ТОМСККАБЕЛЬ

Output product catalogue

POWER CABLES with hard grade ethylene propylene rubber (HEPR) insulation TOFLEX®

2017

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Limited liability company TOMSKCABLE, 2016

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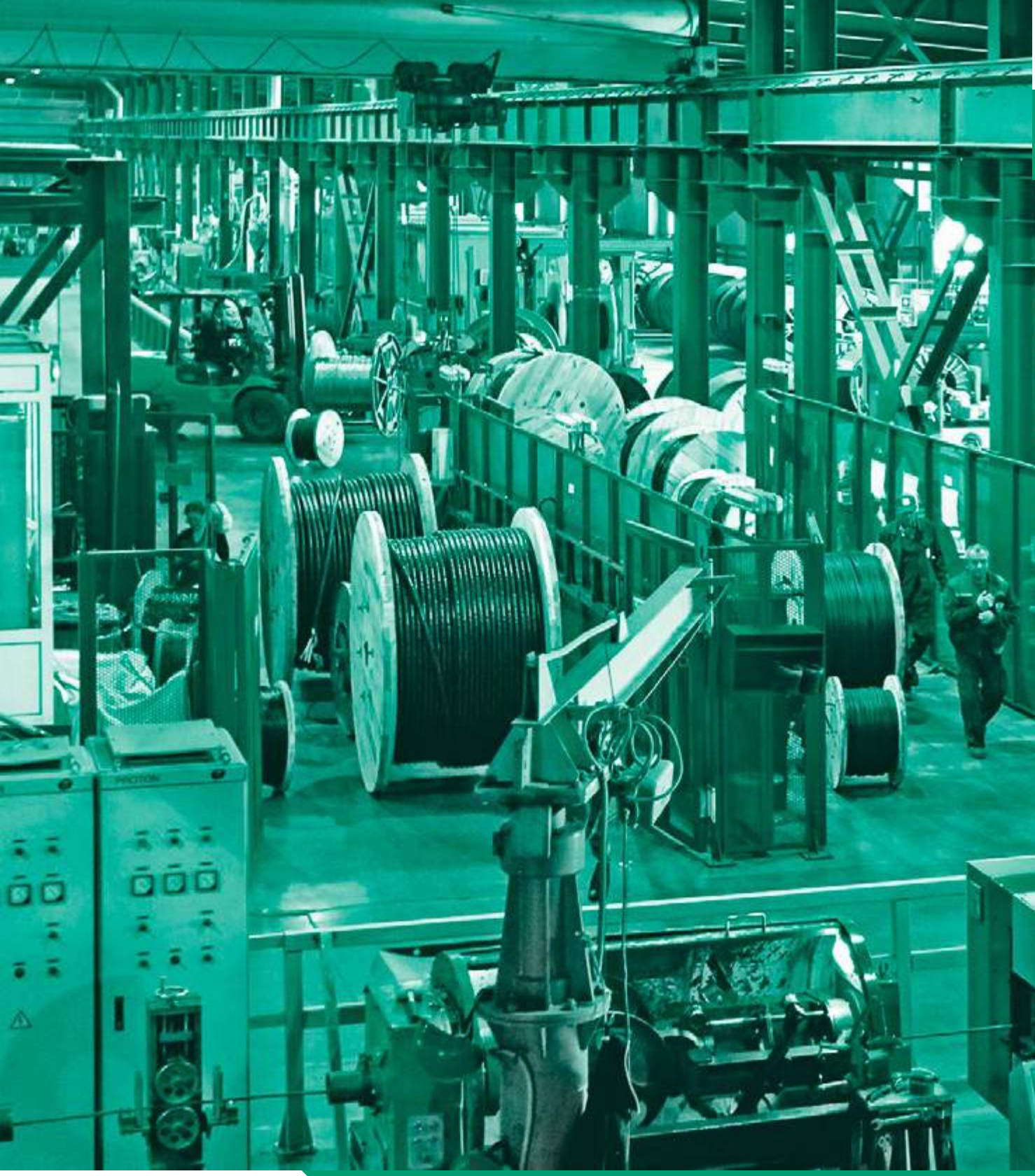
POWER CABLES WITH ETHYLENE PROPYLENE RUBBER (HEPR) INSULATION



POWER CABLES with hard grade ethylene propylene rubber (HEPR) insulation TOFLEX®

POWER CABLES with hard grade ethylene propylene rubber (HEPR) insulation

IEC 60502-1

APPLICATION

Power cables are designed for transmission and distribution of electric power in fixed facilities with nominal alternating voltage of 1kV and 3 kV and frequency of 50 Hz

Cables with copper conductors can be used at explosion hazard areas according to IEC 60079-10-1.

Cables sheathed with low fire hazard PVC-compound or halogen-free polymer compound as well as flame-retardant cables can be used in underground structures and nuclear power stations outside of containment areas in automated systems.

Cables TOFLEX R are designed for laying in dry and wet industrial facilities, open areas, special cable tray systems, blocks, pipes or fire risk facilities:

- Oil and gas production enterprises, transporting and processing enterprises.
- Mining industry enterprises.
- Metallurgical plants.
- Chemical factories.
- Nuclear power stations.
- Floating facilities (vessels, ships, platforms).
- Transport tunnels and underground structures.
- Other objects in hazardous zones (cables with copper conductors).

Cables TOFLEX R are flame-retardant at a group laying; halogen-free cables are low-smoke in condition of burning or smouldering and do not emit corrosive gases. Halogen-free cables TOFLEX R can be used in mass gathering objects: hotels, schools, hospitals, sports facilities, tunnels, multi-storey buildings, business centres, etc.

Cables TOFLEX R withstand high ambient temperature, which allows using them in metallurgical plants facilities. Hard grade ethylene propylene rubber (HEPR) insulation provides smooth operation at the operating conductor temperature at 90 ° C and up to 130 ° C and meets the high values of current carrying capacity with a good safety margin. EPR insulation provides resistance to short circuits at temperatures up to 250 ° C.

TOFLEX R CABLES ADVANTAGES

Characteristics	TOFLEX R	XLPE	PVC	Note
Heat endurance	90	90	70	The higher current loads, the smaller fuel weight
Flexibility	Good	Average	Average	High flexibility reduces installation time
Overload conditions, °C	130	130	80	Higher temperatures provide cable line capacity additional margin (18-25%)
Short-circuit test, °C	250	250	160	Higher temperature increases the reliability of the cable line in case of short circuit
Insulation material fire load, kWh/kg	6.4	12.2	—	Need to take into consideration in the designing of the objects requiring the redundancy of fuel weight
Installation temperature, °C	-35	-20	-15	Installation safety in winter conditions. No additional facilities for preheating
Operating temperature, °C	-65	-50	-50	Possibility of operating in arctic climate
Possibility of using in hazardous zones of all classes	Yes	No	Yes	
The content of halogens	No	No	Yes	Halogen gases cause accelerated corrosion of metal structures and electrical equipment
Service life	35	30	30	

SHEATH MATERIAL SELECTION

Material properties

Material type	Cable grade designation	Operating temperature, °C	Minimal operating temperature without preheating, ° C	Flame retardancy	Low smoke emission	Flexibility	Oil resistance	Resistance todiesel fuel	Hydrocarbon resistance	Fluids resistance	Moisture resistance	Mechanical impacts resistance
PVC	Vng(A)	-50÷50	-15	****	**	***	**	*	**	**	**	***
	Vng(A)-HL	-60÷50	-30	****	**	***	**	*	**	**	**	***
	Vng(A)-LSVng(A)-FRLS	-50÷50	-15	****	****	***	**	*	**	**	**	***
	Vng(A)-LS -HL Vng(A)-FRLS-HL	-60÷50	-30	****	****	***	**	*	**	**	**	***
Cross-linked highly elastic compound	Rng (A)	-50÷50	-15	****	**	****	****	****	****	****	****	****
	Rng (A)-HL	-60÷50	-30	****	**	****	****	****	****	****	****	****
Halogen-free cross-linked highly elastic compound	Rng (A)-HFRng (A)-FRHF	-50÷85	-15	*****	*****	****	****	****	****	****	****	****
	Rng (A)-HF-HL Rng (A)-FRHF-HL	-65÷85	-35	*****	*****	****	****	****	****	****	****	****
Halogen-free thermoplastic polymer compound	Png(A)-HFPng(A)-FRHF	-50÷85	-15	*****	*****	**	**	*	**	**	***	***
	Png(A)-HF-HL Png(A)-FRHF-HL	-65÷85	-35	*****	*****	**	**	*	**	**	****	***
Thermoplastic polyurethane elastomer	Tng(A)	-60÷90	-30	****	**	*****	*****	*****	*****	*****	*****	*****

FIRE SAFETY PERFOMANCE

- Cables are flame-retardant at a group laying.
- Fire resistance for cables with «FR» index.....not less than 180min
- Cables with index «LS» and «HF» are low-smoke in condition of burning and smouldering. Smoke emission does not decrease light permeability in test chamber:

for cables "LS"	more than 50%
for cables "HF"	more than 40%

TECHNICAL STANDARDS

- Ultraviolet category (U) and cold-resistant category (HL)

Operating temperature range:

Cables are designed for operating in stationary state at an ambient temperature:

for cables of any grade, except cables sheathed with thermoplastic elastomer and cold-resistant category	50°C to +50°C
for cables sheathed with thermoplastic polyurethane elastomer	-60°C to +90°C
for cold-resistant category cables of any grade, except «ng(A)-HF-HL»	-60°C to +50°C
for cables «ng(A)-HF-HL»	-65°C to +85°C
for cables «ng(A)-HF»	-50°C to +85°C

- Atmosphere relative humidity up to +35°C.....to 98%
- Conductor continuous heating temperature.....+90°C

Cables sheathed with cross-linked highly elastic compound (R) and thermoplastic polyurethane elastomer (T) are resistant to the periodic effect of oil and diesel fuel.

Minimum bending radius during laying and installation:

for single conductor cable	min. 10D
for multi-conductor cables of any grade except for cables with flexible conductor	min. 7,5D
for cables with single flexible conductor unarmoured and armoured with braiding from galvanized steel wires	min. 5D where D is cable outer diameter.

Cables can be laid and installed without preheating at a temperature not lower than:

- for cables «-HL» (except «ng(A)-HF-HL»).....-30 °C
- for cables «ng(A)-HF-HL».....-35 °C
- other grades.....-15 °C

Cables are resistant to UV radiation

Cables service life.....35 years

Warranty period.....5 years

Warranty period starts from the date of putting cables into operation, but not later than 6 months from the production date.

RECOMMENDATION ON CABLE LAYING

Material properties

Material type	Cable grade designation	In dry soils (sand, sandy-clay and normal soil with humidity less than 14%)	In soil(humidity more than 14%)	In water-flooded and marshy soils	In open cable structures (overpasses, galleries), outdoor electric installations	In indoor electric installations, in buildings and closed cable structures	In indoor electric installations and buildings, structures of mass gathering
PVC	Vng(A)	✓	-	-	✓	-	-
	Vng(A)-HL	✓	-	-	✓	-	-
	Vng(A)-LSVng(A)-FRLS	✓	-	-	✓	✓	-
	Vng(A)-LS -HL Vng(A)-FRLS-HL	✓	-	-	✓	✓	-
Cross-linked highly elastic compound	Rng (A)	✓	✓	✓	✓	-	-
	Rng (A)-HL	✓	✓	✓	✓	-	-
Halogen-free cross-linked highly elastic compound	Rng (A)-HFRng (A)-FRHF	✓	✓	✓	✓	✓	✓
	Rng (A)-HF-HL Rng (A)-FRHF-HL	✓	✓	✓	✓	✓	✓
Halogen-free thermoplastic polymer compound	Png(A)-HFPng(A)-FRHF	✓	✓	-	✓	✓	✓
	Png(A)-HF-HL Png(A)-FRHF-HL	✓	✓	-	✓	✓	✓
Thermoplastic polyurethane elastomer	Tng(A)	✓	✓	✓	✓	-	-

SHIELD TYPES

Copper foil or copper tape shield	Shield with braiding from copper wires	Shield with full lay-up from copper wires
		
Default option	Is used in cables with a flexible conductor	The cross section of shield is indicated after the slash in cable grade

TOFLEX | R | E | B | P | n g(A) | -FR | HF | -HL | 2 x 5 0RM | /25 | l | (N) | -1

CONDUCTOR
No index – copper
G – copper, 5th class
A – aluminium

INSULATION
R – hard grade ethylene propylene rubber (HEPR)

SHIELD
E – copper shield:
– tape shield (without cross-section mark)
– wiry shield (with cross-section index after the slash)

ARMOUR
B – galvanized steel tapes
K – full lay-up from galvanized steel wires
P – braiding from galvanized steel wires

SHEATH
V – PVC
P – halogen-free polymer compound
R – cross-linked highly elastic compound
T – thermoplastic polyurethane elastomer

INDEX OF FIRE SAFETY
"ng(A)" – flame retardant at a group laying

VOLTAGE CLASS
1 kV, 3 kV

COLOUR CODE
N – neutral blue
G – protective green-and yellow conductor
N, G – neutral blue and protective green-and yellow conductor

CONDUCTORS TYPE
Without index mark –
l – tinned

SHIELD CROSS SECTION

CONDUCTOR CROSS-SECTION
RM – multi wire round conductors with cross-6-800 mm

CONDUCTORS NUMBER

COLD RESISTANCE

FIRE SAFETY INDEX
LS – low smoke and low gas retardant (for **V** sheath type)
HF – halogen-free cables (for **R, P** sheath type)

FIRE RESISTANCE
FR – fire resistant cables

Designation examples when ordering and in other documentation:

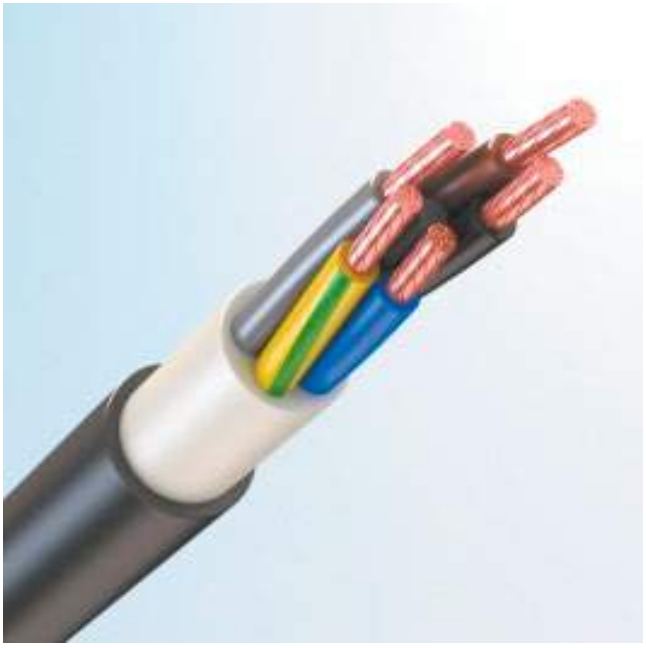
Cable TOFLEX ARVng(A) 1×185RM-1 IEC 60502- 1	Power cable TOFLEX with single aluminium multi wire conductor with cross section 185 mm², insulated with hard grade ethylene propylene rubber, sheathed with flame retardant PVC-compound, for nominal voltage 1kV (Al/HEPR/PVC).
Cable TOFLEX GRRng(A)-HF 3×70RM - 1 IEC 60502-1	Power cable TOFLEX with three copper multi wire conductors with cross section 70 mm², insulated with hard grade ethylene propylene rubber, sheathed with cross-linked highly elastic compound, for nominal voltage 1 kV (Cu/HEPR/XLHFFR).
Cable TOFLEX REPng(A)-FRHF 2×50RM/25(N)-1 IEC 60502-1	Power cable TOFLEX with two copper multi wire conductors with cross section 50 mm², insulated with hard grade ethylene propylene rubber, shielded with copper wires with cross section 25mm², sheathed with halogen-free polymer compound, for nominal voltage 1 kV, flame retardant (Cu/MGT/HEPR/OSCR/HFFR).
Cable TOFLEX REBVng(A)-FRLS 3×95RM(N, G)-1 IEC 60502-1	Power cable TOFLEX with three copper multi wire conductors with cross section 95 mm², insulated with hard grade ethylene propylene rubber, shielded with copper tapes or flexible materials based on copper foil, armoured with steel galvanized tapes, sheathed with flame retardant PVC-compound, for nominal voltage 1 kV (Cu/HEPR/OSCR/LSPVC/STA/LSPVC).
Cable TOFLEX REVng(A)-LS 1×150RM-3 IEC 60502-1	Power cable TOFLEX with single copper multi wire conductor with cross section 150mm², insulated with hard grade ethylene propylene rubber, shielded with copper tapes or flexible materials based on copper foil, sheathed with flame retardant PVC-compound, for nominal voltage 3 kV (Cu/HEPR/OSCR/LSPVC).

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

1. UNSHIELDED UNARMOURED

IEC 60502-1

1.1 Cables with PVC sheath



- **TOFLEX R Vng(A)**
- **TOFLEX GRVng(A)**
- **TOFLEX ARVng(A)**
- **Cu/HEPR/PVC, Al/HEPR/PVC**

Possible options:

«ng(A)-HL»	
«ng(A)-LS»	(Cu/HEPR/LSPVC, Al/ HEPR/LSPVC)
«ng(A)-LS-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GRV) of 5th class (according to IEC 60228).
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Outer sheath:**

- **«ng(A)»** – made from PVC-compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant PVC-compound with low fire hazard.
- **«ng(A)-LS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-LS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX R Vng(A)-LS 3×95RM(N, G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX RVng(A)	TOFLEX RVng(A)-HL	TOFLEX RVng(A)-LS	TOFLEX RVng(A)-LS-HL	
1x1,5 RE	1	7.0	69.6	64	64	72	72	36.3
1x2,5 RE	1	7.4	73.6	77	77	86	86	39.7
1x4 RE	1	7.8	78.2	95	95	105	105	43.7
1x6 RE	1	8.3	83.2	118	118	128	128	48.0
1x10 RE	1	9.1	91.0	161	161	173	173	54.8
1x16 RE	1	10.1	100.5	225	225	184	184	63.0
1x16 RM	1	10.5	105.0	232	232	238	238	66.9
1x25 RE	1	11.6	115.5	323	323	245	245	79.4
1x25 RM	1	11.9	119.0	331	331	346	346	82.7
1x35 RM	1	12.9	129.0	425	425	442	442	91.9
1x50 RM	1	14.6	146.0	600	600	620	620	112.7
1x70 RM	1	16.2	162.0	771	771	793	793	128.5
1x95 RM	1	18.3	183.0	1026	1026	1052	1052	156.2
1x120 RM	1	19.7	197.0	1270	1270	1298	1298	170.9
1x150 RM	1	21.5	215.0	1548	1548	1578	1578	198.4
1x185 RM	1	23.5	235.0	1906	1906	1939	1939	230.2
1x240 RM	1	26.6	266.0	2440	2440	2482	2482	289.3
1x300 RM	1	30.9	308.5	3081	3081	3130	3130	372.7
1x400 RM	1	35.0	349.9	3964	3964	4030	4030	479.8
1x500 RM	1	38.6	385.7	4958	4958	5031	5031	555.6
1x630 RM	1	42.5	425.3	6321	6321	6402	6402	621.7
2x1,5 RE	1	10.3	77.4	143	143	162	162	82.7
2x2,5 RE	1	11.1	83.4	177	177	198	198	94.4
2x4 RE	1	12.0	90.3	223	223	247	247	108.5
2x6 RE	1	13.0	97.8	281	281	308	308	124.7
2x10 RE	1	14.6	109.5	387	387	420	420	151.5
2x16 RE	1	16.5	123.8	543	543	585	585	186.8
2x16 RM	1	17.4	130.5	572	572	617	617	204.6
2x25 RE	1	21.5	161.3	894	894	988	988	322.5
2x25 RM	1	22.2	166.5	928	928	1028	1028	340.6
2x35 RM	1	24.6	184.5	1194	1194	1316	1316	410.7
2x50 RM	1	28.0	210.0	1651	1651	1806	1806	522.4
2x70 RM	1	31.6	237.0	2138	2138	2334	2334	649.1
2x95 RM	1	36.6	274.5	2893	2893	3153	3153	865.1
2x120 RM	1	39.4	295.5	3515	3515	3813	3813	981.5
2x150 RM	1	43.4	325.5	4298	4298	4661	4661	1186.3
2x185 RM	1	48.2	361.5	5337	5337	5781	5781	1462.2
2x240 RM	1	54.0	405.0	6759	6759	7314	7314	1812.4
3x1,5 RE	1	10.8	81.2	162	162	180	180	88.8
3x2,5 RE	1	11.7	87.6	205	205	226	226	101.0
3x4 RE	1	12.7	95.0	264	264	287	287	115.7
3x6 RE	1	13.7	103.1	339	339	365	365	132.2
3x10 RE	1	15.4	115.7	478	478	510	510	159.2
3x16 RE	1	17.5	131.0	686	686	725	725	194.2
3x16 RM	1	18.4	138.3	715	715	757	757	211.6
3x25 RE	1	22.7	170.2	1118	1118	1207	1207	335.4
3x25 RM	1	23.4	175.8	1155	1155	1249	1249	353.3
3x35 RM	1	26.0	195.0	1502	1502	1616	1616	423.0
3x50 RM	1	29.7	222.4	2106	2106	2248	2248	536.2

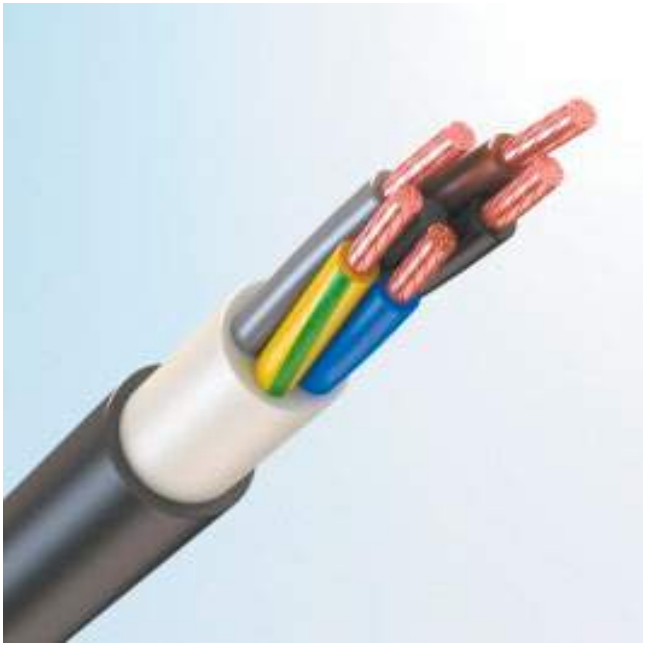
3x70 RM	1	33.5	251.2	2737	2737	2916	2916	659.8
3x95 RM	1	38.8	291.0	3709	3709	3947	3947	877.6
3x120 RM	1	41.8	313.6	4546	4546	4816	4816	987.9
3x150 RM	1	46.9	351.6	5660	5660	6003	6003	1254.0
3x185 RM	1	51.2	383.9	6922	6922	7322	7322	1470.5
3x240 RM	1	58.0	434.9	8869	8869	9381	9381	1871.7
4x1,5 RE	1	11.7	87.7	190	190	209	209	100.5
4x2,5 RE	1	12.7	95.0	243	243	265	265	114.5
4x4 RE	1	13.8	103.3	317	317	342	342	131.1
4x6 RE	1	15.0	112.3	412	412	440	440	149.7
4x10 RE	1	16.9	126.4	589	589	623	623	179.9
4x16 RE	1	19.1	143.6	854	854	895	895	218.8
4x16 RM	1	20.2	151.7	886	886	931	931	237.9
4x25 RE	1	25.2	188.7	1409	1409	1507	1507	392.4
4x25 RM	1	26.0	195.0	1453	1453	1556	1556	412.7
4x35 RM	1	28.4	213.1	1866	1866	1985	1985	472.4
4x50 RM	1	32.9	246.8	2667	2667	2824	2824	621.1
4x70 RM	1	37.6	281.7	3504	3504	3705	3705	783.2
4x95 RM	1	43.0	322.7	4697	4697	4956	4956	1004.7
4x120 RM	1	47.2	354.0	5866	5866	6176	6176	1187.5
4x150 RM	1	51.5	386.5	7126	7126	7484	7484	1391.8
4x185 RM	1	57.4	430.2	8876	8876	9321	9321	1725.7
4x240 RM	1	63.9	479.0	11195	11195	11727	11727	2075.8
5x1,5 RE	1	12.7	95.0	225	225	246	246	114.0
5x2,5 RE	1	13.8	103.1	290	290	314	314	130.0
5x4 RE	1	15.0	112.5	382	382	409	409	149.0
5x6 RE	1	16.3	122.6	505	505	535	535	170.2
5x10 RE	1	18.5	138.4	721	721	758	758	204.5
5x16 RE	1	21.0	157.6	1046	1046	1091	1091	248.5
5x16 RM	1	22.2	166.7	1083	1083	1131	1131	270.1
5x25 RE	1	27.5	206.0	1721	1721	1827	1827	442.8
5x25 RM	1	28.4	213.1	1772	1772	1884	1884	465.7
5x35 RM	1	31.5	236.3	2321	2321	2458	2458	553.2
5x50 RM	1	36.9	276.8	3355	3355	3537	3537	749.1
5x70 RM	1	41.2	309.2	4359	4359	4577	4577	881.9
5x95 RM	1	48.1	360.7	5905	5905	6201	6201	1194.6
5x120 RM	1	51.9	389.0	7235	7235	7569	7569	1335.4
5x150 RM	1	57.7	433.0	8915	8915	9331	9331	1661.0
5x185 RM	1	63.1	473.5	11056	11056	11536	11536	1943.4

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

1. UNSHIELDED UNARMOURED

IEC 60502-1

1.2 Cables sheathed with cross-linked highly elastic polymer compound



- **TOFLEX R Rng(A)**
- **TOFLEX GRRng(A)**
- **TOFLEX ARRng(A)**
- **Cu/HEPR/XLFR, Al/HEPR/ XLFR**

Possible options:

«ng(A)-HL»	
«ng(A)-HF»	(Cu/HEPR/XLHFFR, Al/HEPR/XLHFFR)
«ng(A)-HF-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GRR) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Outer sheath:**
- **«ng(A)»** – made from cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX R Rng(A)-HF-HL5×95RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX RRng(A)	TOFLEX RRng(A)-HL	TOFLEX RRng(A)-HF	TOFLEX RRng(A)-HF-HL	
1x1,5 RE	1	7.0	69.6	60	60	60	60	36.3
1x2,5 RE	1	7.4	73.6	73	73	73	73	39.7
1x4 RE	1	7.8	78.2	90	90	90	90	43.7
1x6 RE	1	8.3	83.2	113	113	113	113	48.0
1x10 RE	1	9.1	91.0	155	155	155	155	54.8
1x16 RE	1	10.1	100.5	218	218	218	218	63.0
1x16 RM	1	10.5	105.0	224	224	224	224	66.9
1x25 RE	1	11.6	115.5	314	314	314	314	79.4
1x25 RM	1	11.9	119.0	322	322	322	322	82.7
1x35 RM	1	12.9	129.0	416	416	416	416	91.9
1x50 RM	1	14.6	146.0	589	589	589	589	112.7
1x70 RM	1	16.2	162.0	758	758	758	758	128.5
1x95 RM	1	18.3	183.0	1012	1012	1012	1012	156.2
1x120 RM	1	19.7	197.0	1255	1255	1255	1255	170.9
1x150 RM	1	21.5	215.0	1531	1531	1531	1531	198.4
1x185 RM	1	23.5	235.0	1888	1888	1888	1888	230.2
1x240 RM	1	26.6	266.0	2417	2417	2417	2417	289.3
1x300 RM	1	30.9	308.5	3053	3053	3053	3053	372.7
1x400 RM	1	35.0	349.9	3926	3926	3926	3926	479.8
1x500 RM	1	38.6	385.7	4916	4916	4916	4916	555.6
1x630 RM	1	42.5	425.3	6274	6274	6274	6274	621.7
2x1,5 RE	1	10.3	77.4	133	133	133	133	82.7
2x2,5 RE	1	11.1	83.4	165	165	165	165	94.4
2x4 RE	1	12.0	90.3	209	209	209	209	108.5
2x6 RE	1	13.0	97.8	265	265	265	265	124.7
2x10 RE	1	14.6	109.5	368	368	368	368	151.5
2x16 RE	1	16.5	123.8	520	520	520	520	186.8
2x16 RM	1	17.4	130.5	546	546	546	546	204.6
2x25 RE	1	21.5	161.3	930	930	930	930	322.5
2x25 RM	1	22.2	166.5	967	967	967	967	340.6
2x35 RM	1	24.6	184.5	1241	1241	1241	1241	410.7
2x50 RM	1	28.0	210.0	1718	1718	1718	1718	522.4
2x70 RM	1	31.6	237.0	2231	2231	2231	2231	649.1
2x95 RM	1	36.6	274.5	3011	3011	3011	3011	865.1
2x120 RM	1	39.4	295.5	3658	3658	3658	3658	981.5
2x150 RM	1	43.4	325.5	4483	4483	4483	4483	1186.3
2x185 RM	1	48.2	361.5	5555	5555	5555	5555	1462.2
2x240 RM	1	54.0	405.0	7052	7052	7052	7052	1812.4
3x1,5 RE	1	10.8	81.2	152	152	152	152	88.8
3x2,5 RE	1	11.7	87.6	194	194	194	194	101.0
3x4 RE	1	12.7	95.0	251	251	251	251	115.7
3x6 RE	1	13.7	103.1	323	323	323	323	132.2
3x10 RE	1	15.4	115.7	460	460	460	460	159.2
3x16 RE	1	17.5	131.0	664	664	664	664	194.2
3x16 RM	1	18.4	138.3	690	690	690	690	211.6
3x25 RE	1	22.7	170.2	1147	1147	1147	1147	335.4
3x25 RM	1	23.4	175.8	1186	1186	1186	1186	353.3
3x35 RM	1	26.0	195.0	1539	1539	1539	1539	423.0
3x50 RM	1	29.7	222.4	2158	2158	2158	2158	536.2

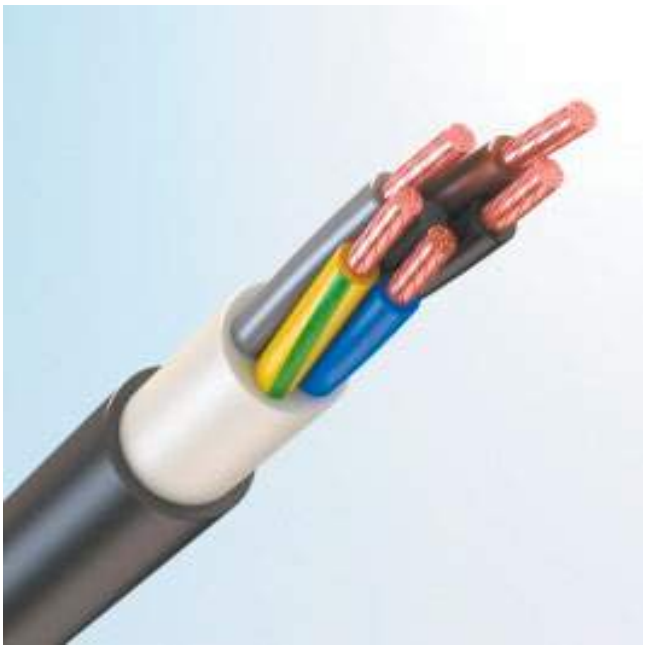
3x70 RM	1	33.5	251.2	2811	2811	2811	2811	659.8
3x95 RM	1	38.8	291.0	3802	3802	3802	3802	877.6
3x120 RM	1	41.8	313.6	4658	4658	4658	4658	987.9
3x150 RM	1	46.9	351.6	5798	5798	5798	5798	1254.0
3x185 RM	1	51.2	383.9	7093	7093	7093	7093	1470.5
3x240 RM	1	58.0	434.9	9093	9093	9093	9093	1871.7
4x1,5 RE	1	11.7	87.7	178	178	178	178	100.5
4x2,5 RE	1	12.7	95.0	231	231	231	231	114.5
4x4 RE	1	13.8	103.3	303	303	303	303	131.1
4x6 RE	1	15.0	112.3	395	395	395	395	149.7
4x10 RE	1	16.9	126.4	570	570	570	570	179.9
4x16 RE	1	19.1	143.6	831	831	831	831	218.8
4x16 RM	1	20.2	151.7	861	861	861	861	237.9
4x25 RE	1	25.2	188.7	1434	1434	1434	1434	392.4
4x25 RM	1	26.0	195.0	1481	1481	1481	1481	412.7
4x35 RM	1	28.4	213.1	1901	1901	1901	1901	472.4
4x50 RM	1	32.9	246.8	2724	2724	2724	2724	621.1
4x70 RM	1	37.6	281.7	3569	3569	3569	3569	783.2
4x95 RM	1	43.0	322.7	4795	4795	4795	4795	1004.7
4x120 RM	1	47.2	354.0	5974	5974	5974	5974	1187.5
4x150 RM	1	51.5	386.5	7260	7260	7260	7260	1391.8
4x185 RM	1	57.4	430.2	9044	9044	9044	9044	1725.7
4x240 RM	1	63.9	479.0	11412	11412	11412	11412	2075.8
5x1,5 RE	1	12.7	95.0	213	213	213	213	114.0
5x2,5 RE	1	13.8	103.1	276	276	276	276	130.0
5x4 RE	1	15.0	112.5	367	367	366	366	149.0
5x6 RE	1	16.3	122.6	487	487	486	486	170.2
5x10 RE	1	18.5	138.4	700	700	700	700	204.5
5x16 RE	1	21.0	157.6	1020	1020	1020	1020	248.5
5x16 RM	1	22.2	166.7	1055	1055	1054	1054	270.1
5x25 RE	1	27.5	206.0	1748	1748	1746	1746	442.8
5x25 RM	1	28.4	213.1	1802	1802	1800	1800	465.7
5x35 RM	1	31.5	236.3	2364	2364	2362	2362	553.2
5x50 RM	1	36.9	276.8	3407	3407	3404	3404	749.1
5x70 RM	1	41.2	309.2	4428	4428	4421	4421	881.9
5x95 RM	1	48.1	360.7	5999	5999	5992	5992	1194.6
5x120 RM	1	51.9	389.0	7348	7348	7341	7341	1335.4
5x150 RM	1	57.7	433.0	9057	9057	9050	9050	1661.0
5x185 RM	1	63.1	473.5	11232	11232	11216	11216	1943.4
5x240 RM	1	71.8	538.7	14359	14359	14343	14343	2501.6

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

1. UNSHIELDED UNARMOURED

IEC 60502-1

1.3 Cables sheathed with halogen-free polymer compound



- **TOFLEX RPng(A)-HF**
- **TOFLEX GRPng(A)-HF**
- **TOFLEX ARPng(A)-HF**
- **Cu/HEPR/HFFR, Al/HEPR/HFFR**

Possible options:

«ng(A)-HL»

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GRP) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Outer sheath:**
- **«ng(A)-HF»** — made from halogen-free polymer compounds.
- **«ng(A)-HF-HL»** — made from cold-resistant halogen-free polymer compounds.

Ordering example:
«TOFLEX RPng(A)-HF-HL1×185RM-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RPng(A)-HF	TOFLEX RPng(A)-HF-HL	
1x1,5 RE	1	7.0	69.6	63	63	36.3
1x2,5 RE	1	7.4	73.6	77	77	39.7
1x4 RE	1	7.8	78.2	95	95	43.7
1x6 RE	1	8.3	83.2	118	118	48.0
1x10 RE	1	9.1	91.0	161	161	54.8
1x16 RE	1	10.1	100.5	224	224	63.0
1x16 RM	1	10.5	105.0	231	231	66.9
1x25 RE	1	11.6	115.5	322	322	79.4
1x25 RM	1	11.9	119.0	330	330	82.7
1x35 RM	1	12.9	129.0	424	424	91.9
1x50 RM	1	14.6	146.0	599	599	112.7
1x70 RM	1	16.2	162.0	769	769	128.5
1x95 RM	1	18.3	183.0	1024	1024	156.2
1x120 RM	1	19.7	197.0	1268	1268	170.9
1x150 RM	1	21.5	215.0	1546	1546	198.4
1x185 RM	1	23.5	235.0	1904	1904	230.2
1x240 RM	1	26.6	266.0	2437	2437	289.3
1x300 RM	1	30.9	308.5	3077	3077	372.7
1x400 RM	1	35.0	349.9	3959	3959	479.8
1x500 RM	1	38.6	385.7	4952	4952	555.6
1x630 RM	1	42.5	425.3	6314	6314	621.7
2x1,5 RE	1	10.3	77.4	142	142	82.7
2x2,5 RE	1	11.1	83.4	176	176	94.4
2x4 RE	1	12.0	90.3	221	221	108.5
2x6 RE	1	13.0	97.8	278	278	124.7
2x10 RE	1	14.6	109.5	384	384	151.5
2x16 RE	1	16.5	123.8	540	540	186.8
2x16 RM	1	17.4	130.5	568	568	204.6
2x25 RE	1	21.5	161.3	945	945	322.5
2x25 RM	1	22.2	166.5	983	983	340.6
2x35 RM	1	24.6	184.5	1261	1261	410.7
2x50 RM	1	28.0	210.0	1740	1740	522.4
2x70 RM	1	31.6	237.0	2257	2257	649.1
2x95 RM	1	36.6	274.5	3047	3047	865.1
2x120 RM	1	39.4	295.5	3696	3696	981.5
2x150 RM	1	43.4	325.5	4526	4526	1186.3
2x185 RM	1	48.2	361.5	5611	5611	1462.2
2x240 RM	1	54.0	405.0	7114	7114	1812.4
3x1,5 RE	1	10.8	81.2	161	161	88.8
3x2,5 RE	1	11.7	87.6	204	204	101.0
3x4 RE	1	12.7	95.0	262	262	115.7
3x6 RE	1	13.7	103.1	337	337	132.2
3x10 RE	1	15.4	115.7	476	476	159.2
3x16 RE	1	17.5	131.0	683	683	194.2
3x16 RM	1	18.4	138.3	711	711	211.6
3x25 RE	1	22.7	170.2	1163	1163	335.4
3x25 RM	1	23.4	175.8	1203	1203	353.3
3x35 RM	1	26.0	195.0	1560	1560	423.0
3x50 RM	1	29.7	222.4	2182	2182	536.2

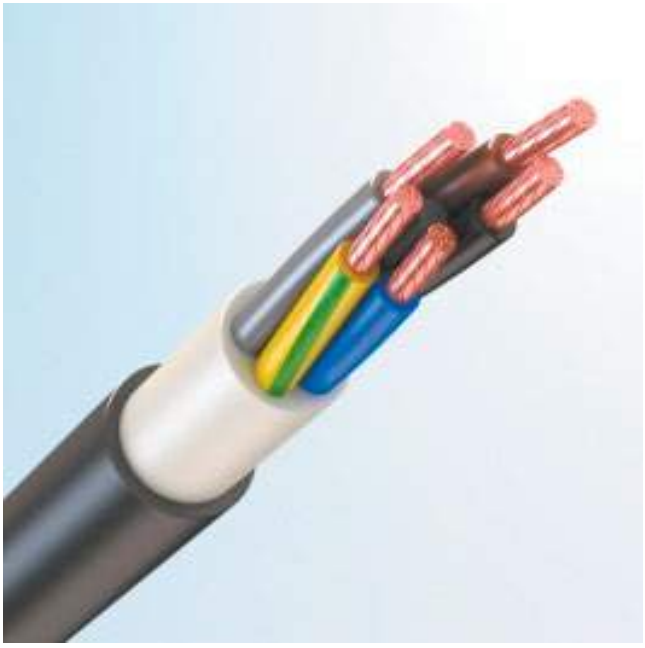
3x70 RM	1	33.5	251.2	2838	2838	659.8
3x95 RM	1	38.8	291.0	3840	3840	877.6
3x120 RM	1	41.8	313.6	4699	4699	987.9
3x150 RM	1	46.9	351.6	5852	5852	1254.0
3x185 RM	1	51.2	383.9	7152	7152	1470.5
3x240 RM	1	58.0	434.9	9167	9167	1871.7
4x1,5 RE	1	11.7	87.7	188	188	100.5
4x2,5 RE	1	12.7	95.0	242	242	114.5
4x4 RE	1	13.8	103.3	315	315	131.1
4x6 RE	1	15.0	112.3	409	409	149.7
4x10 RE	1	16.9	126.4	586	586	179.9
4x16 RE	1	19.1	143.6	851	851	218.8
4x16 RM	1	20.2	151.7	883	883	237.9
4x25 RE	1	25.2	188.7	1454	1454	392.4
4x25 RM	1	26.0	195.0	1502	1502	412.7
4x35 RM	1	28.4	213.1	1924	1924	472.4
4x50 RM	1	32.9	246.8	2750	2750	621.1
4x70 RM	1	37.6	281.7	3606	3606	783.2
4x95 RM	1	43.0	322.7	4838	4838	1004.7
4x120 RM	1	47.2	354.0	6028	6028	1187.5
4x150 RM	1	51.5	386.5	7319	7319	1391.8
4x185 RM	1	57.4	430.2	9118	9118	1725.7
4x240 RM	1	63.9	479.0	11495	11495	2075.8
5x1,5 RE	1	12.7	95.0	223	223	114.0
5x2,5 RE	1	13.8	103.1	288	288	130.0
5x4 RE	1	15.0	112.5	380	380	149.0
5x6 RE	1	16.3	122.6	502	502	170.2
5x10 RE	1	18.5	138.4	718	718	204.5
5x16 RE	1	21.0	157.6	1042	1042	248.5
5x16 RM	1	22.2	166.7	1078	1078	270.1
5x25 RE	1	27.5	206.0	1768	1768	442.8
5x25 RM	1	28.4	213.1	1823	1823	465.7
5x35 RM	1	31.5	236.3	2388	2388	553.2
5x50 RM	1	36.9	276.8	3440	3440	749.1
5x70 RM	1	41.2	309.2	4462	4462	881.9
5x95 RM	1	48.1	360.7	6047	6047	1194.6
5x120 RM	1	51.9	389.0	7401	7401	1335.4
5x150 RM	1	57.7	433.0	9124	9124	1661.0
5x185 RM	1	63.1	473.5	11298	11298	1943.4
5x240 RM	1	71.2	534.2	14347	14347	2431.5

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

1. UNSHIELDED UNARMOURED

IEC 60502-1

1.4 Cables sheathed with thermoplastic polyurethane elastomer



- **TOFLEX RTng(A)**
- **TOFLEX GRTng(A)**
- **TOFLEX ARTng(A)**
- **Cu/HEPR/TPU, Al/HEPR/ TPU**

DESIGN FEATURES

① **Electrical conductor –** copper or aluminium of 1st, 2nd class; flexible copper (version GRT) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Outer sheath:**
- **«ng(A)»**— made from thermoplastic polyurethane elastomer.

Ordering example:
«TOFLEX RTng(A)1×185RM-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg	Amount of combustible materials, l/km
				TOFLEX RTng(A)	
1x1,5 RE	1	7.0	69.6	61	36.3
1x2,5 RE	1	7.4	73.6	75	39.7
1x4 RE	1	7.8	78.2	92	43.7
1x6 RE	1	8.3	83.2	115	48.0
1x10 RE	1	9.1	91.0	158	54.8
1x16 RE	1	10.1	100.5	221	63.0
1x16 RM	1	10.5	105.0	227	66.9
1x25 RE	1	11.6	115.5	318	79.4
1x25 RM	1	11.9	119.0	326	82.7
1x35 RM	1	12.9	129.0	420	91.9
1x50 RM	1	14.6	146.0	594	112.7
1x70 RM	1	16.2	162.0	764	128.5
1x95 RM	1	18.3	183.0	1018	156.2
1x120 RM	1	19.7	197.0	1261	170.9
1x150 RM	1	21.5	215.0	1538	198.4
1x185 RM	1	23.5	235.0	1895	230.2
1x240 RM	1	26.6	266.0	2426	289.3
1x300 RM	1	30.9	308.5	3064	372.7
1x400 RM	1	35.0	349.9	3942	479.8
1x500 RM	1	38.6	385.7	4933	555.6
1x630 RM	1	42.5	425.3	6293	621.7
2x1,5 RE	1	10.3	77.4	137	82.7
2x2,5 RE	1	11.1	83.4	170	94.4
2x4 RE	1	12.0	90.3	215	108.5
2x6 RE	1	13.0	97.8	271	124.7
2x10 RE	1	14.6	109.5	376	151.5
2x16 RE	1	16.5	123.8	529	186.8
2x16 RM	1	17.4	130.5	556	204.6
2x25 RE	1	21.5	161.3	883	322.5
2x25 RM	1	22.2	166.5	917	340.6
2x35 RM	1	24.6	184.5	1181	410.7
2x50 RM	1	28.0	210.0	1636	522.4
2x70 RM	1	31.6	237.0	2121	649.1
2x95 RM	1	36.6	274.5	2869	865.1
2x120 RM	1	39.4	295.5	3489	981.5
2x150 RM	1	43.4	325.5	4269	1186.3
2x185 RM	1	48.2	361.5	5300	1462.2
2x240 RM	1	54.0	405.0	6717	1812.4
3x1,5 RE	1	10.8	81.2	156	88.8
3x2,5 RE	1	11.7	87.6	198	101.0
3x4 RE	1	12.7	95.0	256	115.7
3x6 RE	1	13.7	103.1	330	132.2
3x10 RE	1	15.4	115.7	468	159.2
3x16 RE	1	17.5	131.0	673	194.2
3x16 RM	1	18.4	138.3	700	211.6
3x25 RE	1	22.7	170.2	1107	335.4
3x25 RM	1	23.4	175.8	1144	353.3
3x35 RM	1	26.0	195.0	1488	423.0
3x50 RM	1	29.7	222.4	2090	536.2

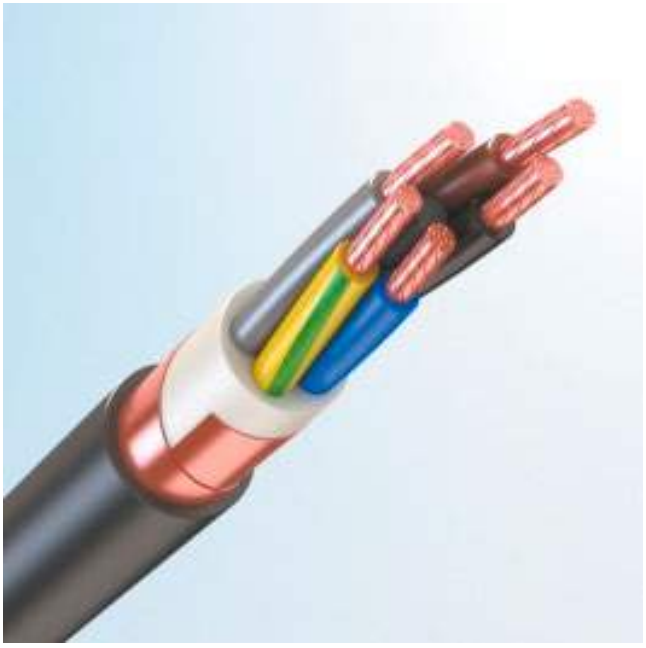
3x70 RM	1	33.5	251.2	2718	659.8
3x95 RM	1	38.8	291.0	3684	877.6
3x120 RM	1	41.8	313.6	4518	987.9
3x150 RM	1	46.9	351.6	5624	1254.0
3x185 RM	1	51.2	383.9	6882	1470.5
3x240 RM	1	58.0	434.9	8819	1871.7
4x1,5 RE	1	11.7	87.7	183	100.5
4x2,5 RE	1	12.7	95.0	236	114.5
4x4 RE	1	13.8	103.3	309	131.1
4x6 RE	1	15.0	112.3	402	149.7
4x10 RE	1	16.9	126.4	578	179.9
4x16 RE	1	19.1	143.6	840	218.8
4x16 RM	1	20.2	151.7	871	237.9
4x25 RE	1	25.2	188.7	1395	392.4
4x25 RM	1	26.0	195.0	1439	412.7
4x35 RM	1	28.4	213.1	1850	472.4
4x50 RM	1	32.9	246.8	2649	621.1
4x70 RM	1	37.6	281.7	3479	783.2
4x95 RM	1	43.0	322.7	4668	1004.7
4x120 RM	1	47.2	354.0	5830	1187.5
4x150 RM	1	51.5	386.5	7086	1391.8
4x185 RM	1	57.4	430.2	8827	1725.7
4x240 RM	1	63.9	479.0	11140	2075.8
5x1,5 RE	1	12.7	95.0	218	114.0
5x2,5 RE	1	13.8	103.1	282	130.0
5x4 RE	1	15.0	112.5	373	149.0
5x6 RE	1	16.3	122.6	495	170.2
5x10 RE	1	18.5	138.4	709	204.5
5x16 RE	1	21.0	157.6	1031	248.5
5x16 RM	1	22.2	166.7	1066	270.1
5x25 RE	1	27.5	206.0	1706	442.8
5x25 RM	1	28.4	213.1	1757	465.7
5x35 RM	1	31.5	236.3	2304	553.2
5x50 RM	1	36.9	276.8	3331	749.1
5x70 RM	1	41.2	309.2	4332	881.9
5x95 RM	1	48.1	360.7	5868	1194.6
5x120 RM	1	51.9	389.0	7194	1335.4
5x150 RM	1	57.7	433.0	8865	1661.0
5x185 RM	1	63.1	473.5	11001	1943.4
5x240 RM	1	71.8	538.7	14063	2501.6

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

2. SHIELDED

IEC 60502-1

2.1 Cables with PVC sheath



- **TOFLEX REVng(A)**
- **TOFLEX GREVng(A)**
- **TOFLEX AREVng(A)**
- **Cu/HEPR/OSCR/PVC, Al/HEPR/OSCR/PVC**

Possible options:

«ng(A)-HL»	
«ng(A)-LS»	(Cu/HEPR/OSCR/LSPVC, Al/HEPR/OSCR/LSPVC)
«ng(A)-LS-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GREV) of 5th class (according to IEC 60228).

② **Insulation** – hard grade ethylene propylene rubber (HEPR).

③ **Inner sheath** – corresponds to the type of the outer sheath.

④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.

⑤ **Outer sheath:**

- **«ng(A)»** – made from PVC-compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant PVC-compound with low fire hazard.
- **«ng(A)-LS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-LS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX REVng(A)-LS3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX REVng(A)-LS3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX REVng(A)	TOFLEX REVng(A)-HL	TOFLEX REVng(A)-LS	TOFLEX REVng(A)-LS-HL	
1x1,5 RE	1	9.1	91.4	116	116	133	133	62.3
1x2,5 RE	1	9.5	95.4	132	132	150	150	67.0
1x4 RE	1	10.0	100.0	154	154	173	173	72.4
1x6 RE	1	10.5	105.0	180	180	201	201	78.3
1x10 RE	1	11.3	112.8	229	229	251	251	87.5
1x16 RE	1	12.2	122.3	299	299	324	324	98.7
1x16 RM	1	12.7	126.8	309	309	335	335	104.0
1x25 RE	1	13.7	137.3	407	407	437	437	119.9
1x25 RM	1	14.1	140.8	418	418	449	449	124.2
1x35 RM	1	15.1	150.8	519	519	553	553	136.6
1x50 RM	1	16.8	167.8	706	706	744	744	162.7
1x70 RM	1	18.4	183.8	889	889	931	931	183.5
1x95 RM	1	20.5	204.8	1159	1159	1207	1207	217.8
1x120 RM	1	21.9	218.8	1413	1413	1465	1465	236.9
1x150 RM	1	24.1	240.8	1726	1726	1787	1787	285.1
1x185 RM	1	26.1	260.8	2100	2100	2167	2167	324.4
1x240 RM	1	28.8	287.8	2631	2631	2706	2706	377.1
1x300 RM	1	33.4	334.3	3334	3334	3429	3429	494.6
1x400 RM	1	37.6	375.7	4249	4249	4368	4368	617.5
1x500 RM	1	41.2	411.5	5271	5271	5403	5403	706.9
1x630 RM	1	46.3	463.1	6796	6796	6968	6968	873.8
2x1,5 RE	1	12.5	93.8	221	221	256	256	120.7
2x2,5 RE	1	13.3	99.8	261	261	300	300	135.0
2x4 RE	1	14.2	106.7	314	314	357	357	152.2
2x6 RE	1	15.2	114.2	378	378	428	428	171.6
2x10 RE	1	16.8	125.9	496	496	555	555	203.5
2x16 RE	1	18.7	140.1	666	666	738	738	245.0
2x16 RM	1	19.6	146.9	701	701	780	780	265.7
2x25 RE	1	21.7	162.6	938	938	1033	1033	323.5
2x25 RM	1	22.4	167.9	974	974	1074	1074	341.7
2x35 RM	1	24.8	185.9	1246	1246	1368	1368	411.8
2x50 RM	1	28.2	211.4	1711	1711	1866	1866	523.6
2x70 RM	1	31.8	238.4	2206	2206	2403	2403	650.2
2x95 RM	1	36.8	275.9	2971	2971	3232	3232	866.5
2x120 RM	1	39.6	296.9	3600	3600	3899	3899	982.9
2x150 RM	1	43.6	326.9	4393	4393	4756	4756	1187.7
2x185 RM	1	48.4	362.9	5442	5442	5886	5886	1463.8
2x240 RM	1	54.2	406.4	6878	6878	7433	7433	1814.0
3x1,5 RE	1	13.0	97.5	244	244	278	278	128.4
3x2,5 RE	1	13.9	104.0	293	293	331	331	143.5
3x4 RE	1	14.9	111.4	359	359	402	402	161.4
3x6 RE	1	15.9	119.5	442	442	490	490	181.4
3x10 RE	1	17.6	132.0	593	593	651	651	213.9
3x16 RE	1	19.6	147.4	816	816	885	885	255.6
3x16 RM	1	20.6	154.6	852	852	926	926	276.1
3x25 RE	1	22.9	171.5	1166	1166	1255	1255	336.5
3x25 RM	1	24.0	180.2	1228	1228	1326	1326	369.9
3x35 RM	1	26.2	196.3	1557	1557	1671	1671	424.1
3x50 RM	1	29.8	223.7	2170	2170	2312	2312	537.4

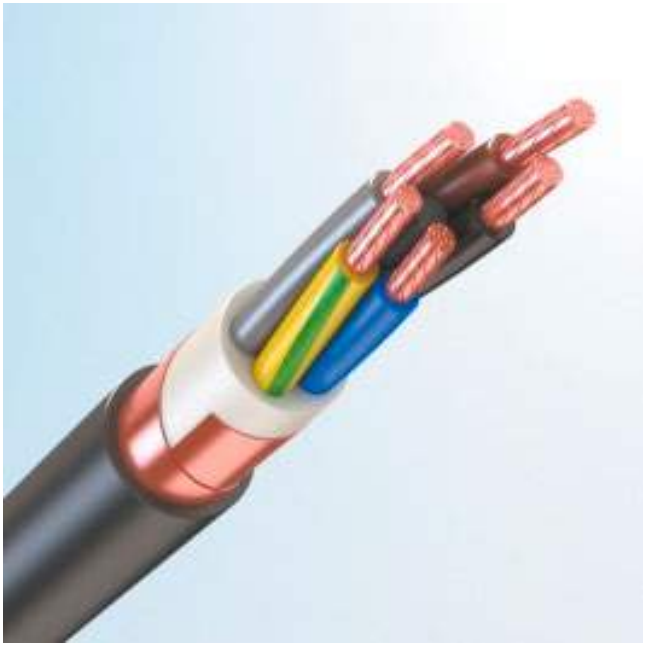
3x70 RM	1	33.7	252.5	2809	2809	2990	2990	660.9
3x95 RM	1	39.0	292.4	3793	3793	4031	4031	879.0
3x120 RM	1	42.0	315.0	4637	4637	4908	4908	989.3
3x150 RM	1	47.1	353.0	5762	5762	6106	6106	1255.6
3x185 RM	1	51.4	385.2	7034	7034	7435	7435	1472.2
3x240 RM	1	58.2	436.3	8996	8996	9510	9510	1873.5
4x1,5 RE	1	13.9	104.1	278	278	314	314	143.1
4x2,5 RE	1	14.8	111.3	338	338	379	379	160.2
4x4 RE	1	16.0	119.6	420	420	466	466	180.4
4x6 RE	1	17.2	128.7	524	524	575	575	202.9
4x10 RE	1	19.0	142.8	715	715	775	775	239.3
4x16 RE	1	21.3	159.9	997	997	1070	1070	285.6
4x16 RM	1	22.4	168.1	1037	1037	1116	1116	308.3
4x25 RE	1	25.3	190.0	1461	1461	1560	1560	393.6
4x25 RM	1	26.2	196.4	1507	1507	1612	1612	413.9
4x35 RM	1	28.6	214.4	1926	1926	2046	2046	473.5
4x50 RM	1	33.1	248.2	2738	2738	2896	2896	622.3
4x70 RM	1	37.7	283.1	3584	3584	3786	3786	784.6
4x95 RM	1	43.2	324.1	4791	4791	5050	5050	1006.1
4x120 RM	1	47.4	355.4	5969	5969	6279	6279	1189.2
4x150 RM	1	51.7	387.9	7238	7238	7597	7597	1393.4
4x185 RM	1	57.5	431.5	9002	9002	9448	9448	1727.6
4x240 RM	1	64.0	480.3	11336	11336	11870	11870	2077.6
5x1,5 RE	1	14.9	111.4	320	320	360	360	159.7
5x2,5 RE	1	15.9	119.5	393	393	437	437	179.3
5x4 RE	1	17.2	128.8	494	494	544	544	202.3
5x6 RE	1	18.5	138.9	627	627	683	683	227.9
5x10 RE	1	20.6	154.7	859	859	925	925	269.1
5x16 RE	1	23.2	174.0	1202	1202	1281	1281	321.4
5x16 RM	1	24.8	186.1	1272	1272	1362	1362	363.1
5x25 RE	1	27.6	207.3	1779	1779	1886	1886	444.0
5x25 RM	1	28.6	214.4	1833	1833	1945	1945	466.9
5x35 RM	1	31.7	237.7	2389	2389	2527	2527	554.4
5x50 RM	1	37.1	278.1	3434	3434	3618	3618	750.5
5x70 RM	1	41.4	310.5	4449	4449	4668	4668	883.4
5x95 RM	1	48.3	362.0	6009	6009	6307	6307	1196.3
5x120 RM	1	52.1	390.4	7348	7348	7684	7684	1337.0
5x150 RM	1	57.9	434.3	9041	9041	9459	9459	1662.8
5x185 RM	1	63.3	474.8	11195	11195	11677	11677	1945.3
5x240 RM	1	72.0	540.0	14293	14293	14919	14919	2503.7

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

2. SHIELDED

IEC 60502-1

2.2 Cables sheathed with cross-linked highly elastic polymer compound



- **TOFLEX RERng(A)**
- **TOFLEX GRERng(A)**
- **TOFLEX ARERng(A)**
- **Cu/HEPR/OSCR/ XLFR, Al/HEPR/OSCR/ XLFR**

Possible options:

«ng(A)-HL»	
«ng(A)-HF»	(Cu/HEPR/OSCR/ XLHFFR, Al/HEPR/OSCR/ XLHFFR)
«ng(A)-HF-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GRER) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑤ **Outer sheath:**
- **«ng(A)»** – made from cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX RERng(A)3×95RM(N,G)-1 IEC 60502-1»
«TOFLEX RERng(A)3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX RERng(A)	TOFLEX RERng(A)-HL	TOFLEX RERng(A)-HF	TOFLEX RERng(A)-HF-HL	
1x1,5 RE	1	9.1	91.4	114	114	114	114	62.3
1x2,5 RE	1	9.5	95.4	131	131	131	131	67.0
1x4 RE	1	10.0	100.0	152	152	152	152	72.4
1x6 RE	1	10.5	105.0	179	179	179	179	78.3
1x10 RE	1	11.3	112.8	227	227	227	227	87.5
1x16 RE	1	12.2	122.3	298	298	298	298	98.7
1x16 RM	1	12.7	126.8	308	308	308	308	104.0
1x25 RE	1	13.7	137.3	407	407	407	407	119.9
1x25 RM	1	14.1	140.8	417	417	417	417	124.2
1x35 RM	1	15.1	150.8	519	519	519	519	136.6
1x50 RM	1	16.8	167.8	706	706	706	706	162.7
1x70 RM	1	18.4	183.8	889	889	889	889	183.5
1x95 RM	1	20.5	204.8	1159	1159	1159	1159	217.8
1x120 RM	1	21.9	218.8	1414	1414	1414	1414	236.9
1x150 RM	1	24.1	240.8	1725	1725	1725	1725	285.1
1x185 RM	1	26.1	260.8	2099	2099	2099	2099	324.4
1x240 RM	1	28.8	287.8	2630	2630	2630	2630	377.1
1x300 RM	1	33.4	334.3	3339	3339	3339	3339	494.6
1x400 RM	1	37.6	375.7	4248	4248	4248	4248	617.5
1x500 RM	1	41.2	411.5	5271	5271	5271	5271	706.9
1x630 RM	1	46.3	463.1	6796	6796	6796	6796	873.8
2x1,5 RE	1	12.5	93.8	227	227	227	227	120.7
2x2,5 RE	1	13.3	99.8	268	268	268	268	135.0
2x4 RE	1	14.2	106.7	323	323	323	323	152.2
2x6 RE	1	15.2	114.2	390	390	390	390	171.6
2x10 RE	1	16.8	125.9	513	513	513	513	203.5
2x16 RE	1	18.7	140.1	689	689	689	689	245.0
2x16 RM	1	19.6	146.9	728	728	728	728	265.7
2x25 RE	1	21.7	162.6	974	974	974	974	323.5
2x25 RM	1	22.4	167.9	1013	1013	1013	1013	341.7
2x35 RM	1	24.8	185.9	1292	1292	1292	1292	411.8
2x50 RM	1	28.2	211.4	1777	1777	1777	1777	523.6
2x70 RM	1	31.8	238.4	2299	2299	2299	2299	650.2
2x95 RM	1	36.8	275.9	3090	3090	3090	3090	866.5
2x120 RM	1	39.6	296.9	3742	3742	3742	3742	982.9
2x150 RM	1	43.6	326.9	4578	4578	4578	4578	1187.7
2x185 RM	1	48.4	362.9	5660	5660	5660	5660	1463.8
2x240 RM	1	54.2	406.4	7170	7170	7170	7170	1814.0
3x1,5 RE	1	13.0	97.5	248	248	248	248	128.4
3x2,5 RE	1	13.9	104.0	299	299	299	299	143.5
3x4 RE	1	14.9	111.4	366	366	366	366	161.4
3x6 RE	1	15.9	119.5	451	451	451	451	181.4
3x10 RE	1	17.6	132.0	606	606	606	606	213.9
3x16 RE	1	19.6	147.4	834	834	834	834	255.6
3x16 RM	1	20.6	154.6	873	873	873	873	276.1
3x25 RE	1	22.9	171.5	1194	1194	1194	1194	336.5
3x25 RM	1	24.0	180.2	1256	1256	1256	1256	369.9
3x35 RM	1	26.2	196.3	1593	1593	1593	1593	424.1
3x50 RM	1	29.8	223.7	2221	2221	2221	2221	537.4

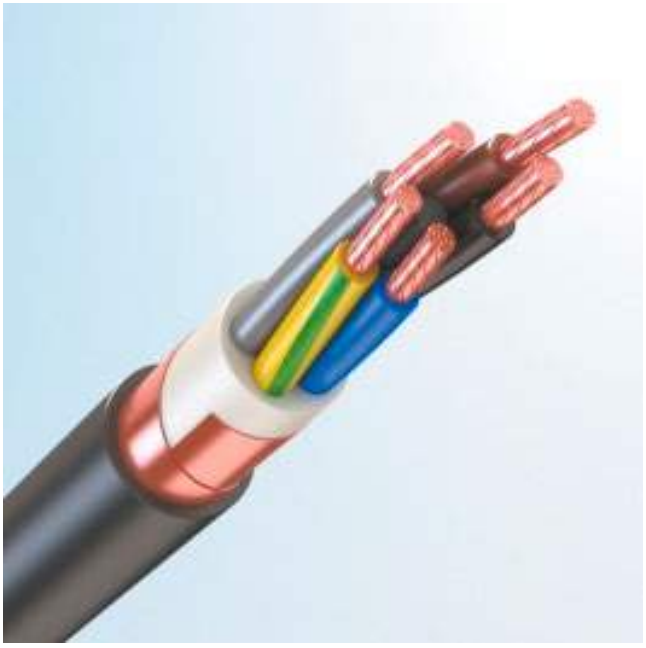
3x70 RM	1	33.7	252.5	2883	2883	2883	2883	660.9
3x95 RM	1	39.0	292.4	3886	3886	3886	3886	879.0
3x120 RM	1	42.0	315.0	4749	4749	4749	4749	989.3
3x150 RM	1	47.1	353.0	5899	5899	5899	5899	1255.6
3x185 RM	1	51.4	385.2	7205	7205	7205	7205	1472.2
3x240 RM	1	58.2	436.3	9220	9220	9220	9220	1873.5
4x1,5 RE	1	13.9	104.1	282	282	282	282	143.1
4x2,5 RE	1	14.8	111.3	344	344	344	344	160.2
4x4 RE	1	16.0	119.6	427	427	427	427	180.4
4x6 RE	1	17.2	128.7	533	533	533	533	202.9
4x10 RE	1	19.0	142.8	728	728	728	728	239.3
4x16 RE	1	21.3	159.9	1015	1015	1015	1015	285.6
4x16 RM	1	22.4	168.1	1057	1057	1057	1057	308.3
4x25 RE	1	25.3	190.0	1487	1487	1487	1487	393.6
4x25 RM	1	26.2	196.4	1535	1535	1535	1535	413.9
4x35 RM	1	28.6	214.4	1961	1961	1961	1961	473.5
4x50 RM	1	33.1	248.2	2795	2795	2795	2795	622.3
4x70 RM	1	37.7	283.1	3650	3650	3650	3650	784.6
4x95 RM	1	43.2	324.1	4889	4889	4889	4889	1006.1
4x120 RM	1	47.4	355.4	6076	6076	6076	6076	1189.2
4x150 RM	1	51.7	387.9	7372	7372	7372	7372	1393.4
4x185 RM	1	57.5	431.5	9170	9170	9170	9170	1727.6
4x240 RM	1	64.0	480.3	11553	11553	11553	11553	2077.6
5x1,5 RE	1	14.9	111.4	324	324	324	324	159.7
5x2,5 RE	1	15.9	119.5	399	399	399	399	179.3
5x4 RE	1	17.2	128.8	502	502	502	502	202.3
5x6 RE	1	18.5	138.9	637	636	636	636	227.9
5x10 RE	1	20.6	154.7	872	872	872	872	269.1
5x16 RE	1	23.2	174.0	1221	1220	1220	1220	321.4
5x16 RM	1	24.8	186.1	1291	1290	1290	1290	363.1
5x25 RE	1	27.6	207.3	1806	1804	1804	1804	444.0
5x25 RM	1	28.6	214.4	1862	1860	1860	1860	466.9
5x35 RM	1	31.7	237.7	2432	2429	2429	2429	554.4
5x50 RM	1	37.1	278.1	3486	3482	3482	3482	750.5
5x70 RM	1	41.4	310.5	4518	4511	4511	4511	883.4
5x95 RM	1	48.3	362.0	6103	6096	6096	6096	1196.3
5x120 RM	1	52.1	390.4	7461	7454	7454	7454	1337.0
5x150 RM	1	57.9	434.3	9183	9176	9176	9176	1662.8
5x185 RM	1	63.3	474.8	11371	11355	11355	11355	1945.3
5x240 RM	1	72.0	540.0	14517	14501	14501	14501	2503.7

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

2. SHIELDED

IEC 60502-1

2.3 Cables sheathed with halogen-free polymer compound



- **TOFLEX REPng(A)-HF**
- **TOFLEX GREPng(A)-HF**
- **TOFLEX AREPng(A)-HF**
- **Cu/HEPR/OSCR/HFFR, Al/HEPR/OSCR/HFFR**

Possible options:

«ng(A)-HL»

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GREP) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑤ **Outer sheath:**
- **«ng(A)-HF»** — made from halogen-free polymer compounds.
- **«ng(A)-HF-HL»** — made from cold-resistant halogen-free polymer compounds.

Ordering example:

«TOFLEX REPng(A)-HF3×95RM(N,G)-1 IEC 60502-1»
«TOFLEX REPng(A)-HF3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REPng(A)-HF	TOFLEX REPng(A)-HF-HL	
1x1,5 RE	1	9.1	91.4	120	120	62.3
1x2,5 RE	1	9.5	95.4	136	136	67.0
1x4 RE	1	10.0	100.0	158	158	72.4
1x6 RE	1	10.5	105.0	185	185	78.3
1x10 RE	1	11.3	112.8	234	234	87.5
1x16 RE	1	12.2	122.3	306	306	98.7
1x16 RM	1	12.7	126.8	316	316	104.0
1x25 RE	1	13.7	137.3	416	416	119.9
1x25 RM	1	14.1	140.8	427	427	124.2
1x35 RM	1	15.1	150.8	529	529	136.6
1x50 RM	1	16.8	167.8	717	717	162.7
1x70 RM	1	18.4	183.8	901	901	183.5
1x95 RM	1	20.5	204.8	1174	1174	217.8
1x120 RM	1	21.9	218.8	1429	1429	236.9
1x150 RM	1	24.1	240.8	1744	1744	285.1
1x185 RM	1	26.1	260.8	2120	2120	324.4
1x240 RM	1	28.8	287.8	2653	2653	377.1
1x300 RM	1	33.4	334.3	3366	3366	494.6
1x400 RM	1	37.6	375.7	4284	4284	617.5
1x500 RM	1	41.2	411.5	5310	5310	706.9
1x630 RM	1	46.3	463.1	6847	6847	873.8
2x1,5 RE	1	12.5	93.8	235	235	120.7
2x2,5 RE	1	13.3	99.8	277	277	135.0
2x4 RE	1	14.2	106.7	332	332	152.2
2x6 RE	1	15.2	114.2	401	401	171.6
2x10 RE	1	16.8	125.9	524	524	203.5
2x16 RE	1	18.7	140.1	703	703	245.0
2x16 RM	1	19.6	146.9	742	742	265.7
2x25 RE	1	21.7	162.6	990	990	323.5
2x25 RM	1	22.4	167.9	1029	1029	341.7
2x35 RM	1	24.8	185.9	1312	1312	411.8
2x50 RM	1	28.2	211.4	1800	1800	523.6
2x70 RM	1	31.8	238.4	2325	2325	650.2
2x95 RM	1	36.8	275.9	3126	3126	866.5
2x120 RM	1	39.6	296.9	3781	3781	982.9
2x150 RM	1	43.6	326.9	4621	4621	1187.7
2x185 RM	1	48.4	362.9	5716	5716	1463.8
2x240 RM	1	54.2	406.4	7233	7233	1814.0
3x1,5 RE	1	13.0	97.5	257	257	128.4
3x2,5 RE	1	13.9	104.0	308	308	143.5
3x4 RE	1	14.9	111.4	376	376	161.4
3x6 RE	1	15.9	119.5	462	462	181.4
3x10 RE	1	17.6	132.0	619	619	213.9
3x16 RE	1	19.6	147.4	848	848	255.6
3x16 RM	1	20.6	154.6	888	888	276.1
3x25 RE	1	22.9	171.5	1211	1211	336.5
3x25 RM	1	24.0	180.2	1276	1276	369.9
3x35 RM	1	26.2	196.3	1614	1614	424.1
3x50 RM	1	29.8	223.7	2245	2245	537.4

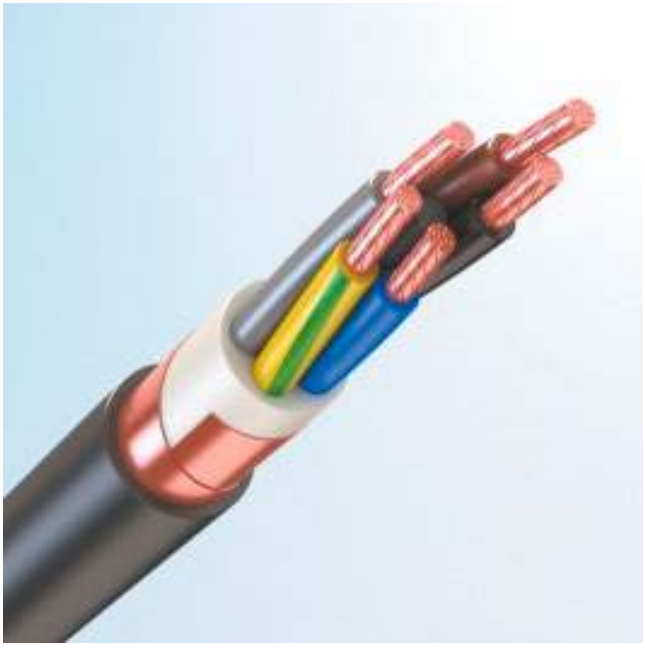
3x70 RM	1	33.7	252.5	2911	2911	660.9
3x95 RM	1	39.0	292.4	3924	3924	879.0
3x120 RM	1	42.0	315.0	4790	4790	989.3
3x150 RM	1	47.1	353.0	5953	5953	1255.6
3x185 RM	1	51.4	385.2	7264	7264	1472.2
3x240 RM	1	58.2	436.3	9294	9294	1873.5
4x1,5 RE	1	13.9	104.1	291	291	143.1
4x2,5 RE	1	14.8	111.3	354	354	160.2
4x4 RE	1	16.0	119.6	438	438	180.4
4x6 RE	1	17.2	128.7	545	545	202.9
4x10 RE	1	19.0	142.8	741	741	239.3
4x16 RE	1	21.3	159.9	1030	1030	285.6
4x16 RM	1	22.4	168.1	1074	1074	308.3
4x25 RE	1	25.3	190.0	1508	1508	393.6
4x25 RM	1	26.2	196.4	1557	1557	413.9
4x35 RM	1	28.6	214.4	1985	1985	473.5
4x50 RM	1	33.1	248.2	2822	2822	622.3
4x70 RM	1	37.7	283.1	3687	3687	784.6
4x95 RM	1	43.2	324.1	4932	4932	1006.1
4x120 RM	1	47.4	355.4	6131	6131	1189.2
4x150 RM	1	51.7	387.9	7432	7432	1393.4
4x185 RM	1	57.5	431.5	9243	9243	1727.6
4x240 RM	1	64.0	480.3	11636	11636	2077.6
5x1,5 RE	1	14.9	111.4	334	334	159.7
5x2,5 RE	1	15.9	119.5	410	410	179.3
5x4 RE	1	17.2	128.8	514	514	202.3
5x6 RE	1	18.5	138.9	649	649	227.9
5x10 RE	1	20.6	154.7	886	886	269.1
5x16 RE	1	23.2	174.0	1237	1237	321.4
5x16 RM	1	24.8	186.1	1310	1310	363.1
5x25 RE	1	27.6	207.3	1827	1827	444.0
5x25 RM	1	28.6	214.4	1883	1883	466.9
5x35 RM	1	31.7	237.7	2455	2455	554.4
5x50 RM	1	37.1	278.1	3519	3519	750.5
5x70 RM	1	41.4	310.5	4552	4552	883.4
5x95 RM	1	48.3	362.0	6152	6152	1196.3
5x120 RM	1	52.1	390.4	7514	7514	1337.0
5x150 RM	1	57.9	434.3	9251	9251	1662.8
5x185 RM	1	63.3	474.8	11437	11437	1945.3
5x240 RM	1	72.0	540.0	14608	14608	2503.7

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

2. SHIELDED

IEC 60502-1

2.4 Cables sheathed with thermoplastic polyurethane elastomer



- **TOFLEX RETng(A)**
- **TOFLEX GRETng(A)**
- **TOFLEX ARETng(A)**
- **Cu/HEPR/OSCR/ TPU, Al/HEPR/OSCR/ TPU**

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class;
flexible copper (version GRET) of 5th class.

② **Insulation** – hard grade ethylene propylene rubber (HEPR).

③ **Inner sheath** – corresponds to the type of the outer sheath.

④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.

⑤ **Outer sheath:**
- **«ng(A)» —** made from thermoplastic polyurethane elastomer.

Ordering example:

«TOFLEX RETng(A)3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX RETng(A)3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

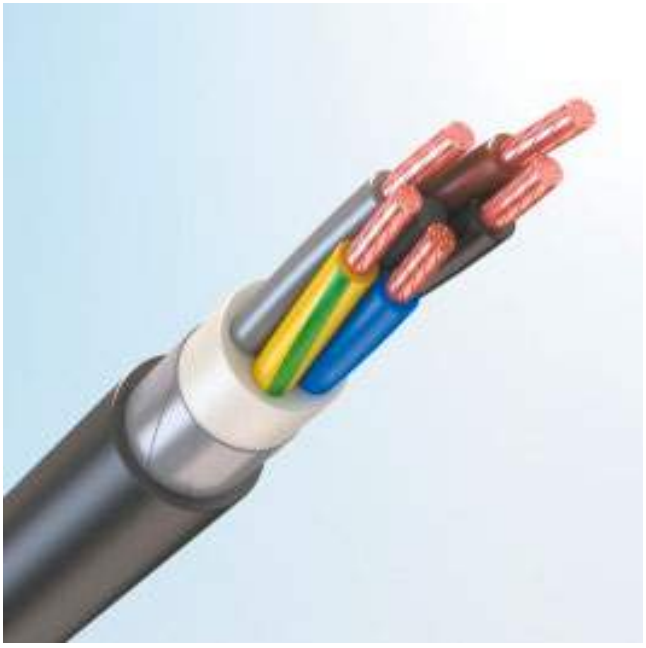
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire, kg	Amount of combustible materials, l/km
				TOFLEX RETng(A)	
1x1,5 RE	1	9.1	91.4	116	62.3
1x2,5 RE	1	9.5	95.4	132	67.0
1x4 RE	1	10.0	100.0	154	72.4
1x6 RE	1	10.5	105.0	180	78.3
1x10 RE	1	11.3	112.8	229	87.5
1x16 RE	1	12.2	122.3	299	98.7
1x16 RM	1	12.7	126.8	309	104.0
1x25 RE	1	13.7	137.3	407	119.9
1x25 RM	1	14.1	140.8	418	124.2
1x35 RM	1	15.1	150.8	519	136.6
1x50 RM	1	16.8	167.8	706	162.7
1x70 RM	1	18.4	183.8	889	183.5
1x95 RM	1	20.5	204.8	1159	217.8
1x120 RM	1	21.9	218.8	1413	236.9
1x150 RM	1	24.1	240.8	1726	285.1
1x185 RM	1	26.1	260.8	2100	324.4
1x240 RM	1	28.8	287.8	2631	377.1
1x300 RM	1	33.4	334.3	3334	494.6
1x400 RM	1	37.6	375.7	4249	617.5
1x500 RM	1	41.2	411.5	5271	706.9
1x630 RM	1	46.3	463.1	6796	873.8
2x1,5 RE	1	12.5	93.8	221	120.7
2x2,5 RE	1	13.3	99.8	261	135.0
2x4 RE	1	14.2	106.7	314	152.2
2x6 RE	1	15.2	114.2	378	171.6
2x10 RE	1	16.8	125.9	496	203.5
2x16 RE	1	18.7	140.1	666	245.0
2x16 RM	1	19.6	146.9	701	265.7
2x25 RE	1	21.7	162.6	938	323.5
2x25 RM	1	22.4	167.9	974	341.7
2x35 RM	1	24.8	185.9	1246	411.8
2x50 RM	1	28.2	211.4	1711	523.6
2x70 RM	1	31.8	238.4	2206	650.2
2x95 RM	1	36.8	275.9	2971	866.5
2x120 RM	1	39.6	296.9	3600	982.9
2x150 RM	1	43.6	326.9	4393	1187.7
2x185 RM	1	48.4	362.9	5442	1463.8
2x240 RM	1	54.2	406.4	6878	1814.0
3x1,5 RE	1	13.0	97.5	244	128.4
3x2,5 RE	1	13.9	104.0	293	143.5
3x4 RE	1	14.9	111.4	359	161.4
3x6 RE	1	15.9	119.5	442	181.4
3x10 RE	1	17.6	132.0	593	213.9
3x16 RE	1	19.6	147.4	816	255.6
3x16 RM	1	20.6	154.6	852	276.1
3x25 RE	1	22.9	171.5	1166	336.5
3x25 RM	1	24.0	180.2	1228	369.9
3x35 RM	1	26.2	196.3	1557	424.1
3x50 RM	1	29.8	223.7	2170	537.4

3x70 RM	1	33.7	252.5	2809	660.9
3x95 RM	1	39.0	292.4	3793	879.0
3x120 RM	1	42.0	315.0	4637	989.3
3x150 RM	1	47.1	353.0	5762	1255.6
3x185 RM	1	51.4	385.2	7034	1472.2
3x240 RM	1	58.2	436.3	8996	1873.5
4x1,5 RE	1	13.9	104.1	278	143.1
4x2,5 RE	1	14.8	111.3	338	160.2
4x4 RE	1	16.0	119.6	420	180.4
4x6 RE	1	17.2	128.7	524	202.9
4x10 RE	1	19.0	142.8	715	239.3
4x16 RE	1	21.3	159.9	997	285.6
4x16 RM	1	22.4	168.1	1037	308.3
4x25 RE	1	25.3	190.0	1461	393.6
4x25 RM	1	26.2	196.4	1507	413.9
4x35 RM	1	28.6	214.4	1926	473.5
4x50 RM	1	33.1	248.2	2738	622.3
4x70 RM	1	37.7	283.1	3584	784.6
4x95 RM	1	43.2	324.1	4791	1006.1
4x120 RM	1	47.4	355.4	5969	1189.2
4x150 RM	1	51.7	387.9	7238	1393.4
4x185 RM	1	57.5	431.5	9002	1727.6
4x240 RM	1	64.0	480.3	11336	2077.6
5x1,5 RE	1	14.9	111.4	320	159.7
5x2,5 RE	1	15.9	119.5	393	179.3
5x4 RE	1	17.2	128.8	494	202.3
5x6 RE	1	18.5	138.9	627	227.9
5x10 RE	1	20.6	154.7	859	269.1
5x16 RE	1	23.2	174.0	1202	321.4
5x16 RM	1	24.8	186.1	1272	363.1
5x25 RE	1	27.6	207.3	1779	444.0
5x25 RM	1	28.6	214.4	1833	466.9
5x35 RM	1	31.7	237.7	2389	554.4
5x50 RM	1	37.1	278.1	3434	750.5
5x70 RM	1	41.4	310.5	4449	883.4
5x95 RM	1	48.3	362.0	6009	1196.3
5x120 RM	1	52.1	390.4	7348	1337.0
5x150 RM	1	57.9	434.3	9041	1662.8
5x185 RM	1	63.3	474.8	11195	1945.3
5x240 RM	1	72.0	540.0	14293	2503.7

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

3. ARMOURED WITH STEEL GALVANIZED TAPES*

IEC 60502-1



3.1 Cables with PVC sheath

- **TOFLEX RBVng(A)**
- **TOFLEX GRBVng(A)**
- **TOFLEX ARBVng(A)**
- **Cu/HEPR/PVC/STA/PVC, Al/HEPR/PVC/STA/PVC**

Possible options:

«ng(A)-HL»	
«ng(A)-LS»	(Cu/HEPR/PVC/STA/LSPVC, Al/HEPR/PVC/STA/LSPVC)
«ng(A)-LS-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GRBV) of 5th class (according to IEC 60228).
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).
⑤ **Outer sheath:**
- **«ng(A)» –** made from PVC-compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant PVC-compound with low fire hazard.
- **«ng(A)-LS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-LS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:
«TOFLEX RBVng(A)-LS 3×95RM(N,G)-1 IEC 60502-1»

*In the production of power cables with aluminium or aluminium alloy tapes armour in the cable grade «Ba» must be specified instead of «B».

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX RBVng(A)	TOFLEX RBVng(A)-HL	TOFLEX RBVng(A)-LS	TOFLEX RBVng(A)-LS-HL	
2x1,5 RE	1	13.4	100.5	285	285	322	322	130.0
2x2,5 RE	1	13.9	104.4	318	318	357	357	138.7
2x4 RE	1	14.8	111.3	375	375	420	420	155.8
2x6 RE	1	15.8	118.8	445	445	495	495	175.3
2x10 RE	1	17.4	130.5	571	571	631	631	207.2
2x16 RE	1	19.3	144.8	745	745	818	818	248.7
2x16 RM	1	20.2	151.5	784	784	863	863	269.4
2x25 RE	1	22.3	167.3	1031	1031	1127	1127	327.2
2x25 RM	1	23.0	172.5	1070	1070	1171	1171	345.3
2x35 RM	1	25.4	190.5	1352	1352	1475	1475	415.9
2x50 RM	1	28.8	216.0	1833	1833	1989	1989	527.7
2x70 RM	1	32.4	243.0	2345	2345	2543	2543	654.3
2x95 RM	1	37.8	283.5	3253	3253	3516	3516	874.5
2x120 RM	1	40.6	304.5	3905	3905	4206	4206	990.9
2x150 RM	1	44.6	334.5	4731	4731	5097	5097	1195.7
2x185 RM	1	49.4	370.5	5815	5815	6263	6263	1473.2
2x240 RM	1	56.6	424.5	7748	7748	8323	8323	1885.8
3x1,5 RE	1	13.6	102.2	299	299	334	334	132.1
3x2,5 RE	1	14.5	108.6	353	353	392	392	147.2
3x4 RE	1	15.5	116.0	424	424	468	468	165.0
3x6 RE	1	16.5	124.1	512	512	561	561	185.1
3x10 RE	1	18.2	136.7	667	667	725	725	217.6
3x16 RE	1	20.3	152.0	899	899	969	969	259.2
3x16 RM	1	21.2	159.3	939	939	1015	1015	279.8
3x25 RE	1	23.5	176.2	1264	1264	1354	1354	340.1
3x25 RM	1	24.6	184.8	1331	1331	1430	1430	374.0
3x35 RM	1	26.8	201.0	1670	1670	1785	1785	428.2
3x50 RM	1	30.5	228.4	2300	2300	2443	2443	541.4
3x70 RM	1	35.1	263.2	3026	3026	3219	3219	710.3
3x95 RM	1	40.0	300.0	4093	4093	4334	4334	887.0
3x120 RM	1	43.0	322.6	4962	4962	5235	5235	997.3
3x150 RM	1	48.1	360.6	6124	6124	6471	6471	1264.9
3x185 RM	1	53.2	398.9	7778	7778	8184	8184	1488.8
3x240 RM	1	60.0	449.9	9839	9839	10358	10358	1891.9
4x1,5 RE	1	14.5	108.7	337	337	375	375	146.7
4x2,5 RE	1	15.5	116.0	403	403	445	445	163.8
4x4 RE	1	16.6	124.3	491	491	537	537	184.0
4x6 RE	1	17.8	133.3	595	595	647	647	206.6
4x10 RE	1	19.7	147.4	795	795	856	856	243.0
4x16 RE	1	21.9	164.6	1088	1088	1161	1161	289.3
4x16 RM	1	23.0	172.7	1133	1133	1213	1213	312.0
4x25 RE	1	26.0	194.7	1570	1570	1670	1670	397.6
4x25 RM	1	26.8	201.0	1620	1620	1725	1725	417.9
4x35 RM	1	29.2	219.1	2050	2050	2171	2171	477.6
4x50 RM	1	33.7	252.8	2884	2884	3043	3043	626.3
4x70 RM	1	38.8	290.7	3874	3874	4078	4078	792.6
4x95 RM	1	44.2	331.7	5126	5126	5388	5388	1014.1
4x120 RM	1	48.4	363.0	6334	6334	6647	6647	1198.5
4x150 RM	1	53.5	401.5	7988	7988	8352	8352	1410.1

4x185 RM	1	59.4	445.2	9835	9835	10286	10286	1746.0
4x240 RM	1	65.9	494.0	12270	12270	12809	12809	2096.1
5x1,5 RE	1	15.5	116.0	385	385	425	425	163.4
5x2,5 RE	1	16.6	124.1	463	463	508	508	182.9
5x4 RE	1	17.8	133.5	566	566	616	616	205.9
5x6 RE	1	19.1	143.6	704	704	761	761	231.5
5x10 RE	1	21.3	159.4	946	946	1013	1013	272.7
5x16 RE	1	24.2	181.6	1325	1325	1410	1410	340.7
5x16 RM	1	25.4	190.7	1378	1378	1469	1469	367.1
5x25 RE	1	28.3	212.0	1899	1899	2007	2007	448.0
5x25 RM	1	29.2	219.1	1957	1957	2071	2071	470.9
5x35 RM	1	32.3	242.3	2528	2528	2667	2667	558.4
5x50 RM	1	38.1	285.8	3718	3718	3904	3904	758.5
5x70 RM	1	42.4	318.2	4769	4769	4990	4990	891.4
5x95 RM	1	49.3	369.7	6382	6382	6682	6682	1205.6
5x120 RM	1	53.9	404.0	8103	8103	8444	8444	1353.7
5x150 RM	1	59.7	448.0	9880	9880	10303	10303	1681.2
5x185 RM	1	65.1	488.5	12118	12118	12605	12605	1963.7
5x240 RM	1	73.8	553.7	15340	15340	15971	15971	2525.1

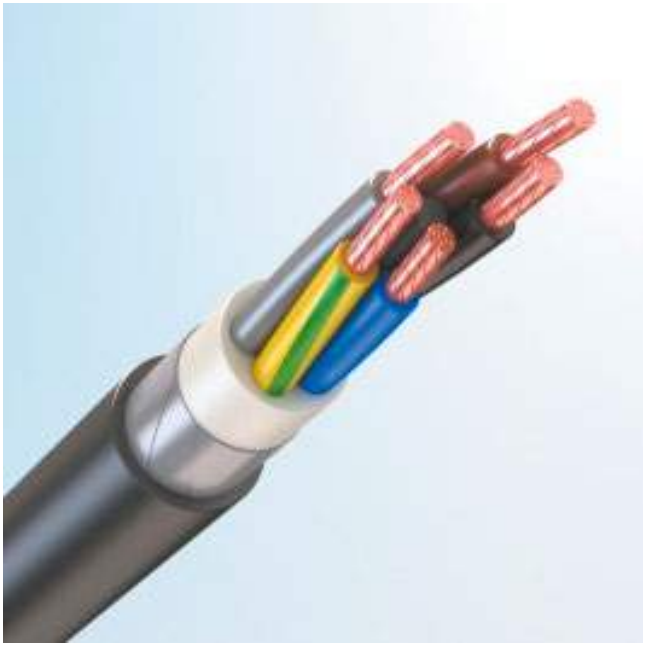
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX RBaVng(A)	TOFLEX RBaVng(A)-HL	TOFLEX RBaVng(A)-LS	TOFLEX RBaVng(A)-LS-HL	
		13.4	100.5	285	285	322	322	130.0
1x4 RE	1	14.6	146.0	291	291	330	330	131.6
1x6 RE	1	14.6	146.0	305	305	343	343	129.6
1x10 RE	1	14.6	146.0	331	331	367	367	125.7
1x16 RE	1	14.6	146.0	374	374	406	406	119.6
1x16 RM	1	14.6	146.0	370	370	400	400	116.3
1x25 RE	1	15.6	155.5	469	469	501	501	130.2
1x25 RM	1	15.9	159.0	481	481	514	514	134.5
1x35 RM	1	16.9	169.0	586	586	622	622	146.9
1x50 RM	1	18.6	186.0	780	780	821	821	173.0
1x70 RM	1	20.2	202.0	964	964	1009	1009	193.8
1x95 RM	1	22.3	223.0	1242	1242	1293	1293	228.1
1x120 RM	1	24.1	241.0	1524	1524	1583	1583	262.2
1x150 RM	1	25.9	259.0	1823	1823	1888	1888	296.5
1x185 RM	1	27.9	279.0	2205	2205	2275	2275	335.8
1x240 RM	1	30.6	306.0	2746	2746	2824	2824	388.5
1x300 RM	1	36.1	360.5	3534	3534	3644	3644	550.8
1x400 RM	1	39.4	393.9	4398	4398	4520	4520	631.2
1x500 RM	1	43.0	429.7	5434	5434	5569	5569	720.6
1x630 RM	1	48.1	481.3	6978	6978	7155	7155	889.8

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

3. ARMOURED WITH STEEL GALVANIZED TAPES*

IEC 60502-1

3.2 Cables sheathed with cross-linked highly elastic polymer compound



- **TOFLEX RBRng(A)**
- **TOFLEX GRBRng(A)**
- **TOFLEX ARBRng(A)**
- **Cu/HEPR/HFFR/STA/ XLFR, Al/HEPR/HFFR/STA/ XLFR**

Possible options:

«ng(A)-HL»	
«ng(A)-HF»	(Cu/HEPR/HFFR/STA/XLHFFR, Al/HEPR/HFFR/STA/XLHFFR)
«ng(A)-HF-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GRBR) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).
⑤ **Outer sheath:**
- **«ng(A)»** – made from cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX RBRng(A)-HL5×95RM(N,G)-1 IEC 60502-1»

*In the production of power cables with aluminium or aluminium alloy tapes armour in the cable grade «Ba» must be specified instead of «B».

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX RBRng(A)	TOFLEX RBRng(A)-HL	TOFLEX RBRng(A)-HF	TOFLEX RBRng(A)-HF-HL	
2x1,5 RE	1	13.4	100.5	290	290	290	290	130.0
2x2,5 RE	1	13.9	104.4	324	324	324	324	138.7
2x4 RE	1	14.8	111.3	384	384	384	384	155.8
2x6 RE	1	15.8	118.8	456	456	456	456	175.3
2x10 RE	1	17.4	130.5	586	586	586	586	207.2
2x16 RE	1	19.3	144.8	767	767	767	767	248.7
2x16 RM	1	20.2	151.5	810	810	810	810	269.4
2x25 RE	1	22.3	167.3	1066	1066	1066	1066	327.2
2x25 RM	1	23.0	172.5	1108	1108	1108	1108	345.3
2x35 RM	1	25.4	190.5	1398	1398	1398	1398	415.9
2x50 RM	1	28.8	216.0	1898	1898	1898	1898	527.7
2x70 RM	1	32.4	243.0	2438	2438	2438	2438	654.3
2x95 RM	1	37.8	283.5	3370	3370	3370	3370	874.5
2x120 RM	1	40.6	304.5	4046	4046	4046	4046	990.9
2x150 RM	1	44.6	334.5	4915	4915	4915	4915	1195.7
2x185 RM	1	49.4	370.5	6032	6032	6032	6032	1473.2
2x240 RM	1	56.6	424.5	8030	8030	8030	8030	1885.8
3x1,5 RE	1	13.6	102.2	302	302	302	302	132.1
3x2,5 RE	1	14.5	108.6	358	358	358	358	147.2
3x4 RE	1	15.5	116.0	430	430	430	430	165.0
3x6 RE	1	16.5	124.1	520	520	520	520	185.1
3x10 RE	1	18.2	136.7	679	679	679	679	217.6
3x16 RE	1	20.3	152.0	917	917	917	917	259.2
3x16 RM	1	21.2	159.3	960	960	960	960	279.8
3x25 RE	1	23.5	176.2	1292	1292	1292	1292	340.1
3x25 RM	1	24.6	184.8	1358	1358	1358	1358	374.0
3x35 RM	1	26.8	201.0	1705	1705	1705	1705	428.2
3x50 RM	1	30.5	228.4	2351	2351	2351	2351	541.4
3x70 RM	1	35.1	263.2	3092	3092	3092	3092	710.3
3x95 RM	1	40.0	300.0	4185	4185	4185	4185	887.0
3x120 RM	1	43.0	322.6	5072	5072	5072	5072	997.3
3x150 RM	1	48.1	360.6	6261	6261	6261	6261	1264.9
3x185 RM	1	53.2	398.9	7947	7947	7947	7947	1488.8
3x240 RM	1	60.0	449.9	10060	10060	10060	10060	1891.9
4x1,5 RE	1	14.5	108.7	341	341	341	341	146.7
4x2,5 RE	1	15.5	116.0	408	408	408	408	163.8
4x4 RE	1	16.6	124.3	497	497	497	497	184.0
4x6 RE	1	17.8	133.3	603	603	603	603	206.6
4x10 RE	1	19.7	147.4	807	807	807	807	243.0
4x16 RE	1	21.9	164.6	1105	1105	1105	1105	289.3
4x16 RM	1	23.0	172.7	1153	1153	1153	1153	312.0
4x25 RE	1	26.0	194.7	1595	1595	1595	1595	397.6
4x25 RM	1	26.8	201.0	1647	1647	1647	1647	417.9
4x35 RM	1	29.2	219.1	2085	2085	2085	2085	477.6
4x50 RM	1	33.7	252.8	2940	2940	2940	2940	626.3
4x70 RM	1	38.8	290.7	3938	3938	3938	3938	792.6
4x95 RM	1	44.2	331.7	5223	5223	5223	5223	1014.1
4x120 RM	1	48.4	363.0	6440	6440	6440	6440	1198.5
4x150 RM	1	53.5	401.5	8119	8119	8119	8119	1410.1

4x185 RM	1	59.4	445.2	10000	10000	10000	10000	1746.0
4x240 RM	1	65.9	494.0	12484	12484	12484	12484	2096.1
5x1,5 RE	1	15.5	116.0	388	388	388	388	163.4
5x2,5 RE	1	16.6	124.1	468	468	468	468	182.9
5x4 RE	1	17.8	133.5	573	573	572	572	205.9
5x6 RE	1	19.1	143.6	714	714	713	713	231.5
5x10 RE	1	21.3	159.4	960	960	959	959	272.7
5x16 RE	1	24.2	181.6	1342	1342	1341	1341	340.7
5x16 RM	1	25.4	190.7	1397	1397	1396	1396	367.1
5x25 RE	1	28.3	212.0	1925	1925	1923	1923	448.0
5x25 RM	1	29.2	219.1	1986	1986	1984	1984	470.9
5x35 RM	1	32.3	242.3	2570	2570	2568	2568	558.4
5x50 RM	1	38.1	285.8	3769	3769	3765	3765	758.5
5x70 RM	1	42.4	318.2	4837	4837	4830	4830	891.4
5x95 RM	1	49.3	369.7	6475	6475	6468	6468	1205.6
5x120 RM	1	53.9	404.0	8214	8214	8207	8207	1353.7
5x150 RM	1	59.7	448.0	10020	10020	10013	10013	1681.2
5x185 RM	1	65.1	488.5	12291	12291	12275	12275	1963.7
5x240 RM	1	73.8	553.7	15560	15560	15544	15544	2525.1

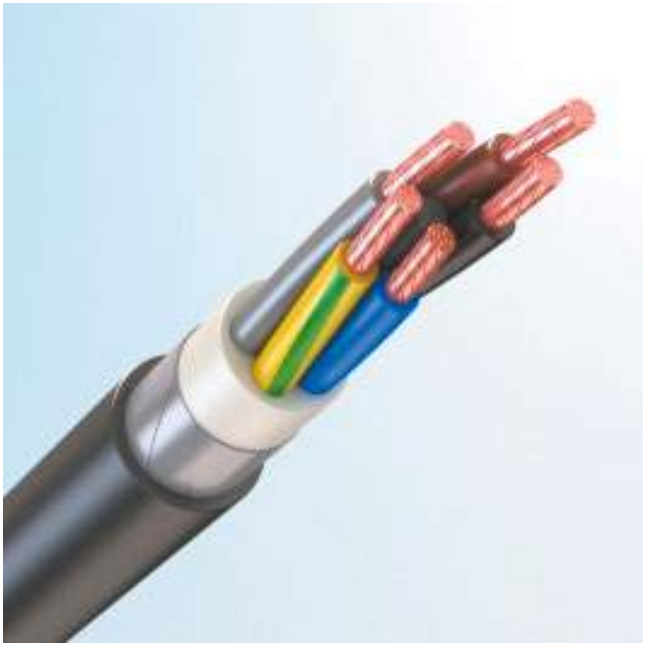
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX RBaRng(A)	TOFLEX RBaRng(A)-HL	TOFLEX RBaRng(A)-HF	TOFLEX RBaRng(A)-HF-HL	
	1	13.4	100.5	290	290	290	290	130.0
HF"								
1x4 RE	1	14.6	146.0	297	297	297	297	131.6
1x6 RE	1	14.6	146.0	309	309	309	309	129.6
1x10 RE	1	14.6	146.0	334	334	334	334	125.7
1x16 RE	1	14.6	146.0	373	373	373	373	119.6
1x16 RM	1	14.6	146.0	367	367	367	367	116.3
1x25 RE	1	15.6	155.5	466	466	466	466	130.2
1x25 RM	1	15.9	159.0	479	479	479	479	134.5
1x35 RM	1	16.9	169.0	584	584	584	584	146.9
1x50 RM	1	18.6	186.0	778	778	778	778	173.0
1x70 RM	1	20.2	202.0	963	963	963	963	193.8
1x95 RM	1	22.3	223.0	1241	1241	1241	1241	228.1
1x120 RM	1	24.1	241.0	1521	1521	1521	1521	262.2
1x150 RM	1	25.9	259.0	1821	1821	1821	1821	296.5
1x185 RM	1	27.9	279.0	2202	2202	2202	2202	335.8
1x240 RM	1	30.6	306.0	2744	2744	2744	2744	388.5
1x300 RM	1	36.1	360.5	3531	3531	3531	3531	550.8
1x400 RM	1	39.4	393.9	4395	4395	4395	4395	631.2
1x500 RM	1	43.0	429.7	5432	5432	5432	5432	720.6
1x630 RM	1	48.1	481.3	6976	6976	6976	6976	889.8

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

3. ARMOURED WITH STEEL GALVANIZED TAPES*

IEC 60502-1

3.3 Cables sheathed with halogen-free polymer compound



- **TOFLEX RBPng(A)-HF**
- **TOFLEX GRBPng(A)-HF**
- **TOFLEX ARBPng(A)-HF**
- **Cu/HEPR/HFFR/STA/HFFR, Al/HEPR/HFFR/STA/HFFR**

Possible options:

«ng(A)-HF-HL»

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GRBP) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).
⑤ **Outer sheath:**
- **«ng(A)-HF»** — made from halogen-free polymer compounds.
- **«ng(A)-HF-HL»** — made from cold-resistant halogen-free polymer compounds.

Ordering example:
«TOFLEX RBPng(A)-HF3×185RM-1 IEC 60502-1»

*In the production of power cables with aluminium or aluminium alloy tapes armour in the cable grade «Ba» must be specified instead of «B».

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RBPng(A)-HF	TOFLEX RBPng(A)-HF-HL	
2x1,5 RE	1	13.4	100.5	299	299	130.0
2x2,5 RE	1	13.9	104.4	334	334	138.7
2x4 RE	1	14.8	111.3	394	394	155.8
2x6 RE	1	15.8	118.8	467	467	175.3
2x10 RE	1	17.4	130.5	599	599	207.2
2x16 RE	1	19.3	144.8	781	781	248.7
2x16 RM	1	20.2	151.5	824	824	269.4
2x25 RE	1	22.3	167.3	1082	1082	327.2
2x25 RM	1	23.0	172.5	1125	1125	345.3
2x35 RM	1	25.4	190.5	1418	1418	415.9
2x50 RM	1	28.8	216.0	1922	1922	527.7
2x70 RM	1	32.4	243.0	2464	2464	654.3
2x95 RM	1	37.8	283.5	3407	3407	874.5
2x120 RM	1	40.6	304.5	4086	4086	990.9
2x150 RM	1	44.6	334.5	4959	4959	1195.7
2x185 RM	1	49.4	370.5	6089	6089	1473.2
2x240 RM	1	56.6	424.5	8102	8102	1885.8
3x1,5 RE	1	13.6	102.2	312	312	132.1
3x2,5 RE	1	14.5	108.6	367	367	147.2
3x4 RE	1	15.5	116.0	441	441	165.0
3x6 RE	1	16.5	124.1	532	532	185.1
3x10 RE	1	18.2	136.7	692	692	217.6
3x16 RE	1	20.3	152.0	931	931	259.2
3x16 RM	1	21.2	159.3	975	975	279.8
3x25 RE	1	23.5	176.2	1309	1309	340.1
3x25 RM	1	24.6	184.8	1378	1378	374.0
3x35 RM	1	26.8	201.0	1727	1727	428.2
3x50 RM	1	30.5	228.4	2376	2376	541.4
3x70 RM	1	35.1	263.2	3126	3126	710.3
3x95 RM	1	40.0	300.0	4224	4224	887.0
3x120 RM	1	43.0	322.6	5115	5115	997.3
3x150 RM	1	48.1	360.6	6316	6316	1264.9
3x185 RM	1	53.2	398.9	8008	8008	1488.8
3x240 RM	1	60.0	449.9	10137	10137	1891.9
4x1,5 RE	1	14.5	108.7	351	351	146.7
4x2,5 RE	1	15.5	116.0	418	418	163.8
4x4 RE	1	16.6	124.3	509	509	184.0
4x6 RE	1	17.8	133.3	616	616	206.6
4x10 RE	1	19.7	147.4	821	821	243.0
4x16 RE	1	21.9	164.6	1121	1121	289.3
4x16 RM	1	23.0	172.7	1170	1170	312.0
4x25 RE	1	26.0	194.7	1616	1616	397.6
4x25 RM	1	26.8	201.0	1669	1669	417.9
4x35 RM	1	29.2	219.1	2109	2109	477.6
4x50 RM	1	33.7	252.8	2967	2967	626.3
4x70 RM	1	38.8	290.7	3977	3977	792.6
4x95 RM	1	44.2	331.7	5267	5267	1014.1
4x120 RM	1	48.4	363.0	6496	6496	1198.5
4x150 RM	1	53.5	401.5	8181	8181	1410.1

4x185 RM	1	59.4	445.2	10076	10076	1746.0
4x240 RM	1	65.9	494.0	12569	12569	2096.1
5x1,5 RE	1	15.5	116.0	399	399	163.4
5x2,5 RE	1	16.6	124.1	480	480	182.9
5x4 RE	1	17.8	133.5	585	585	205.9
5x6 RE	1	19.1	143.6	726	726	231.5
5x10 RE	1	21.3	159.4	974	974	272.7
5x16 RE	1	24.2	181.6	1360	1360	340.7
5x16 RM	1	25.4	190.7	1416	1416	367.1
5x25 RE	1	28.3	212.0	1946	1946	448.0
5x25 RM	1	29.2	219.1	2008	2008	470.9
5x35 RM	1	32.3	242.3	2594	2594	558.4
5x50 RM	1	38.1	285.8	3803	3803	758.5
5x70 RM	1	42.4	318.2	4872	4872	891.4
5x95 RM	1	49.3	369.7	6524	6524	1205.6
5x120 RM	1	53.9	404.0	8269	8269	1353.7
5x150 RM	1	59.7	448.0	10089	10089	1681.2
5x185 RM	1	65.1	488.5	12359	12359	1963.7
5x240 RM	1	73.8	553.7	15654	15654	2525.1

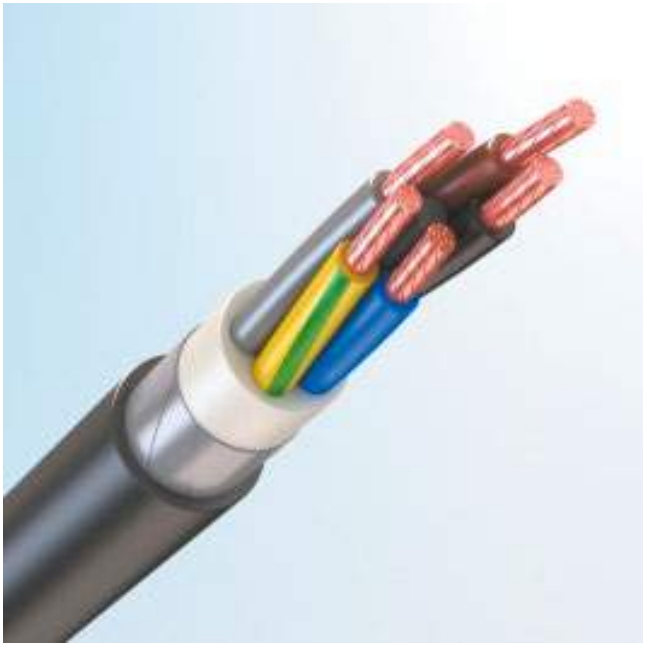
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RBaPng(A)-HF	TOFLEX RBaPng(A)-HF-HL	
1x4 RE	1	14.6	146.0	306	306	131.6
1x6 RE	1	14.6	146.0	319	319	129.6
1x10 RE	1	14.6	146.0	344	344	125.7
1x16 RE	1	14.6	146.0	383	383	119.6
1x16 RM	1	14.6	146.0	377	377	116.3
1x25 RE	1	15.6	155.5	477	477	130.2
1x25 RM	1	15.9	159.0	489	489	134.5
1x35 RM	1	16.9	169.0	596	596	146.9
1x50 RM	1	18.6	186.0	791	791	173.0
1x70 RM	1	20.2	202.0	976	976	193.8
1x95 RM	1	22.3	223.0	1257	1257	228.1
1x120 RM	1	24.1	241.0	1540	1540	262.2
1x150 RM	1	25.9	259.0	1841	1841	296.5
1x185 RM	1	27.9	279.0	2224	2224	335.8
1x240 RM	1	30.6	306.0	2768	2768	388.5
1x300 RM	1	36.1	360.5	3564	3564	550.8
1x400 RM	1	39.4	393.9	4432	4432	631.2
1x500 RM	1	43.0	429.7	5472	5472	720.6
1x630 RM	1	48.1	481.3	7029	7029	889.8

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

3. ARMOURED WITH STEEL GALVANIZED TAPES*

IEC 60502-1

3.4 Cables sheathed with thermoplastic polyurethane elastomer



- **TOFLEX RBTng(A)**
- **TOFLEX GRBTng(A)**
- **TOFLEX ARBTng(A)**
- **Cu/HEPR/TPE/STA/ TPU, Al/HEPR/ TPE /STA/ TPU**

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GRBT) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).
⑤ **Outer sheath:**
- **«ng(A)»** — made from thermoplastic polyurethane elastomer.

Ordering example:
«TOFLEX RBTng(A)3×185RM-1 IEC 60502-1»

*In the production of power cables with aluminium or aluminium alloy tapes armour in the cable grade «Ba» must be specified instead of «B».

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire, kg	Amount of combustible materials, l/km
				TOFLEX RBTng(A)	
2x1,5 RE	1	13.4	100.5	285	130.0
2x2,5 RE	1	13.9	104.4	318	138.7
2x4 RE	1	14.8	111.3	375	155.8
2x6 RE	1	15.8	118.8	445	175.3
2x10 RE	1	17.4	130.5	571	207.2
2x16 RE	1	19.3	144.8	745	248.7
2x16 RM	1	20.2	151.5	784	269.4
2x25 RE	1	22.3	167.3	1031	327.2
2x25 RM	1	23.0	172.5	1070	345.3
2x35 RM	1	25.4	190.5	1352	415.9
2x50 RM	1	28.8	216.0	1833	527.7
2x70 RM	1	32.4	243.0	2345	654.3
2x95 RM	1	37.8	283.5	3253	874.5
2x120 RM	1	40.6	304.5	3905	990.9
2x150 RM	1	44.6	334.5	4731	1195.7
2x185 RM	1	49.4	370.5	5815	1473.2
2x240 RM	1	56.6	424.5	7748	1885.8
3x1,5 RE	1	13.6	102.2	299	132.1
3x2,5 RE	1	14.5	108.6	353	147.2
3x4 RE	1	15.5	116.0	424	165.0
3x6 RE	1	16.5	124.1	512	185.1
3x10 RE	1	18.2	136.7	667	217.6
3x16 RE	1	20.3	152.0	899	259.2
3x16 RM	1	21.2	159.3	939	279.8
3x25 RE	1	23.5	176.2	1264	340.1
3x25 RM	1	24.6	184.8	1331	374.0
3x35 RM	1	26.8	201.0	1670	428.2
3x50 RM	1	30.5	228.4	2300	541.4
3x70 RM	1	35.1	263.2	3026	710.3
3x95 RM	1	40.0	300.0	4093	887.0
3x120 RM	1	43.0	322.6	4962	997.3
3x150 RM	1	48.1	360.6	6124	1264.9
3x185 RM	1	53.2	398.9	7778	1488.8
3x240 RM	1	60.0	449.9	9839	1891.9
4x1,5 RE	1	14.5	108.7	337	146.7
4x2,5 RE	1	15.5	116.0	403	163.8
4x4 RE	1	16.6	124.3	491	184.0
4x6 RE	1	17.8	133.3	595	206.6
4x10 RE	1	19.7	147.4	795	243.0
4x16 RE	1	21.9	164.6	1088	289.3
4x16 RM	1	23.0	172.7	1133	312.0
4x25 RE	1	26.0	194.7	1570	397.6
4x25 RM	1	26.8	201.0	1620	417.9
4x35 RM	1	29.2	219.1	2050	477.6
4x50 RM	1	33.7	252.8	2884	626.3
4x70 RM	1	38.8	290.7	3874	792.6
4x95 RM	1	44.2	331.7	5126	1014.1
4x120 RM	1	48.4	363.0	6334	1198.5
4x150 RM	1	53.5	401.5	7988	1410.1

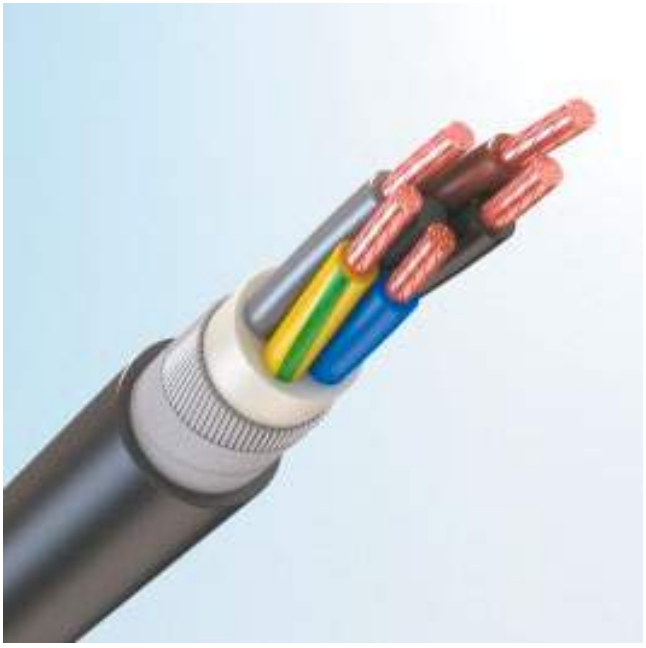
4x185 RM	1	59.4	445.2	9835	1746.0
4x240 RM	1	65.9	494.0	12270	2096.1
5x1,5 RE	1	15.5	116.0	385	163.4
5x2,5 RE	1	16.6	124.1	463	182.9
5x4 RE	1	17.8	133.5	566	205.9
5x6 RE	1	19.1	143.6	704	231.5
5x10 RE	1	21.3	159.4	946	272.7
5x16 RE	1	24.2	181.6	1325	340.7
5x16 RM	1	25.4	190.7	1378	367.1
5x25 RE	1	28.3	212.0	1899	448.0
5x25 RM	1	29.2	219.1	1957	470.9
5x35 RM	1	32.3	242.3	2528	558.4
5x50 RM	1	38.1	285.8	3718	758.5
5x70 RM	1	42.4	318.2	4769	891.4
5x95 RM	1	49.3	369.7	6382	1205.6
5x120 RM	1	53.9	404.0	8103	1353.7
5x150 RM	1	59.7	448.0	9880	1681.2
5x185 RM	1	65.1	488.5	12118	1963.7
5x240 RM	1	73.8	553.7	15340	2525.1

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire, kg	Amount of combustible materials, l/km
				TOFLEX RBaTng(A)	
1x4 RE	1	14.6	146.0	291	131.6
1x6 RE	1	14.6	146.0	305	129.6
1x10 RE	1	14.6	146.0	331	125.7
1x16 RE	1	14.6	146.0	374	119.6
1x16 RM	1	14.6	146.0	370	116.3
1x25 RE	1	15.6	155.5	469	130.2
1x25 RM	1	15.9	159.0	481	134.5
1x35 RM	1	16.9	169.0	586	146.9
1x50 RM	1	18.6	186.0	780	173.0
1x70 RM	1	20.2	202.0	964	193.8
1x95 RM	1	22.3	223.0	1242	228.1
1x120 RM	1	24.1	241.0	1524	262.2
1x150 RM	1	25.9	259.0	1823	296.5
1x185 RM	1	27.9	279.0	2205	335.8
1x240 RM	1	30.6	306.0	2746	388.5
1x300 RM	1	36.1	360.5	3534	550.8
1x400 RM	1	39.4	393.9	4398	631.2
1x500 RM	1	43.0	429.7	5434	720.6
1x630 RM	1	48.1	481.3	6978	889.8

POWER CABLES WITH HARD GRADE
ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

4. ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1



4.1 Cables with PVC sheath

- **TOFLEX RKVng(A)**
- **TOFLEX GRKVng(A)**
- **TOFLEX ARKVng(A)**
- **Cu/HEPR/PVC/SWA/PVC, Al/HEPR/PVC/SWA/PVC**

Possible options:

«ng(A)-HL»	
«ng(A)-LS»	(Cu/HEPR/LSPVC/SWA/LSPVC, Al/HEPR/LSPVC/SWA/LSPVC)
«ng(A)-LS-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor**– copper or aluminium of 1st, 2nd class; copper flexible (version GRKV) of 5th class (according to IEC 60228).
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Armour** – steel galvanized wires.
⑤ **Outer sheath:**
- **«ng(A)»** – made from PVC-compound with low fire hazard.
- **«ng(A)-HL» –** made from cold-resistant PVC-compound with low fire hazard.
- **«ng(A)-LS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-LS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:
«TOFLEX RKVng(A)-LS3×95RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

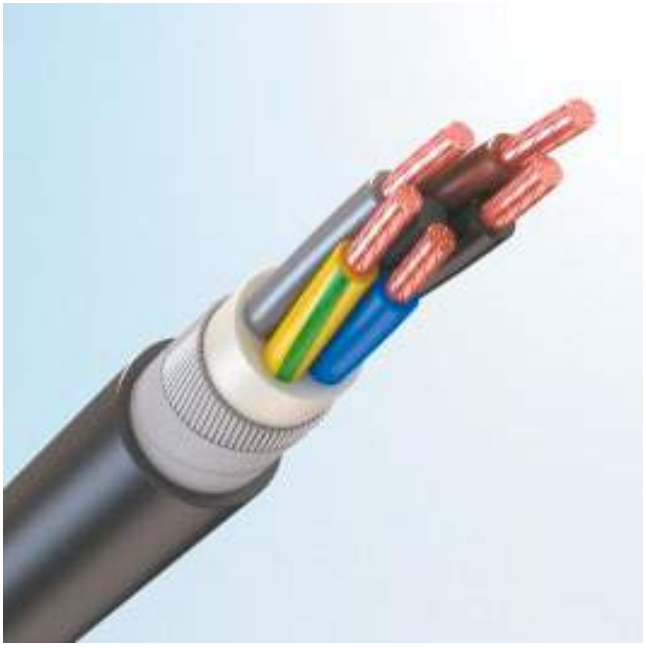
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX RKVng(A)	TOFLEX RKVng(A)-HL	TOFLEX RKVng(A)-LS	TOFLEX RKVng(A)-LS-HL	
2x1,5 RE	1	14.3	107.1	374	374	411	411	131.2
2x2,5 RE	1	15.1	113.1	424	424	466	466	145.5
2x4 RE	1	16.8	126.0	597	597	644	644	167.4
2x6 RE	1	17.8	133.5	687	687	741	741	186.8
2x10 RE	1	19.4	145.2	839	839	903	903	218.7
2x16 RE	1	21.3	159.5	1053	1053	1129	1129	260.2
2x16 RM	1	23.0	172.2	1265	1265	1349	1349	285.6
2x25 RE	1	25.5	191.0	1590	1590	1694	1694	359.9
2x25 RM	1	26.2	196.2	1641	1641	1751	1751	378.5
2x35 RM	1	28.2	211.2	1953	1953	2081	2081	433.9
2x70 RM	1	36.8	275.7	3459	3459	3676	3676	725.0
3x1,5 RE	1	14.8	110.9	404	404	441	441	138.9
3x2,5 RE	1	16.4	123.3	568	568	610	610	158.7
3x4 RE	1	17.4	130.7	660	660	707	707	176.5
3x6 RE	1	18.5	138.8	759	759	811	811	196.6
3x10 RE	1	20.2	151.4	954	954	1015	1015	229.1
3x16 RE	1	23.0	172.7	1380	1380	1454	1454	275.4
3x16 RM	1	24.4	183.0	1471	1471	1555	1555	311.8
3x25 RE	1	26.7	199.9	1849	1849	1948	1948	373.6
3x25 RM	1	27.4	205.5	1920	1920	2025	2025	392.0
3x35 RM	1	29.6	221.7	2311	2311	2431	2431	446.2
3x50 RM	1	34.8	261.1	3345	3345	3507	3507	609.6
4x1,5 RE	1	16.5	123.4	552	552	593	593	158.2
4x2,5 RE	1	17.4	130.7	639	639	684	684	175.4
4x4 RE	1	18.5	139.0	737	737	787	787	195.6
4x6 RE	1	19.7	148.0	875	875	931	931	218.1
4x10 RE	1	22.4	168.1	1263	1263	1329	1329	259.2
4x16 RE	1	25.1	188.3	1632	1632	1714	1714	321.8
4x16 RM	1	26.2	196.4	1704	1704	1793	1793	345.2
4x25 RE	1	28.7	215.4	2184	2184	2289	2289	415.7
4x25 RM	1	29.6	221.7	2262	2262	2372	2372	436.0
4x50 RM	1	38.1	285.5	4043	4043	4221	4221	698.8
5x1,5 RE	1	17.4	130.7	621	621	664	664	174.9
5x2,5 RE	1	18.5	138.8	710	710	758	758	194.4
5x4 RE	1	19.8	148.2	846	846	900	900	217.4
5x6 RE	1	21.1	158.3	1004	1004	1064	1064	243.0
5x10 RE	1	24.4	183.1	1478	1478	1553	1553	304.8
5x16 RE	1	27.0	202.3	1902	1902	1991	1991	358.8
5x16 RM	1	28.2	211.4	1979	1979	2075	2075	385.1
5x35 RM	1	36.7	275.0	3642	3642	3800	3800	629.0
5x70 RM	1	47.4	355.4	6478	6478	6725	6725	985.3

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

4. ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1

4.2 Cables sheathed with cross-linked highly elastic polymer compound



- **TOFLEX RKRng(A)**
- **TOFLEX GRKRng(A)**
- **TOFLEX ARKRng(A)**
- **Cu/HEPR/HFFR/SWA/XLFR, Al/HEPR/HFFR/SWA/XLFR**

Possible options:

«ng(A)-HL»	
«ng(A)-HF»	(Cu/HEPR/HFFR/SWA/XLHFFR, Al/HEPR/HFFR/SWA/XLHFFR)
«ng(A)-HF-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor –** copper or aluminium of 1st, 2nd class; flexible copper (version GRKR) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Armour** – steel galvanized wires.
⑤ **Outer sheath:**
- **«ng(A)»** – made from cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HL» –** made from cold-resistant cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF» –** made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:
«TOFLEX RKRng(A)-HF-HL5×95RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

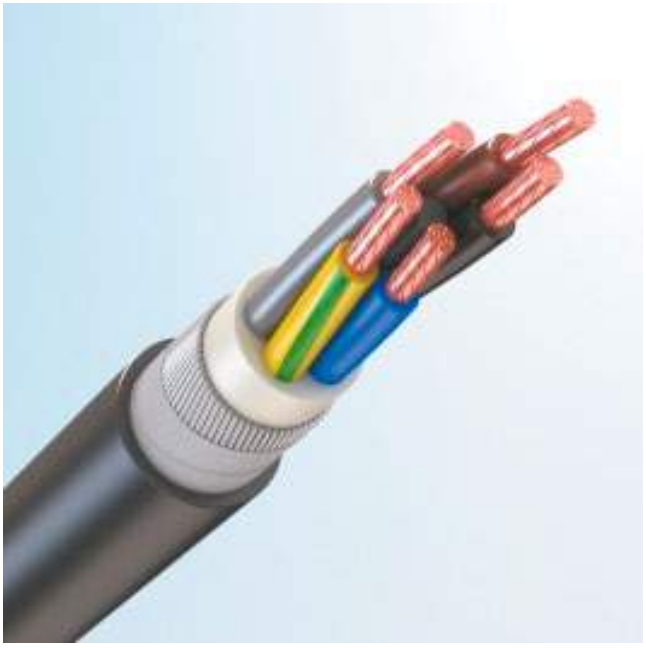
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX RKRng(A)	TOFLEX RKRng(A)-HL	TOFLEX RKRng(A)-HF	TOFLEX RKRng(A)-HF-HL	
2x1,5 RE	1	14.3	107.1	377	377	377	377	131.2
2x2,5 RE	1	15.1	113.1	430	430	430	430	145.5
2x4 RE	1	16.8	126.0	603	603	603	603	167.4
2x6 RE	1	17.8	133.5	697	697	697	697	186.8
2x10 RE	1	19.4	145.2	853	853	853	853	218.7
2x16 RE	1	21.3	159.5	1073	1073	1073	1073	260.2
2x16 RM	1	23.0	172.2	1289	1289	1289	1289	285.6
2x25 RE	1	25.5	191.0	1620	1620	1620	1620	359.9
2x25 RM	1	26.2	196.2	1674	1674	1674	1674	378.5
2x35 RM	1	28.2	211.2	1996	1996	1996	1996	433.9
2x70 RM	1	36.8	275.7	3540	3540	3540	3540	725.0
3x1,5 RE	1	14.8	110.9	406	406	406	406	138.9
3x2,5 RE	1	16.4	123.3	571	571	571	571	158.7
3x4 RE	1	17.4	130.7	664	664	664	664	176.5
3x6 RE	1	18.5	138.8	766	766	766	766	196.6
3x10 RE	1	20.2	151.4	964	964	964	964	229.1
3x16 RE	1	23.0	172.7	1395	1395	1395	1395	275.4
3x16 RM	1	24.4	183.0	1486	1486	1486	1486	311.8
3x25 RE	1	26.7	199.9	1872	1872	1872	1872	373.6
3x25 RM	1	27.4	205.5	1945	1945	1945	1945	392.0
3x35 RM	1	29.6	221.7	2344	2344	2344	2344	446.2
3x50 RM	1	34.8	261.1	3385	3385	3385	3385	609.6
4x1,5 RE	1	16.5	123.4	554	554	554	554	158.2
4x2,5 RE	1	17.4	130.7	642	642	642	642	175.4
4x4 RE	1	18.5	139.0	742	742	742	742	195.6
4x6 RE	1	19.7	148.0	882	882	882	882	218.1
4x10 RE	1	22.4	168.1	1273	1273	1273	1273	259.2
4x16 RE	1	25.1	188.3	1644	1644	1644	1644	321.8
4x16 RM	1	26.2	196.4	1719	1719	1719	1719	345.2
4x25 RE	1	28.7	215.4	2206	2206	2206	2206	415.7
4x25 RM	1	29.6	221.7	2286	2286	2286	2286	436.0
4x50 RM	1	38.1	285.5	4087	4087	4087	4087	698.8
5x1,5 RE	1	17.4	130.7	623	623	623	623	174.9
5x2,5 RE	1	18.5	138.8	713	713	713	713	194.4
5x4 RE	1	19.8	148.2	852	852	852	852	217.4
5x6 RE	1	21.1	158.3	1012	1012	1012	1012	243.0
5x10 RE	1	24.4	183.1	1486	1486	1486	1486	304.8
5x16 RE	1	27.0	202.3	1915	1915	1915	1915	358.8
5x16 RM	1	28.2	211.4	1995	1995	1995	1995	385.1
5x35 RM	1	36.7	275.0	3673	3673	3673	3673	629.0
5x70 RM	1	47.4	355.4	6531	6531	6531	6531	985.3

POWER CABLES WITH HARD GRADE
ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

4. ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1

4.3 Cables sheathed with halogen-free polymer compound



- **TOFLEX RKPng(A)-HF**
- **TOFLEX GRKPng(A)-HF**
- **TOFLEX ARKPng(A)-HF**
- **Cu/HEPR/HFFR/SWA/HFFR, Al/HEPR/HFFR/SWA/HFFR**

Possible options:

«ng(A)-HF-HL»

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; flexible copper (version GRKP) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **ËArmour** – steel galvanized wires.
⑤ **Outer sheath:**
- **«ng(A)-HF»** — made from halogen-free polymer compounds.
- **«ng(A)-HF-HL»** — made from cold-resistant halogen-free polymer compounds.

Ordering example:
«TOFLEX RKPng(A)-HF-HL3×185RM-1 IEC 60502-1»

CABLE FEATURES

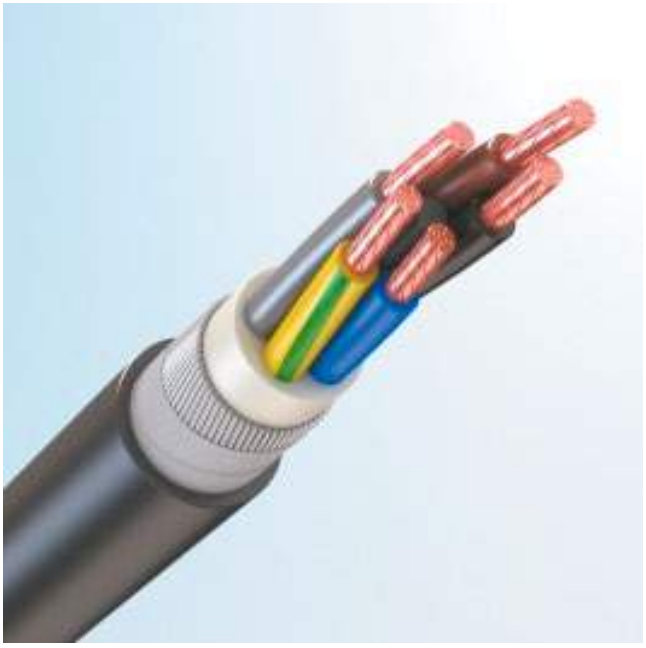
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RKPng(A)-HF	TOFLEX RKPng(A)-HF-HL	
2x1,5 RE	1	14.3	107.1	387	387	131.2
2x2,5 RE	1	15.1	113.1	440	440	145.5
2x4 RE	1	16.8	126.0	615	615	167.4
2x6 RE	1	17.8	133.5	709	709	186.8
2x10 RE	1	19.4	145.2	867	867	218.7
2x16 RE	1	21.3	159.5	1089	1089	260.2
2x16 RM	1	23.0	172.2	1306	1306	285.6
2x25 RE	1	25.5	191.0	1640	1640	359.9
2x25 RM	1	26.2	196.2	1696	1696	378.5
2x35 RM	1	28.2	211.2	2019	2019	433.9
2x70 RM	1	36.8	275.7	3576	3576	725.0
3x1,5 RE	1	14.8	110.9	416	416	138.9
3x2,5 RE	1	16.4	123.3	582	582	158.7
3x4 RE	1	17.4	130.7	677	677	176.5
3x6 RE	1	18.5	138.8	779	779	196.6
3x10 RE	1	20.2	151.4	979	979	229.1
3x16 RE	1	23.0	172.7	1412	1412	275.4
3x16 RM	1	24.4	183.0	1506	1506	311.8
3x25 RE	1	26.7	199.9	1893	1893	373.6
3x25 RM	1	27.4	205.5	1968	1968	392.0
3x35 RM	1	29.6	221.7	2368	2368	446.2
3x50 RM	1	34.8	261.1	3419	3419	609.6
4x1,5 RE	1	16.5	123.4	565	565	158.2
4x2,5 RE	1	17.4	130.7	654	654	175.4
4x4 RE	1	18.5	139.0	755	755	195.6
4x6 RE	1	19.7	148.0	896	896	218.1
4x10 RE	1	22.4	168.1	1289	1289	259.2
4x16 RE	1	25.1	188.3	1664	1664	321.8
4x16 RM	1	26.2	196.4	1740	1740	345.2
4x25 RE	1	28.7	215.4	2230	2230	415.7
4x25 RM	1	29.6	221.7	2310	2310	436.0
4x50 RM	1	38.1	285.5	4125	4125	698.8
5x1,5 RE	1	17.4	130.7	635	635	174.9
5x2,5 RE	1	18.5	138.8	726	726	194.4
5x4 RE	1	19.8	148.2	865	865	217.4
5x6 RE	1	21.1	158.3	1026	1026	243.0
5x10 RE	1	24.4	183.1	1505	1505	304.8
5x16 RE	1	27.0	202.3	1936	1936	358.8
5x16 RM	1	28.2	211.4	2017	2017	385.1
5x35 RM	1	36.7	275.0	3707	3707	629.0
5x70 RM	1	47.4	355.4	6579	6579	985.3

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

4. ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1

4.4 Cables sheathed with thermoplastic polyurethane elastomer



- **TOFLEX RKTng(A)**
- **TOFLEX GRKTng(A)**
- **TOFLEX ARKTng(A)**
- **Cu/HEPR/ TPE /SWA/ TPU, Al/HEPR/ TPE /SWA/ TPU**

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; flexible copper (version GRKT) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Armour** – steel galvanized wires.
⑤ **Outer sheath:**
- **«ng(A)»** — made from thermoplastic polyurethane elastomer.

Ordering example:
«TOFLEX RKTng(A)3×185RM-1 IEC 60502-1»

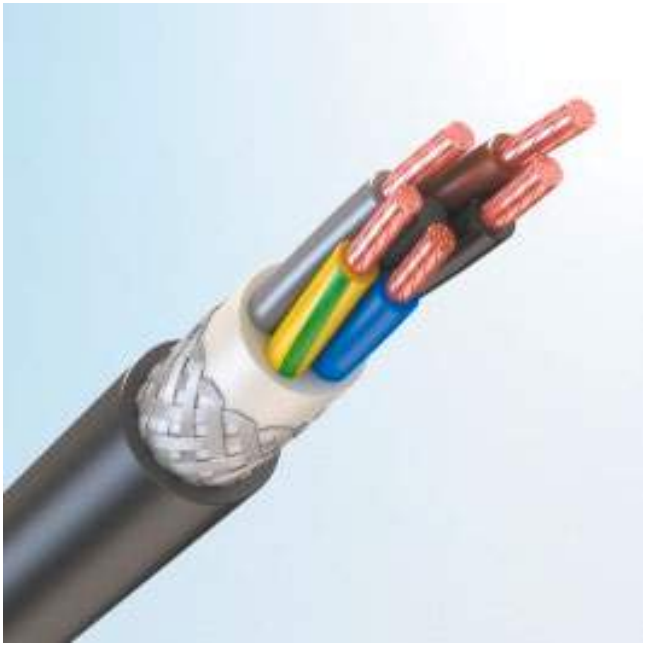
CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire, kg	Amount of combustible materials, l/km
				TOFLEX RKTng(A)	
2x1,5 RE	1	14.3	107.1	374	131.2
2x2,5 RE	1	15.1	113.1	424	145.5
2x4 RE	1	16.8	126.0	597	167.4
2x6 RE	1	17.8	133.5	687	186.8
2x10 RE	1	19.4	145.2	839	218.7
2x16 RE	1	21.3	159.5	1053	260.2
2x16 RM	1	23.0	172.2	1265	285.6
2x25 RE	1	25.5	191.0	1590	359.9
2x25 RM	1	26.2	196.2	1641	378.5
2x35 RM	1	28.2	211.2	1953	433.9
2x70 RM	1	36.8	275.7	3459	725.0
3x1,5 RE	1	14.8	110.9	404	138.9
3x2,5 RE	1	16.4	123.3	568	158.7
3x4 RE	1	17.4	130.7	660	176.5
3x6 RE	1	18.5	138.8	759	196.6
3x10 RE	1	20.2	151.4	954	229.1
3x16 RE	1	23.0	172.7	1380	275.4
3x16 RM	1	24.4	183.0	1471	311.8
3x25 RE	1	26.7	199.9	1849	373.6
3x25 RM	1	27.4	205.5	1920	392.0
3x35 RM	1	29.6	221.7	2311	446.2
3x50 RM	1	34.8	261.1	3345	609.6
4x1,5 RE	1	16.5	123.4	552	158.2
4x2,5 RE	1	17.4	130.7	639	175.4
4x4 RE	1	18.5	139.0	737	195.6
4x6 RE	1	19.7	148.0	875	218.1
4x10 RE	1	22.4	168.1	1263	259.2
4x16 RE	1	25.1	188.3	1632	321.8
4x16 RM	1	26.2	196.4	1704	345.2
4x25 RE	1	28.7	215.4	2184	415.7
4x25 RM	1	29.6	221.7	2262	436.0
4x50 RM	1	38.1	285.5	4043	698.8
5x1,5 RE	1	17.4	130.7	621	174.9
5x2,5 RE	1	18.5	138.8	710	194.4
5x4 RE	1	19.8	148.2	846	217.4
5x6 RE	1	21.1	158.3	1004	243.0
5x10 RE	1	24.4	183.1	1478	304.8
5x16 RE	1	27.0	202.3	1902	358.8
5x16 RM	1	28.2	211.4	1979	385.1
5x35 RM	1	36.7	275.0	3642	629.0
5x70 RM	1	47.4	355.4	6478	985.3

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

5. ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1



5.1 Cables with PVC sheath

- **TOFLEX RPVng(A)**
- **TOFLEX GRPVng(A)**
- **TOFLEX ARPVng(A)**
- **Cu/HEPR/PVC/SWB/PVC, Al/HEPR/PVC/SWB/PVC**

Possible options:

«ng(A)-HL»	
«ng(A)-LS»	(Cu/HEPR/LSPVC/SWB/LSPVC, Al/HEPR/LSPVC/SWB/LSPVC)
«ng(A)-LS-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GRPV) of 5th class (according to IEC 60228).
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Armour** – with full lay-up from galvanized steel wires.
⑤ **Outer sheath:**

- **«ng(A)»** – made from PVC-compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant PVC-compound with low fire hazard.
- **«ng(A)-LS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-LS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX RPVng(A)-LS3×95RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX RPVng(A)	TOFLEX RPVng(A)-HL	TOFLEX RPVng(A)-LS	TOFLEX RPVng(A)-LS-HL	
2x1,5 RE	1	13.5	101.4	277	277	313	313	126.7
2x2,5 RE	1	14.3	107.4	321	321	361	361	141.0
2x4 RE	1	15.2	114.3	378	378	423	423	158.2
2x6 RE	1	16.2	121.8	448	448	499	499	177.6
2x10 RE	1	17.8	133.5	573	573	633	633	209.5
2x16 RE	1	19.7	147.8	752	752	826	826	251.0
2x16 RM	1	20.6	154.5	792	792	872	872	271.7
2x25 RE	1	22.7	170.3	1039	1039	1135	1135	329.5
2x25 RM	1	23.4	175.5	1078	1078	1180	1180	347.7
2x35 RM	1	25.8	193.5	1361	1361	1484	1484	418.5
2x50 RM	1	29.2	219.0	1842	1842	1999	1999	530.3
2x70 RM	1	32.8	246.0	2355	2355	2554	2554	656.9
2x95 RM	1	37.8	283.5	3143	3143	3406	3406	874.5
2x120 RM	1	40.6	304.5	3785	3785	4086	4086	990.9
2x150 RM	1	44.6	334.5	4598	4598	4963	4963	1195.7
2x185 RM	1	49.4	370.5	5668	5668	6115	6115	1473.2
2x240 RM	1	55.2	414.0	7132	7132	7691	7691	1823.3
3x1,5 RE	1	14.0	105.2	302	302	338	338	134.4
3x2,5 RE	1	14.9	111.6	356	356	396	396	149.5
3x4 RE	1	15.9	119.0	426	426	471	471	167.4
3x6 RE	1	16.9	127.1	514	514	564	564	187.4
3x10 RE	1	18.6	139.7	674	674	733	733	219.9
3x16 RE	1	20.7	155.0	907	907	977	977	261.6
3x16 RM	1	21.6	162.3	947	947	1024	1024	282.1
3x25 RE	1	24.3	182.2	1296	1296	1391	1391	358.2
3x25 RM	1	25.0	187.8	1339	1339	1439	1439	376.6
3x35 RM	1	27.2	204.0	1679	1679	1794	1794	430.8
3x50 RM	1	30.9	231.4	2309	2309	2454	2454	544.0
3x70 RM	1	35.5	266.2	3036	3036	3231	3231	713.4
3x95 RM	1	40.0	300.0	3976	3976	4216	4216	887.0
3x120 RM	1	43.0	322.6	4834	4834	5107	5107	997.3
3x150 RM	1	48.1	360.6	5982	5982	6329	6329	1264.9
3x185 RM	1	52.4	392.9	7275	7275	7679	7679	1481.5
4x1,5 RE	1	14.9	111.7	340	340	378	378	149.1
4x2,5 RE	1	15.9	119.0	406	406	448	448	166.2
4x4 RE	1	17.0	127.3	493	493	540	540	186.4
4x6 RE	1	18.2	136.3	602	602	655	655	208.9
4x10 RE	1	20.1	150.4	802	802	865	865	245.3
4x16 RE	1	22.3	167.6	1096	1096	1170	1170	291.6
4x16 RM	1	23.4	175.7	1141	1141	1222	1222	314.3
4x25 RE	1	26.4	197.7	1579	1579	1679	1679	400.2
4x25 RM	1	27.2	204.0	1629	1629	1735	1735	420.5
4x35 RM	1	29.6	222.1	2059	2059	2181	2181	480.2
4x50 RM	1	34.9	261.8	2962	2962	3133	3133	674.0
4x70 RM	1	38.8	290.7	3761	3761	3965	3965	792.6
4x95 RM	1	44.2	331.7	4994	4994	5256	5256	1014.1
4x120 RM	1	48.4	363.0	6190	6190	6503	6503	1198.5
4x150 RM	1	52.7	395.5	7481	7481	7843	7843	1402.8
5x1,5 RE	1	15.9	119.0	387	387	429	429	165.7

5x2,5 RE	1	17.0	127.1	466	466	512	512	185.3
5x4 RE	1	18.2	136.5	573	573	624	624	208.3
5x6 RE	1	19.5	146.6	712	712	770	770	233.9
5x10 RE	1	21.7	162.4	954	954	1022	1022	275.1
5x16 RE	1	24.6	184.6	1334	1334	1419	1419	343.3
5x16 RM	1	25.8	193.7	1387	1387	1479	1479	369.7
5x25 RE	1	28.7	215.0	1908	1908	2017	2017	450.7
5x25 RM	1	29.6	222.1	1966	1966	2081	2081	473.5
5x35 RM	1	32.7	245.3	2538	2538	2677	2677	561.0
5x50 RM	1	38.1	285.8	3607	3607	3793	3793	758.5
5x70 RM	1	42.4	318.2	4643	4643	4864	4864	891.4
5x95 RM	1	49.3	369.7	6235	6235	6536	6536	1205.6
5x120 RM	1	53.1	398.0	7593	7593	7931	7931	1346.3

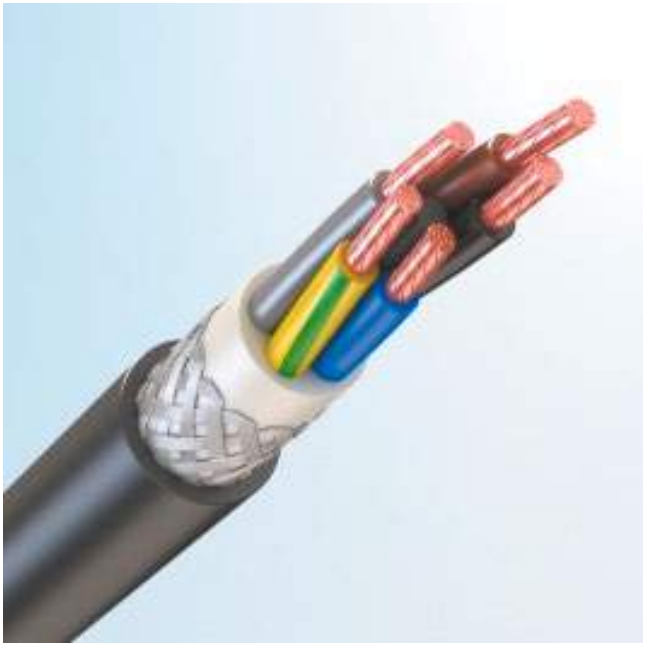
CABLE FEATURES

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

5. ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1

5.2 Cables sheathed with cross-linked highly elastic polymer compound



- **TOFLEX RPRng(A)**
- **TOFLEX GRPRng(A)**
- **TOFLEX ARPRng(A)**
- **Cu/HEPR/HFFR/SWB/ XLFR, Al/HEPR/HFFR/SWB/ XLFR**

Possible options:

«ng(A)-HL»	
«ng(A)-HF»	(Cu/HEPR/HFFR/SWB/XLHFFR, Al/HEPR/HFFR/SWB/XLHFFR)
«ng(A)-HF-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GRPR) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath –** corresponds to the type of the outer sheath.
④ **Armour** – with full lay-up from galvanized steel wires.
⑤ **Outer sheath:**
- **«ng(A)»** – made from cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX RPRng(A)-HF-HL5×95RM(N,G)-1 IEC 60502-1»

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX RPRng(A)	TOFLEX RPRng(A)-HL	TOFLEX RPRng(A)-LS	TOFLEX RPRng(A)-LS-HL	
2x1,5 RE	1	13.5	101.4	281	281	281	281	126.7
2x2,5 RE	1	14.3	107.4	327	327	327	327	141.0
2x4 RE	1	15.2	114.3	386	386	386	386	158.2
2x6 RE	1	16.2	121.8	458	458	458	458	177.6
2x10 RE	1	17.8	133.5	588	588	588	588	209.5
2x16 RE	1	19.7	147.8	775	775	775	775	251.0
2x16 RM	1	20.6	154.5	817	817	817	817	271.7
2x25 RE	1	22.7	170.3	1074	1074	1074	1074	329.5
2x25 RM	1	23.4	175.5	1116	1116	1116	1116	347.7
2x35 RM	1	25.8	193.5	1406	1406	1406	1406	418.5
2x50 RM	1	29.2	219.0	1907	1907	1907	1907	530.3
2x70 RM	1	32.8	246.0	2447	2447	2447	2447	656.9
2x95 RM	1	37.8	283.5	3260	3260	3260	3260	874.5
2x120 RM	1	40.6	304.5	3927	3927	3927	3927	990.9
2x150 RM	1	44.6	334.5	4782	4782	4782	4782	1195.7
2x185 RM	1	49.4	370.5	5885	5885	5885	5885	1473.2
2x240 RM	1	55.2	414.0	7423	7423	7423	7423	1823.3
3x1,5 RE	1	14.0	105.2	305	305	305	305	134.4
3x2,5 RE	1	14.9	111.6	360	360	360	360	149.5
3x4 RE	1	15.9	119.0	433	433	433	433	167.4
3x6 RE	1	16.9	127.1	523	523	523	523	187.4
3x10 RE	1	18.6	139.7	686	686	686	686	219.9
3x16 RE	1	20.7	155.0	924	924	924	924	261.6
3x16 RM	1	21.6	162.3	967	967	967	967	282.1
3x25 RE	1	24.3	182.2	1321	1321	1321	1321	358.2
3x25 RM	1	25.0	187.8	1367	1367	1367	1367	376.6
3x35 RM	1	27.2	204.0	1714	1714	1714	1714	430.8
3x50 RM	1	30.9	231.4	2360	2360	2360	2360	544.0
3x70 RM	1	35.5	266.2	3102	3102	3102	3102	713.4
3x95 RM	1	40.0	300.0	4067	4067	4067	4067	887.0
3x120 RM	1	43.0	322.6	4944	4944	4944	4944	997.3
3x150 RM	1	48.1	360.6	6118	6118	6118	6118	1264.9
3x185 RM	1	52.4	392.9	7444	7444	7444	7444	1481.5
4x1,5 RE	1	14.9	111.7	343	343	343	343	149.1
4x2,5 RE	1	15.9	119.0	410	410	410	410	166.2
4x4 RE	1	17.0	127.3	499	499	499	499	186.4
4x6 RE	1	18.2	136.3	610	610	610	610	208.9
4x10 RE	1	20.1	150.4	814	814	814	814	245.3
4x16 RE	1	22.3	167.6	1113	1113	1113	1113	291.6
4x16 RM	1	23.4	175.7	1161	1161	1161	1161	314.3
4x25 RE	1	26.4	197.7	1603	1603	1603	1603	400.2
4x25 RM	1	27.2	204.0	1656	1656	1656	1656	420.5
4x35 RM	1	29.6	222.1	2094	2094	2094	2094	480.2
4x50 RM	1	34.9	261.8	3010	3010	3010	3010	674.0
4x70 RM	1	38.8	290.7	3825	3825	3825	3825	792.6
4x95 RM	1	44.2	331.7	5091	5091	5091	5091	1014.1
4x120 RM	1	48.4	363.0	6296	6296	6296	6296	1198.5
4x150 RM	1	52.7	395.5	7613	7613	7613	7613	1402.8
5x1,5 RE	1	15.9	119.0	391	391	391	391	165.7

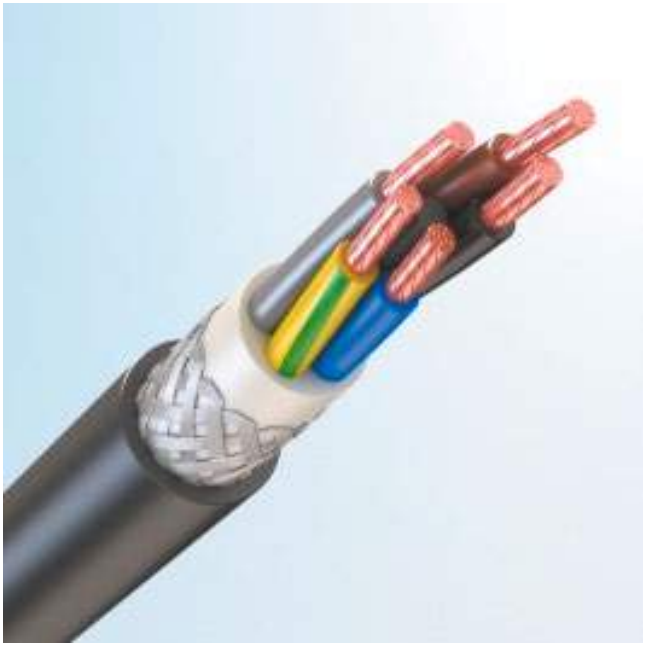
5x2,5 RE	1	17.0	127.1	470	470	470	470	185.3
5x4 RE	1	18.2	136.5	579	579	579	579	208.3
5x6 RE	1	19.5	146.6	720	720	720	720	233.9
5x10 RE	1	21.7	162.4	966	966	966	966	275.1
5x16 RE	1	24.6	184.6	1349	1349	1349	1349	343.3
5x16 RM	1	25.8	193.7	1404	1404	1404	1404	369.7
5x25 RE	1	28.7	215.0	1932	1932	1932	1932	450.7
5x25 RM	1	29.6	222.1	1993	1993	1993	1993	473.5
5x35 RM	1	32.7	245.3	2577	2577	2577	2577	561.0
5x50 RM	1	38.1	285.8	3654	3654	3654	3654	758.5
5x70 RM	1	42.4	318.2	4704	4704	4704	4704	891.4
5x95 RM	1	49.3	369.7	6321	6321	6321	6321	1205.6
5x120 RM	1	53.1	398.0	7697	7697	7697	7697	1346.3

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

5. ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1

5.3 Cables sheathed with halogen-free polymer compound



- **TOFLEX RPPng(A)-HF**
- **TOFLEX GRPPng(A)-HF**
- **TOFLEX ARPPng(A)-HF**
- **Cu/HEPR/HFFR/SWB/HFFR, Al/HEPR/HFFR/SWB/HFFR**

Possible options:

«ng(A)-HF-HL»

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; flexible copper (version GRPP) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Armour** – with full lay-up from galvanized steel wires.
⑤ **Outer sheath:**
- **«ng(A)-HF»** – made from halogen-free polymer compounds.
- **«ng(A)-HF-HL»** — made from cold-resistant halogen-free polymer compounds.

Ordering example:
«TOFLEX RPPng(A)-HF-HL3×185RM-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RPPng(A)-HF	TOFLEX RPPng(A)-HF-HL	
2x1,5 RE	1	13.5	101.4	292	292	126.7
2x2,5 RE	1	14.3	107.4	339	339	141.0
2x4 RE	1	15.2	114.3	399	399	158.2
2x6 RE	1	16.2	121.8	472	472	177.6
2x10 RE	1	17.8	133.5	603	603	209.5
2x16 RE	1	19.7	147.8	791	791	251.0
2x16 RM	1	20.6	154.5	835	835	271.7
2x25 RE	1	22.7	170.3	1094	1094	329.5
2x25 RM	1	23.4	175.5	1137	1137	347.7
2x35 RM	1	25.8	193.5	1431	1431	418.5
2x50 RM	1	29.2	219.0	1936	1936	530.3
2x70 RM	1	32.8	246.0	2479	2479	656.9
2x95 RM	1	37.8	283.5	3304	3304	874.5
2x120 RM	1	40.6	304.5	3974	3974	990.9
2x150 RM	1	44.6	334.5	4834	4834	1195.7
2x185 RM	1	49.4	370.5	5953	5953	1473.2
2x240 RM	1	55.2	414.0	7500	7500	1823.3
3x1,5 RE	1	14.0	105.2	317	317	134.4
3x2,5 RE	1	14.9	111.6	372	372	149.5
3x4 RE	1	15.9	119.0	446	446	167.4
3x6 RE	1	16.9	127.1	537	537	187.4
3x10 RE	1	18.6	139.7	702	702	219.9
3x16 RE	1	20.7	155.0	942	942	261.6
3x16 RM	1	21.6	162.3	986	986	282.1
3x25 RE	1	24.3	182.2	1344	1344	358.2
3x25 RM	1	25.0	187.8	1391	1391	376.6
3x35 RM	1	27.2	204.0	1740	1740	430.8
3x50 RM	1	30.9	231.4	2390	2390	544.0
3x70 RM	1	35.5	266.2	3144	3144	713.4
3x95 RM	1	40.0	300.0	4114	4114	887.0
3x120 RM	1	43.0	322.6	4995	4995	997.3
3x150 RM	1	48.1	360.6	6184	6184	1264.9
3x185 RM	1	52.4	392.9	7517	7517	1481.5
4x1,5 RE	1	14.9	111.7	356	356	149.1
4x2,5 RE	1	15.9	119.0	423	423	166.2
4x4 RE	1	17.0	127.3	513	513	186.4
4x6 RE	1	18.2	136.3	626	626	208.9
4x10 RE	1	20.1	150.4	832	832	245.3
4x16 RE	1	22.3	167.6	1132	1132	291.6
4x16 RM	1	23.4	175.7	1181	1181	314.3
4x25 RE	1	26.4	197.7	1629	1629	400.2
4x25 RM	1	27.2	204.0	1682	1682	420.5
4x35 RM	1	29.6	222.1	2123	2123	480.2
4x50 RM	1	34.9	261.8	3050	3050	674.0
4x70 RM	1	38.8	290.7	3871	3871	792.6
4x95 RM	1	44.2	331.7	5143	5143	1014.1
4x120 RM	1	48.4	363.0	6363	6363	1198.5
4x150 RM	1	52.7	395.5	7687	7687	1402.8
5x1,5 RE	1	15.9	119.0	404	404	165.7

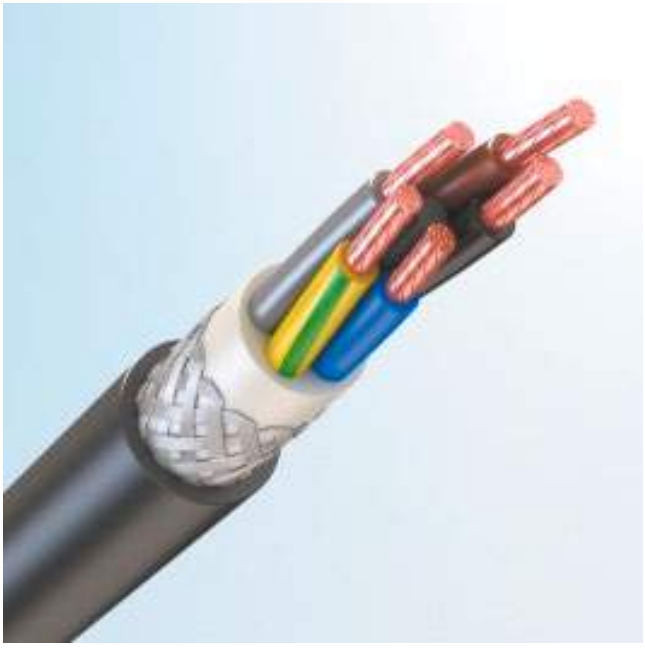
5x2,5 RE	1	17.0	127.1	485	485	185.3
5x4 RE	1	18.2	136.5	595	595	208.3
5x6 RE	1	19.5	146.6	737	737	233.9
5x10 RE	1	21.7	162.4	985	985	275.1
5x16 RE	1	24.6	184.6	1373	1373	343.3
5x16 RM	1	25.8	193.7	1429	1429	369.7
5x25 RE	1	28.7	215.0	1960	1960	450.7
5x25 RM	1	29.6	222.1	2022	2022	473.5
5x35 RM	1	32.7	245.3	2609	2609	561.0
5x50 RM	1	38.1	285.8	3699	3699	758.5
5x70 RM	1	42.4	318.2	4754	4754	891.4
5x95 RM	1	49.3	369.7	6389	6389	1205.6
5x120 RM	1	53.1	398.0	7771	7771	1346.3

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

5. ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1

5.4 Cables sheathed with thermoplastic polyurethane elastomer



- **TOFLEX RPTng(A)**
- **TOFLEX GRPTng(A)**
- **TOFLEX ARPTng(A)**
- **Cu/HEPR/TPE/SWB/ TPU, Al/HEPR/TPE/SWB/ TPU**

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; flexible copper (version GRPT) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Armour** – with full lay-up from galvanized steel wires.
⑤ **Outer sheath:**
- **«ng(A)»**— made from thermoplastic polyurethane elastomer.

Ordering example:
«TOFLEX RPTng(A)3×185RM-1 IEC 60502-1»

CABLE FEATURES

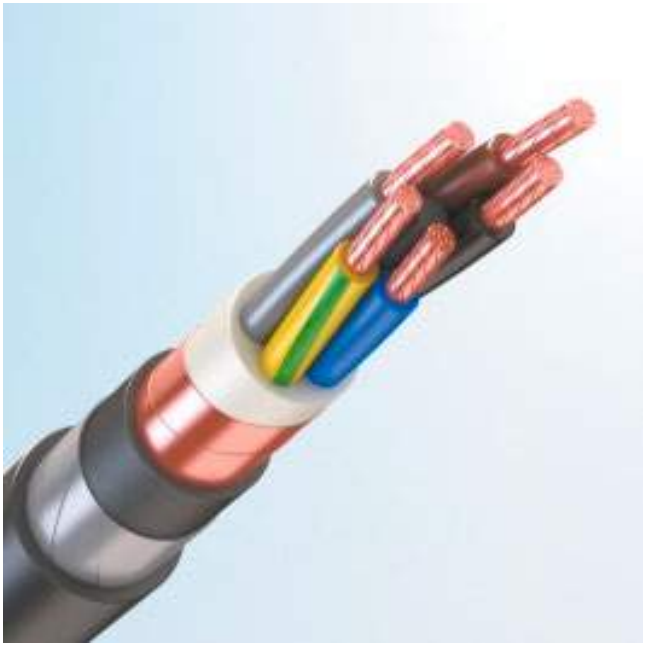
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire, kg	Amount of combustible materials, l/km
				TOFLEX RPTng(A)	
2x1,5 RE	1	13.5	101.4	277	126.7
2x2,5 RE	1	14.3	107.4	321	141.0
2x4 RE	1	15.2	114.3	378	158.2
2x6 RE	1	16.2	121.8	448	177.6
2x10 RE	1	17.8	133.5	573	209.5
2x16 RE	1	19.7	147.8	752	251.0
2x16 RM	1	20.6	154.5	792	271.7
2x25 RE	1	22.7	170.3	1039	329.5
2x25 RM	1	23.4	175.5	1078	347.7
2x35 RM	1	25.8	193.5	1361	418.5
2x50 RM	1	29.2	219.0	1842	530.3
2x70 RM	1	32.8	246.0	2355	656.9
2x95 RM	1	37.8	283.5	3143	874.5
2x120 RM	1	40.6	304.5	3785	990.9
2x150 RM	1	44.6	334.5	4598	1195.7
2x185 RM	1	49.4	370.5	5668	1473.2
2x240 RM	1	55.2	414.0	7132	1823.3
3x1,5 RE	1	14.0	105.2	302	134.4
3x2,5 RE	1	14.9	111.6	356	149.5
3x4 RE	1	15.9	119.0	426	167.4
3x6 RE	1	16.9	127.1	514	187.4
3x10 RE	1	18.6	139.7	674	219.9
3x16 RE	1	20.7	155.0	907	261.6
3x16 RM	1	21.6	162.3	947	282.1
3x25 RE	1	24.3	182.2	1296	358.2
3x25 RM	1	25.0	187.8	1339	376.6
3x35 RM	1	27.2	204.0	1679	430.8
3x50 RM	1	30.9	231.4	2309	544.0
3x70 RM	1	35.5	266.2	3036	713.4
3x95 RM	1	40.0	300.0	3976	887.0
3x120 RM	1	43.0	322.6	4834	997.3
3x150 RM	1	48.1	360.6	5982	1264.9
3x185 RM	1	52.4	392.9	7275	1481.5
4x1,5 RE	1	14.9	111.7	340	149.1
4x2,5 RE	1	15.9	119.0	406	166.2
4x4 RE	1	17.0	127.3	493	186.4
4x6 RE	1	18.2	136.3	602	208.9
4x10 RE	1	20.1	150.4	802	245.3
4x16 RE	1	22.3	167.6	1096	291.6
4x16 RM	1	23.4	175.7	1141	314.3
4x25 RE	1	26.4	197.7	1579	400.2
4x25 RM	1	27.2	204.0	1629	420.5
4x35 RM	1	29.6	222.1	2059	480.2
4x50 RM	1	34.9	261.8	2962	674.0
4x70 RM	1	38.8	290.7	3761	792.6
4x95 RM	1	44.2	331.7	4994	1014.1
4x120 RM	1	48.4	363.0	6190	1198.5
4x150 RM	1	52.7	395.5	7481	1402.8
5x1,5 RE	1	15.9	119.0	387	165.7

5x2,5 RE	1	17.0	127.1	466	185.3
5x4 RE	1	18.2	136.5	573	208.3
5x6 RE	1	19.5	146.6	712	233.9
5x10 RE	1	21.7	162.4	954	275.1
5x16 RE	1	24.6	184.6	1334	343.3
5x16 RM	1	25.8	193.7	1387	369.7
5x25 RE	1	28.7	215.0	1908	450.7
5x25 RM	1	29.6	222.1	1966	473.5
5x35 RM	1	32.7	245.3	2538	561.0
5x50 RM	1	38.1	285.8	3607	758.5
5x70 RM	1	42.4	318.2	4643	891.4
5x95 RM	1	49.3	369.7	6235	1205.6
5x120 RM	1	53.1	398.0	7593	1346.3

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

6. SHIELDED, ARMOURED WITH STEEL GALVANIZED TAPES*

IEC 60502-1



6.1 Cables with PVC sheath

- **TOFLEX REBVng(A)**
- **TOFLEX GREBVng(A)**
- **TOFLEX AREBVng(A)**
- **Cu/HEPR/OSCR/PVC/STA/PVC, Al/HEPR/OSCR/PVC/STA/PVC**

Possible options:

«ng(A)-HL»	
«ng(A)-LS»	(Cu/HEPR/OSCR/LSPVC/STA/LSPVC, Al/HEPR/OSCR/LSPVC/STA/LSPVC)
«ng(A)-LS-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GREBV) of 5th class (according to IEC 60228).
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑤ **Separation layer** – corresponds to the type of the outer sheath.
⑥ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).
⑦ **Outer sheath:**
- **«ng(A)»** – made from PVC-compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant PVC-compound with low fire hazard.
- **«ng(A)-LS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-LS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX RPTng(A)3×185RM-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX REBVng(A)	TOFLEX REBVng(A)-HL	TOFLEX REBVng(A)-LS	TOFLEX REBVng(A)-LS	
2x1,5 RE	1	15.3	114.8	379	379	437	437	169.5
2x2,5 RE	1	16.1	120.8	429	429	492	492	186.4
2x4 RE	1	17.0	127.7	493	493	563	563	206.6
2x6 RE	1	18.0	135.2	565	565	642	642	229.3
2x10 RE	1	19.6	146.9	701	701	791	791	266.3
2x16 RE	1	21.5	161.1	894	894	1000	1000	314.0
2x16 RM	1	22.4	167.9	940	940	1053	1053	337.6
2x25 RE	1	24.9	186.6	1226	1226	1366	1366	418.4
2x25 RM	1	25.6	191.9	1271	1271	1418	1418	439.3
2x35 RM	1	27.6	206.9	1545	1545	1713	1713	501.2
2x50 RM	1	31.0	232.4	2051	2051	2257	2257	624.1
2x70 RM	1	36.2	271.4	2810	2810	3091	3091	834.1
2x95 RM	1	40.4	302.9	3582	3582	3924	3924	1024.8
2x120 RM	1	43.2	323.9	4257	4257	4644	4644	1152.1
2x150 RM	1	48.4	362.9	5260	5260	5753	5753	1465.4
2x185 RM	1	53.2	398.9	6639	6639	7210	7210	1709.7
2x240 RM	1	60.0	449.9	8369	8369	9099	9099	2182.2
3x1,5 RE	1	15.8	118.5	408	408	466	466	178.9
3x2,5 RE	1	16.7	125.0	468	468	532	532	196.8
3x4 RE	1	17.7	132.4	541	541	611	611	217.9
3x6 RE	1	18.7	140.5	636	636	714	714	241.4
3x10 RE	1	20.4	153.0	808	808	897	897	279.4
3x16 RE	1	22.4	168.4	1056	1056	1160	1160	327.7
3x16 RM	1	23.4	175.6	1103	1103	1214	1214	351.4
3x25 RE	1	26.1	195.5	1470	1470	1606	1606	436.0
3x25 RM	1	26.8	201.2	1518	1518	1661	1661	456.9
3x35 RM	1	29.0	217.3	1873	1873	2035	2035	518.1
3x50 RM	1	33.0	247.7	2564	2564	2767	2767	664.2
3x70 RM	1	38.1	285.5	3449	3449	3718	3718	854.6
3x95 RM	1	42.6	319.4	4441	4441	4765	4765	1045.9
3x120 RM	1	46.8	351.0	5473	5473	5869	5869	1257.7
3x150 RM	1	51.1	383.0	6590	6590	7055	7055	1488.2
3x185 RM	1	57.2	428.7	8449	8449	9016	9016	1822.9
3x240 RM	1	63.4	475.3	10495	10495	11178	11178	2206.0
4x1,5 RE	1	16.7	125.1	452	452	515	515	196.4
4x2,5 RE	1	17.6	132.3	520	520	588	588	216.6
4x4 RE	1	18.8	140.6	615	615	690	690	240.5
4x6 RE	1	20.0	149.7	733	733	816	816	266.9
4x10 RE	1	21.8	163.8	947	947	1042	1042	309.4
4x16 RE	1	24.5	183.9	1280	1280	1397	1397	379.1
4x16 RM	1	25.6	192.1	1334	1334	1460	1460	406.1
4x25 RE	1	28.1	211.0	1768	1768	1913	1913	484.8
4x25 RM	1	29.0	217.4	1824	1824	1976	1976	507.9
4x35 RM	1	31.4	235.4	2272	2272	2444	2444	575.4
4x50 RM	1	37.5	281.2	3368	3368	3612	3612	812.9
4x70 RM	1	41.3	310.1	4211	4211	4497	4497	946.6
4x95 RM	1	48.0	360.1	5651	5651	6039	6039	1281.6
4x120 RM	1	51.4	385.4	6803	6803	7234	7234	1423.2
4x150 RM	1	57.5	431.4	8663	8663	9189	9189	1746.4

4x185 RM	1	62.7	470.5	10484	10484	11097	11097	2056.8
4x240 RM	1	70.2	526.8	13157	13157	13921	13921	2554.8
5x1,5 RE	1	17.7	132.4	502	502	569	569	216.2
5x2,5 RE	1	18.7	140.5	588	588	661	661	239.3
5x4 RE	1	20.0	149.8	704	704	785	785	266.3
5x6 RE	1	21.3	159.9	853	853	942	942	296.3
5x10 RE	1	23.4	175.7	1110	1110	1213	1213	344.4
5x16 RE	1	26.4	198.0	1510	1510	1637	1637	422.2
5x16 RM	1	27.6	207.1	1571	1571	1707	1707	452.6
5x25 RE	1	30.4	228.3	2113	2113	2271	2271	542.8
5x25 RM	1	31.4	235.4	2178	2178	2343	2343	568.7
5x35 RM	1	36.1	270.7	2992	2992	3213	3213	737.7
5x50 RM	1	40.7	305.1	4050	4050	4316	4316	909.9
5x70 RM	1	46.2	346.5	5274	5274	5616	5616	1148.3
5x95 RM	1	53.1	398.0	7204	7204	7628	7628	1441.7
5x120 RM	1	57.9	433.9	8782	8782	9286	9286	1692.0
5x150 RM	1	63.1	473.3	10533	10533	11119	11119	1994.0
5x185 RM	1	69.5	521.3	12995	12995	13705	13705	2417.3
5x240 RM	1	77.6	582.0	16216	16216	17078	17078	2961.0

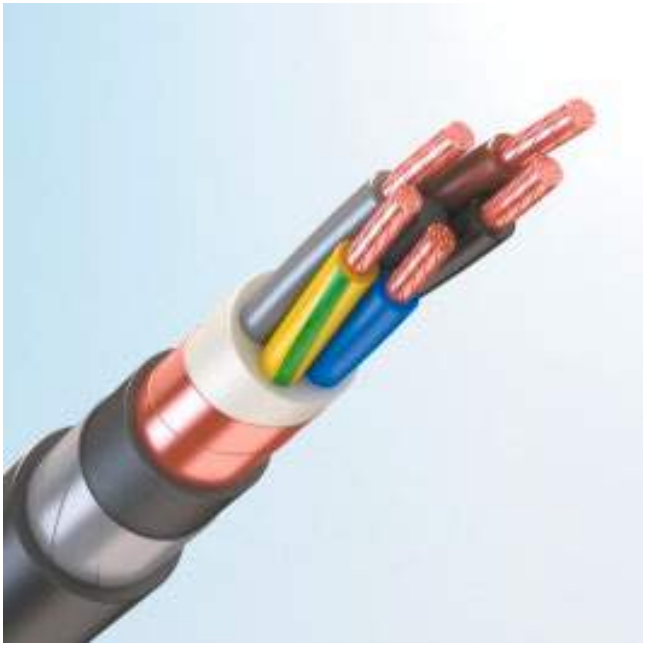
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX REBaVng(A)	TOFLEX REBaVng(A)-HL	TOFLEX REBaVng(A)-LS	TOFLEX REBaVng(A)-LS-HL	
1x1,5 RE	1	14.6	146.0	285	285	330	330	132.6
1x2,5 RE	1	14.6	146.0	293	293	337	337	131.5
1x4 RE	1	14.6	146.0	303	303	347	347	129.8
1x6 RE	1	14.6	146.0	318	318	361	361	127.7
1x10 RE	1	15.3	152.8	372	372	418	418	137.4
1x16 RE	1	16.2	162.3	453	453	503	503	151.6
1x16 RM	1	16.7	166.8	468	468	520	520	158.3
1x25 RE	1	17.7	177.3	578	578	635	635	177.4
1x25 RM	1	18.1	180.8	593	593	651	651	182.9
1x35 RM	1	19.1	190.8	700	700	763	763	198.4
1x50 RM	1	20.8	207.8	906	906	976	976	229.9
1x70 RM	1	22.4	223.8	1105	1105	1182	1182	255.7
1x95 RM	1	24.9	248.8	1422	1422	1514	1514	312.1
1x120 RM	1	26.3	262.8	1693	1693	1791	1791	336.4
1x150 RM	1	28.1	280.8	2005	2005	2112	2112	376.4
1x185 RM	1	30.1	300.8	2400	2400	2517	2517	422.0
1x240 RM	1	32.8	327.8	2961	2961	3089	3089	483.2
1x300 RM	1	38.6	386.3	3822	3822	4005	4005	685.7
1x400 RM	1	42.0	419.7	4713	4713	4914	4914	778.6
1x500 RM	1	46.8	467.5	5909	5909	6161	6161	967.2
1x630 RM	1	51.1	511.1	7411	7411	7700	7700	1101.1

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

6. SHIELDED, ARMOURED WITH STEEL GALVANIZED TAPES*

IEC 60502-1

6.2 Cables sheathed with cross-linked highly elastic compound



- **TOFLEX REBRng(A)**
- **TOFLEX GREBRng(A)**
- **TOFLEX AREBRng(A)**
- **Cu/HEPR/OSCR/HFFR/STA/ XLFR, Al/HEPR/OSCR/HFFR/STA/ XLFR**

Possible options:

«ng(A)-HL»	
«ng(A)-HF»	(Cu/HEPR/OSCR/HFFR/STA/XLHFFR, Al/HEPR/OSCR/HFFR/STA/XLHFFR)
«ng(A)-HF-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GREBR) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑤ **Separation layer** – corresponds to the type of the outer sheath.
⑥ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).
⑦ **Outer sheath:**
- **«ng(A)»** – made from cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX REBRng(A)-HL3×95RM(N,G)-1 IEC 60502-1»
«TOFLEX REBRng(A)-HL3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX REBRng(A)	TOFLEX REBRng(A)-HL	TOFLEX REBRng(A)-HF	TOFLEX REBRng(A)-HF	
2x1,5 RE	1	15.3	114.8	415	415	415	415	169.5
2x2,5 RE	1	16.1	120.8	468	468	468	468	186.4
2x4 RE	1	17.0	127.7	537	537	537	537	206.6
2x6 RE	1	18.0	135.2	613	613	613	613	229.3
2x10 RE	1	19.6	146.9	758	758	758	758	266.3
2x16 RE	1	21.5	161.1	962	962	962	962	314.0
2x16 RM	1	22.4	167.9	1014	1014	1014	1014	337.6
2x25 RE	1	24.9	186.6	1320	1320	1320	1320	418.4
2x25 RM	1	25.6	191.9	1370	1370	1370	1370	439.3
2x35 RM	1	27.6	206.9	1658	1658	1658	1658	501.2
2x50 RM	1	31.0	232.4	2193	2193	2193	2193	624.1
2x70 RM	1	36.2	271.4	3003	3003	3003	3003	834.1
2x95 RM	1	40.4	302.9	3820	3820	3820	3820	1024.8
2x120 RM	1	43.2	323.9	4528	4528	4528	4528	1152.1
2x150 RM	1	48.4	362.9	5604	5604	5604	5604	1465.4
2x185 RM	1	53.2	398.9	7041	7041	7041	7041	1709.7
2x240 RM	1	60.0	449.9	8882	8882	8882	8882	2182.2
3x1,5 RE	1	15.8	118.5	444	444	444	444	178.9
3x2,5 RE	1	16.7	125.0	507	507	507	507	196.8
3x4 RE	1	17.7	132.4	584	584	584	584	217.9
3x6 RE	1	18.7	140.5	684	684	684	684	241.4
3x10 RE	1	20.4	153.0	864	864	864	864	279.4
3x16 RE	1	22.4	168.4	1121	1121	1121	1121	327.7
3x16 RM	1	23.4	175.6	1174	1174	1174	1174	351.4
3x25 RE	1	26.1	195.5	1558	1558	1558	1558	436.0
3x25 RM	1	26.8	201.2	1611	1611	1611	1611	456.9
4x1,5 RE	1	16.7	125.1	490	490	490	490	196.4
4x2,5 RE	1	17.6	132.3	561	561	561	561	216.6
4x4 RE	1	18.8	140.6	661	661	661	661	240.5
4x6 RE	1	20.0	149.7	784	784	784	784	266.9
4x10 RE	1	21.8	163.8	1005	1005	1005	1005	309.4
4x16 RE	1	24.5	183.9	1355	1355	1355	1355	379.1
4x16 RM	1	25.6	192.1	1414	1414	1414	1414	406.1
4x25 RE	1	28.1	211.0	1861	1861	1861	1861	484.8
4x25 RM	1	29.0	217.4	1922	1922	1922	1922	507.9
4x35 RM	1	31.4	235.4	2384	2384	2384	2384	575.4
4x50 RM	1	37.5	281.2	3527	3527	3527	3527	812.9
4x70 RM	1	41.3	310.1	4399	4399	4399	4399	946.6
4x95 RM	1	48.0	360.1	5906	5906	5906	5906	1281.6
4x120 RM	1	51.4	385.4	7088	7088	7088	7088	1423.2
4x150 RM	1	57.5	431.4	9008	9008	9008	9008	1746.4
4x185 RM	1	62.7	470.5	10892	10892	10892	10892	2056.8
4x240 RM	1	70.2	526.8	13679	13679	13679	13679	2554.8
5x1,5 RE	1	17.7	132.4	542	542	542	542	216.2
5x2,5 RE	1	18.7	140.5	632	632	632	632	239.3
5x4 RE	1	20.0	149.8	753	753	753	753	266.3
5x6 RE	1	21.3	159.9	907	907	907	907	296.3
5x10 RE	1	23.4	175.7	1173	1173	1173	1173	344.4
5x16 RE	1	26.4	198.0	1590	1590	1590	1590	422.2

5x16 RM	1	27.6	207.1	1658	1658	1658	1658	452.6
5x25 RE	1	30.4	228.3	2214	2214	2214	2214	542.8
5x25 RM	1	31.4	235.4	2284	2284	2284	2284	568.7
5x35 RM	1	36.1	270.7	3134	3134	3134	3134	737.7
5x50 RM	1	40.7	305.1	4222	4222	4222	4222	909.9
5x70 RM	1	46.2	346.5	5493	5493	5493	5493	1148.3
5x95 RM	1	53.1	398.0	7482	7482	7482	7482	1441.7
5x120 RM	1	57.9	433.9	9107	9107	9107	9107	1692.0
5x150 RM	1	63.1	473.3	10917	10917	10917	10917	1994.0
5x185 RM	1	69.5	521.3	13473	13473	13473	13473	2417.3
5x240 RM	1	77.6	582.0	16788	16788	16788	16788	2961.0

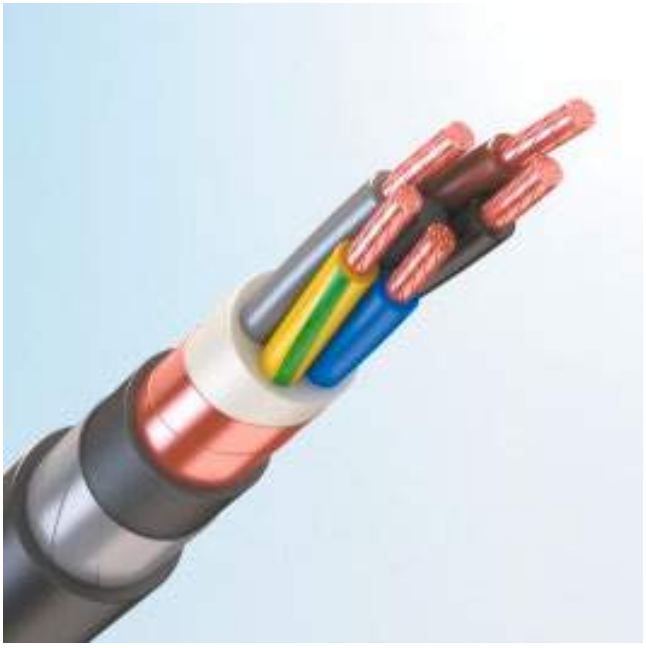
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX REBaRng(A)	TOFLEX REBaRng(A)-HL	TOFLEX REBaRng(A)-HF	TOFLEX REBaRng(A)-HF-HL	
1x1,5 RE	1	14.6	146.0	307	307	307	307	132.6
1x2,5 RE	1	14.6	146.0	316	316	316	316	131.5
1x4 RE	1	14.6	146.0	328	328	328	328	129.8
1x6 RE	1	14.6	146.0	344	344	344	344	127.7
1x10 RE	1	15.3	152.8	399	399	399	399	137.4
1x16 RE	1	16.2	162.3	483	483	483	483	151.6
1x16 RM	1	16.7	166.8	499	499	499	499	158.3
1x25 RE	1	17.7	177.3	612	612	612	612	177.4
1x25 RM	1	18.1	180.8	627	627	627	627	182.9
1x35 RM	1	19.1	190.8	737	737	737	737	198.4
1x50 RM	1	20.8	207.8	947	947	947	947	229.9
1x70 RM	1	22.4	223.8	1151	1151	1151	1151	255.7
1x95 RM	1	24.9	248.8	1477	1477	1477	1477	312.1
1x120 RM	1	26.3	262.8	1752	1752	1752	1752	336.4
1x150 RM	1	28.1	280.8	2069	2069	2069	2069	376.4
1x185 RM	1	30.1	300.8	2470	2470	2470	2470	422.0
1x240 RM	1	32.8	327.8	3037	3037	3037	3037	483.2
1x300 RM	1	38.6	386.3	3930	3930	3930	3930	685.7
1x400 RM	1	42.0	419.7	4832	4832	4832	4832	778.6
1x500 RM	1	46.8	467.5	6055	6055	6055	6055	967.2
1x630 RM	1	51.1	511.1	7581	7581	7581	7581	1101.1

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

6. SHIELDED, ARMOURED WITH STEEL GALVANIZED TAPES*

IEC 60502-1

6.3 Cables sheathed with halogen-free polymer compound



- **TOFLEX REBPng(A)-HF**
- **TOFLEX GREBPng(A)-HF**
- **TOFLEX AREBPng(A)-HF**
- **Cu/HEPR/OSCR/HFFR/STA/HFFR, Al/HEPR/OSCR/HFFR/STA/HFFR**

Possible options:

«ng(A)-HF-HL»

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st,2nd class;
flexible copper (version GREBP) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑤ **Separation layer** – corresponds to the type of the outer sheath.
⑥ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).
⑦ **Outer sheath:**
- **«ng(A)-HF»** – made from halogen-free polymer compounds.
- **«ng(A)-HF-HL»** — made from cold-resistant halogen-free polymer compounds.

Ordering example:

«TOFLEX REBPng(A)-HF-HL3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX REBPng(A)-HF-HL3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REBPng(A)-HF	TOFLEX REBPng(A)-HF-HL	
2x1,5 RE	1	15.3	114.8	420	420	169.5
2x2,5 RE	1	16.1	120.8	474	474	186.4
2x4 RE	1	17.0	127.7	543	543	206.6
2x6 RE	1	18.0	135.2	620	620	229.3
2x10 RE	1	19.6	146.9	766	766	266.3
2x16 RE	1	21.5	161.1	971	971	314.0
2x16 RM	1	22.4	167.9	1023	1023	337.6
2x25 RE	1	24.9	186.6	1330	1330	418.4
2x25 RM	1	25.6	191.9	1380	1380	439.3
2x35 RM	1	27.6	206.9	1670	1670	501.2
2x50 RM	1	31.0	232.4	2206	2206	624.1
2x70 RM	1	36.2	271.4	3021	3021	834.1
2x95 RM	1	40.4	302.9	3841	3841	1024.8
2x120 RM	1	43.2	323.9	4551	4551	1152.1
2x150 RM	1	48.4	362.9	5633	5633	1465.4
2x185 RM	1	53.2	398.9	7074	7074	1709.7
2x240 RM	1	60.0	449.9	8924	8924	2182.2
3x1,5 RE	1	15.8	118.5	449	449	178.9
3x2,5 RE	1	16.7	125.0	513	513	196.8
3x4 RE	1	17.7	132.4	590	590	217.9
3x6 RE	1	18.7	140.5	691	691	241.4
3x10 RE	1	20.4	153.0	872	872	279.4
3x16 RE	1	22.4	168.4	1130	1130	327.7
3x16 RM	1	23.4	175.6	1183	1183	351.4
3x25 RE	1	26.1	195.5	1569	1569	436.0
3x25 RM	1	26.8	201.2	1622	1622	456.9
3x35 RM	1	29.0	217.3	1992	1992	518.1
3x50 RM	1	33.0	247.7	2710	2710	664.2
3x70 RM	1	38.1	285.5	3647	3647	854.6
3x95 RM	1	42.6	319.4	4682	4682	1045.9
3x120 RM	1	46.8	351.0	5766	5766	1257.7
3x150 RM	1	51.1	383.0	6936	6936	1488.2
3x185 RM	1	57.2	428.7	8869	8869	1822.9
3x240 RM	1	63.4	475.3	11006	11006	2206.0
4x1,5 RE	1	16.7	125.1	496	496	196.4
4x2,5 RE	1	17.6	132.3	568	568	216.6
4x4 RE	1	18.8	140.6	668	668	240.5
4x6 RE	1	20.0	149.7	791	791	266.9
4x10 RE	1	21.8	163.8	1014	1014	309.4
4x16 RE	1	24.5	183.9	1364	1364	379.1
4x16 RM	1	25.6	192.1	1425	1425	406.1
4x25 RE	1	28.1	211.0	1873	1873	484.8
4x25 RM	1	29.0	217.4	1934	1934	507.9
4x35 RM	1	31.4	235.4	2397	2397	575.4
4x50 RM	1	37.5	281.2	3546	3546	812.9
4x70 RM	1	41.3	310.1	4421	4421	946.6
4x95 RM	1	48.0	360.1	5935	5935	1281.6
4x120 RM	1	51.4	385.4	7120	7120	1423.2
4x150 RM	1	57.5	431.4	9048	9048	1746.4

4x185 RM	1	62.7	470.5	10936	10936	2056.8
4x240 RM	1	70.2	526.8	13729	13729	2554.8
5x1,5 RE	1	17.7	132.4	549	549	216.2
5x2,5 RE	1	18.7	140.5	639	639	239.3
5x4 RE	1	20.0	149.8	761	761	266.3
5x6 RE	1	21.3	159.9	916	916	296.3
5x10 RE	1	23.4	175.7	1183	1183	344.4
5x16 RE	1	26.4	198.0	1601	1601	422.2
5x16 RM	1	27.6	207.1	1669	1669	452.6
5x25 RE	1	30.4	228.3	2227	2227	542.8
5x25 RM	1	31.4	235.4	2297	2297	568.7
5x35 RM	1	36.1	270.7	3152	3152	737.7
5x50 RM	1	40.7	305.1	4243	4243	909.9
5x70 RM	1	46.2	346.5	5521	5521	1148.3
5x95 RM	1	53.1	398.0	7514	7514	1441.7
5x120 RM	1	57.9	433.9	9148	9148	1692.0
5x150 RM	1	63.1	473.3	10962	10962	1994.0
5x185 RM	1	69.5	521.3	13522	13522	2417.3
5x240 RM	1	77.6	582.0	16851	16851	2961.0

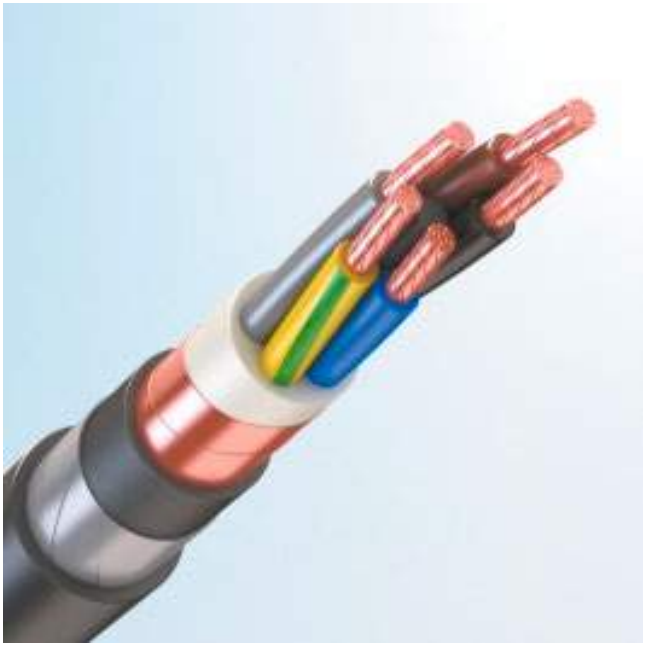
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REBaPng(A)-HF	TOFLEX REBaPng(A)-HF-HL	
1x1,5 RE	1	14.6	146.0	314	314	132.6
1x2,5 RE	1	14.6	146.0	322	322	131.5
1x4 RE	1	14.6	146.0	333	333	129.8
1x6 RE	1	14.6	146.0	348	348	127.7
1x10 RE	1	15.3	152.8	404	404	137.4
1x16 RE	1	16.2	162.3	488	488	151.6
1x16 RM	1	16.7	166.8	504	504	158.3
1x25 RE	1	17.7	177.3	617	617	177.4
1x25 RM	1	18.1	180.8	633	633	182.9
1x35 RM	1	19.1	190.8	744	744	198.4
1x50 RM	1	20.8	207.8	954	954	229.9
1x70 RM	1	22.4	223.8	1158	1158	255.7
1x95 RM	1	24.9	248.8	1486	1486	312.1
1x120 RM	1	26.3	262.8	1761	1761	336.4
1x150 RM	1	28.1	280.8	2079	2079	376.4
1x185 RM	1	30.1	300.8	2481	2481	422.0
1x240 RM	1	32.8	327.8	3050	3050	483.2
1x300 RM	1	38.6	386.3	3949	3949	685.7
1x400 RM	1	42.0	419.7	4852	4852	778.6
1x500 RM	1	46.8	467.5	6082	6082	967.2
1x630 RM	1	51.1	511.1	7610	7610	1101.1

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

6. SHIELDED, ARMOURED WITH STEEL GALVANIZED TAPES*

IEC 60502-1

6.4 Cables sheathed with thermoplastic polyurethane elastomer



- **TOFLEX REBTng(A)**
- **TOFLEX GREBTng(A)**
- **TOFLEX AREBTng(A)**
- **Cu/HEPR/OSCR/ TPE /STA/ TPU, Al/HEPR/OSCR/ TPE /STA/ TPU**

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class;
flexible copper (version GREBT) of 5th class.

② **Insulation** – hard grade ethylene propylene rubber (HEPR).

③ **Inner sheath** – corresponds to the type of the outer sheath.

④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.

⑤ **Separation layer** – corresponds to the type of the outer sheath.

⑥ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).

⑦ **Outer sheath:**

- **«ng(A)»** — made from thermoplastic polyurethane elastomer.

Ordering example:

«TOFLEX REBTng(A)3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX REBTng(A)3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire, kg	Amount of combustible materials, l/km
				TOFLEX REBTng(A)	
2x1,5 RE	1	15.3	114.8	379	169.5
2x2,5 RE	1	16.1	120.8	429	186.4
2x4 RE	1	17.0	127.7	493	206.6
2x6 RE	1	18.0	135.2	565	229.3
2x10 RE	1	19.6	146.9	701	266.3
2x16 RE	1	21.5	161.1	894	314.0
2x16 RM	1	22.4	167.9	940	337.6
2x25 RE	1	24.9	186.6	1226	418.4
2x25 RM	1	25.6	191.9	1271	439.3
2x35 RM	1	27.6	206.9	1545	501.2
2x50 RM	1	31.0	232.4	2051	624.1
2x70 RM	1	36.2	271.4	2810	834.1
2x95 RM	1	40.4	302.9	3582	1024.8
2x120 RM	1	43.2	323.9	4257	1152.1
2x150 RM	1	48.4	362.9	5260	1465.4
2x185 RM	1	53.2	398.9	6639	1709.7
2x240 RM	1	60.0	449.9	8369	2182.2
3x1,5 RE	1	15.8	118.5	408	178.9
3x2,5 RE	1	16.7	125.0	468	196.8
3x4 RE	1	17.7	132.4	541	217.9
3x6 RE	1	18.7	140.5	636	241.4
3x10 RE	1	20.4	153.0	808	279.4
3x16 RE	1	22.4	168.4	1056	327.7
3x16 RM	1	23.4	175.6	1103	351.4
3x25 RE	1	26.1	195.5	1470	436.0
3x25 RM	1	26.8	201.2	1518	456.9
3x35 RM	1	29.0	217.3	1873	518.1
3x50 RM	1	33.0	247.7	2564	664.2
3x70 RM	1	38.1	285.5	3449	854.6
3x95 RM	1	42.6	319.4	4441	1045.9
3x120 RM	1	46.8	351.0	5473	1257.7
3x150 RM	1	51.1	383.0	6590	1488.2
3x185 RM	1	57.2	428.7	8449	1822.9
3x240 RM	1	63.4	475.3	10495	2206.0
4x1,5 RE	1	16.7	125.1	452	196.4
4x2,5 RE	1	17.6	132.3	520	216.6
4x4 RE	1	18.8	140.6	615	240.5
4x6 RE	1	20.0	149.7	733	266.9
4x10 RE	1	21.8	163.8	947	309.4
4x16 RE	1	24.5	183.9	1280	379.1
4x16 RM	1	25.6	192.1	1334	406.1
4x25 RE	1	28.1	211.0	1768	484.8
4x25 RM	1	29.0	217.4	1824	507.9
4x35 RM	1	31.4	235.4	2272	575.4
4x50 RM	1	37.5	281.2	3368	812.9
4x70 RM	1	41.3	310.1	4211	946.6
4x95 RM	1	48.0	360.1	5651	1281.6
4x120 RM	1	51.4	385.4	6803	1423.2
4x150 RM	1	57.5	431.4	8663	1746.4

4x185 RM	1	62.7	470.5	10484	2056.8
4x240 RM	1	70.2	526.8	13157	2554.8
5x1,5 RE	1	17.7	132.4	502	216.2
5x2,5 RE	1	18.7	140.5	588	239.3
5x4 RE	1	20.0	149.8	704	266.3
5x6 RE	1	21.3	159.9	853	296.3
5x10 RE	1	23.4	175.7	1110	344.4
5x16 RE	1	26.4	198.0	1510	422.2
5x16 RM	1	27.6	207.1	1571	452.6
5x25 RE	1	30.4	228.3	2113	542.8
5x25 RM	1	31.4	235.4	2178	568.7
5x35 RM	1	36.1	270.7	2992	737.7
5x50 RM	1	40.7	305.1	4050	909.9
5x70 RM	1	46.2	346.5	5274	1148.3
5x95 RM	1	53.1	398.0	7204	1441.7
5x120 RM	1	57.9	433.9	8782	1692.0
5x150 RM	1	63.1	473.3	10533	1994.0
5x185 RM	1	69.5	521.3	12995	2417.3
5x240 RM	1	77.6	582.0	16216	2961.0

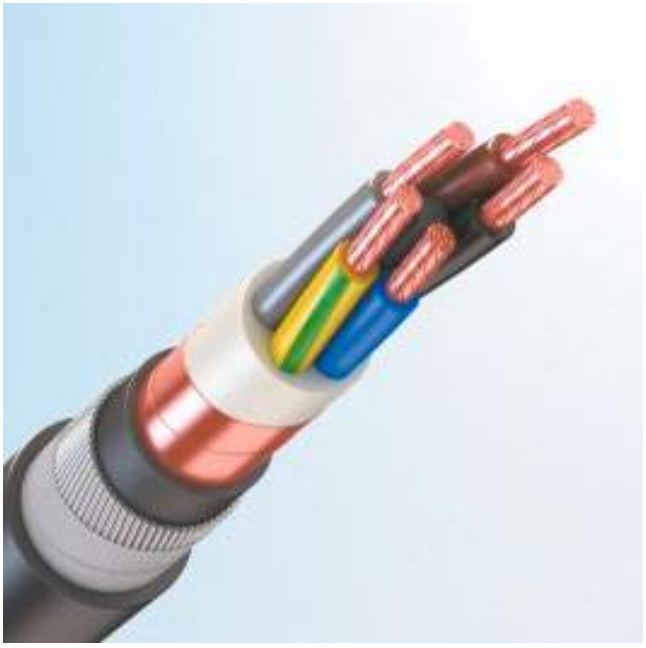
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire, kg	Amount of combustible materials, l/km
				TOFLEX REBaTng(A)	
1x1,5 RE	1	14.6	146.0	285	132.6
1x2,5 RE	1	14.6	146.0	293	131.5
1x4 RE	1	14.6	146.0	303	129.8
1x6 RE	1	14.6	146.0	318	127.7
1x10 RE	1	15.3	152.8	372	137.4
1x16 RE	1	16.2	162.3	453	151.6
1x16 RM	1	16.7	166.8	468	158.3
1x25 RE	1	17.7	177.3	578	177.4
1x25 RM	1	18.1	180.8	593	182.9
1x35 RM	1	19.1	190.8	700	198.4
1x50 RM	1	20.8	207.8	906	229.9
1x70 RM	1	22.4	223.8	1105	255.7
1x95 RM	1	24.9	248.8	1422	312.1
1x120 RM	1	26.3	262.8	1693	336.4
1x150 RM	1	28.1	280.8	2005	376.4
1x185 RM	1	30.1	300.8	2400	422.0
1x240 RM	1	32.8	327.8	2961	483.2
1x300 RM	1	38.6	386.3	3822	685.7
1x400 RM	1	42.0	419.7	4713	778.6
1x500 RM	1	46.8	467.5	5909	967.2
1x630 RM	1	51.1	511.1	7411	1101.1

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

7. SHIELDED, ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1

7.1 Cables with PVC sheath



- **TOFLEX REKVng(A)**
- **TOFLEX GREKVng(A)**
- **TOFLEX AREKVng(A)**
- **Cu/HEPR/OSCR/PVC/SWA/PVC, Al/HEPR/OSCR/PVC/SWA/PVC**

Possible options:

«ng(A)-HL»	
«ng(A)-LS»	(Cu/HEPR/OSCR/LSPVC/SWA/LSPVC, Al/HEPR/OSCR/LSPVC/SWA/LSPVC)
«ng(A)-LS-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GREKV) of 5th class (according to IEC 60228).
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑤ **Separation layer** – corresponds to the type of the outer sheath.
⑥ **Armour** – steel galvanized wires.
⑦ **Outer sheath:**
- **«ng(A)»** – made from PVC-compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant PVC-compound with low fire hazard.
- **«ng(A)-LS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-LS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX REKVng(A)-LS 3×95RM(N,G)-1 IEC 60502-1»
«TOFLEX REKVng(A)-LS 3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

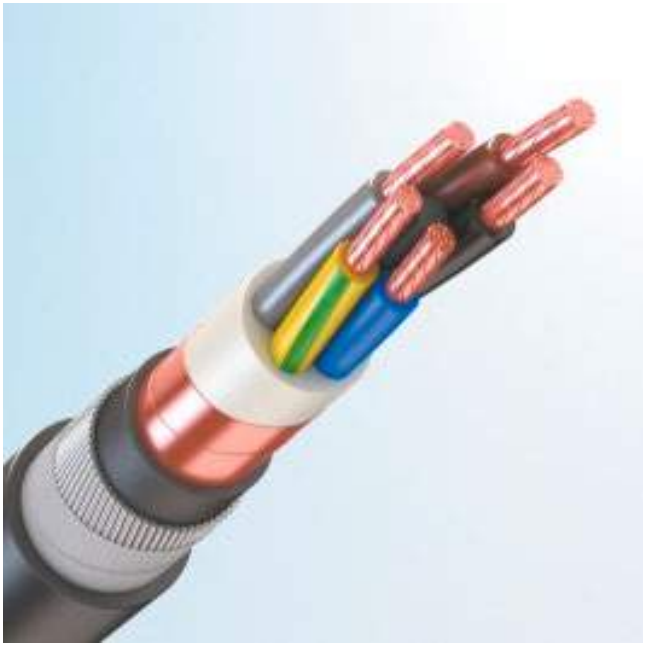
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX REKVng(A)	TOFLEX REKVng(A)-HL	TOFLEX REKVng(A)-LS	TOFLEX REKVng(A)-LS-HL	
2x1,5 RE	1	17.3	129.5	607	607	669	669	181.0
2x2,5 RE	1	18.1	135.5	670	670	738	738	198.0
2x4 RE	1	19.0	142.4	755	755	829	829	218.1
2x6 RE	1	20.0	149.9	844	844	926	926	240.8
2x10 RE	1	22.3	167.6	1153	1153	1250	1250	282.5
2x16 RE	1	24.6	184.8	1424	1424	1543	1543	346.2
2x16 RM	1	25.5	191.6	1498	1498	1625	1625	370.4
2x25 RE	1	27.6	207.3	1815	1815	1962	1962	436.4
2x25 RM	1	28.3	212.6	1871	1871	2025	2025	457.3
2x35 RM	1	30.3	227.6	2198	2198	2373	2373	519.3
2x50 RM	1	35.3	265.1	3119	3119	3353	3353	693.0
3x1,5 RE	1	17.8	133.2	641	641	705	705	190.4
3x2,5 RE	1	18.6	139.7	723	723	792	792	208.3
3x4 RE	1	19.6	147.1	813	813	888	888	229.4
3x6 RE	1	20.7	155.2	929	929	1011	1011	252.9
3x10 RE	1	23.2	173.7	1288	1288	1384	1384	295.6
3x16 RE	1	25.6	192.1	1613	1613	1730	1730	360.5
3x16 RM	1	26.6	199.3	1688	1688	1813	1813	384.8
3x25 RE	1	28.8	216.2	2083	2083	2227	2227	454.0
3x25 RM	1	29.6	221.9	2160	2160	2310	2310	474.9
3x50 RM	1	37.4	280.4	3700	3700	3932	3932	735.8
4x1,5 RE	1	18.6	139.8	708	708	775	775	207.9
4x2,5 RE	1	19.6	147.0	792	792	865	865	228.2
4x4 RE	1	20.7	155.3	908	908	988	988	252.0
4x6 RE	1	22.7	170.4	1200	1200	1289	1289	283.1
4x10 RE	1	25.0	187.5	1491	1491	1599	1599	341.9
4x16 RE	1	27.3	204.6	1854	1854	1979	1979	397.1
4x16 RM	1	28.4	212.8	1934	1934	2067	2067	424.1
4x25 RE	1	30.9	231.7	2434	2434	2586	2586	502.8
4x35 RM	1	35.8	268.1	3338	3338	3538	3538	644.8
4x70 RM	1	46.3	347.3	5889	5889	6211	6211	1039.2
5x1,5 RE	1	19.6	147.1	774	774	846	846	227.7
5x2,5 RE	1	20.7	155.2	881	881	959	959	250.8
5x4 RE	1	22.7	170.5	1171	1171	1258	1258	282.5
5x6 RE	1	24.5	183.6	1384	1384	1486	1486	328.4
5x10 RE	1	26.6	199.4	1695	1695	1812	1812	377.9
5x16 RE	1	29.2	218.7	2138	2138	2272	2272	440.2
5x16 RM	1	30.4	227.8	2224	2224	2367	2367	470.6
5x25 RE	1	34.8	261.0	3158	3158	3343	3343	611.0
5x25 RM	1	35.8	268.1	3244	3244	3437	3437	638.1

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

7. SHIELDED, ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1

7.2 Cables sheathed with cross-linked highly elastic polymer compound



- **TOFLEX REKRng(A)**
- **TOFLEX GREKRng(A)**
- **TOFLEX AREKRng(A)**
- **Cu/HEPR/OSCR/HFFR/SWA/XLFR, Al/HEPR/OSCR/HFFR/SWA/XLFR**

Possible options:

«ng(A)-HL»	
«ng(A)-HF»	(Cu/HEPR/OSCR/HFFR/SWA/XLHFFR, Al/HEPR/OSCR/HFFR/SWA/XLHFFR)
«ng(A)-HF-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; flexible copper (version GREKR) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑤ **Separation layer** – corresponds to the type of the outer sheath.
⑥ **Armour** – steel galvanized wires.
⑦ **Outer sheath:**
- **«ng(A)»** – made from cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX REKRng(A)-HL3×95RM(N,G)-1 IEC 60502-1»
«TOFLEX REKRng(A)-HL3×95/50RM(N,G)-1 IEC 60502-1»

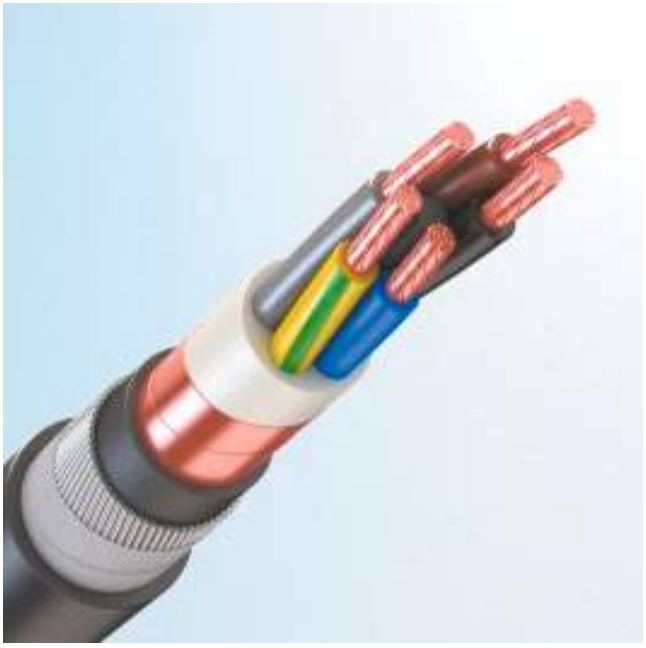
CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX REKRng(A)	TOFLEX REKRng(A)-HL	TOFLEX REKRng(A)-HF	TOFLEX REKRng(A)-HF-HL	
2x1,5 RE	1	17.3	129.5	624	624	624	624	181.0
2x2,5 RE	1	18.1	135.5	689	689	689	689	198.0
2x4 RE	1	19.0	142.4	778	778	778	778	218.1
2x6 RE	1	20.0	149.9	871	871	871	871	240.8
2x10 RE	1	22.3	167.6	1187	1187	1187	1187	282.5
2x16 RE	1	24.6	184.8	1466	1466	1466	1466	346.2
2x16 RM	1	25.5	191.6	1545	1545	1545	1545	370.4
2x25 RE	1	27.6	207.3	1873	1873	1873	1873	436.4
2x25 RM	1	28.3	212.6	1934	1934	1934	1934	457.3
2x35 RM	1	30.3	227.6	2273	2273	2273	2273	519.3
2x50 RM	1	35.3	265.1	3216	3216	3216	3216	693.0
3x1,5 RE	1	17.8	133.2	658	658	658	658	190.4
3x2,5 RE	1	18.6	139.7	742	742	742	742	208.3
3x4 RE	1	19.6	147.1	835	835	835	835	229.4
3x6 RE	1	20.7	155.2	955	955	955	955	252.9
3x10 RE	1	23.2	173.7	1320	1320	1320	1320	295.6
3x16 RE	1	25.6	192.1	1652	1652	1652	1652	360.5
3x16 RM	1	26.6	199.3	1731	1731	1731	1731	384.8
3x25 RE	1	28.8	216.2	2135	2135	2135	2135	454.0
3x25 RM	1	29.6	221.9	2216	2216	2216	2216	474.9
3x50 RM	1	37.4	280.4	3788	3788	3788	3788	735.8
4x1,5 RE	1	18.6	139.8	725	725	725	725	207.9
4x2,5 RE	1	19.6	147.0	813	813	813	813	228.2
4x4 RE	1	20.7	155.3	931	931	931	931	252.0
4x6 RE	1	22.7	170.4	1226	1226	1226	1226	283.1
4x10 RE	1	25.0	187.5	1524	1524	1524	1524	341.9
4x16 RE	1	27.3	204.6	1894	1894	1894	1894	397.1
4x16 RM	1	28.4	212.8	1979	1979	1979	1979	424.1
4x25 RE	1	30.9	231.7	2488	2488	2488	2488	502.8
4x35 RM	1	35.8	268.1	3404	3404	3404	3404	644.8
4x70 RM	1	46.3	347.3	6005	6005	6005	6005	1039.2
5x1,5 RE	1	19.6	147.1	793	793	793	793	227.7
5x2,5 RE	1	20.7	155.2	903	903	903	903	250.8
5x4 RE	1	22.7	170.5	1196	1196	1196	1196	282.5
5x6 RE	1	24.5	183.6	1412	1412	1412	1412	328.4
5x10 RE	1	26.6	199.4	1730	1730	1730	1730	377.9
5x16 RE	1	29.2	218.7	2182	2182	2182	2182	440.2
5x16 RM	1	30.4	227.8	2272	2272	2272	2272	470.6
5x25 RE	1	34.8	261.0	3215	3215	3215	3215	611.0
5x25 RM	1	35.8	268.1	3305	3305	3305	3305	638.1

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

7. SHIELDED, ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1



7.3 Cables sheathed with halogen-free polymer compound

- **TOFLEX REKPng(A)-HF**
- **TOFLEX GREKPng(A)-HF**
- **TOFLEX AREKPng(A)-HF**
- **Cu/HEPR/OSCR/HFFR/SWA/HFFR, Al/HEPR/OSCR/HFFR/SWA/HFFR**

Possible options:

«ng(A)-HF-HL»

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class;
flexible copper (version GREKP) of 5th class.

② **Insulation –** hard grade ethylene propylene rubber (HEPR).

③ **Inner sheath** – corresponds to the type of the outer sheath.

④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.

⑤ **Separation layer** – corresponds to the type of the outer sheath.

⑥ **Armour** – steel galvanized wires.

⑦ **Outer sheath:**

- **«ng(A)-HF»** – made from halogen-free polymer compounds.
- **«ng(A)-HF-HL»** — made from cold-resistant halogen-free polymer compounds.

Ordering example:

«TOFLEX REKPng(A)-HF-HL3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX REKPng(A)-HF-HL3×95/50RM(N,G)-1 IEC 60502-1»

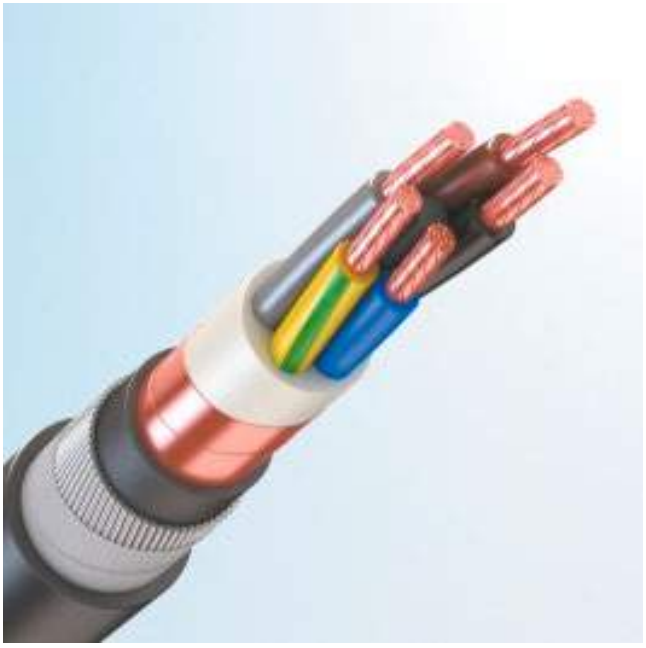
CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REKPng(A)-HF	TOFLEX REKPng(A)-HF-HL	
2x1,5 RE	1	17.3	129.5	638	638	181.0
2x2,5 RE	1	18.1	135.5	705	705	198.0
2x4 RE	1	19.0	142.4	794	794	218.1
2x6 RE	1	20.0	149.9	888	888	240.8
2x10 RE	1	22.3	167.6	1206	1206	282.5
2x16 RE	1	24.6	184.8	1490	1490	346.2
2x16 RM	1	25.5	191.6	1569	1569	370.4
2x25 RE	1	27.6	207.3	1900	1900	436.4
2x25 RM	1	28.3	212.6	1961	1961	457.3
2x35 RM	1	30.3	227.6	2303	2303	519.3
2x50 RM	1	35.3	265.1	3257	3257	693.0
3x1,5 RE	1	17.8	133.2	673	673	190.4
3x2,5 RE	1	18.6	139.7	758	758	208.3
3x4 RE	1	19.6	147.1	852	852	229.4
3x6 RE	1	20.7	155.2	973	973	252.9
3x10 RE	1	23.2	173.7	1340	1340	295.6
3x16 RE	1	25.6	192.1	1676	1676	360.5
3x16 RM	1	26.6	199.3	1756	1756	384.8
3x25 RE	1	28.8	216.2	2163	2163	454.0
3x25 RM	1	29.6	221.9	2245	2245	474.9
3x50 RM	1	37.4	280.4	3832	3832	735.8
4x1,5 RE	1	18.6	139.8	741	741	207.9
4x2,5 RE	1	19.6	147.0	829	829	228.2
4x4 RE	1	20.7	155.3	949	949	252.0
4x6 RE	1	22.7	170.4	1246	1246	283.1
4x10 RE	1	25.0	187.5	1548	1548	341.9
4x16 RE	1	27.3	204.6	1921	1921	397.1
4x16 RM	1	28.4	212.8	2006	2006	424.1
4x25 RE	1	30.9	231.7	2519	2519	502.8
4x35 RM	1	35.8	268.1	3446	3446	644.8
4x70 RM	1	46.3	347.3	6069	6069	1039
5x1,5 RE	1	19.6	147.1	810	810	227.7
5x2,5 RE	1	20.7	155.2	921	921	250.8
5x4 RE	1	22.7	170.5	1216	1216	282.5
5x6 RE	1	24.5	183.6	1436	1436	328.4
5x10 RE	1	26.6	199.4	1756	1756	377.9
5x16 RE	1	29.2	218.7	2210	2210	440.2
5x16 RM	1	30.4	227.8	2302	2302	470.6
5x25 RE	1	34.8	261.0	3255	3255	611.0
5x25 RM	1	35.8	268.1	3346	3346	638.1

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

7. SHIELDED, ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1



7.4 Cables sheathed with thermoplastic polyurethane elastomer

- **TOFLEX REKTng(A)**
- **TOFLEX GREKTng(A)**
- **TOFLEX AREKTng(A)**
- **Cu/HEPR/OSCR/ TPE /SWA/ TPU, Al/HEPR/OSCR/ TPE /SWA/ TPU**

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class;
flexible copper (version GREKT) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑤ **Separation layer** – corresponds to the type of the outer sheath.
⑥ **Armour** – steel galvanized wires.
⑦ **Outer sheath:**
- **«ng(A)»** — made from thermoplastic polyurethane elastomer.

Ordering example:

«TOFLEX REKTng(A)3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX REKTng(A)3×95/50RM(N,G)-1 IEC 60502-1»

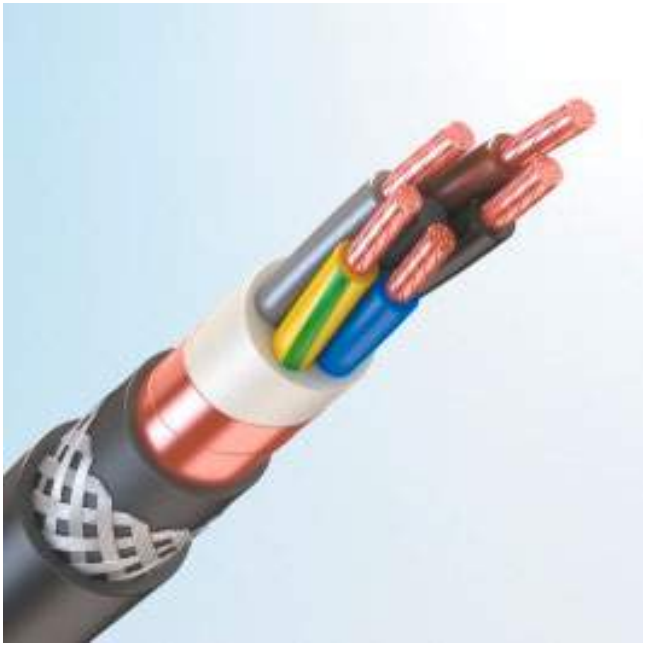
CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire, kg	Amount of combustible materials, l/km
				TOFLEX REKTng(A)	
2x1,5 RE	1	17.3	129.5	607	181.0
2x2,5 RE	1	18.1	135.5	670	198.0
2x4 RE	1	19.0	142.4	755	218.1
2x6 RE	1	20.0	149.9	844	240.8
2x10 RE	1	22.3	167.6	1153	282.5
2x16 RE	1	24.6	184.8	1424	346.2
2x16 RM	1	25.5	191.6	1498	370.4
2x25 RE	1	27.6	207.3	1815	436.4
2x25 RM	1	28.3	212.6	1871	457.3
2x35 RM	1	30.3	227.6	2198	519.3
2x50 RM	1	35.3	265.1	3119	693.0
3x1,5 RE	1	17.8	133.2	641	190.4
3x2,5 RE	1	18.6	139.7	723	208.3
3x4 RE	1	19.6	147.1	813	229.4
3x6 RE	1	20.7	155.2	929	252.9
3x10 RE	1	23.2	173.7	1288	295.6
3x16 RE	1	25.6	192.1	1613	360.5
3x16 RM	1	26.6	199.3	1688	384.8
3x25 RE	1	28.8	216.2	2083	454.0
3x25 RM	1	29.6	221.9	2160	474.9
3x50 RM	1	37.4	280.4	3700	735.8
4x1,5 RE	1	18.6	139.8	708	207.9
4x2,5 RE	1	19.6	147.0	792	228.2
4x4 RE	1	20.7	155.3	908	252.0
4x6 RE	1	22.7	170.4	1200	283.1
4x10 RE	1	25.0	187.5	1491	341.9
4x16 RE	1	27.3	204.6	1854	397.1
4x16 RM	1	28.4	212.8	1934	424.1
4x25 RE	1	30.9	231.7	2434	502.8
4x35 RM	1	35.8	268.1	3338	644.8
4x70 RM	1	46.3	347.3	5889	1039.2
5x1,5 RE	1	19.6	147.1	774	227.7
5x2,5 RE	1	20.7	155.2	881	250.8
5x4 RE	1	22.7	170.5	1171	282.5
5x6 RE	1	24.5	183.6	1384	328.4
5x10 RE	1	26.6	199.4	1695	377.9
5x16 RE	1	29.2	218.7	2138	440.2
5x16 RM	1	30.4	227.8	2224	470.6
5x25 RE	1	34.8	261.0	3158	611.0
5x25 RM	1	35.8	268.1	3244	638.1

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

8. SHIELDED, ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1



8.1 Cables with PVC sheath

- **TOFLEX REPVng(A)**
- **TOFLEX GREPVng(A)**
- **TOFLEX AREPVng(A)**
- **Cu/HEPR/OSCR/PVC/SWB/PVC, Al/HEPR/OSCR/PVC/SWB/PVC**

Possible options:

«ng(A)-HL»	
«ng(A)-LS»	(Cu/HEPR/OSCR/LSPVC/SWB/LSPVC, Al/HEPR/OSCR/LSPVC/SWB/LSPVC)
«ng(A)-LS-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GREPV) of 5th class (according to IEC 60228).
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑤ **Separation layer** – corresponds to the type of the outer sheath.
⑥ **Armour** – with full lay-up from galvanized steel wires.
⑦ **Outer sheath:**

- **«ng(A)»** – made from PVC-compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant PVC-compound with low fire hazard.
- **«ng(A)-LS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-LS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX REPVng(A)-LS 3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX REPVng(A)-LS 3×95/95RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX REPVng(A)	TOFLEX REPVng(A)-HL	TOFLEX REPVng(A)-LS	TOFLEX REPVng(A)-LS-HL	
2x1,5 RE	1	15.7	117.8	382	382	434	434	171.8
2x2,5 RE	1	16.5	123.8	431	431	489	489	188.8
2x4 RE	1	17.4	130.7	495	495	559	559	208.9
2x6 RE	1	18.4	138.2	572	572	643	643	231.6
2x10 RE	1	20.0	149.9	709	709	791	791	268.6
2x16 RE	1	21.9	164.1	902	902	1000	1000	316.4
2x16 RM	1	22.8	170.9	948	948	1054	1054	340.0
2x25 RE	1	25.3	189.6	1235	1235	1364	1364	421.0
2x25 RM	1	26.0	194.9	1280	1280	1416	1416	441.9
2x35 RM	1	28.0	209.9	1554	1554	1710	1710	503.9
2x50 RM	1	31.4	235.4	2061	2061	2254	2254	626.7
2x70 RM	1	36.2	271.4	2706	2706	2967	2967	834.1
2x95 RM	1	40.4	302.9	3463	3463	3784	3784	1024.8
2x120 RM	1	43.2	323.9	4129	4129	4492	4492	1152.1
2x150 RM	1	48.4	362.9	5117	5117	5579	5579	1465.4
2x185 RM	1	52.4	392.9	6136	6136	6671	6671	1702.4
3x1,5 RE	1	16.2	121.5	411	411	463	463	181.2
3x2,5 RE	1	17.1	128.0	470	470	528	528	199.1
3x4 RE	1	18.1	135.4	548	548	612	612	220.2
3x6 RE	1	19.1	143.5	644	644	715	715	243.7
3x10 RE	1	20.8	156.0	816	816	898	898	281.7
3x16 RE	1	22.8	171.4	1064	1064	1160	1160	330.1
3x16 RM	1	24.2	181.6	1135	1135	1242	1242	369.4
3x25 RE	1	26.5	198.5	1478	1478	1604	1604	438.6
3x25 RM	1	27.2	204.2	1527	1527	1659	1659	459.5
3x35 RM	1	29.4	220.3	1882	1882	2032	2032	520.7
3x50 RM	1	33.4	250.7	2574	2574	2765	2765	666.8
3x70 RM	1	38.1	285.5	3338	3338	3586	3586	854.6
3x95 RM	1	42.6	319.4	4314	4314	4616	4616	1045.9
3x120 RM	1	46.8	351.0	5335	5335	5702	5702	1257.7
3x150 RM	1	51.1	383.0	6437	6437	6870	6870	1488.2
4x1,5 RE	1	17.1	128.1	455	455	511	511	198.7
4x2,5 RE	1	18.0	135.3	527	527	589	589	219.0
4x4 RE	1	19.2	143.6	623	623	691	691	242.8
4x6 RE	1	20.4	152.7	741	741	816	816	269.3
4x10 RE	1	22.2	166.8	955	955	1042	1042	311.8
4x16 RE	1	24.9	186.9	1289	1289	1396	1396	381.7
4x16 RM	1	26.0	195.1	1343	1343	1458	1458	408.7
4x25 RE	1	28.5	214.0	1777	1777	1910	1910	487.4
4x25 RM	1	29.4	220.4	1833	1833	1973	1973	510.5
4x35 RM	1	31.8	238.4	2281	2281	2440	2440	578.0
4x50 RM	1	37.5	281.2	3259	3259	3483	3483	812.9
4x70 RM	1	41.3	310.1	4089	4089	4352	4352	946.6
4x95 RM	1	48.0	360.1	5509	5509	5866	5866	1281.6
4x120 RM	1	51.4	385.4	6649	6649	7048	7048	1423.2
5x1,5 RE	1	18.1	135.4	509	509	570	570	218.5
5x2,5 RE	1	19.1	143.5	595	595	662	662	241.6
5x4 RE	1	20.4	152.8	712	712	786	786	268.7
5x6 RE	1	21.7	162.9	861	861	942	942	298.7

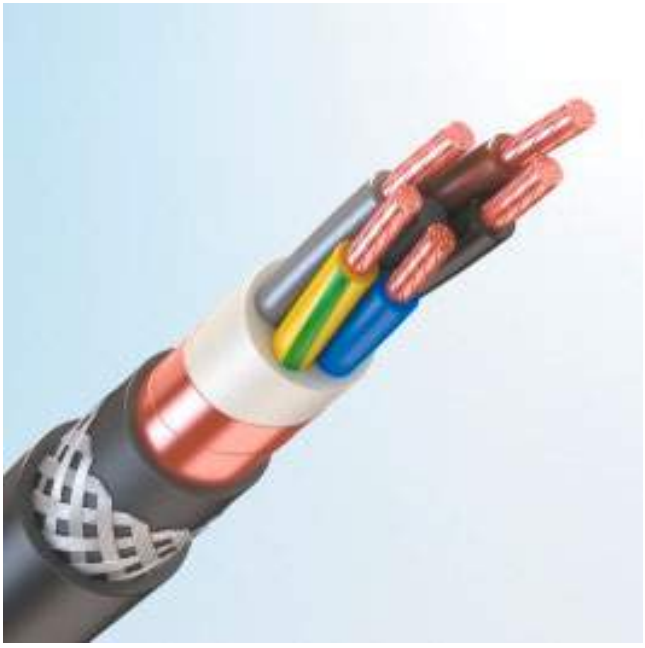
5x10 RE	1	24.2	181.7	1142	1142	1241	1241	362.5
5x16 RE	1	26.8	201.0	1519	1519	1635	1635	424.8
5x16 RM	1	28.0	210.1	1580	1580	1705	1705	455.2
5x25 RE	1	30.8	231.3	2123	2123	2267	2267	545.4
5x25 RM	1	31.8	238.4	2188	2188	2339	2339	571.3
5x35 RM	1	36.1	270.7	2888	2888	3090	3090	737.7
5x50 RM	1	40.7	305.1	3930	3930	4174	4174	909.9
5x70 RM	1	46.2	346.5	5138	5138	5451	5451	1148.3
5x95 RM	1	52.3	392.0	6702	6702	7090	7090	1434.3

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

8. SHIELDED, ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1

8.2 Cables sheathed with cross-linked highly elastic polymer compound



- **TOFLEX REPRng(A)**
- **TOFLEX GREPRng(A)**
- **TOFLEX AREPRng(A)**
- **Cu/HEPR/OSCR/HFFR/SWB/XLFR, Al/ HEPR/OSCR/HFFR/SWB/XLFR**

Possible options:

«ng(A)-HL»	
«ng(A)-HF»	(Cu/HEPR/OSCR/HFFR/SWB/XLHFFR, Al/HEPR/OSCR/HFFR/SWB/XLHFFR)
«ng(A)-HF-HL»	(materials as above)

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class; copper flexible (version GREPR) of 5th class.

② **Insulation** – hard grade ethylene propylene rubber (HEPR).

③ **Inner sheath** – corresponds to the type of the outer sheath.

④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.

⑤ **Separation layer** – corresponds to the type of the outer sheath.

⑥ **Armour** – with full lay-up from galvanized steel wires.

⑦ **Outer sheath:**

- **«ng(A)»** – made from cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HL»** – made from cold-resistant cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-HF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX REPRng(A)-HF3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX REPRng(A)-HF3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg				Amount of combustible materials, l/km
				TOFLEX REPRng(A)	TOFLEX REPRng(A)-HL	TOFLEX REPRng(A)-HF	TOFLEX REPRng(A)-HF-HL	
2x1,5 RE	1	15.7	117.8	393	393	393	393	171.8
2x2,5 RE	1	16.5	123.8	445	445	445	445	188.8
2x4 RE	1	17.4	130.7	512	512	512	512	208.9
2x6 RE	1	18.4	138.2	592	592	592	592	231.6
2x10 RE	1	20.0	149.9	735	735	735	735	268.6
2x16 RE	1	21.9	164.1	937	937	937	937	316.4
2x16 RM	1	22.8	170.9	987	987	987	987	340.0
2x25 RE	1	25.3	189.6	1283	1283	1283	1283	421.0
2x25 RM	1	26.0	194.9	1331	1331	1331	1331	441.9
2x35 RM	1	28.0	209.9	1617	1617	1617	1617	503.9
2x50 RM	1	31.4	235.4	2146	2146	2146	2146	626.7
2x70 RM	1	36.2	271.4	2820	2820	2820	2820	834.1
2x95 RM	1	40.4	302.9	3614	3614	3614	3614	1024.8
2x120 RM	1	43.2	323.9	4307	4307	4307	4307	1152.1
2x150 RM	1	48.4	362.9	5339	5339	5339	5339	1465.4
2x185 RM	1	52.4	392.9	6405	6405	6405	6405	1702.4
3x1,5 RE	1	16.2	121.5	421	421	421	421	181.2
3x2,5 RE	1	17.1	128.0	483	483	483	483	199.1
3x4 RE	1	18.1	135.4	564	564	564	564	220.2
3x6 RE	1	19.1	143.5	662	662	662	662	243.7
3x10 RE	1	20.8	156.0	840	840	840	840	281.7
3x16 RE	1	22.8	171.4	1095	1095	1095	1095	330.1
3x16 RM	1	24.2	181.6	1167	1167	1167	1167	369.4
3x25 RE	1	26.5	198.5	1519	1519	1519	1519	438.6
3x25 RM	1	27.2	204.2	1571	1571	1571	1571	459.5
3x35 RM	1	29.4	220.3	1936	1936	1936	1936	520.7
3x50 RM	1	33.4	250.7	2652	2652	2652	2652	666.8
3x70 RM	1	38.1	285.5	3434	3434	3434	3434	854.6
3x95 RM	1	42.6	319.4	4441	4441	4441	4441	1045.9
4x1,5 RE	1	17.1	128.1	466	466	466	466	198.7
4x2,5 RE	1	18.0	135.3	541	541	541	541	219.0
4x4 RE	1	19.2	143.6	639	639	639	639	242.8
4x6 RE	1	20.4	152.7	760	760	760	760	269.3
4x10 RE	1	22.2	166.8	980	980	980	980	311.8
4x16 RE	1	24.9	186.9	1318	1318	1318	1318	381.7
4x16 RM	1	26.0	195.1	1376	1376	1376	1376	408.7
4x25 RE	1	28.5	214.0	1819	1819	1819	1819	487.4
4x25 RM	1	29.4	220.4	1879	1879	1879	1879	510.5
4x35 RM	1	31.8	238.4	2337	2337	2337	2337	578.0
4x50 RM	1	37.5	281.2	3337	3337	3337	3337	812.9
4x70 RM	1	41.3	310.1	4188	4188	4188	4188	946.6
4x95 RM	1	48.0	360.1	5643	5643	5643	5643	1281.6
4x120 RM	1	51.4	385.4	6806	6806	6806	6806	1423.2
5x1,5 RE	1	18.1	135.4	522	522	522	522	218.5
5x2,5 RE	1	19.1	143.5	610	610	610	610	241.6
5x4 RE	1	20.4	152.8	730	730	730	730	268.7
5x6 RE	1	21.7	162.9	882	882	882	882	298.7
5x10 RE	1	24.2	181.7	1166	1166	1166	1166	362.5
5x16 RE	1	26.8	201.0	1551	1551	1551	1551	424.8

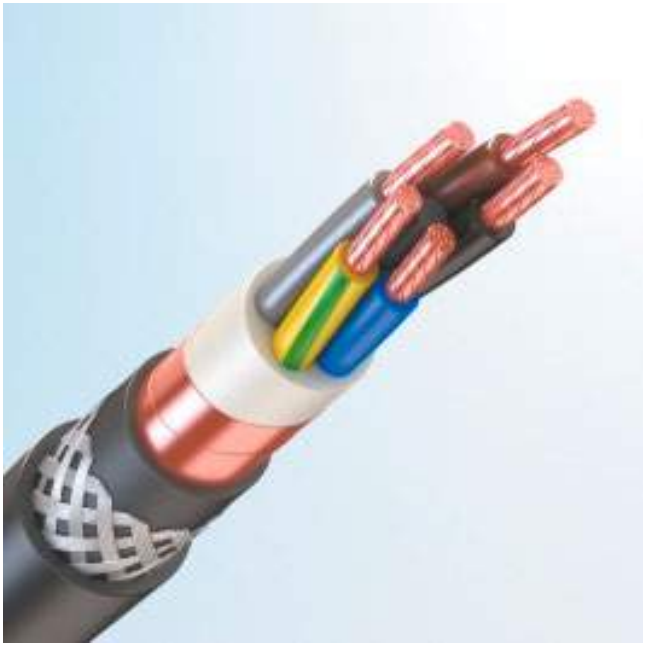
5x16 RM	1	28.0	210.1	1616	1616	1616	1616	455.2
5x25 RE	1	30.8	231.3	2168	2168	2168	2168	545.4
5x25 RM	1	31.8	238.4	2237	2237	2237	2237	571.3
5x35 RM	1	36.1	270.7	2951	2951	2951	2951	737.7
5x50 RM	1	40.7	305.1	4014	4014	4014	4014	909.9
5x70 RM	1	46.2	346.5	5241	5241	5241	5241	1148.3
5x95 RM	1	52.3	392.0	6847	6847	6847	6847	1434.3

POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

8. SHIELDED, ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1

8.3 Cables sheathed with halogen-free polymer compound



- **TOFLEX REPPng(A)-HF**
- **TOFLEX GREPPng(A)-HF**
- **TOFLEX AREPPng(A)-HF**
- **Cu/HEPR/OSCR/HFFR/SWB/HFFR, Al/HEPR/OSCR/HFFR/SWB/HFFR**

Possible options:

«ng(A)-HF-HL»

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class;
flexible copper (version GREPP) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑤ **Separation layer** – corresponds to the type of the outer sheath.
⑥ **Armour** – with full lay-up from galvanized steel wires.
⑦ **Outer sheath:**
- **«ng(A)-HF» —** made from halogen-free polymer compounds.
- **«ng(A)-HF-HL» —** made from cold-resistant halogen-free polymer compounds.

Ordering example:

«TOFLEX REPPng(A)-HF-HL3×95RM(N,G)-1 IEC 60502-1»
«TOFLEX REPPng(A)-HF-HL3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REPPng(A)-HF	TOFLEX REPPng(A)-HF-HL	
2x1,5 RE	1	15.7	117.8	406	406	171.8
2x2,5 RE	1	16.5	123.8	459	459	188.8
2x4 RE	1	17.4	130.7	526	526	208.9
2x6 RE	1	18.4	138.2	608	608	231.6
2x10 RE	1	20.0	149.9	752	752	268.6
2x16 RE	1	21.9	164.1	956	956	316.4
2x16 RM	1	22.8	170.9	1007	1007	340.0
2x25 RE	1	25.3	189.6	1307	1307	421.0
2x25 RM	1	26.0	194.9	1357	1357	441.9
2x35 RM	1	28.0	209.9	1644	1644	503.9
2x50 RM	1	31.4	235.4	2177	2177	626.7
2x70 RM	1	36.2	271.4	2862	2862	834.1
2x95 RM	1	40.4	302.9	3661	3661	1024.8
2x120 RM	1	43.2	323.9	4358	4358	1152.1
2x150 RM	1	48.4	362.9	5405	5405	1465.4
2x185 RM	1	52.4	392.9	6478	6478	1702.4
3x1,5 RE	1	16.2	121.5	434	434	181.2
3x2,5 RE	1	17.1	128.0	497	497	199.1
3x4 RE	1	18.1	135.4	579	579	220.2
3x6 RE	1	19.1	143.5	679	679	243.7
3x10 RE	1	20.8	156.0	858	858	281.7
3x16 RE	1	22.8	171.4	1115	1115	330.1
3x16 RM	1	24.2	181.6	1190	1190	369.4
3x25 RE	1	26.5	198.5	1545	1545	438.6
3x25 RM	1	27.2	204.2	1598	1598	459.5
3x35 RM	1	29.4	220.3	1965	1965	520.7
3x50 RM	1	33.4	250.7	2685	2685	666.8
3x70 RM	1	38.1	285.5	3479	3479	854.6
3x95 RM	1	42.6	319.4	4492	4492	1045.9
3x120 RM	1	46.8	351.0	5546	5546	1257.7
3x150 RM	1	51.1	383.0	6695	6695	1488.2
4x1,5 RE	1	17.1	128.1	480	480	198.7
4x2,5 RE	1	18.0	135.3	556	556	219.0
4x4 RE	1	19.2	143.6	655	655	242.8
4x6 RE	1	20.4	152.7	778	778	269.3
4x10 RE	1	22.2	166.8	999	999	311.8
4x16 RE	1	24.9	186.9	1342	1342	381.7
4x16 RM	1	26.0	195.1	1401	1401	408.7
4x25 RE	1	28.5	214.0	1847	1847	487.4
4x25 RM	1	29.4	220.4	1907	1907	510.5
4x35 RM	1	31.8	238.4	2368	2368	578.0
4x50 RM	1	37.5	281.2	3381	3381	812.9
4x70 RM	1	41.3	310.1	4237	4237	946.6
4x95 RM	1	48.0	360.1	5709	5709	1281.6
4x120 RM	1	51.4	385.4	6877	6877	1423.2
5x1,5 RE	1	18.1	135.4	537	537	218.5
5x2,5 RE	1	19.1	143.5	627	627	241.6
5x4 RE	1	20.4	152.8	747	747	268.7
5x6 RE	1	21.7	162.9	901	901	298.7

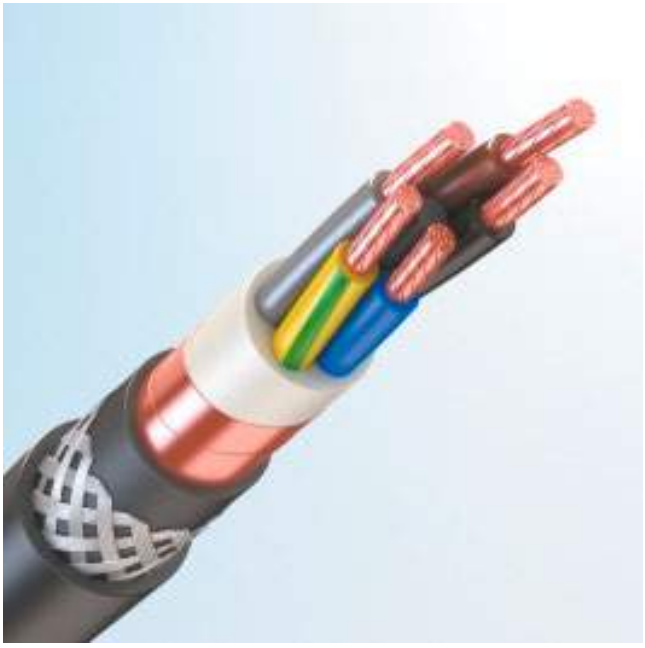
5x10 RE	1	24.2	181.7	1190	1190	362.5
5x16 RE	1	26.8	201.0	1577	1577	424.8
5x16 RM	1	28.0	210.1	1644	1644	455.2
5x25 RE	1	30.8	231.3	2199	2199	545.4
5x25 RM	1	31.8	238.4	2268	2268	571.3
5x35 RM	1	36.1	270.7	2994	2994	737.7
5x50 RM	1	40.7	305.1	4062	4062	909.9
5x70 RM	1	46.2	346.5	5305	5305	1148.3
5x95 RM	1	52.3	392.0	6919	6919	1434.3

POWER CABLES WITH HARD GRADE
ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

8. SHIELDED, ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1

8.4 Cables sheathed with thermoplastic polyurethane elastomer



- **TOFLEX REPTng(A)**
- **TOFLEX GREPTng(A)**
- **TOFLEX AREPTng(A)**
- **Cu/HEPR/OSCR/ TPE /SWB/ TPU, Al/HEPR/OSCR/TPE/SWB/ TPU**

DESIGN FEATURES

① **Electrical conductor** – copper or aluminium of 1st, 2nd class;
flexible copper (version GREPT) of 5th class.
② **Insulation** – hard grade ethylene propylene rubber (HEPR).
③ **Inner sheath** – corresponds to the type of the outer sheath.
④ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid.
The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑤ **Separation layer** – corresponds to the type of the outer sheath.
⑥ **Armour** – with full lay-up from galvanized steel wires.
⑦ **Outer sheath:**
- «ng(A)»— made from thermoplastic polyurethane elastomer.

Ordering example:
«TOFLEX REPTng(A)3×95RM(N,G)-1 IEC 60502-1»
«TOFLEX REPTng(A)3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

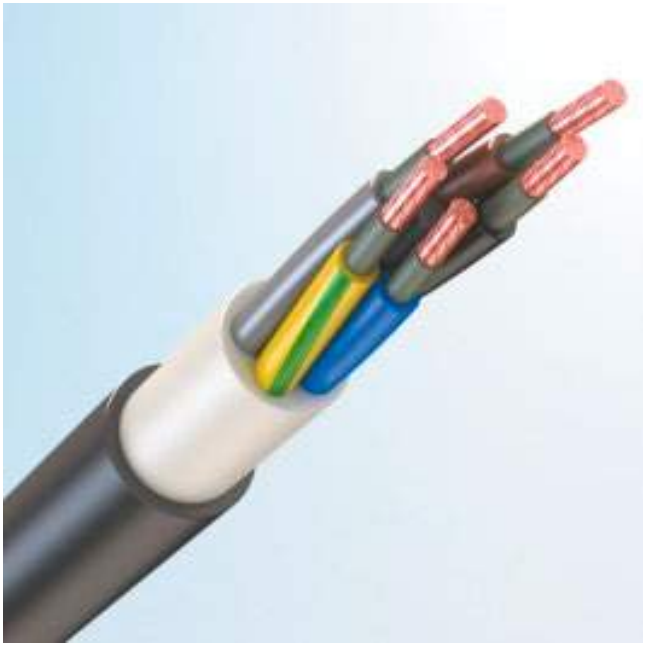
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire, kg	Amount of combustible materials, l/km
				TOFLEX REPTng(A)	
2x1,5 RE	1	15.7	117.8	382	171.8
2x2,5 RE	1	16.5	123.8	431	188.8
2x4 RE	1	17.4	130.7	495	208.9
2x6 RE	1	18.4	138.2	572	231.6
2x10 RE	1	20.0	149.9	709	268.6
2x16 RE	1	21.9	164.1	902	316.4
2x16 RM	1	22.8	170.9	948	340.0
2x25 RE	1	25.3	189.6	1235	421.0
2x25 RM	1	26.0	194.9	1280	441.9
2x35 RM	1	28.0	209.9	1554	503.9
2x50 RM	1	31.4	235.4	2061	626.7
2x70 RM	1	36.2	271.4	2706	834.1
2x95 RM	1	40.4	302.9	3463	1024.8
2x120 RM	1	43.2	323.9	4129	1152.1
2x150 RM	1	48.4	362.9	5117	1465.4
2x185 RM	1	52.4	392.9	6136	1702.4
3x1,5 RE	1	16.2	121.5	411	181.2
3x2,5 RE	1	17.1	128.0	470	199.1
3x4 RE	1	18.1	135.4	548	220.2
3x6 RE	1	19.1	143.5	644	243.7
3x10 RE	1	20.8	156.0	816	281.7
3x16 RE	1	22.8	171.4	1064	330.1
3x16 RM	1	24.2	181.6	1135	369.4
3x25 RE	1	26.5	198.5	1478	438.6
3x25 RM	1	27.2	204.2	1527	459.5
3x35 RM	1	29.4	220.3	1882	520.7
3x50 RM	1	33.4	250.7	2574	666.8
3x70 RM	1	38.1	285.5	3338	854.6
3x95 RM	1	42.6	319.4	4314	1045.9
3x120 RM	1	46.8	351.0	5335	1257.7
3x150 RM	1	51.1	383.0	6437	1488.2
4x1,5 RE	1	17.1	128.1	455	198.7
4x2,5 RE	1	18.0	135.3	527	219.0
4x4 RE	1	19.2	143.6	623	242.8
4x6 RE	1	20.4	152.7	741	269.3
4x10 RE	1	22.2	166.8	955	311.8
4x16 RE	1	24.9	186.9	1289	381.7
4x16 RM	1	26.0	195.1	1343	408.7
4x25 RE	1	28.5	214.0	1777	487.4
4x25 RM	1	29.4	220.4	1833	510.5
4x35 RM	1	31.8	238.4	2281	578.0
4x50 RM	1	37.5	281.2	3259	812.9
4x70 RM	1	41.3	310.1	4089	946.6
4x95 RM	1	48.0	360.1	5509	1281.6
4x120 RM	1	51.4	385.4	6649	1423.2
5x1,5 RE	1	18.1	135.4	509	218.5
5x2,5 RE	1	19.1	143.5	595	241.6
5x4 RE	1	20.4	152.8	712	268.7
5x6 RE	1	21.7	162.9	861	298.7

5x10 RE	1	24.2	181.7	1142	362.5
5x16 RE	1	26.8	201.0	1519	424.8
5x16 RM	1	28.0	210.1	1580	455.2
5x25 RE	1	30.8	231.3	2123	545.4
5x25 RM	1	31.8	238.4	2188	571.3
5x35 RM	1	36.1	270.7	2888	737.7
5x50 RM	1	40.7	305.1	3930	909.9
5x70 RM	1	46.2	346.5	5138	1148.3
5x95 RM	1	52.3	392.0	6702	1434.3

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

9. UNSHIELDED UNARMOURED

IEC 60502-1



9.1 Cables with PVC sheath

- **TOFLEX RVng(A)-FRLS**
- **TOFLEX GRVng(A)-FRLS**
- **Cu/MGT/HEPR/LSPVC**

Possible options:

«ng(A)-FRLS-HL»

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GRV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Outer sheath:**
- **«ng(A)-FRLS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-FRLS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX RVng(A)-FRLS3×95RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RVng(A)-FRLS	TOFLEX RVng(A)-FRLS-HL	
1x1,5 RE	1	7.7	76.8	84	79	42.5
1x2,5 RE	1	8.1	80.8	99	93	45.9
1x4 RE	1	8.5	85.4	118	112	49.9
1x6 RE	1	9.0	90.4	143	136	54.3
1x10 RE	1	9.8	98.2	188	181	61.0
1x16 RE	1	10.8	107.7	255	247	69.2
1x16 RM	1	11.2	112.2	263	255	73.1
1x25 RE	1	12.3	122.7	357	348	86.1
1x25 RM	1	12.6	126.2	367	357	89.3
1x35 RM	1	13.6	136.2	464	453	98.6
1x50 RM	1	15.3	153.2	644	632	119.8
1x70 RM	1	16.9	169.2	820	807	135.6
1x95 RM	1	19.0	190.2	1082	1067	163.8
1x120 RM	1	20.4	204.2	1331	1314	178.4
1x150 RM	1	22.2	222.2	1614	1596	206.4
1x185 RM	1	24.6	246.2	2006	1983	253.9
1x240 RM	1	27.3	273.2	2526	2501	298.6
1x300 RM	1	31.6	315.7	3181	3152	382.9
1x400 RM	1	35.7	357.1	4089	4049	491.3
1x500 RM	1	39.3	392.9	5096	5051	567.7
1x630 RM	1	43.3	432.5	6473	6424	633.7
2x1,5 RE	1	11.8	88.2	202	189	104.2
2x2,5 RE	1	12.6	94.2	242	227	116.8
2x4 RE	1	13.5	101.1	294	277	132.1
2x6 RE	1	14.5	108.6	359	339	149.4
2x10 RE	1	16.0	120.3	477	454	178.0
2x16 RE	1	17.9	134.6	649	620	215.6
2x16 RM	1	18.8	141.3	684	653	234.4
2x25 RE	1	22.9	172.1	1074	1054	360.3
2x25 RM	1	24.0	180.3	1144	1121	394.8
2x35 RM	1	26.0	195.3	1414	1389	452.5
2x50 RM	1	29.4	220.8	1917	1888	569.2
2x70 RM	1	33.0	247.8	2460	2428	700.5
2x95 RM	1	38.0	285.3	3298	3253	924.2
2x120 RM	1	40.8	306.3	3969	3921	1043.9
2x150 RM	1	45.6	342.3	4937	4874	1313.7
2x185 RM	1	49.6	372.3	5971	5902	1537.9
2x240 RM	1	55.4	415.8	7527	7450	1896.3
3x1,5 RE	1	12.4	92.8	224	210	111.2
3x2,5 RE	1	13.2	99.2	273	258	124.2
3x4 RE	1	14.2	106.7	338	321	139.7
3x6 RE	1	15.3	114.7	420	401	157.1
3x10 RE	1	17.0	127.3	571	549	185.5
3x16 RE	1	19.0	142.6	794	768	222.3
3x16 RM	1	20.0	149.9	830	801	240.4
3x25 RE	1	24.6	184.8	1328	1304	388.5
3x25 RM	1	25.4	190.4	1374	1349	407.5
3x35 RM	1	27.5	206.6	1722	1695	463.6
3x50 RM	1	31.6	237.0	2407	2376	601.7

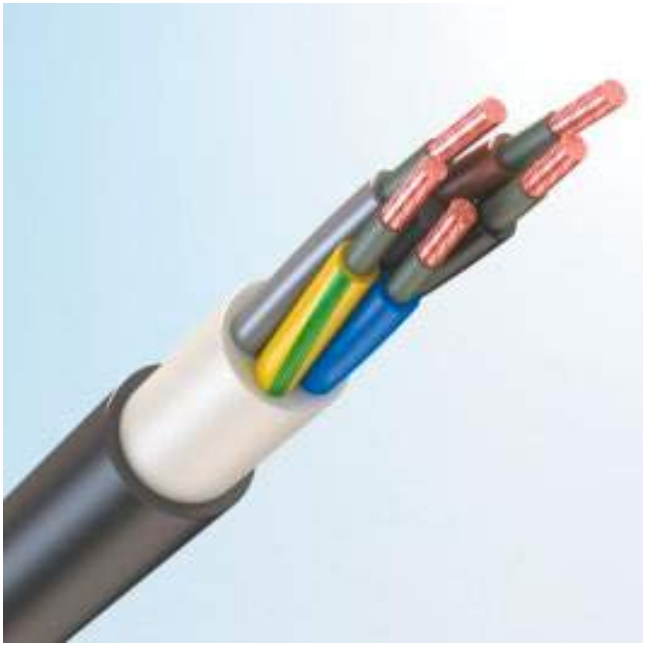
3x70 RM	1	35.8	268.8	3134	3092	755.0
3x95 RM	1	40.4	302.6	4103	4056	933.7
3x120 RM	1	43.8	328.2	5039	4987	1075.0
3x150 RM	1	48.4	363.2	6193	6126	1320.2
3x185 RM	1	52.7	395.5	7528	7455	1541.8
3x240 RM	1	59.5	446.5	9615	9523	1951.6
4x1,5 RE	1	13.4	100.7	259	245	126.0
4x2,5 RE	1	14.4	108.0	319	303	140.7
4x4 RE	1	15.5	116.3	400	383	158.1
4x6 RE	1	16.7	125.3	503	484	177.6
4x10 RE	1	18.6	139.4	694	671	209.2
4x16 RE	1	20.9	156.6	976	948	249.7
4x16 RM	1	22.0	164.7	1016	986	269.6
4x25 RE	1	26.9	201.7	1616	1590	434.5
4x25 RM	1	27.7	208.0	1669	1642	455.4
4x35 RM	1	30.1	226.1	2108	2079	516.8
4x50 RM	1	35.4	265.8	3047	3006	717.2
4x70 RM	1	39.3	294.8	3867	3821	838.6
4x95 RM	1	44.8	335.7	5140	5087	1066.7
4x120 RM	1	48.9	367.0	6379	6311	1254.2
4x150 RM	1	53.3	399.6	7704	7630	1463.4
4x185 RM	1	59.1	443.2	9566	9476	1805.5
4x240 RM	1	65.6	492.0	11999	11898	2162.0
5x1,5 RE	1	14.6	109.6	304	288	143.2
5x2,5 RE	1	15.7	117.7	376	359	159.9
5x4 RE	1	16.9	127.0	477	458	179.7
5x6 RE	1	18.3	137.2	608	587	201.8
5x10 RE	1	20.4	153.0	840	815	237.6
5x16 RE	1	23.0	172.2	1184	1154	283.3
5x16 RM	1	24.6	184.3	1258	1223	321.6
5x25 RE	1	29.4	220.6	1953	1924	490.2
5x25 RM	1	30.4	227.7	2014	1984	513.7
5x35 RM	1	33.5	250.9	2602	2569	604.3
5x50 RM	1	38.8	291.3	3704	3658	808.1
5x70 RM	1	43.6	326.7	4813	4761	972.2
5x95 RM	1	50.0	375.3	6415	6346	1266.4
5x120 RM	1	54.2	406.6	7866	7791	1445.0
5x150 RM	1	59.7	447.6	9587	9496	1743.9
5x185 RM	1	65.1	488.1	11807	11707	2032.3
5x240 RM	1	73.8	553.2	15069	14937	2602.0

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

9. UNSHIELDED UNARMOURED

IEC 60502-1

9.2 Cables sheathed with cross-linked highly elastic polymer compound



- **TOFLEX RRng(A)-FRHF**
- **TOFLEX GRRng(A)-FRHF**
- **Cu/MGT/HEPR/ XLHFFR**

Possible options:

«ng(A)-FRHF-HL»

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GRR) – of 5th class.
② **Thermal barrier** - micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:
«TOFLEX RRng(A)-FRHF-HL5×95RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RRng(A)-FRHF	TOFLEX RRng(A)-FRHF-HL	
1x1,5 RE	1	7.7	76.8	70	70	42.5
1x2,5 RE	1	8.1	80.8	84	84	45.9
1x4 RE	1	8.5	85.4	102	102	49.9
1x6 RE	1	9.0	90.4	126	126	54.3
1x10 RE	1	9.8	98.2	169	169	61.0
1x16 RE	1	10.8	107.7	234	234	69.2
1x16 RM	1	11.2	112.2	241	241	73.1
1x25 RE	1	12.3	122.7	332	332	86.1
1x25 RM	1	12.6	126.2	341	341	89.3
1x35 RM	1	13.6	136.2	436	436	98.6
1x50 RM	1	15.3	153.2	612	612	119.8
1x70 RM	1	16.9	169.2	784	784	135.6
1x95 RM	1	19.0	190.2	1041	1041	163.8
1x120 RM	1	20.4	204.2	1286	1286	178.4
1x150 RM	1	22.2	222.2	1566	1566	206.4
1x185 RM	1	24.6	246.2	1945	1945	253.9
1x240 RM	1	27.3	273.2	2459	2459	298.6
1x300 RM	1	31.6	315.7	3103	3103	382.9
1x400 RM	1	35.7	357.1	3983	3983	491.3
1x500 RM	1	39.3	392.9	4978	4978	567.7
1x630 RM	1	43.3	432.5	6343	6343	633.7
2x1,5 RE	1	11.8	88.2	166	166	104.2
2x2,5 RE	1	12.6	94.2	201	201	116.8
2x4 RE	1	13.5	101.1	248	248	132.1
2x6 RE	1	14.5	108.6	307	307	149.4
2x10 RE	1	16.0	120.3	415	415	178.0
2x16 RE	1	17.9	134.6	573	573	215.6
2x16 RM	1	18.8	141.3	602	602	234.4
2x25 RE	1	22.9	172.1	1011	1011	360.3
2x25 RM	1	24.0	180.3	1072	1072	394.8
2x35 RM	1	26.0	195.3	1334	1334	452.5
2x50 RM	1	29.4	220.8	1823	1823	569.2
2x70 RM	1	33.0	247.8	2350	2350	700.5
2x95 RM	1	38.0	285.3	3149	3149	924.2
2x120 RM	1	40.8	306.3	3806	3806	1043.9
2x150 RM	1	45.6	342.3	4727	4727	1313.7
2x185 RM	1	49.6	372.3	5737	5737	1537.9
2x240 RM	1	55.4	415.8	7255	7255	1896.3
3x1,5 RE	1	12.4	92.8	189	189	111.2
3x2,5 RE	1	13.2	99.2	233	233	124.2
3x4 RE	1	14.2	106.7	294	294	139.7
3x6 RE	1	15.3	114.7	370	370	157.1
3x10 RE	1	17.0	127.3	513	513	185.5
3x16 RE	1	19.0	142.6	724	724	222.3
3x16 RM	1	20.0	149.9	754	754	240.4
3x25 RE	1	24.6	184.8	1256	1256	388.5
3x25 RM	1	25.4	190.4	1299	1299	407.5
3x35 RM	1	27.5	206.6	1639	1639	463.6
3x50 RM	1	31.6	237.0	2308	2308	601.7

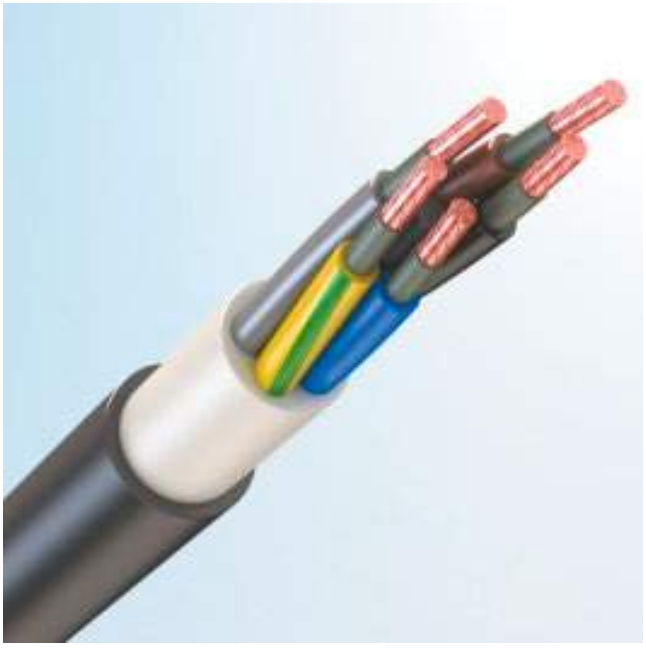
3x70 RM	1	35.8	268.8	3003	3003	755.0
3x95 RM	1	40.4	302.6	3951	3951	933.7
3x120 RM	1	43.8	328.2	4870	4870	1075.0
3x150 RM	1	48.4	363.2	5978	5978	1320.2
3x185 RM	1	52.7	395.5	7290	7290	1541.8
3x240 RM	1	59.5	446.5	9315	9315	1951.6
4x1,5 RE	1	13.4	100.7	221	221	126.0
4x2,5 RE	1	14.4	108.0	277	277	140.7
4x4 RE	1	15.5	116.3	354	354	158.1
4x6 RE	1	16.7	125.3	451	451	177.6
4x10 RE	1	18.6	139.4	632	632	209.2
4x16 RE	1	20.9	156.6	902	902	249.7
4x16 RM	1	22.0	164.7	936	936	269.6
4x25 RE	1	26.9	201.7	1538	1538	434.5
4x25 RM	1	27.7	208.0	1587	1587	455.4
4x35 RM	1	30.1	226.1	2018	2018	516.8
4x50 RM	1	35.4	265.8	2920	2920	717.2
4x70 RM	1	39.3	294.8	3724	3724	838.6
4x95 RM	1	44.8	335.7	4972	4972	1066.7
4x120 RM	1	48.9	367.0	6168	6168	1254.2
4x150 RM	1	53.3	399.6	7470	7470	1463.4
4x185 RM	1	59.1	443.2	9279	9279	1805.5
4x240 RM	1	65.6	492.0	11673	11673	2162.0
5x1,5 RE	1	14.6	109.6	263	263	143.2
5x2,5 RE	1	15.7	117.7	331	331	159.9
5x4 RE	1	16.9	127.0	426	426	179.7
5x6 RE	1	18.3	137.2	551	551	201.8
5x10 RE	1	20.4	153.0	773	773	237.6
5x16 RE	1	23.0	172.2	1104	1104	283.3
5x16 RM	1	24.6	184.3	1164	1164	321.6
5x25 RE	1	29.4	220.6	1867	1867	490.2
5x25 RM	1	30.4	227.7	1924	1924	513.7
5x35 RM	1	33.5	250.9	2500	2500	604.3
5x50 RM	1	38.8	291.3	3565	3565	808.1
5x70 RM	1	43.6	326.7	4652	4652	972.2
5x95 RM	1	50.0	375.3	6202	6202	1266.4
5x120 RM	1	54.2	406.6	7631	7631	1445.0
5x150 RM	1	59.7	447.6	9302	9302	1743.9
5x185 RM	1	65.1	488.1	11491	11491	2032.3
5x240 RM	1	73.8	553.2	14655	14655	2602.0

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

9. UNSHIELDED UNARMOURED

IEC 60502-1

9.3 Cables sheathed with halogen-free polymer compound



- **TOFLEX RPng(A)-FRHF**
- **TOFLEX GRPng(A)-FRHF**
- **Cu/MGT/HEPR/HFFR**

Possible options:

"ng(A)-FRHF-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GRP) of 5th class.
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free polymer compounds.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free polymer compounds.

Ordering example:

«TOFLEX RPng(A)-FRHF-HL1×185RM-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RPng(A)-FRHF	TOFLEX RPng(A)-FRHF-HL	
1x1,5 RE	1	7.7	76.8	74	74	42.5
1x2,5 RE	1	8.1	80.8	88	88	45.9
1x4 RE	1	8.5	85.4	107	107	49.9
1x6 RE	1	9.0	90.4	131	131	54.3
1x10 RE	1	9.8	98.2	175	175	61.0
1x16 RE	1	10.8	107.7	240	240	69.2
1x16 RM	1	11.2	112.2	248	248	73.1
1x25 RE	1	12.3	122.7	340	340	86.1
1x25 RM	1	12.6	126.2	349	349	89.3
1x35 RM	1	13.6	136.2	445	445	98.6
1x50 RM	1	15.3	153.2	622	622	119.8
1x70 RM	1	16.9	169.2	796	796	135.6
1x95 RM	1	19.0	190.2	1054	1054	163.8
1x120 RM	1	20.4	204.2	1300	1300	178.4
1x150 RM	1	22.2	222.2	1581	1581	206.4
1x185 RM	1	24.6	246.2	1964	1964	253.9
1x240 RM	1	27.3	273.2	2480	2480	298.6
1x300 RM	1	31.6	315.7	3127	3127	382.9
1x400 RM	1	35.7	357.1	4016	4016	491.3
1x500 RM	1	39.3	392.9	5015	5015	567.7
1x630 RM	1	43.3	432.5	6384	6384	633.7
2x1,5 RE	1	11.8	88.2	178	178	104.2
2x2,5 RE	1	12.6	94.2	214	214	116.8
2x4 RE	1	13.5	101.1	263	263	132.1
2x6 RE	1	14.5	108.6	323	323	149.4
2x10 RE	1	16.0	120.3	435	435	178.0
2x16 RE	1	17.9	134.6	597	597	215.6
2x16 RM	1	18.8	141.3	628	628	234.4
2x25 RE	1	22.9	172.1	1027	1027	360.3
2x25 RM	1	24.0	180.3	1091	1091	394.8
2x35 RM	1	26.0	195.3	1355	1355	452.5
2x50 RM	1	29.4	220.8	1847	1847	569.2
2x70 RM	1	33.0	247.8	2377	2377	700.5
2x95 RM	1	38.0	285.3	3186	3186	924.2
2x120 RM	1	40.8	306.3	3846	3846	1043.9
2x150 RM	1	45.6	342.3	4779	4779	1313.7
2x185 RM	1	49.6	372.3	5794	5794	1537.9
2x240 RM	1	55.4	415.8	7319	7319	1896.3
3x1,5 RE	1	12.4	92.8	200	200	111.2
3x2,5 RE	1	13.2	99.2	246	246	124.2
3x4 RE	1	14.2	106.7	308	308	139.7
3x6 RE	1	15.3	114.7	386	386	157.1
3x10 RE	1	17.0	127.3	531	531	185.5
3x16 RE	1	19.0	142.6	746	746	222.3
3x16 RM	1	20.0	149.9	778	778	240.4
3x25 RE	1	24.6	184.8	1276	1276	388.5
3x25 RM	1	25.4	190.4	1319	1319	407.5
3x35 RM	1	27.5	206.6	1661	1661	463.6
3x50 RM	1	31.6	237.0	2334	2334	601.7

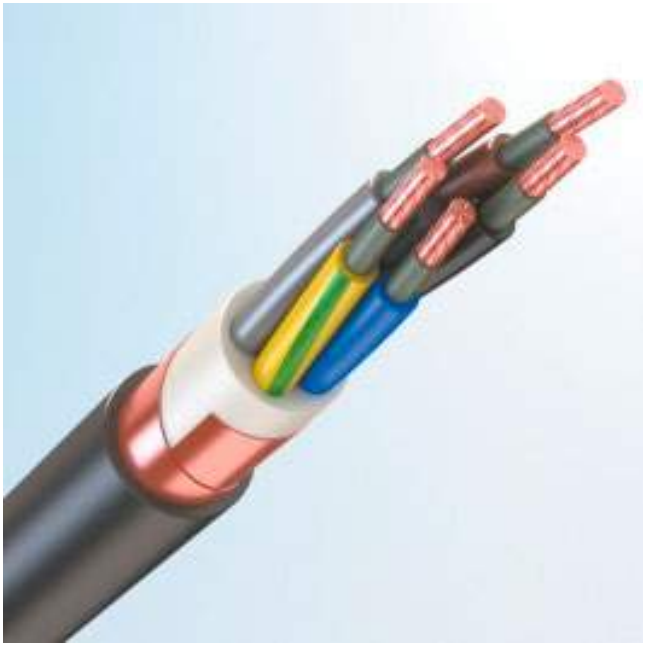
3x70 RM	1	35.8	268.8	3038	3038	755.0
3x95 RM	1	40.4	302.6	3991	3991	933.7
3x120 RM	1	43.8	328.2	4913	4913	1075.0
3x150 RM	1	48.4	363.2	6034	6034	1320.2
3x185 RM	1	52.7	395.5	7351	7351	1541.8
3x240 RM	1	59.5	446.5	9392	9392	1951.6
4x1,5 RE	1	13.4	100.7	233	233	126.0
4x2,5 RE	1	14.4	108.0	291	291	140.7
4x4 RE	1	15.5	116.3	368	368	158.1
4x6 RE	1	16.7	125.3	467	467	177.6
4x10 RE	1	18.6	139.4	652	652	209.2
4x16 RE	1	20.9	156.6	925	925	249.7
4x16 RM	1	22.0	164.7	961	961	269.6
4x25 RE	1	26.9	201.7	1559	1559	434.5
4x25 RM	1	27.7	208.0	1610	1610	455.4
4x35 RM	1	30.1	226.1	2042	2042	516.8
4x50 RM	1	35.4	265.8	2955	2955	717.2
4x70 RM	1	39.3	294.8	3762	3762	838.6
4x95 RM	1	44.8	335.7	5016	5016	1066.7
4x120 RM	1	48.9	367.0	6224	6224	1254.2
4x150 RM	1	53.3	399.6	7532	7532	1463.4
4x185 RM	1	59.1	443.2	9355	9355	1805.5
4x240 RM	1	65.6	492.0	11757	11757	2162.0
5x1,5 RE	1	14.6	109.6	276	276	143.2
5x2,5 RE	1	15.7	117.7	345	345	159.9
5x4 RE	1	16.9	127.0	442	442	179.7
5x6 RE	1	18.3	137.2	569	569	201.8
5x10 RE	1	20.4	153.0	794	794	237.6
5x16 RE	1	23.0	172.2	1129	1129	283.3
5x16 RM	1	24.6	184.3	1194	1194	321.6
5x25 RE	1	29.4	220.6	1890	1890	490.2
5x25 RM	1	30.4	227.7	1949	1949	513.7
5x35 RM	1	33.5	250.9	2528	2528	604.3
5x50 RM	1	38.8	291.3	3603	3603	808.1
5x70 RM	1	43.6	326.7	4695	4695	972.2
5x95 RM	1	50.0	375.3	6259	6259	1266.4
5x120 RM	1	54.2	406.6	7693	7693	1445.0
5x150 RM	1	59.7	447.6	9378	9378	1743.9
5x185 RM	1	65.1	488.1	11574	11574	2032.3
5x240 RM	1	73.8	553.2	14765	14765	2602.0

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

10. SHIELDED

IEC 60502-1

10.1 Cables with PVC sheath



- **TOFLEX REVng(A)-FRLS**
- **TOFLEX GREVng(A)-FRLS**
- **Cu/MGT/HEPR/OSCR/LSPVC**

Possible options:

«ng(A)-FRLS-HL»

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GREV) of 5th class (according to IEC 60228).

② **Thermal barrier** – micatape double-layer lapping.

③ **Insulation** – hard grade ethylene propylene rubber (HEPR).

④ **Inner sheath** – corresponds to the type of the outer sheath.

⑤ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.

⑥ **Outer sheath:**

- **«ng(A)-FRLS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-FRLS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX REVng(A)-FRLS3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX REVng(A)-FRLS3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REVng(A)-FRLS	TOFLEX REVng(A)-FRLS-HL	
1x1,5 RE	1	9.9	98.6	151	144	70.8
1x2,5 RE	1	10.3	102.6	169	161	75.5
1x4 RE	1	10.7	107.2	193	184	80.9
1x6 RE	1	11.2	112.2	221	213	86.8
1x10 RE	1	12.0	120.0	273	264	96.0
1x16 RE	1	13.0	129.5	348	338	107.2
1x16 RM	1	13.4	134.0	360	350	112.5
1x25 RE	1	14.5	144.5	463	452	128.8
1x25 RM	1	14.8	148.0	475	464	133.1
1x35 RM	1	15.8	158.0	581	568	145.5
1x50 RM	1	17.5	175.0	775	761	172.1
1x70 RM	1	19.1	191.0	965	949	192.9
1x95 RM	1	21.2	212.0	1245	1227	227.6
1x120 RM	1	22.6	226.0	1505	1486	246.7
1x150 RM	1	24.8	248.0	1831	1808	295.8
1x185 RM	1	26.8	268.0	2214	2189	335.5
1x240 RM	1	29.5	295.0	2758	2730	388.7
1x300 RM	1	35.0	349.5	3566	3527	550.9
1x400 RM	1	38.3	382.9	4435	4392	631.7
1x500 RM	1	41.9	418.7	5476	5428	721.6
1x630 RM	1	47.0	470.3	7051	6988	889.9
2x1,5 RE	1	13.9	104.6	310	299	146.9
2x2,5 RE	1	14.7	110.6	357	345	162.2
2x4 RE	1	15.7	117.5	418	405	180.4
2x6 RE	1	16.7	125.0	493	479	201.0
2x10 RE	1	18.2	136.7	626	611	234.7
2x16 RE	1	20.1	150.9	817	800	278.5
2x16 RM	1	21.0	157.7	862	844	300.2
2x25 RE	1	23.1	173.4	1123	1103	361.3
2x25 RM	1	24.2	181.7	1195	1172	396.0
2x35 RM	1	26.2	196.7	1470	1445	453.7
2x50 RM	1	29.6	222.2	1981	1952	570.3
2x70 RM	1	33.2	249.2	2533	2500	701.6
2x95 RM	1	38.2	286.7	3382	3337	925.6
2x120 RM	1	41.0	307.7	4060	4011	1045.3
2x150 RM	1	45.8	343.7	5038	4975	1315.3
2x185 RM	1	49.8	373.7	6082	6013	1539.6
2x240 RM	1	56.2	421.7	7749	7662	1952.7
3x1,5 RE	1	14.6	109.1	336	324	155.9
3x2,5 RE	1	15.4	115.6	393	380	171.7
3x4 RE	1	16.4	123.0	467	454	190.4
3x6 RE	1	17.5	131.1	560	545	211.4
3x10 RE	1	19.2	143.6	727	711	245.3
3x16 RE	1	21.2	159.0	970	952	288.7
3x16 RM	1	22.2	166.2	1015	996	310.0
3x25 RE	1	24.8	186.2	1381	1357	389.7
3x25 RM	1	25.6	191.8	1428	1404	408.7
3x35 RM	1	27.7	207.9	1782	1755	464.7
3x50 RM	1	31.8	238.3	2477	2446	602.9

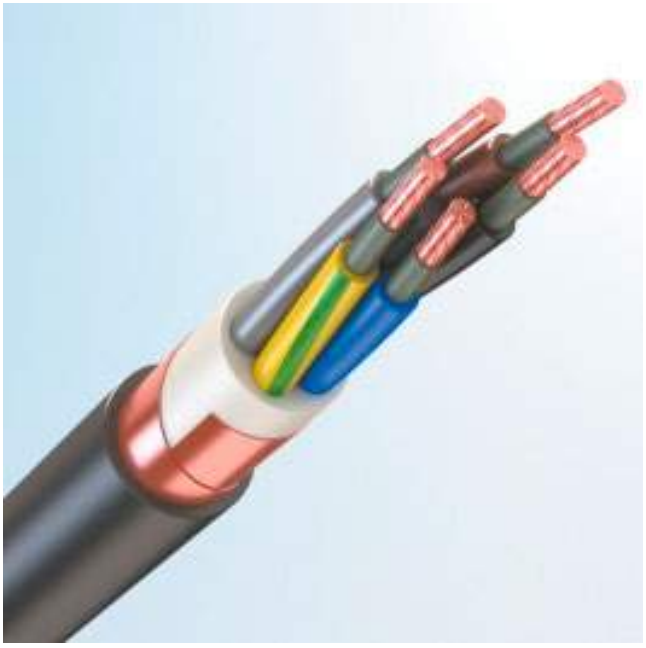
3x70 RM	1	36.0	270.1	3213	3171	756.4
3x95 RM	1	40.5	304.0	4193	4146	935.1
3x120 RM	1	43.9	329.6	5137	5085	1076.4
3x150 RM	1	48.6	364.6	6301	6234	1321.9
3x185 RM	1	52.9	396.8	7647	7573	1543.4
3x240 RM	1	59.7	447.9	9749	9658	1953.5
4x1,5 RE	1	15.6	117.1	380	367	174.2
4x2,5 RE	1	16.6	124.3	450	436	192.0
4x4 RE	1	17.7	132.6	541	526	213.0
4x6 RE	1	18.9	141.7	655	639	236.5
4x10 RE	1	20.8	155.8	864	846	274.2
4x16 RE	1	23.1	172.9	1168	1148	322.2
4x16 RM	1	24.5	184.1	1247	1223	361.6
4x25 RE	1	27.1	203.1	1675	1649	435.7
4x25 RM	1	27.9	209.4	1730	1703	456.6
4x35 RM	1	30.3	227.5	2175	2146	518.0
4x50 RM	1	35.6	267.2	3126	3084	718.6
4x70 RM	1	39.5	296.1	3955	3908	840.0
4x95 RM	1	45.7	343.1	5346	5284	1127.3
4x120 RM	1	49.1	368.4	6489	6421	1255.9
4x150 RM	1	53.5	400.9	7825	7751	1465.1
4x185 RM	1	59.3	444.6	9700	9609	1807.3
4x240 RM	1	65.8	493.4	12149	12048	2163.9
5x1,5 RE	1	16.8	126.0	436	422	195.2
5x2,5 RE	1	17.9	134.1	518	503	215.5
5x4 RE	1	19.1	143.4	631	614	239.3
5x6 RE	1	20.5	153.5	775	758	265.9
5x10 RE	1	22.6	169.3	1027	1007	308.5
5x16 RE	1	25.5	191.5	1424	1400	379.1
5x16 RM	1	26.8	200.7	1484	1458	406.3
5x25 RE	1	29.6	221.9	2019	1991	491.4
5x25 RM	1	30.5	229.0	2083	2053	514.9
5x35 RM	1	33.6	252.3	2679	2646	605.5
5x50 RM	1	39.0	292.7	3794	3748	809.5
5x70 RM	1	43.7	328.1	4918	4866	973.6
5x95 RM	1	50.2	376.6	6535	6465	1268.0
5x120 RM	1	54.4	408.0	7997	7921	1446.6
5x150 RM	1	59.9	448.9	9730	9638	1745.8
5x185 RM	1	65.3	489.4	11972	11871	2034.1
5x240 RM	1	73.9	554.6	15254	15121	2604.1

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

10. SHIELDED

IEC 60502-1

10.2 Cables sheathed with cross-linked highly elastic polymer compound



- **TOFLEX RERng(A)-FRHF,**
- **TOFLEX GRERng(A)-FRHF**
- **Cu/MGT/HEPR/OSCR/ XLHFFR**

Possible options:

"ng(A)-FRHF-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GRER) – of 5th class.
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑥ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX RERng(A)-FRHF3×95RM(N,G)-1 IEC 60502-1»
«TOFLEX RERng(A)-FRHF3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RERng(A)-FRHF	TOFLEX RERng(A)-FRHF-HL	
1x1,5 RE	1	9.9	98.6	131	131	70.8
1x2,5 RE	1	10.3	102.6	148	148	75.5
1x4 RE	1	10.7	107.2	170	170	80.9
1x6 RE	1	11.2	112.2	198	198	86.8
1x10 RE	1	12.0	120.0	248	248	96.0
1x16 RE	1	13.0	129.5	320	320	107.2
1x16 RM	1	13.4	134.0	331	331	112.5
1x25 RE	1	14.5	144.5	431	431	128.8
1x25 RM	1	14.8	148.0	442	442	133.1
1x35 RM	1	15.8	158.0	546	546	145.5
1x50 RM	1	17.5	175.0	736	736	172.1
1x70 RM	1	19.1	191.0	921	921	192.9
1x95 RM	1	21.2	212.0	1195	1195	227.6
1x120 RM	1	22.6	226.0	1452	1452	246.7
1x150 RM	1	24.8	248.0	1767	1767	295.8
1x185 RM	1	26.8	268.0	2144	2144	335.5
1x240 RM	1	29.5	295.0	2680	2680	388.7
1x300 RM	1	35.0	349.5	3456	3456	550.9
1x400 RM	1	38.3	382.9	4313	4313	631.7
1x500 RM	1	41.9	418.7	5342	5342	721.6
1x630 RM	1	47.0	470.3	6875	6875	889.9
2x1,5 RE	1	13.9	104.6	276	276	146.9
2x2,5 RE	1	14.7	110.6	321	321	162.2
2x4 RE	1	15.7	117.5	379	379	180.4
2x6 RE	1	16.7	125.0	451	451	201.0
2x10 RE	1	18.2	136.7	579	579	234.7
2x16 RE	1	20.1	150.9	764	764	278.5
2x16 RM	1	21.0	157.7	805	805	300.2
2x25 RE	1	23.1	173.4	1059	1059	361.3
2x25 RM	1	24.2	181.7	1122	1122	396.0
2x35 RM	1	26.2	196.7	1389	1389	453.7
2x50 RM	1	29.6	222.2	1887	1887	570.3
2x70 RM	1	33.2	249.2	2423	2423	701.6
2x95 RM	1	38.2	286.7	3232	3232	925.6
2x120 RM	1	41.0	307.7	3896	3896	1045.3
2x150 RM	1	45.8	343.7	4827	4827	1315.3
2x185 RM	1	49.8	373.7	5846	5846	1539.6
2x240 RM	1	56.2	421.7	7453	7453	1952.7
3x1,5 RE	1	14.6	109.1	301	301	155.9
3x2,5 RE	1	15.4	115.6	355	355	171.7
3x4 RE	1	16.4	123.0	427	427	190.4
3x6 RE	1	17.5	131.1	516	516	211.4
3x10 RE	1	19.2	143.6	678	678	245.3
3x16 RE	1	21.2	159.0	914	914	288.7
3x16 RM	1	22.2	166.2	957	957	310.0
3x25 RE	1	24.8	186.2	1308	1308	389.7
3x25 RM	1	25.6	191.8	1353	1353	408.7
3x35 RM	1	27.7	207.9	1698	1698	464.7
3x50 RM	1	31.8	238.3	2378	2378	602.9

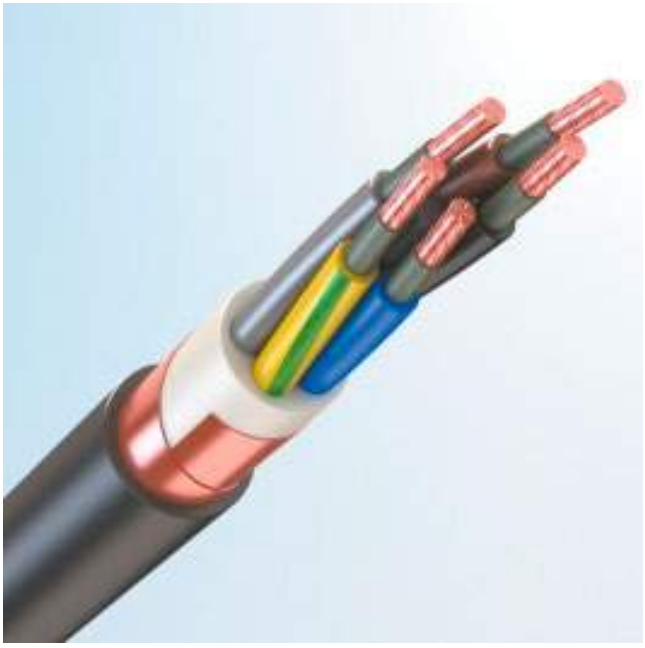
3x70 RM	1	36.0	270.1	3081	3081	756.4
3x95 RM	1	40.5	304.0	4041	4041	935.1
3x120 RM	1	43.9	329.6	4967	4967	1076.4
3x150 RM	1	48.6	364.6	6086	6086	1321.9
3x185 RM	1	52.9	396.8	7408	7408	1543.4
3x240 RM	1	59.7	447.9	9449	9449	1953.5
4x1,5 RE	1	15.6	117.1	343	343	174.2
4x2,5 RE	1	16.6	124.3	409	409	192.0
4x4 RE	1	17.7	132.6	497	497	213.0
4x6 RE	1	18.9	141.7	608	608	236.5
4x10 RE	1	20.8	155.8	811	811	274.2
4x16 RE	1	23.1	172.9	1108	1108	322.2
4x16 RM	1	24.5	184.1	1176	1176	361.6
4x25 RE	1	27.1	203.1	1596	1596	435.7
4x25 RM	1	27.9	209.4	1648	1648	456.6
4x35 RM	1	30.3	227.5	2084	2084	518.0
4x50 RM	1	35.6	267.2	2998	2998	718.6
4x70 RM	1	39.5	296.1	3811	3811	840.0
4x95 RM	1	45.7	343.1	5152	5152	1127.3
4x120 RM	1	49.1	368.4	6277	6277	1255.9
4x150 RM	1	53.5	400.9	7591	7591	1465.1
4x185 RM	1	59.3	444.6	9412	9412	1807.3
4x240 RM	1	65.8	493.4	11822	11822	2163.9
5x1,5 RE	1	16.8	126.0	394	394	195.2
5x2,5 RE	1	17.9	134.1	474	474	215.5
5x4 RE	1	19.1	143.4	582	582	239.3
5x6 RE	1	20.5	153.5	723	723	265.9
5x10 RE	1	22.6	169.3	968	968	308.5
5x16 RE	1	25.5	191.5	1351	1351	379.1
5x16 RM	1	26.8	200.7	1406	1406	406.3
5x25 RE	1	29.6	221.9	1931	1931	491.4
5x25 RM	1	30.5	229.0	1991	1991	514.9
5x35 RM	1	33.6	252.3	2575	2575	605.5
5x50 RM	1	39.0	292.7	3651	3651	809.5
5x70 RM	1	43.7	328.1	4750	4750	973.6
5x95 RM	1	50.2	376.6	6314	6314	1268.0
5x120 RM	1	54.4	408.0	7753	7753	1446.6
5x150 RM	1	59.9	448.9	9437	9437	1745.8
5x185 RM	1	65.3	489.4	11639	11639	2034.1
5x240 RM	1	73.9	554.6	14823	14823	2604.1

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

10. SHIELDED

IEC 60502-1

10.3 Cables sheathed with halogen-free polymer compound



- **TOFLEX REPng(A)-FRHF**
- **TOFLEX GREPng(A)-FRHF**
- **Cu/MGT/HEPR/OSCR/HFFR**

Possible options:

"ng(A)-FRHF-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GREP) – of 5th class.
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑥ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free polymer compounds.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free polymer compounds.

Ordering example:

«TOFLEX REPng(A)-FRHF3×95RM(N,G)-1 IEC 60502-1»
«TOFLEX REPng(A)-FRHF3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

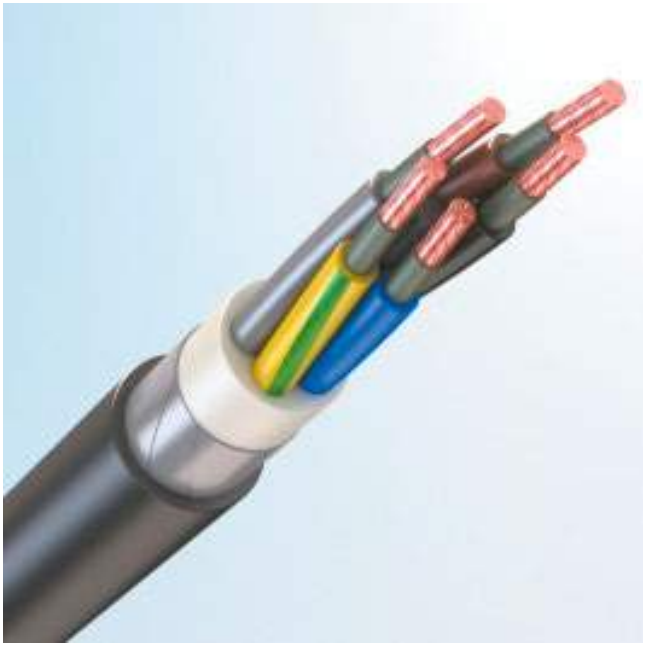
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REPng(A)-FRHF	TOFLEX REPng(A)-FRHF-HL	
1x1,5 RE	1	9.9	98.6	137	137	70.8
1x2,5 RE	1	10.3	102.6	154	154	75.5
1x4 RE	1	10.7	107.2	177	177	80.9
1x6 RE	1	11.2	112.2	205	205	86.8
1x10 RE	1	12.0	120.0	255	255	96.0
1x16 RE	1	13.0	129.5	328	328	107.2
1x16 RM	1	13.4	134.0	339	339	112.5
1x25 RE	1	14.5	144.5	440	440	128.8
1x25 RM	1	14.8	148.0	452	452	133.1
1x35 RM	1	15.8	158.0	556	556	145.5
1x50 RM	1	17.5	175.0	747	747	172.1
1x70 RM	1	19.1	191.0	934	934	192.9
1x95 RM	1	21.2	212.0	1210	1210	227.6
1x120 RM	1	22.6	226.0	1468	1468	246.7
1x150 RM	1	24.8	248.0	1786	1786	295.8
1x185 RM	1	26.8	268.0	2165	2165	335.5
1x240 RM	1	29.5	295.0	2703	2703	388.7
1x300 RM	1	35.0	349.5	3488	3488	550.9
1x400 RM	1	38.3	382.9	4349	4349	631.7
1x500 RM	1	41.9	418.7	5382	5382	721.6
1x630 RM	1	47.0	470.3	6927	6927	889.9
2x1,5 RE	1	13.9	104.6	286	286	146.9
2x2,5 RE	1	14.7	110.6	331	331	162.2
2x4 RE	1	15.7	117.5	390	390	180.4
2x6 RE	1	16.7	125.0	462	462	201.0
2x10 RE	1	18.2	136.7	592	592	234.7
2x16 RE	1	20.1	150.9	778	778	278.5
2x16 RM	1	21.0	157.7	821	821	300.2
2x25 RE	1	23.1	173.4	1076	1076	361.3
2x25 RM	1	24.2	181.7	1142	1142	396.0
2x35 RM	1	26.2	196.7	1410	1410	453.7
2x50 RM	1	29.6	222.2	1911	1911	570.3
2x70 RM	1	33.2	249.2	2450	2450	701.6
2x95 RM	1	38.2	286.7	3270	3270	925.6
2x120 RM	1	41.0	307.7	3936	3936	1045.3
2x150 RM	1	45.8	343.7	4879	4879	1315.3
2x185 RM	1	49.8	373.7	5904	5904	1539.6
2x240 RM	1	56.2	421.7	7525	7525	1952.7
3x1,5 RE	1	14.6	109.1	311	311	155.9
3x2,5 RE	1	15.4	115.6	366	366	171.7
3x4 RE	1	16.4	123.0	438	438	190.4
3x6 RE	1	17.5	131.1	528	528	211.4
3x10 RE	1	19.2	143.6	692	692	245.3
3x16 RE	1	21.2	159.0	930	930	288.7
3x16 RM	1	22.2	166.2	973	973	310.0
3x25 RE	1	24.8	186.2	1328	1328	389.7
3x25 RM	1	25.6	191.8	1374	1374	408.7
3x35 RM	1	27.7	207.9	1721	1721	464.7
3x50 RM	1	31.8	238.3	2404	2404	602.9

3x70 RM	1	36.0	270.1	3116	3116	756.4
3x95 RM	1	40.5	304.0	4081	4081	935.1
3x120 RM	1	43.9	329.6	5011	5011	1076.4
3x150 RM	1	48.6	364.6	6142	6142	1321.9
3x185 RM	1	52.9	396.8	7469	7469	1543.4
3x240 RM	1	59.7	447.9	9526	9526	1953.5
4x1,5 RE	1	15.6	117.1	353	353	174.2
4x2,5 RE	1	16.6	124.3	421	421	192.0
4x4 RE	1	17.7	132.6	510	510	213.0
4x6 RE	1	18.9	141.7	621	621	236.5
4x10 RE	1	20.8	155.8	826	826	274.2
4x16 RE	1	23.1	172.9	1124	1124	322.2
4x16 RM	1	24.5	184.1	1196	1196	361.6
4x25 RE	1	27.1	203.1	1618	1618	435.7
4x25 RM	1	27.9	209.4	1671	1671	456.6
4x35 RM	1	30.3	227.5	2109	2109	518.0
4x50 RM	1	35.6	267.2	3033	3033	718.6
4x70 RM	1	39.5	296.1	3850	3850	840.0
4x95 RM	1	45.7	343.1	5205	5205	1127.3
4x120 RM	1	49.1	368.4	6334	6334	1255.9
4x150 RM	1	53.5	400.9	7653	7653	1465.1
4x185 RM	1	59.3	444.6	9488	9488	1807.3
4x240 RM	1	65.8	493.4	11907	11907	2163.9
5x1,5 RE	1	16.8	126.0	406	406	195.2
5x2,5 RE	1	17.9	134.1	487	487	215.5
5x4 RE	1	19.1	143.4	596	596	239.3
5x6 RE	1	20.5	153.5	738	738	265.9
5x10 RE	1	22.6	169.3	985	985	308.5
5x16 RE	1	25.5	191.5	1372	1372	379.1
5x16 RM	1	26.8	200.7	1428	1428	406.3
5x25 RE	1	29.6	221.9	1957	1957	491.4
5x25 RM	1	30.5	229.0	2018	2018	514.9
5x35 RM	1	33.6	252.3	2605	2605	605.5
5x50 RM	1	39.0	292.7	3693	3693	809.5
5x70 RM	1	43.7	328.1	4800	4800	973.6
5x95 RM	1	50.2	376.6	6379	6379	1268.0
5x120 RM	1	54.4	408.0	7823	7823	1446.6
5x150 RM	1	59.9	448.9	9521	9521	1745.8
5x185 RM	1	65.3	489.4	11739	11739	2034.1
5x240 RM	1	73.9	554.6	14949	14949	2604.1

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

11. ARMOURED WITH STEEL GALVANIZED TAPES

IEC 60502-1



11.1 Cables with PVC sheath

- **TOFLEX RBVng(A)-FRLS**
- **TOFLEX GRBVng(A)-FRLS**
- **Cu/MGT/HEPR/LSPVC/STA/LSPVC**

Possible options:

«ng(A)-FRLS-HL»

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GRBV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).
⑥ **Outer sheath:**
- **«ng(A)-FRLS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-FRLS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX RBVng(A)-FRLS3×95RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RBVng(A)-FRLS	TOFLEX RBVng(A)-FRLS-HL	
2x1,5 RE	1	14.6	109.2	371	359	150.5
2x2,5 RE	1	15.4	115.2	422	409	165.8
2x4 RE	1	16.3	122.1	488	474	184.1
2x6 RE	1	17.3	129.6	568	553	204.6
2x10 RE	1	18.8	141.3	704	687	238.4
2x16 RE	1	20.7	155.6	903	885	282.1
2x16 RM	1	21.6	162.3	953	933	303.9
2x25 RE	1	24.1	181.1	1251	1228	380.6
2x25 RM	1	24.8	186.3	1300	1275	400.0
2x35 RM	1	26.8	201.3	1584	1557	457.8
2x50 RM	1	30.2	226.8	2111	2081	574.4
2x70 RM	1	33.8	253.8	2680	2646	705.7
2x95 RM	1	39.2	294.3	3678	3630	933.6
2x120 RM	1	42.0	315.3	4379	4328	1053.3
2x150 RM	1	46.8	351.3	5392	5326	1324.7
2x185 RM	1	50.8	381.3	6470	6398	1548.9
2x240 RM	1	58.0	435.3	8566	8475	1971.1
3x1,5 RE	1	15.2	113.8	400	387	159.5
3x2,5 RE	1	16.0	120.2	461	448	175.4
3x4 RE	1	17.0	127.7	541	526	194.1
3x6 RE	1	18.1	135.7	633	617	215.0
3x10 RE	1	19.8	148.3	809	791	248.9
3x16 RE	1	21.8	163.6	1061	1041	292.3
3x16 RM	1	22.8	170.9	1111	1091	313.7
3x25 RE	1	25.4	190.8	1488	1463	393.7
3x25 RM	1	26.2	196.4	1539	1513	412.7
3x35 RM	1	28.3	212.6	1903	1874	468.8
3x50 RM	1	32.4	243.0	2617	2584	607.0
3x70 RM	1	37.0	277.8	3491	3445	764.4
3x95 RM	1	41.6	311.6	4509	4457	943.1
3x120 RM	1	45.8	343.2	5586	5520	1143.6
3x150 RM	1	49.6	372.2	6679	6608	1331.2
3x185 RM	1	54.7	410.5	8420	8341	1560.0
3x240 RM	1	61.5	461.5	10621	10523	1971.9
4x1,5 RE	1	16.2	121.7	450	436	177.8
4x2,5 RE	1	17.2	129.0	524	509	195.7
4x4 RE	1	18.3	137.3	616	600	216.7
4x6 RE	1	19.5	146.3	736	718	240.1
4x10 RE	1	21.4	160.4	953	934	277.9
4x16 RE	1	24.1	180.6	1296	1271	341.4
4x16 RM	1	25.2	188.7	1353	1327	365.6
4x25 RE	1	27.7	207.7	1793	1765	439.7
4x25 RM	1	28.5	214.0	1852	1823	460.6
4x35 RM	1	30.9	232.1	2308	2276	522.0
4x50 RM	1	36.6	274.8	3399	3354	726.6
4x70 RM	1	40.5	303.8	4261	4211	848.0
4x95 RM	1	46.8	350.7	5701	5634	1136.6
4x120 RM	1	50.1	376.0	6871	6799	1265.2
4x150 RM	1	55.3	414.6	8606	8526	1481.7

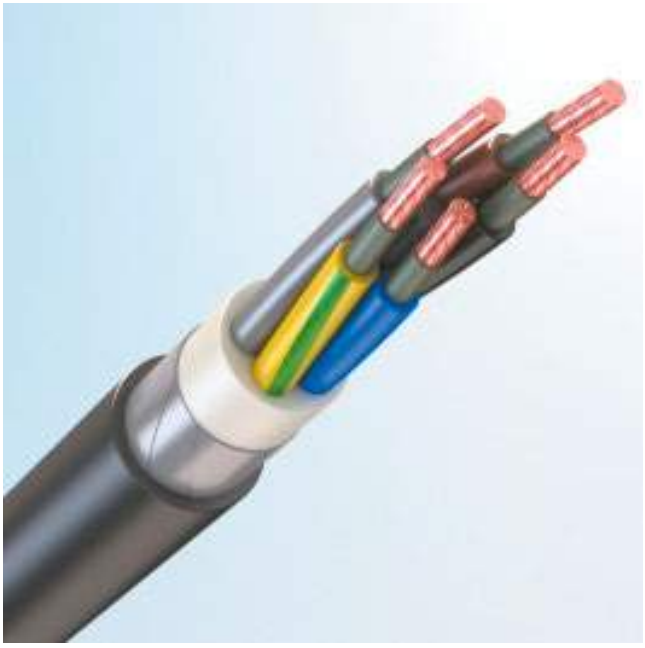
4x185 RM	1	61.1	458.2	10565	10468	1825.7
4x240 RM	1	68.6	514.5	13312	13185	2293.5
5x1,5 RE	1	17.4	130.6	506	491	198.9
5x2,5 RE	1	18.5	138.7	594	577	219.1
5x4 RE	1	19.7	148.0	712	694	243.0
5x6 RE	1	21.1	158.2	863	844	269.5
5x10 RE	1	23.2	174.0	1125	1104	312.2
5x16 RE	1	26.2	196.2	1535	1509	383.2
5x16 RM	1	27.4	205.3	1600	1572	410.4
5x25 RE	1	30.2	226.6	2150	2118	495.4
5x25 RM	1	31.2	233.7	2218	2185	518.9
5x35 RM	1	35.1	262.9	2909	2866	654.8
5x50 RM	1	40.0	300.3	4097	4047	817.5
5x70 RM	1	44.8	335.7	5260	5204	981.6
5x95 RM	1	51.2	384.3	6926	6852	1277.4
5x120 RM	1	56.8	426.1	8890	8799	1518.6
5x150 RM	1	61.7	462.6	10604	10505	1764.2
5x185 RM	1	68.1	510.6	13125	12999	2162.8
5x240 RM	1	75.8	568.2	16336	16194	2625.5

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RBaVng(A)-FRLS	TOFLEX RBaVng(A)-FRLS-HL	
1x4 RE	1	14.6	146.0	346	333	139.5
1x6 RE	1	14.6	146.0	358	345	136.9
1x10 RE	1	14.6	146.0	382	369	132.1
1x16 RE	1	14.8	147.7	428	415	128.5
1x16 RM	1	15.2	152.2	443	429	134.2
1x25 RE	1	16.3	162.7	552	537	151.3
1x25 RM	1	16.6	166.2	566	551	156.0
1x35 RM	1	17.6	176.2	678	661	169.2
1x50 RM	1	19.3	193.2	877	858	197.2
1x70 RM	1	20.9	209.2	1075	1055	219.4
1x95 RM	1	23.0	230.2	1365	1343	255.9
1x120 RM	1	24.8	248.2	1665	1638	293.9
1x150 RM	1	26.6	266.2	1975	1947	330.4
1x185 RM	1	28.6	286.2	2369	2338	372.0
1x240 RM	1	31.3	313.2	2927	2893	427.7
1x300 RM	1	36.8	367.7	3777	3730	603.5
1x400 RM	1	40.1	401.1	4665	4613	688.1
1x500 RM	1	43.7	436.9	5727	5670	782.0
1x630 RM	1	48.9	488.5	7348	7273	966.6

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

11. ARMOURED WITH STEEL GALVANIZED TAPES

IEC 60502-1



11.2 Cables sheathed with cross-linked highly elastic polymer compound

- **TOFLEX RBRng(A)-FRHF**
- **TOFLEX GRBRng(A)-FRHF**
- **Cu/MGT/HEPR/HFFR/STA/ XLHFFR**

Possible options:

"ng(A)-FRHF-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GRBR) of 5th class.
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).
⑥ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX RBRng(A)-FRHF-HL5×95RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RBRng(A)-FRHF	TOFLEX RBRng(A)-FRHF-HL	
2x1,5 RE	1	14.6	109.2	336	336	150.5
2x2,5 RE	1	15.4	115.2	385	385	165.8
2x4 RE	1	16.3	122.1	447	447	184.1
2x6 RE	1	17.3	129.6	524	524	204.6
2x10 RE	1	18.8	141.3	655	655	238.4
2x16 RE	1	20.7	155.6	848	848	282.1
2x16 RM	1	21.6	162.3	894	894	303.9
2x25 RE	1	24.1	181.1	1179	1179	380.6
2x25 RM	1	24.8	186.3	1225	1225	400.0
2x35 RM	1	26.8	201.3	1502	1502	457.8
2x50 RM	1	30.2	226.8	2015	2015	574.4
2x70 RM	1	33.8	253.8	2569	2569	705.7
2x95 RM	1	39.2	294.3	3525	3525	933.6
2x120 RM	1	42.0	315.3	4212	4212	1053.3
2x150 RM	1	46.8	351.3	5178	5178	1324.7
2x185 RM	1	50.8	381.3	6231	6231	1548.9
2x240 RM	1	58.0	435.3	8263	8263	1971.1
3x1,5 RE	1	15.2	113.8	364	364	159.5
3x2,5 RE	1	16.0	120.2	422	422	175.4
3x4 RE	1	17.0	127.7	499	499	194.1
3x6 RE	1	18.1	135.7	588	588	215.0
3x10 RE	1	19.8	148.3	758	758	248.9
3x16 RE	1	21.8	163.6	1004	1004	292.3
3x16 RM	1	22.8	170.9	1051	1051	313.7
3x25 RE	1	25.4	190.8	1414	1414	393.7
3x25 RM	1	26.2	196.4	1462	1462	412.7
3x35 RM	1	28.3	212.6	1818	1818	468.8
3x50 RM	1	32.4	243.0	2517	2517	607.0
3x70 RM	1	37.0	277.8	3355	3355	764.4
3x95 RM	1	41.6	311.6	4352	4352	943.1
3x120 RM	1	45.8	343.2	5387	5387	1143.6
3x150 RM	1	49.6	372.2	6460	6460	1331.2
3x185 RM	1	54.7	410.5	8174	8174	1560.0
3x240 RM	1	61.5	461.5	10313	10313	1971.9
4x1,5 RE	1	16.2	121.7	411	411	177.8
4x2,5 RE	1	17.2	129.0	482	482	195.7
4x4 RE	1	18.3	137.3	570	570	216.7
4x6 RE	1	19.5	146.3	687	687	240.1
4x10 RE	1	21.4	160.4	898	898	277.9
4x16 RE	1	24.1	180.6	1227	1227	341.4
4x16 RM	1	25.2	188.7	1281	1281	365.6
4x25 RE	1	27.7	207.7	1712	1712	439.7
4x25 RM	1	28.5	214.0	1768	1768	460.6
4x35 RM	1	30.9	232.1	2216	2216	522.0
4x50 RM	1	36.6	274.8	3269	3269	726.6
4x70 RM	1	40.5	303.8	4114	4114	848.0
4x95 RM	1	46.8	350.7	5502	5502	1136.6
4x120 RM	1	50.1	376.0	6656	6656	1265.2
4x150 RM	1	55.3	414.6	8365	8365	1481.7

4x185 RM	1	61.1	458.2	10269	10269	1825.7
4x240 RM	1	68.6	514.5	12930	12930	2293.5
5x1,5 RE	1	17.4	130.6	463	463	198.9
5x2,5 RE	1	18.5	138.7	548	548	219.1
5x4 RE	1	19.7	148.0	662	662	243.0
5x6 RE	1	21.1	158.2	809	809	269.5
5x10 RE	1	23.2	174.0	1064	1064	312.2
5x16 RE	1	26.2	196.2	1460	1460	383.2
5x16 RM	1	27.4	205.3	1520	1520	410.4
5x25 RE	1	30.2	226.6	2059	2059	495.4
5x25 RM	1	31.2	233.7	2124	2124	518.9
5x35 RM	1	35.1	262.9	2783	2783	654.8
5x50 RM	1	40.0	300.3	3950	3950	817.5
5x70 RM	1	44.8	335.7	5089	5089	981.6
5x95 RM	1	51.2	384.3	6702	6702	1277.4
5x120 RM	1	56.8	426.1	8617	8617	1518.6
5x150 RM	1	61.7	462.6	10303	10303	1764.2
5x185 RM	1	68.1	510.6	12738	12738	2162.8
5x240 RM	1	75.8	568.2	15896	15896	2625.5

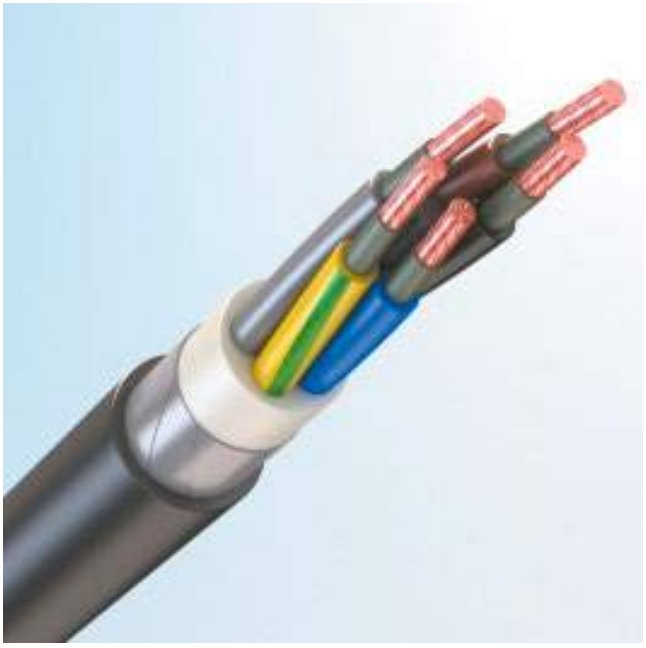
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RBaRng(A)-FRHF	TOFLEX RBaRng(A)-FRHF-HL	
1x4 RE	1	14.6	146.0	292	292	128.6
1x6 RE	1	14.6	146.0	304	304	126.0
1x10 RE	1	14.6	146.0	329	329	121.2
1x16 RE	1	14.8	147.7	374	374	117.5
1x16 RM	1	15.2	152.2	387	387	122.8
1x25 RE	1	16.3	162.7	491	491	139.1
1x25 RM	1	16.6	166.2	504	504	143.4
1x35 RM	1	17.6	176.2	611	611	155.8
1x50 RM	1	19.3	193.2	803	803	182.4
1x70 RM	1	20.9	209.2	995	995	203.2
1x95 RM	1	23.0	230.2	1276	1276	237.9
1x120 RM	1	24.8	248.2	1559	1559	272.4
1x150 RM	1	26.6	266.2	1861	1861	307.2
1x185 RM	1	28.6	286.2	2246	2246	346.9
1x240 RM	1	31.3	313.2	2791	2791	400.1
1x300 RM	1	36.8	367.7	3585	3585	564.6
1x400 RM	1	40.1	401.1	4455	4455	645.4
1x500 RM	1	43.7	436.9	5497	5497	735.3
1x630 RM	1	48.9	488.5	7047	7047	905.9

FIRE-RESISTANT POWER CABLES
WITH HARD GRADE ETHYLENE
PROPYLEN RUBBER (HEPR) INSULATION

11. ARMOURED WITH STEEL GALVANIZED TAPES

IEC 60502-1

11.3 Cables sheathed with halogen-free polymer compound



- **TOFLEX RBPng(A)-FRHF**
- **TOFLEX GRBPng(A)-FRHF**
- **Cu/MGT/HEPR/HFFR/STA/HFFR**

Possible options:

"ng(A)-FRHF-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GRBP) – of 5th class.
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).
⑥ **Outer sheath:**
- **«ng(A)-FRHF» –** made from halogen-free polymer compounds.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free polymer compounds.

Ordering example:

«TOFLEX RBPng(A)-FRHF-HL3×185RM-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RBPng(A)-FRHF	TOFLEX RBPng(A)-FRHF-HL	
2x1,5 RE	1	14.6	109.2	346	346	150.5
2x2,5 RE	1	15.4	115.2	395	395	165.8
2x4 RE	1	16.3	122.1	459	459	184.1
2x6 RE	1	17.3	129.6	536	536	204.6
2x10 RE	1	18.8	141.3	668	668	238.4
2x16 RE	1	20.7	155.6	863	863	282.1
2x16 RM	1	21.6	162.3	910	910	303.9
2x25 RE	1	24.1	181.1	1199	1199	380.6
2x25 RM	1	24.8	186.3	1245	1245	400.0
2x35 RM	1	26.8	201.3	1523	1523	457.8
2x50 RM	1	30.2	226.8	2040	2040	574.4
2x70 RM	1	33.8	253.8	2596	2596	705.7
2x95 RM	1	39.2	294.3	3563	3563	933.6
2x120 RM	1	42.0	315.3	4253	4253	1053.3
2x150 RM	1	46.8	351.3	5231	5231	1324.7
2x185 RM	1	50.8	381.3	6289	6289	1548.9
2x240 RM	1	58.0	435.3	8337	8337	1971.1
3x1,5 RE	1	15.2	113.8	374	374	159.5
3x2,5 RE	1	16.0	120.2	433	433	175.4
3x4 RE	1	17.0	127.7	511	511	194.1
3x6 RE	1	18.1	135.7	601	601	215.0
3x10 RE	1	19.8	148.3	772	772	248.9
3x16 RE	1	21.8	163.6	1020	1020	292.3
3x16 RM	1	22.8	170.9	1068	1068	313.7
3x25 RE	1	25.4	190.8	1434	1434	393.7
3x25 RM	1	26.2	196.4	1483	1483	412.7
3x35 RM	1	28.3	212.6	1841	1841	468.8
3x50 RM	1	32.4	243.0	2543	2543	607.0
3x70 RM	1	37.0	277.8	3391	3391	764.4
3x95 RM	1	41.6	311.6	4393	4393	943.1
3x120 RM	1	45.8	343.2	5440	5440	1143.6
3x150 RM	1	49.6	372.2	6517	6517	1331.2
3x185 RM	1	54.7	410.5	8237	8237	1560.0
3x240 RM	1	61.5	461.5	10392	10392	1971.9
4x1,5 RE	1	16.2	121.7	422	422	177.8
4x2,5 RE	1	17.2	129.0	494	494	195.7
4x4 RE	1	18.3	137.3	583	583	216.7
4x6 RE	1	19.5	146.3	701	701	240.1
4x10 RE	1	21.4	160.4	914	914	277.9
4x16 RE	1	24.1	180.6	1246	1246	341.4
4x16 RM	1	25.2	188.7	1301	1301	365.6
4x25 RE	1	27.7	207.7	1734	1734	439.7
4x25 RM	1	28.5	214.0	1791	1791	460.6
4x35 RM	1	30.9	232.1	2241	2241	522.0
4x50 RM	1	36.6	274.8	3305	3305	726.6
4x70 RM	1	40.5	303.8	4154	4154	848.0
4x95 RM	1	46.8	350.7	5556	5556	1136.6
4x120 RM	1	50.1	376.0	6713	6713	1265.2
4x150 RM	1	55.3	414.6	8429	8429	1481.7

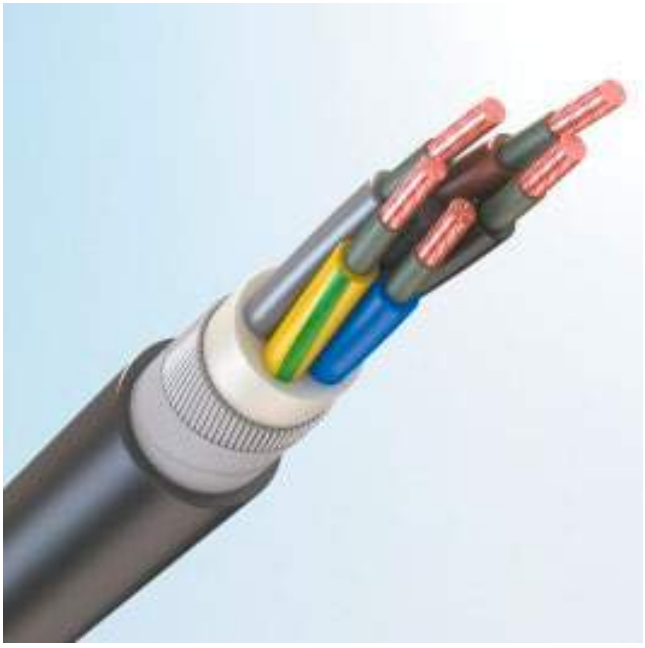
4x185 RM	1	61.1	458.2	10348	10348	1825.7
4x240 RM	1	68.6	514.5	13032	13032	2293.5
5x1,5 RE	1	17.4	130.6	475	475	198.9
5x2,5 RE	1	18.5	138.7	561	561	219.1
5x4 RE	1	19.7	148.0	676	676	243.0
5x6 RE	1	21.1	158.2	824	824	269.5
5x10 RE	1	23.2	174.0	1081	1081	312.2
5x16 RE	1	26.2	196.2	1481	1481	383.2
5x16 RM	1	27.4	205.3	1543	1543	410.4
5x25 RE	1	30.2	226.6	2084	2084	495.4
5x25 RM	1	31.2	233.7	2149	2149	518.9
5x35 RM	1	35.1	262.9	2818	2818	654.8
5x50 RM	1	40.0	300.3	3989	3989	817.5
5x70 RM	1	44.8	335.7	5133	5133	981.6
5x95 RM	1	51.2	384.3	6761	6761	1277.4
5x120 RM	1	56.8	426.1	8689	8689	1518.6
5x150 RM	1	61.7	462.6	10383	10383	1764.2
5x185 RM	1	68.1	510.6	12839	12839	2162.8
5x240 RM	1	75.8	568.2	16009	16009	2625.5

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RBaPng(A)-FRHF	TOFLEX RBaPng(A)-FRHF-HL	
1x4 RE	1	14.6	146.0	304	304	128.6
1x6 RE	1	14.6	146.0	316	316	126.0
1x10 RE	1	14.6	146.0	340	340	121.2
1x16 RE	1	14.8	147.7	386	386	117.5
1x16 RM	1	15.2	152.2	399	399	122.8
1x25 RE	1	16.3	162.7	505	505	139.1
1x25 RM	1	16.6	166.2	518	518	143.4
1x35 RM	1	17.6	176.2	626	626	155.8
1x50 RM	1	19.3	193.2	819	819	182.4
1x70 RM	1	20.9	209.2	1012	1012	203.2
1x95 RM	1	23.0	230.2	1296	1296	237.9
1x120 RM	1	24.8	248.2	1582	1582	272.4
1x150 RM	1	26.6	266.2	1886	1886	307.2
1x185 RM	1	28.6	286.2	2272	2272	346.9
1x240 RM	1	31.3	313.2	2820	2820	400.1
1x300 RM	1	36.8	367.7	3627	3627	564.6
1x400 RM	1	40.1	401.1	4500	4500	645.4
1x500 RM	1	43.7	436.9	5547	5547	735.3
1x630 RM	1	48.9	488.5	7112	7112	905.9

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

12. ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1



12.1 Cables with PVC sheath

- **TOFLEX RKVng(A)-FRLS**
- **TOFLEX GRKVng(A)-FRLS**
- **Cu/MGT/HEPR/LSPVC/SWA/LSPVC**

Possible options:

«ng(A)-FRLS-HL»

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GRKV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Armour** – steel galvanized wires.
⑥ **Outer sheath:**
- **«ng(A)-FRLS» –** made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-FRLS-HL» –** made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX RKVng(A)-FRLS3×95RM(N,G)-1 IEC 60502-1»

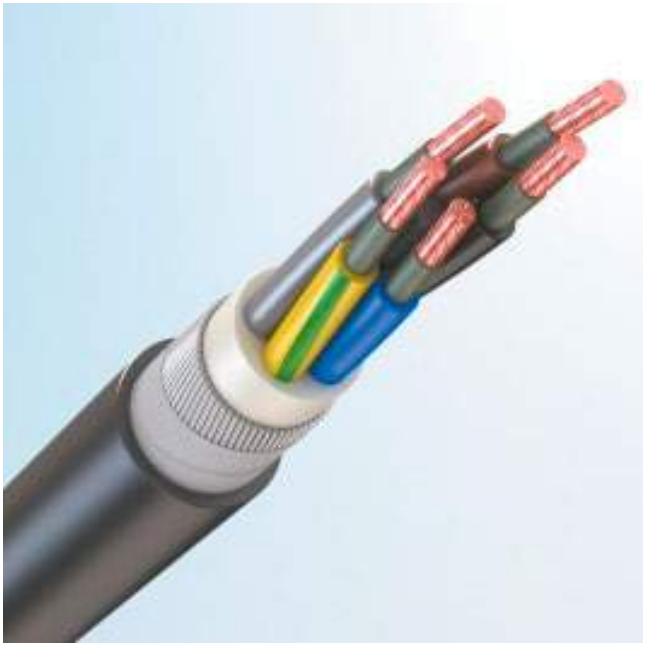
CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RKVng(A)-FRLS	TOFLEX RKVng(A)-FRLS-HL	
2x1,5 RE	1	16.5	123.9	588	574	162.1
2x2,5 RE	1	17.3	129.9	653	638	177.4
2x4 RE	1	18.2	136.8	740	724	195.6
2x6 RE	1	19.2	144.3	831	815	216.2
2x10 RE	1	20.8	156.0	999	981	249.9
2x16 RE	1	23.5	176.3	1402	1382	298.3
2x16 RM	1	24.8	186.0	1490	1467	336.1
2x25 RE	1	26.9	201.8	1833	1807	398.6
2x25 RM	1	27.6	207.0	1893	1866	418.1
2x35 RM	1	29.6	222.0	2231	2202	475.8
2x50 RM	1	33.8	253.5	3097	3063	597.6
2x70 RM	1	38.2	286.5	3858	3813	778.3
2x120 RM	1	47.0	352.5	6117	6052	1146
3x1,5 RE	1	17.1	128.5	632	617	171.1
3x2,5 RE	1	18.0	134.9	706	690	186.9
3x4 RE	1	19.0	142.4	806	790	205.6
3x6 RE	1	20.1	150.4	915	898	226.5
3x10 RE	1	22.5	169.0	1281	1262	265.1
3x16 RE	1	25.0	187.3	1615	1591	324.7
3x16 RM	1	25.9	194.6	1693	1668	346.7
3x25 RE	1	28.2	211.5	2094	2067	411.7
3x25 RM	1	29.0	217.1	2174	2145	430.8
3x50 RM	1	36.8	275.7	3750	3707	677.7
3x95 RM	1	46.5	348.8	6209	6145	1035
4x1,5 RE	1	18.2	136.4	702	687	189.4
4x2,5 RE	1	19.2	143.7	788	772	207.2
4x4 RE	1	20.3	152.0	905	888	228.2
4x6 RE	1	21.5	161.0	1045	1027	251.6
4x10 RE	1	24.6	184.1	1492	1469	310.0
4x16 RE	1	26.8	201.3	1861	1835	359.5
4x16 RM	1	27.9	209.4	1961	1934	383.7
4x25 RE	1	30.5	228.4	2467	2437	457.7
4x35 RM	1	35.3	264.8	3395	3354	590.9
5x1,5 RE	1	19.4	145.3	783	766	210.4
5x2,5 RE	1	20.5	153.4	891	874	230.7
5x4 RE	1	22.5	168.7	1184	1165	259.2
5x6 RE	1	24.2	181.9	1388	1364	301.4
5x10 RE	1	26.4	197.7	1720	1695	345.5
5x16 RE	1	28.9	216.9	2170	2141	401.2
5x16 RM	1	30.1	226.0	2259	2230	428.4
5x25 RE	1	33.8	253.3	3135	3102	518.7
5x25 RM	1	35.5	266.4	3304	3262	588.0

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

12. ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1



12.2 Cables sheathed with cross-linked highly elastic polymer compound

- **TOFLEX RKRng(A)-FRHF**
- **TOFLEX GRKRng(A)-FRHF**
- **Cu/MGT/HEPR/HFFR/SWA/ XLHFFR**

Possible options:

"ng(A)-FRHF-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GRKV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Armour** – steel galvanized wires.
⑥ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX RKRng(A)-FRHF-HL5×95RM(N,G)-1 IEC 60502-1»

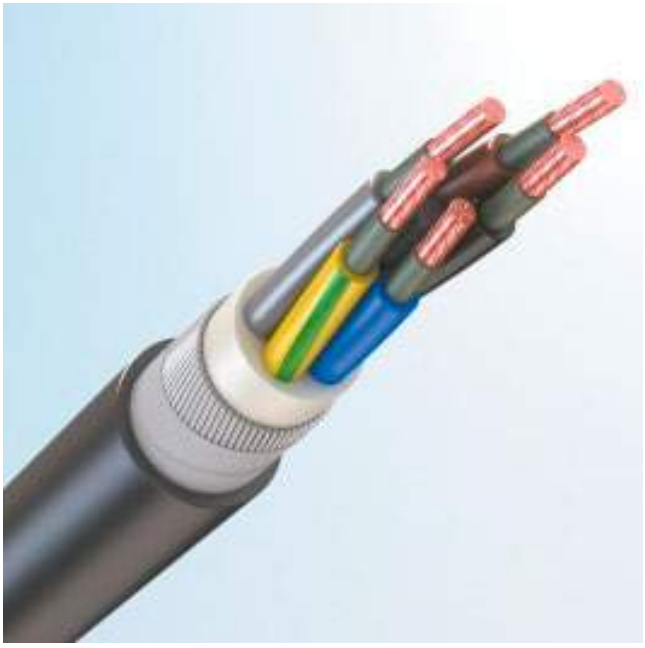
CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RKVng(A)-FRLS	TOFLEX RKVng(A)-FRLS-HL	
2x1,5 RE	1	16.5	123.9	548	548	162.1
2x2,5 RE	1	17.3	129.9	610	610	177.4
2x4 RE	1	18.2	136.8	694	694	195.6
2x6 RE	1	19.2	144.3	783	783	216.2
2x10 RE	1	20.8	156.0	945	945	249.9
2x16 RE	1	23.5	176.3	1340	1340	298.3
2x16 RM	1	24.8	186.0	1419	1419	336.1
2x25 RE	1	26.9	201.8	1753	1753	398.6
2x25 RM	1	27.6	207.0	1811	1811	418.1
2x35 RM	1	29.6	222.0	2140	2140	475.8
2x50 RM	1	33.8	253.5	2990	2990	597.6
2x70 RM	1	38.2	286.5	3716	3716	778.3
2x120 RM	1	47.0	352.5	5910	5910	1146
3x1,5 RE	1	17.1	128.5	590	590	171.1
3x2,5 RE	1	18.0	134.9	662	662	186.9
3x4 RE	1	19.0	142.4	759	759	205.6
3x6 RE	1	20.1	150.4	865	865	226.5
3x10 RE	1	22.5	169.0	1224	1224	265.1
3x16 RE	1	25.0	187.3	1544	1544	324.7
3x16 RM	1	25.9	194.6	1618	1618	346.7
3x25 RE	1	28.2	211.5	2012	2012	411.7
3x25 RM	1	29.0	217.1	2089	2089	430.8
3x50 RM	1	36.8	275.7	3619	3619	677.7
3x95 RM	1	46.5	348.8	6014	6014	1035
4x1,5 RE	1	18.2	136.4	658	658	189.4
4x2,5 RE	1	19.2	143.7	741	741	207.2
4x4 RE	1	20.3	152.0	855	855	228.2
4x6 RE	1	22.3	167.0	1137	1137	256.3
4x10 RE	1	24.6	184.1	1424	1424	310.0
4x16 RE	1	26.8	201.3	1785	1785	359.5
4x16 RM	1	27.9	209.4	1881	1881	383.7
4x25 RE	1	30.5	228.4	2378	2378	457.7
4x35 RM	1	35.3	264.8	3274	3274	590.9
5x1,5 RE	1	19.4	145.3	735	735	210.4
5x2,5 RE	1	20.5	153.4	840	840	230.7
5x4 RE	1	22.5	168.7	1128	1128	259.2
5x6 RE	1	24.2	181.9	1320	1320	301.4
5x10 RE	1	26.4	197.7	1646	1646	345.5
5x16 RE	1	28.9	216.9	2086	2086	401.2
5x16 RM	1	30.1	226.0	2172	2172	428.4
5x25 RE	1	33.8	253.3	3035	3035	518.7
5x25 RM	1	35.5	266.4	3181	3181	588.0

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

12. ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1



12.3 Cables sheathed with halogen-free polymer compound

- **TOFLEX RKPng(A)-FRHF**
- **TOFLEX GRKPng(A)-FRHF**
- **Cu/MGT/HEPR/HFFR/SWA/HFFR**

Possible options:

"ng(A)-FRHF-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GRKV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Armour** – steel galvanized wires.
⑥ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free polymer compounds.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free polymer compounds.

Ordering example:

«TOFLEX RKPng(A)-FRHF-HL3×185RM-1 IEC 60502-1»

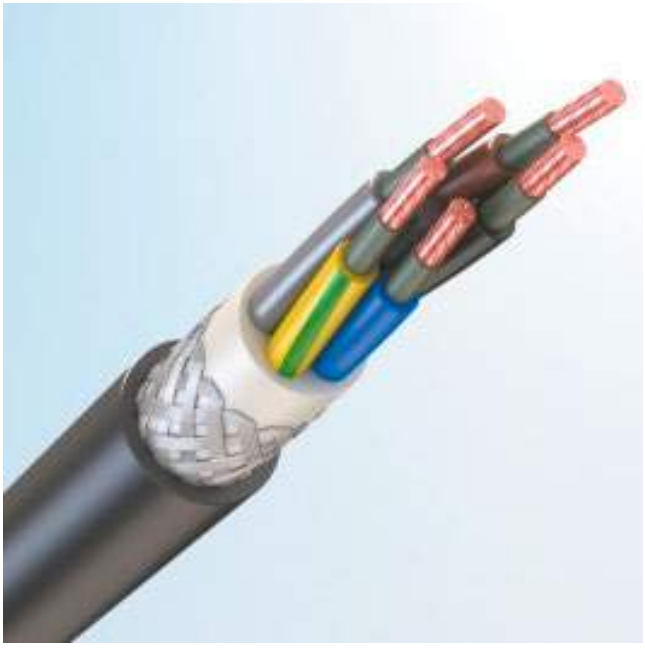
CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RKPng(A)-FRHF	TOFLEX RKPng(A)-FRHF-HL	
2x1,5 RE	1	16.5	123.9	560	560	162.1
2x2,5 RE	1	17.3	129.9	622	622	177.4
2x4 RE	1	18.2	136.8	707	707	195.6
2x6 RE	1	19.2	144.3	796	796	216.2
2x10 RE	1	20.8	156.0	960	960	249.9
2x16 RE	1	23.5	176.3	1357	1357	298.3
2x16 RM	1	24.8	186.0	1438	1438	336.1
2x25 RE	1	26.9	201.8	1775	1775	398.6
2x25 RM	1	27.6	207.0	1833	1833	418.1
2x35 RM	1	29.6	222.0	2164	2164	475.8
2x50 RM	1	33.8	253.5	3018	3018	597.6
2x70 RM	1	38.2	286.5	3753	3753	778.3
2x120 RM	1	47.0	352.5	5964	5964	1146
3x1,5 RE	1	17.1	128.5	603	603	171.1
3x2,5 RE	1	18.0	134.9	674	674	186.9
3x4 RE	1	19.0	142.4	773	773	205.6
3x6 RE	1	20.1	150.4	879	879	226.5
3x10 RE	1	22.5	169.0	1240	1240	265.1
3x16 RE	1	25.0	187.3	1564	1564	324.7
3x16 RM	1	25.9	194.6	1639	1639	346.7
3x25 RE	1	28.2	211.5	2035	2035	411.7
3x25 RM	1	29.0	217.1	2112	2112	430.8
3x50 RM	1	36.8	275.7	3655	3655	677.7
3x95 RM	1	46.5	348.8	6067	6067	1035
4x1,5 RE	1	18.2	136.4	671	671	189.4
4x2,5 RE	1	19.2	143.7	755	755	207.2
4x4 RE	1	20.3	152.0	870	870	228.2
4x6 RE	1	22.3	167.0	1153	1153	256.3
4x10 RE	1	24.6	184.1	1444	1444	310.0
4x16 RE	1	26.8	201.3	1806	1806	359.5
4x16 RM	1	27.9	209.4	1904	1904	383.7
4x25 RE	1	30.5	228.4	2403	2403	457.7
4x35 RM	1	35.3	264.8	3308	3308	590.9
5x1,5 RE	1	19.4	145.3	749	749	210.4
5x2,5 RE	1	20.5	153.4	855	855	230.7
5x4 RE	1	22.5	168.7	1144	1144	259.2
5x6 RE	1	24.2	181.9	1339	1339	301.4
5x10 RE	1	26.4	197.7	1667	1667	345.5
5x16 RE	1	28.9	216.9	2110	2110	401.2
5x16 RM	1	30.1	226.0	2197	2197	428.4
5x25 RE	1	33.8	253.3	3062	3062	518.7
5x25 RM	1	35.5	266.4	3215	3215	588.0

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

13. ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1



13.1 Cables with PVC sheath

- **TOFLEX RPVng(A)-FRLS**
- **TOFLEX GRPVng(A)-FRLS**
- **Cu/MGT/HEPR/ LSPVC/SWB/LSPVC**

Possible options:

«ng(A)-FRLS-HL»

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GRPV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Armour** – with full lay-up from galvanized steel wires.
⑥ **Outer sheath:**
- **«ng(A)-FRLS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-FRLS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX RPVng(A)-FRLS3×95RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

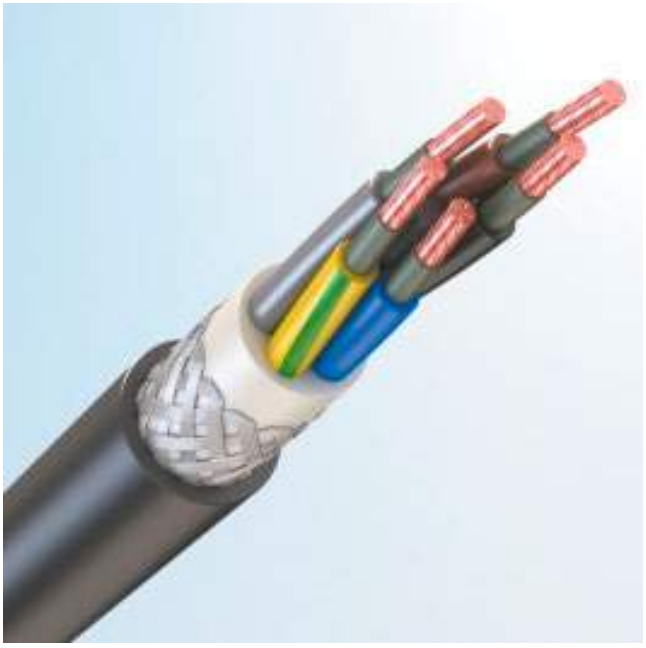
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RPVng(A)-FRLS	TOFLEX RPVng(A)-FRLS-HL	
2x1,5 RE	1	15.0	112.2	375	362	152.9
2x2,5 RE	1	15.8	118.2	426	413	168.2
2x4 RE	1	16.7	125.1	491	477	186.4
2x6 RE	1	17.7	132.6	571	556	207.0
2x10 RE	1	19.2	144.3	712	695	240.7
2x16 RE	1	21.1	158.6	912	894	284.5
2x16 RM	1	22.0	165.3	961	942	306.2
2x25 RE	1	24.5	184.1	1261	1237	383.2
2x25 RM	1	25.2	189.3	1309	1285	402.7
2x35 RM	1	27.2	204.3	1594	1568	460.4
2x50 RM	1	30.6	229.8	2122	2092	577.0
2x70 RM	1	35.0	262.8	2771	2730	753.6
2x95 RM	1	39.2	294.3	3563	3516	933.6
2x120 RM	1	42.0	315.3	4254	4205	1053.3
2x150 RM	1	46.8	351.3	5254	5190	1324.7
2x185 RM	1	50.8	381.3	6318	6247	1548.9
3x1,5 RE	1	15.6	116.8	404	391	161.9
3x2,5 RE	1	16.4	123.2	465	451	177.7
3x4 RE	1	17.4	130.7	544	529	196.4
3x6 RE	1	18.5	138.7	642	626	217.4
3x10 RE	1	20.2	151.3	817	800	251.3
3x16 RE	1	22.2	166.6	1070	1051	294.7
3x16 RM	1	23.2	173.9	1120	1100	316.0
3x25 RE	1	25.8	193.8	1498	1473	396.3
3x25 RM	1	26.6	199.4	1549	1523	415.4
3x35 RM	1	28.7	215.6	1913	1885	471.4
3x50 RM	1	32.8	246.0	2628	2596	609.6
3x70 RM	1	37.0	277.8	3383	3340	764.4
3x95 RM	1	41.6	311.6	4386	4336	943.1
3x120 RM	1	45.8	343.2	5451	5388	1143.6
3x150 RM	1	49.6	372.2	6531	6462	1331.2
3x185 RM	1	53.9	404.5	7898	7823	1552.7
4x1,5 RE	1	16.6	124.7	453	439	180.2
4x2,5 RE	1	17.6	132.0	527	512	198.0
4x4 RE	1	18.7	140.3	624	608	219.0
4x6 RE	1	19.9	149.3	744	727	242.5
4x10 RE	1	21.8	163.4	962	943	280.2
4x16 RE	1	24.5	183.6	1305	1281	344.0
4x16 RM	1	25.6	191.7	1362	1338	368.3
4x25 RE	1	28.1	210.7	1803	1775	442.3
4x25 RM	1	28.9	217.0	1862	1834	463.2
4x35 RM	1	31.3	235.1	2318	2288	524.7
4x50 RM	1	36.6	274.8	3293	3250	726.6
4x70 RM	1	40.5	303.8	4142	4094	848.0
4x95 RM	1	46.8	350.7	5563	5498	1136.6
4x120 RM	1	50.1	376.0	6721	6652	1265.2
4x150 RM	1	54.5	408.6	8079	8003	1474.4
5x1,5 RE	1	17.8	133.6	514	499	201.2
5x2,5 RE	1	18.9	141.7	602	586	221.5

5x4 RE	1	20.1	151.0	720	703	245.3
5x6 RE	1	21.5	161.2	872	853	271.9
5x10 RE	1	23.6	177.0	1134	1113	314.5
5x16 RE	1	26.6	199.2	1545	1519	385.8
5x16 RM	1	27.8	208.3	1610	1583	413.0
5x25 RE	1	30.6	229.6	2160	2130	498.0
5x25 RM	1	31.6	236.7	2228	2197	521.5
5x35 RM	1	35.5	265.9	2920	2879	657.9
5x50 RM	1	40.0	300.3	3979	3932	817.5
5x70 RM	1	44.8	335.7	5126	5073	981.6
5x95 RM	1	51.2	384.3	6773	6702	1277.4
5x120 RM	1	55.4	415.6	8255	8178	1455.9

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

13. ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1



13.2 Cables sheathed with cross-linked highly elastic polymer compound

- **TOFLEX RPRng(A)-FRHF**
- **TOFLEX GRPRng(A)-FRHF**
- **Cu/MGT/HEPR/HFFR/SWB/ XLHFFR**

Possible options:

"ng(A)-FRHF-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GRPV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Armour** – with full lay-up from galvanized steel wires.
⑥ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX RPRng(A)-FRHF-HL5×95RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

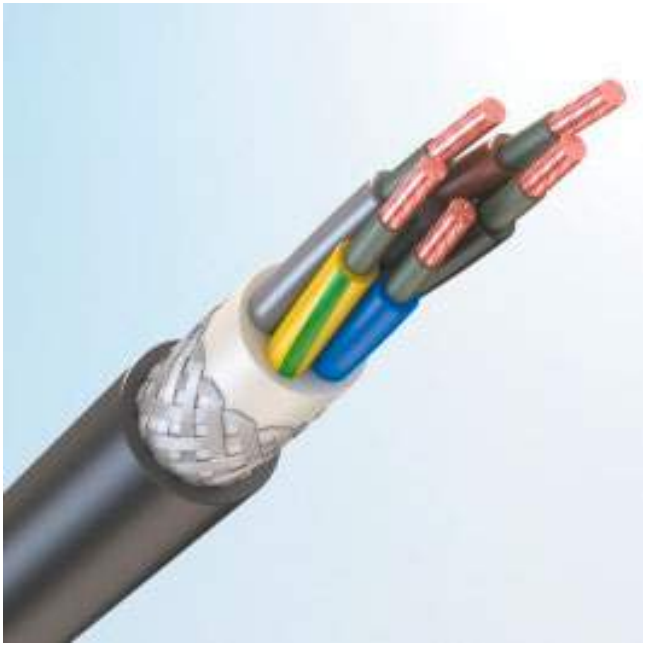
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RPRng(A)-FRHF	TOFLEX RPRng(A)-FRHF-HL	
2x1,5 RE	1	15.0	112.2	336	336	152.9
2x2,5 RE	1	15.8	118.2	385	385	168.2
2x4 RE	1	16.7	125.1	447	447	186.4
2x6 RE	1	17.7	132.6	523	523	207.0
2x10 RE	1	19.2	144.3	659	659	240.7
2x16 RE	1	21.1	158.6	853	853	284.5
2x16 RM	1	22.0	165.3	899	899	306.2
2x25 RE	1	24.5	184.1	1184	1184	383.2
2x25 RM	1	25.2	189.3	1229	1229	402.7
2x35 RM	1	27.2	204.3	1506	1506	460.4
2x50 RM	1	30.6	229.8	2019	2019	577.0
2x70 RM	1	35.0	262.8	2632	2632	753.6
2x95 RM	1	39.2	294.3	3402	3402	933.6
2x120 RM	1	42.0	315.3	4079	4079	1053.3
2x150 RM	1	46.8	351.3	5028	5028	1324.7
2x185 RM	1	50.8	381.3	6067	6067	1548.9
3x1,5 RE	1	15.6	116.8	364	364	161.9
3x2,5 RE	1	16.4	123.2	422	422	177.7
3x4 RE	1	17.4	130.7	498	498	196.4
3x6 RE	1	18.5	138.7	593	593	217.4
3x10 RE	1	20.2	151.3	763	763	251.3
3x16 RE	1	22.2	166.6	1009	1009	294.7
3x16 RM	1	23.2	173.9	1056	1056	316.0
3x25 RE	1	25.8	193.8	1418	1418	396.3
3x25 RM	1	26.6	199.4	1467	1467	415.4
3x35 RM	1	28.7	215.6	1822	1822	471.4
3x50 RM	1	32.8	246.0	2521	2521	609.6
3x70 RM	1	37.0	277.8	3240	3240	764.4
3x95 RM	1	41.6	311.6	4221	4221	943.1
3x120 RM	1	45.8	343.2	5242	5242	1143.6
3x150 RM	1	49.6	372.2	6301	6301	1331.2
3x185 RM	1	53.9	404.5	7643	7643	1552.7
4x1,5 RE	1	16.6	124.7	410	410	180.2
4x2,5 RE	1	17.6	132.0	481	481	198.0
4x4 RE	1	18.7	140.3	575	575	219.0
4x6 RE	1	19.9	149.3	691	691	242.5
4x10 RE	1	21.8	163.4	903	903	280.2
4x16 RE	1	24.5	183.6	1232	1232	344.0
4x16 RM	1	25.6	191.7	1285	1285	368.3
4x25 RE	1	28.1	210.7	1716	1716	442.3
4x25 RM	1	28.9	217.0	1772	1772	463.2
4x35 RM	1	31.3	235.1	2220	2220	524.7
4x50 RM	1	36.6	274.8	3155	3155	726.6
4x70 RM	1	40.5	303.8	3987	3987	848.0
4x95 RM	1	46.8	350.7	5354	5354	1136.6
4x120 RM	1	50.1	376.0	6494	6494	1265.2
4x150 RM	1	54.5	408.6	7828	7828	1474.4
5x1,5 RE	1	17.8	133.6	468	468	201.2
5x2,5 RE	1	18.9	141.7	553	553	221.5

5x4 RE	1	20.1	151.0	667	667	245.3
5x6 RE	1	21.5	161.2	814	814	271.9
5x10 RE	1	23.6	177.0	1070	1070	314.5
5x16 RE	1	26.6	199.2	1465	1465	385.8
5x16 RM	1	27.8	208.3	1525	1525	413.0
5x25 RE	1	30.6	229.6	2065	2065	498.0
5x25 RM	1	31.6	236.7	2130	2130	521.5
5x35 RM	1	35.5	265.9	2789	2789	657.9
5x50 RM	1	40.0	300.3	3828	3828	817.5
5x70 RM	1	44.8	335.7	4953	4953	981.6
5x95 RM	1	51.2	384.3	6543	6543	1277.4
5x120 RM	1	55.4	415.6	8002	8002	1455.9

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

13. ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1



13.3 Cables sheathed with halogen-free polymer compound

- **TOFLEX RPPng(A)-FRHF**
- **TOFLEX GRPPng(A)-FRHF**
- **Cu/MGT/HEPR/HFFR/SWB/HFFR**

Possible options:

"ng(A)-FRHF-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GRPV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Armour** – with full lay-up from galvanized steel wires.
⑥ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free polymer compounds.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free polymer compounds.

Ordering example:

«TOFLEX RPPng(A)-FRHF-HL3×185RM-1 IEC 60502-1»

CABLE FEATURES

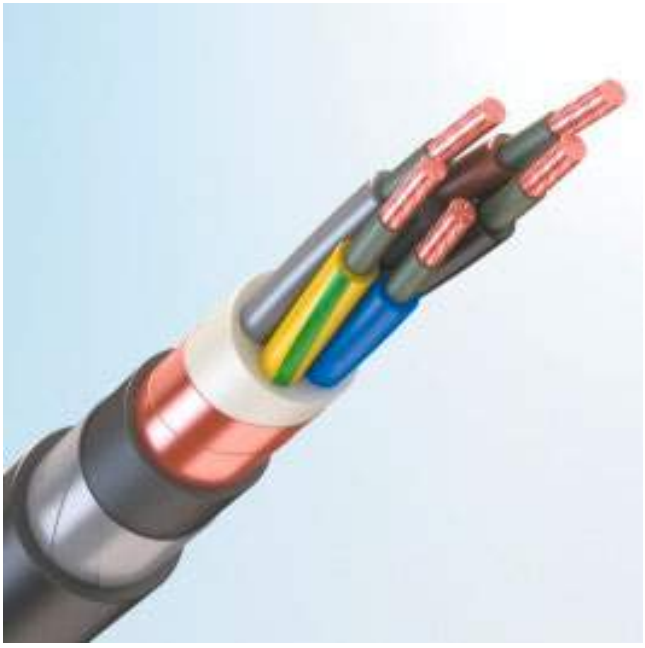
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX RPPng(A)-FRHF	TOFLEX RPPng(A)-FRHF-HL	
2x1,5 RE	1	15.0	112.2	349	349	152.9
2x2,5 RE	1	15.8	118.2	398	398	168.2
2x4 RE	1	16.7	125.1	461	461	186.4
2x6 RE	1	17.7	132.6	538	538	207.0
2x10 RE	1	19.2	144.3	676	676	240.7
2x16 RE	1	21.1	158.6	871	871	284.5
2x16 RM	1	22.0	165.3	918	918	306.2
2x25 RE	1	24.5	184.1	1207	1207	383.2
2x25 RM	1	25.2	189.3	1254	1254	402.7
2x35 RM	1	27.2	204.3	1532	1532	460.4
2x50 RM	1	30.6	229.8	2049	2049	577.0
2x70 RM	1	35.0	262.8	2673	2673	753.6
2x95 RM	1	39.2	294.3	3448	3448	933.6
2x120 RM	1	42.0	315.3	4129	4129	1053.3
2x150 RM	1	46.8	351.3	5093	5093	1324.7
2x185 RM	1	50.8	381.3	6137	6137	1548.9
3x1,5 RE	1	15.6	116.8	377	377	161.9
3x2,5 RE	1	16.4	123.2	436	436	177.7
3x4 RE	1	17.4	130.7	513	513	196.4
3x6 RE	1	18.5	138.7	608	608	217.4
3x10 RE	1	20.2	151.3	780	780	251.3
3x16 RE	1	22.2	166.6	1028	1028	294.7
3x16 RM	1	23.2	173.9	1076	1076	316.0
3x25 RE	1	25.8	193.8	1443	1443	396.3
3x25 RM	1	26.6	199.4	1492	1492	415.4
3x35 RM	1	28.7	215.6	1850	1850	471.4
3x50 RM	1	32.8	246.0	2553	2553	609.6
3x70 RM	1	37.0	277.8	3284	3284	764.4
3x95 RM	1	41.6	311.6	4270	4270	943.1
3x120 RM	1	45.8	343.2	5305	5305	1143.6
3x150 RM	1	49.6	372.2	6369	6369	1331.2
3x185 RM	1	53.9	404.5	7718	7718	1552.7
4x1,5 RE	1	16.6	124.7	424	424	180.2
4x2,5 RE	1	17.6	132.0	496	496	198.0
4x4 RE	1	18.7	140.3	591	591	219.0
4x6 RE	1	19.9	149.3	708	708	242.5
4x10 RE	1	21.8	163.4	922	922	280.2
4x16 RE	1	24.5	183.6	1255	1255	344.0
4x16 RM	1	25.6	191.7	1310	1310	368.3
4x25 RE	1	28.1	210.7	1743	1743	442.3
4x25 RM	1	28.9	217.0	1800	1800	463.2
4x35 RM	1	31.3	235.1	2251	2251	524.7
4x50 RM	1	36.6	274.8	3198	3198	726.6
4x70 RM	1	40.5	303.8	4034	4034	848.0
4x95 RM	1	46.8	350.7	5418	5418	1136.6
4x120 RM	1	50.1	376.0	6564	6564	1265.2
4x150 RM	1	54.5	408.6	7904	7904	1474.4
5x1,5 RE	1	17.8	133.6	483	483	201.2
5x2,5 RE	1	18.9	141.7	569	569	221.5

5x4 RE	1	20.1	151.0	684	684	245.3
5x6 RE	1	21.5	161.2	833	833	271.9
5x10 RE	1	23.6	177.0	1090	1090	314.5
5x16 RE	1	26.6	199.2	1490	1490	385.8
5x16 RM	1	27.8	208.3	1552	1552	413.0
5x25 RE	1	30.6	229.6	2095	2095	498.0
5x25 RM	1	31.6	236.7	2161	2161	521.5
5x35 RM	1	35.5	265.9	2831	2831	657.9
5x50 RM	1	40.0	300.3	3875	3875	817.5
5x70 RM	1	44.8	335.7	5006	5006	981.6
5x95 RM	1	51.2	384.3	6614	6614	1277.4
5x120 RM	1	55.4	415.6	8079	8079	1455.9

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

14. SHIELDED, ARMOURED WITH STEEL GALVANIZED TAPES*

IEC 60502-1



14.1 Cables with PVC sheath

- **TOFLEX REBVng(A)-FRLS**
- **TOFLEX GREBVng(A)-FRLS**
- **Cu/HEPR/OSCR/LSPVC/STA/LSPVC**

Possible options:

«ng(A)-FRLS-HL»

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GREBV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑥ **Separation layer** – corresponds to the type of the outer sheath.
⑦ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).
⑧ **Outer sheath:**
- **«ng(A)-FRLS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-FRLS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX REBVng(A)-FRLS 3×95RM(N, G)-1 IEC 60502-1»

«TOFLEX REBVng(A)-FRLS 3×95/50RM(N, G)-1 IEC 60502-1»

*In the production of power cables with aluminium or aluminium alloy tapes armour in the cable grade «Ba» must be specified instead of «B».

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REBVng(A)-FRLS	TOFLEX REBVng(A)-FRLS-HL	
2x1,5 RE	1	16.7	125.6	511	506	200.4
2x2,5 RE	1	17.5	131.6	565	558	218.3
2x4 RE	1	18.5	138.5	638	632	239.5
2x6 RE	1	19.5	146.0	727	719	263.4
2x10 RE	1	21.0	157.7	881	873	302.2
2x16 RE	1	22.9	171.9	1098	1089	352.1
2x16 RM	1	24.2	181.7	1185	1176	392.5
2x25 RE	1	26.3	197.4	1478	1467	461.9
2x25 RM	1	27.0	202.7	1533	1521	483.6
2x35 RM	1	29.0	217.7	1835	1823	547.8
2x50 RM	1	32.8	246.2	2433	2416	696.3
2x70 RM	1	37.6	282.2	3252	3233	893.0
2x95 RM	1	41.8	313.7	4101	4079	1089.5
2x120 RM	1	45.8	343.7	4999	4972	1307.9
2x150 RM	1	49.8	373.7	5961	5931	1542.2
2x185 RM	1	54.6	409.7	7444	7411	1792.0
2x240 RM	1	61.4	460.7	9361	9318	2275.0
3x1,5 RE	1	17.4	130.1	546	540	211.4
3x2,5 RE	1	18.2	136.6	609	603	230.0
3x4 RE	1	19.2	144.0	698	690	251.9
3x6 RE	1	20.3	152.1	805	797	276.4
3x10 RE	1	22.0	164.6	995	986	315.8
3x16 RE	1	24.4	183.0	1296	1286	381.7
3x16 RM	1	25.4	190.2	1356	1345	406.8
3x25 RE	1	27.6	207.2	1726	1715	479.2
3x25 RM	1	28.4	212.8	1784	1773	500.7
3x35 RM	1	30.5	228.9	2167	2154	563.8
3x50 RM	1	36.2	271.3	3165	3147	786.7
3x70 RM	1	39.6	297.1	3891	3871	911.7
3x95 RM	1	44.5	334.0	5010	4983	1136.2
3x120 RM	1	48.7	365.6	6142	6112	1356.2
3x150 RM	1	53.4	400.6	7631	7598	1568.8
3x185 RM	1	58.7	440.3	9274	9233	1903.7
3x240 RM	1	64.9	486.9	11461	11415	2294.1
4x1,5 RE	1	18.4	138.1	600	593	233.2
4x2,5 RE	1	19.4	145.3	682	675	254.1
4x4 RE	1	20.5	153.6	789	781	278.8
4x6 RE	1	21.7	162.7	920	911	306.1
4x10 RE	1	23.6	176.8	1154	1144	350.0
4x16 RE	1	26.3	196.9	1522	1511	422.5
4x16 RM	1	27.3	205.1	1589	1577	450.2
4x25 RE	1	29.9	224.1	2052	2039	532.6
4x25 RM	1	30.7	230.4	2119	2105	556.2
4x35 RM	1	33.5	251.5	2637	2620	646.8
4x50 RM	1	39.2	294.2	3796	3776	872.3
4x70 RM	1	43.1	323.1	4698	4675	1008.9
4x95 RM	1	49.7	373.1	6269	6238	1353.8
4x120 RM	1	53.9	404.4	7832	7799	1505.1
4x150 RM	1	59.3	444.4	9469	9427	1828.8

4x185 RM	1	64.5	483.6	11399	11354	2145.6
4x240 RM	1	72.0	539.9	14255	14204	2652.9
5x1,5 RE	1	19.6	147.0	671	664	258.0
5x2,5 RE	1	20.7	155.1	768	760	281.8
5x4 RE	1	21.9	164.4	898	889	309.7
5x6 RE	1	23.3	174.5	1061	1052	340.7
5x10 RE	1	25.8	193.3	1373	1363	406.9
5x16 RE	1	28.3	212.5	1780	1768	471.0
5x16 RM	1	29.6	221.7	1856	1843	502.2
5x25 RE	1	32.8	245.9	2471	2454	617.2
5x25 RM	1	33.7	253.0	2548	2531	644.5
5x35 RM	1	38.0	285.3	3407	3387	799.0
5x50 RM	1	42.6	319.7	4528	4506	976.5
5x70 RM	1	48.5	364.1	5919	5889	1252.3
5x95 RM	1	55.0	412.6	7908	7874	1522.3
5x120 RM	1	60.2	451.5	9669	9627	1816.1
5x150 RM	1	65.1	487.9	11446	11400	2087.1

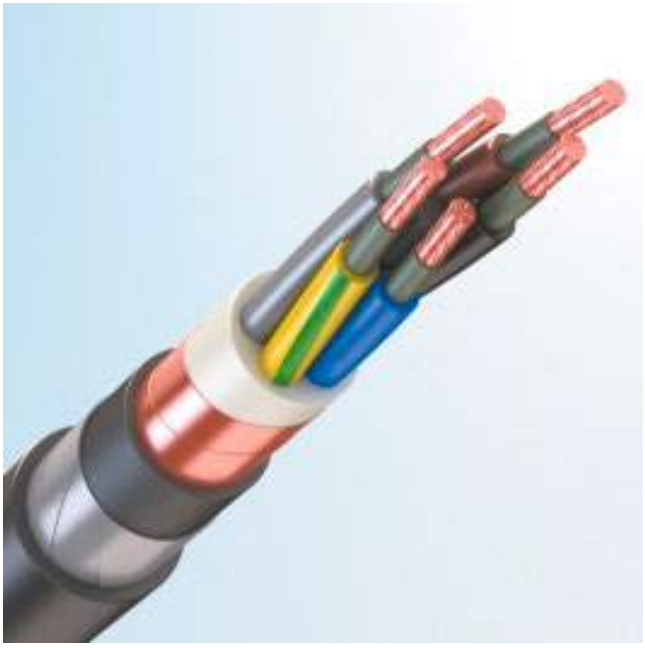
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REBaVng(A)-FRLS	TOFLEX REBaVng(A)-FRLS-HL	
1x1,5 RE	1	14.6	146.0	325	319	127.8
1x2,5 RE	1	14.6	146.0	331	326	125.9
1x4 RE	1	14.7	147.2	345	341	125.9
1x6 RE	1	15.2	152.2	381	376	133.3
1x10 RE	1	16.0	160.0	442	437	144.8
1x16 RE	1	17.0	169.5	529	523	158.8
1x16 RM	1	17.4	174.0	546	541	165.5
1x25 RE	1	18.5	184.5	663	656	184.9
1x25 RM	1	18.8	188.0	675	668	190.3
1x35 RM	1	19.8	198.0	792	785	205.7
1x50 RM	1	21.5	215.0	1007	999	237.3
1x70 RM	1	23.1	231.0	1216	1208	262.9
1x95 RM	1	25.6	256.0	1550	1540	318.8
1x120 RM	1	27.0	270.0	1829	1818	342.8
1x150 RM	1	28.8	288.0	2151	2140	382.8
1x185 RM	1	30.8	308.0	2559	2546	428.5
1x240 RM	1	33.9	339.0	3175	3158	510.6
1x300 RM	1	39.4	393.5	4055	4035	691.8
1x400 RM	1	42.7	426.9	4969	4946	784.4
1x500 RM	1	47.5	474.7	6218	6188	971.5
1x630 RM	1	51.8	518.3	7762	7729	1104.7

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

14. SHIELDED, ARMOURED WITH STEEL GALVANIZED TAPES*

IEC 60502-1

14.2 Cables sheathed with cross-linked highly elastic polymer compound



- **TOFLEX REBRng(A)-FRHF**
- **TOFLEX GREBRng(A)-FRHF**
- **Cu/MGT/HEPR/OSCR/HFFR/STA/XLHFFR**

Possible options:

"ng(A)-FRHF-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GREBV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑥ **Separation layer** – corresponds to the type of the outer sheath.
⑦ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).
⑧ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX REBRng(A)-FRHF 3×95RM(N, G)-1 IEC 60502-1»

«TOFLEX REBRng(A)-FRHF 3×95/50RM(N, G)-1 IEC 60502-1»

*In the production of power cables with aluminium or aluminium alloy tapes armour in the cable grade «Ba» must be specified instead of «B».

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REBRng(A)-FRHF	TOFLEX REBRng(A)-FRHF-HL	
2x1,5 RE	1	16.7	125.6	486	486	200.4
2x2,5 RE	1	17.5	131.6	537	537	218.3
2x4 RE	1	18.5	138.5	609	609	239.5
2x6 RE	1	19.5	146.0	695	695	263.4
2x10 RE	1	21.0	157.7	845	845	302.2
2x16 RE	1	22.9	171.9	1057	1057	352.1
2x16 RM	1	24.2	181.7	1141	1141	392.5
2x25 RE	1	26.3	197.4	1427	1427	461.9
2x25 RM	1	27.0	202.7	1480	1480	483.6
2x35 RM	1	29.0	217.7	1777	1777	547.8
2x50 RM	1	32.8	246.2	2355	2355	696.3
2x70 RM	1	37.6	282.2	3158	3158	893.0
2x95 RM	1	41.8	313.7	3991	3991	1089.5
2x120 RM	1	45.8	343.7	4863	4863	1307.9
2x150 RM	1	49.8	373.7	5806	5806	1542.2
2x185 RM	1	54.6	409.7	7269	7269	1792.0
2x240 RM	1	61.4	460.7	9136	9136	2275.0
3x1,5 RE	1	17.4	130.1	520	520	211.4
3x2,5 RE	1	18.2	136.6	581	581	230.0
3x4 RE	1	19.2	144.0	667	667	251.9
3x6 RE	1	20.3	152.1	772	772	276.4
3x10 RE	1	22.0	164.6	958	958	315.8
3x16 RE	1	24.4	183.0	1252	1252	381.7
3x16 RM	1	25.4	190.2	1310	1310	406.8
3x25 RE	1	27.6	207.2	1675	1675	479.2
3x25 RM	1	28.4	212.8	1731	1731	500.7
3x35 RM	1	30.5	228.9	2108	2108	563.8
3x50 RM	1	36.2	271.3	3081	3081	786.7
3x70 RM	1	39.6	297.1	3796	3796	911.7
3x95 RM	1	44.5	334.0	4888	4888	1136.2
3x120 RM	1	48.7	365.6	6001	6001	1356.2
3x150 RM	1	53.4	400.6	7474	7474	1568.8
3x185 RM	1	58.7	440.3	9081	9081	1903.7
3x240 RM	1	64.9	486.9	11236	11236	2294.1
4x1,5 RE	1	18.4	138.1	571	571	233.2
4x2,5 RE	1	19.4	145.3	652	652	254.1
4x4 RE	1	20.5	153.6	756	756	278.8
4x6 RE	1	21.7	162.7	884	884	306.1
4x10 RE	1	23.6	176.8	1114	1114	350.0
4x16 RE	1	26.3	196.9	1475	1475	422.5
4x16 RM	1	27.3	205.1	1539	1539	450.2
4x25 RE	1	29.9	224.1	1996	1996	532.6
4x25 RM	1	30.7	230.4	2060	2060	556.2
4x35 RM	1	33.5	251.5	2564	2564	646.8
4x50 RM	1	39.2	294.2	3706	3706	872.3
4x70 RM	1	43.1	323.1	4594	4594	1008.9
4x95 RM	1	49.7	373.1	6129	6129	1353.8
4x120 RM	1	53.9	404.4	7680	7680	1505.1
4x150 RM	1	59.3	444.4	9280	9280	1828.8

4x185 RM	1	64.5	483.6	11186	11186	2145.6
4x240 RM	1	72.0	539.9	14005	14005	2652.9
5x1,5 RE	1	19.6	147.0	640	640	258.0
5x2,5 RE	1	20.7	155.1	735	735	281.8
5x4 RE	1	21.9	164.4	862	862	309.7
5x6 RE	1	23.3	174.5	1022	1022	340.7
5x10 RE	1	25.8	193.3	1328	1328	406.9
5x16 RE	1	28.3	212.5	1729	1729	471.0
5x16 RM	1	29.6	221.7	1801	1801	502.2
5x25 RE	1	32.8	245.9	2401	2401	617.2
5x25 RM	1	33.7	253.0	2476	2476	644.5
5x35 RM	1	38.0	285.3	3321	3321	799.0
5x50 RM	1	42.6	319.7	4429	4429	976.5
5x70 RM	1	48.5	364.1	5787	5787	1252.3
5x95 RM	1	55.0	412.6	7755	7755	1522.3
5x120 RM	1	60.2	451.5	9479	9479	1816.1
5x150 RM	1	65.1	487.9	11236	11236	2087.1
5x185 RM	1	71.5	535.9	13820	13820	2519.5
5x240 RM	1	80.7	605.6	17973	17973	3087.0

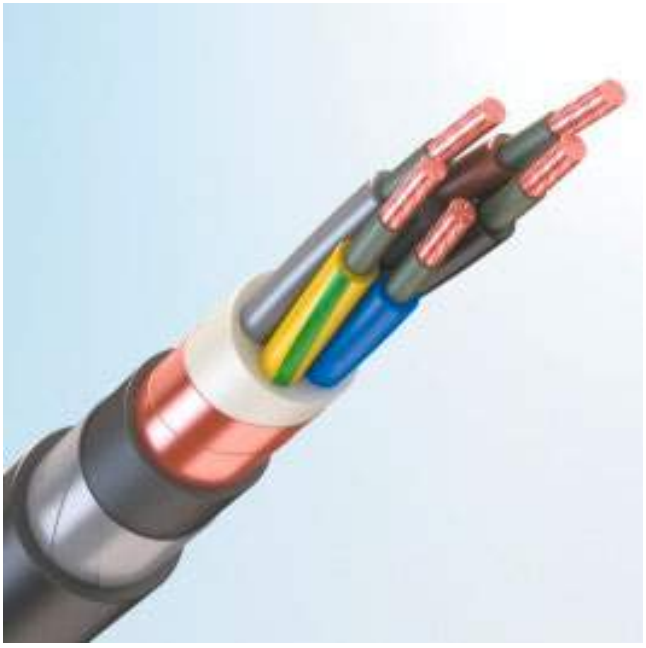
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REBaRng(A)-FRHF	TOFLEX REBaRng(A)-FRHF-HL	
1x1,5 RE	1	14.6	146.0	304	304	127.8
1x2,5 RE	1	14.6	146.0	312	312	125.9
1x4 RE	1	14.7	147.2	328	328	125.9
1x6 RE	1	15.2	152.2	362	362	133.3
1x10 RE	1	16.0	160.0	422	422	144.8
1x16 RE	1	17.0	169.5	507	507	158.8
1x16 RM	1	17.4	174.0	524	524	165.5
1x25 RE	1	18.5	184.5	638	638	184.9
1x25 RM	1	18.8	188.0	649	649	190.3
1x35 RM	1	19.8	198.0	765	765	205.7
1x50 RM	1	21.5	215.0	976	976	237.3
1x70 RM	1	23.1	231.0	1182	1182	262.9
1x95 RM	1	25.6	256.0	1510	1510	318.8
1x120 RM	1	27.0	270.0	1786	1786	342.8
1x150 RM	1	28.8	288.0	2105	2105	382.8
1x185 RM	1	30.8	308.0	2509	2509	428.5
1x240 RM	1	33.9	339.0	3111	3111	510.6
1x300 RM	1	39.4	393.5	3976	3976	691.8
1x400 RM	1	42.7	426.9	4881	4881	784.4
1x500 RM	1	47.5	474.7	6106	6106	971.5
1x630 RM	1	51.8	518.3	7636	7636	1104.7

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

14. SHIELDED, ARMOURED WITH STEEL GALVANIZED TAPES*

IEC 60502-1

14.3 Cables sheathed with halogen-free polymer compound



- **TOFLEX REBPng(A)-FRHF**
- **TOFLEX GREBPng(A)-FRHF**
- **Cu/MGT/HEPR/OSCR/HFFR/STA/HFFR**

Possible options:

"ng(A)-FRHF-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GREBV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑥ **Separation layer** – corresponds to the type of the outer sheath.
⑦ **Armour** – two steel galvanized tapes (the top tapes cover the gaps between the lower tape windings).
⑧ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free polymer compounds.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free polymer compounds.

Ordering example:

«TOFLEX REBPng(A)-FRHF-HL3×95RM(N, G)-1 IEC 60502-1»

«TOFLEX REBPng(A)-FRHF-HL×95/50RM(N, G)-1 IEC 60502-1»

*In the production of power cables with aluminium or aluminium alloy tapes armour in the cable grade «Ba» must be specified instead of «B».

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REBPng(A)-FRHF	TOFLEX REBPng(A)-FRHF-HL	
2x1,5 RE	1	16.7	125.6	492	492	200.4
2x2,5 RE	1	17.5	131.6	544	544	218.3
2x4 RE	1	18.5	138.5	616	616	239.5
2x6 RE	1	19.5	146.0	702	702	263.4
2x10 RE	1	21.0	157.7	854	854	302.2
2x16 RE	1	22.9	171.9	1066	1066	352.1
2x16 RM	1	24.2	181.7	1150	1150	392.5
2x25 RE	1	26.3	197.4	1438	1438	461.9
2x25 RM	1	27.0	202.7	1491	1491	483.6
2x35 RM	1	29.0	217.7	1789	1789	547.8
2x50 RM	1	32.8	246.2	2372	2372	696.3
2x70 RM	1	37.6	282.2	3177	3177	893.0
2x95 RM	1	41.8	313.7	4013	4013	1089.5
2x120 RM	1	45.8	343.7	4890	4890	1307.9
2x150 RM	1	49.8	373.7	5836	5836	1542.2
2x185 RM	1	54.6	409.7	7302	7302	1792.0
2x240 RM	1	61.4	460.7	9179	9179	2275.0
3x1,5 RE	1	17.4	130.1	526	526	211.4
3x2,5 RE	1	18.2	136.6	588	588	230.0
3x4 RE	1	19.2	144.0	674	674	251.9
3x6 RE	1	20.3	152.1	779	779	276.4
3x10 RE	1	22.0	164.6	967	967	315.8
3x16 RE	1	24.4	183.0	1262	1262	381.7
3x16 RM	1	25.4	190.2	1320	1320	406.8
3x25 RE	1	27.6	207.2	1686	1686	479.2
3x25 RM	1	28.4	212.8	1743	1743	500.7
3x35 RM	1	30.5	228.9	2121	2121	563.8
3x50 RM	1	36.2	271.3	3100	3100	786.7
3x70 RM	1	39.6	297.1	3816	3816	911.7
3x95 RM	1	44.5	334.0	4915	4915	1136.2
3x120 RM	1	48.7	365.6	6031	6031	1356.2
3x150 RM	1	53.4	400.6	7506	7506	1568.8
3x185 RM	1	58.7	440.3	9122	9122	1903.7
3x240 RM	1	64.9	486.9	11282	11282	2294.1
4x1,5 RE	1	18.4	138.1	578	578	233.2
4x2,5 RE	1	19.4	145.3	659	659	254.1
4x4 RE	1	20.5	153.6	764	764	278.8
4x6 RE	1	21.7	162.7	892	892	306.1
4x10 RE	1	23.6	176.8	1123	1123	350.0
4x16 RE	1	26.3	196.9	1485	1485	422.5
4x16 RM	1	27.3	205.1	1550	1550	450.2
4x25 RE	1	29.9	224.1	2008	2008	532.6
4x25 RM	1	30.7	230.4	2073	2073	556.2
4x35 RM	1	33.5	251.5	2581	2581	646.8
4x50 RM	1	39.2	294.2	3726	3726	872.3
4x70 RM	1	43.1	323.1	4617	4617	1008.9
4x95 RM	1	49.7	373.1	6160	6160	1353.8
4x120 RM	1	53.9	404.4	7712	7712	1505.1
4x150 RM	1	59.3	444.4	9322	9322	1828.8

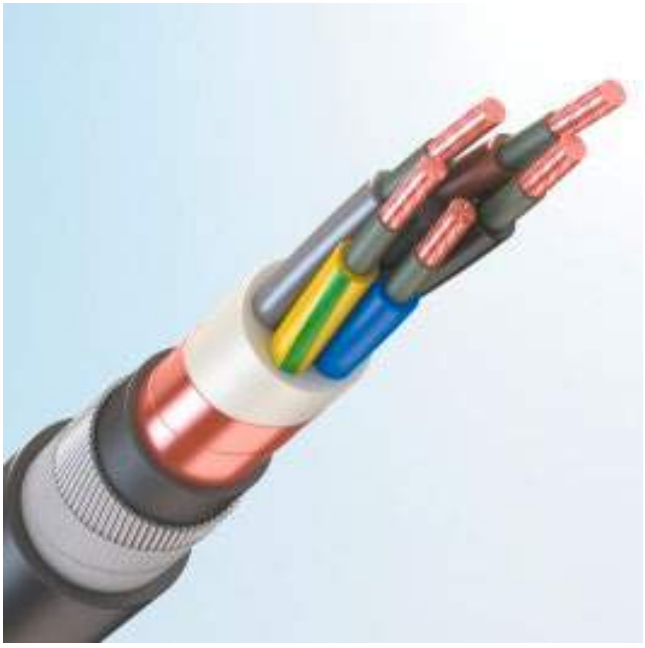
4x185 RM	1	64.5	483.6	11232	11232	2145.6
4x240 RM	1	72.0	539.9	14056	14056	2652.9
5x1,5 RE	1	19.6	147.0	648	648	258.0
5x2,5 RE	1	20.7	155.1	743	743	281.8
5x4 RE	1	21.9	164.4	871	871	309.7
5x6 RE	1	23.3	174.5	1031	1031	340.7
5x10 RE	1	25.8	193.3	1339	1339	406.9
5x16 RE	1	28.3	212.5	1740	1740	471.0
5x16 RM	1	29.6	221.7	1814	1814	502.2
5x25 RE	1	32.8	245.9	2418	2418	617.2
5x25 RM	1	33.7	253.0	2493	2493	644.5
5x35 RM	1	38.0	285.3	3340	3340	799.0
5x50 RM	1	42.6	319.7	4451	4451	976.5
5x70 RM	1	48.5	364.1	5816	5816	1252.3
5x95 RM	1	55.0	412.6	7788	7788	1522.3
5x120 RM	1	60.2	451.5	9521	9521	1816.1
5x150 RM	1	65.1	487.9	11282	11282	2087.1
5x185 RM	1	71.5	535.9	13871	13871	2519.5
5x240 RM	1	80.7	605.6	18037	18037	3087.0

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REBaPng(A)-FRHF	TOFLEX REBaPng(A)-FRHF-HL	
1x1,5 RE	1	14.6	146.0	309	309	127.8
1x2,5 RE	1	14.6	146.0	317	317	125.9
1x4 RE	1	14.7	147.2	332	332	125.9
1x6 RE	1	15.2	152.2	367	367	133.3
1x10 RE	1	16.0	160.0	427	427	144.8
1x16 RE	1	17.0	169.5	512	512	158.8
1x16 RM	1	17.4	174.0	529	529	165.5
1x25 RE	1	18.5	184.5	644	644	184.9
1x25 RM	1	18.8	188.0	655	655	190.3
1x35 RM	1	19.8	198.0	772	772	205.7
1x50 RM	1	21.5	215.0	984	984	237.3
1x70 RM	1	23.1	231.0	1191	1191	262.9
1x95 RM	1	25.6	256.0	1520	1520	318.8
1x120 RM	1	27.0	270.0	1797	1797	342.8
1x150 RM	1	28.8	288.0	2117	2117	382.8
1x185 RM	1	30.8	308.0	2521	2521	428.5
1x240 RM	1	33.9	339.0	3128	3128	510.6
1x300 RM	1	39.4	393.5	3996	3996	691.8
1x400 RM	1	42.7	426.9	4904	4904	784.4
1x500 RM	1	47.5	474.7	6135	6135	971.5
1x630 RM	1	51.8	518.3	7668	7668	1104.7

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

15. SHIELDED, ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1



15.1 Cables with PVC sheath

- **TOFLEX REKVng(A)-FRLS**
- **TOFLEX GREKVng(A)-FRLS**
- **Cu/MGT/HEPR/OSC R/LSPVC/SWA/LSPVC**

Possible options:

"ng(A)-FRLS-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GREKV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑥ **Separation layer** – corresponds to the type of the outer sheath.
⑦ **Armour** – steel galvanized wires.
⑧ **Outer sheath:**
- **«ng(A)-FRLS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-FRLS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX REKVng(A)-FRLS3×95RM(N, G)-1 IEC 60502-1»

«TOFLEX REKVng(A)-FRLS3×95/50RM(N, G)-1 IEC 60502-1»

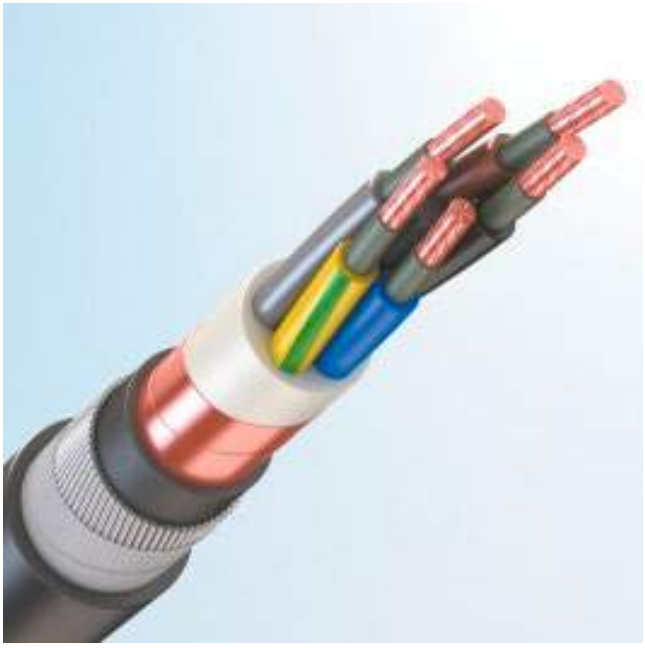
CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REKVng(A)-FRLS	TOFLEX REKVng(A)-FRLS-HL	
2x1,5 RE	1	18.7	140.3	763	747	211.9
2x2,5 RE	1	19.5	146.3	834	817	229.8
2x4 RE	1	20.4	153.2	920	902	251.0
2x6 RE	1	22.2	166.7	1177	1158	279.6
2x10 RE	1	24.2	181.4	1398	1375	334.1
2x16 RE	1	26.1	195.6	1670	1645	385.3
2x16 RM	1	27.0	202.4	1755	1729	410.5
2x25 RE	1	29.1	218.1	2099	2071	479.9
2x25 RM	1	29.8	223.4	2166	2136	501.6
2x50 RM	1	37.2	278.9	3577	3533	767.6
2x95 RM	1	46.8	350.9	5818	5754	1182.7
3x1,5 RE	1	19.3	144.8	812	795	222.9
3x2,5 RE	1	20.2	151.3	893	875	241.5
3x4 RE	1	21.2	158.7	992	974	263.5
3x6 RE	1	23.0	172.8	1282	1262	292.6
3x10 RE	1	25.1	188.3	1540	1515	348.3
3x16 RE	1	27.2	203.7	1864	1838	399.7
3x16 RM	1	28.1	210.9	1951	1923	424.8
3x25 RE	1	30.4	227.9	2372	2342	497.2
3x35 RM	1	34.9	261.6	3216	3176	632.1
4x1,5 RE	1	20.4	152.8	882	864	244.7
4x2,5 RE	1	21.3	160.0	985	967	265.7
4x4 RE	1	23.2	174.3	1265	1245	295.0
4x6 RE	1	24.9	186.4	1466	1442	338.4
4x10 RE	1	26.7	200.5	1739	1713	383.6
4x16 RE	1	29.0	217.6	2143	2115	440.5
4x16 RM	1	30.1	225.8	2236	2206	468.3
4x25 RE	1	33.4	250.8	3000	2967	555.8
4x25 RM	1	35.1	263.1	3167	3126	624.8
4x35 RM	1	37.9	284.2	3804	3760	719.0
5x1,5 RE	1	22.4	167.7	1120	1101	274.3
5x2,5 RE	1	23.4	175.8	1260	1240	298.1
5x4 RE	1	25.1	188.1	1443	1418	342.2
5x6 RE	1	26.4	198.2	1648	1622	374.0
5x10 RE	1	28.5	214.0	1982	1954	424.9
5x25 RE	1	37.1	278.6	3615	3571	688.5
5x25 RM	1	38.1	285.7	3714	3669	716.9

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

15. SHIELDED, ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1



15.2 Cables sheathed with cross-linked highly elastic polymer compound

- **TOFLEX REKVng(A)-FRLS**
- **TOFLEX GREKVng(A)-FRLS**
- **Cu/MGT/HEPR/OSC R/LSPVC/SWA/LSPVC**

Possible options:

«ng(A)-FRHF-HL»

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GREKV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑥ **Separation layer** – corresponds to the type of the outer sheath.
⑦ **Armour** – steel galvanized wires.
⑧ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX REKRng(A)-FRHF3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX REKRng(A)-FRHF3×95/50RM(N,G)-1 IEC 60502-1»

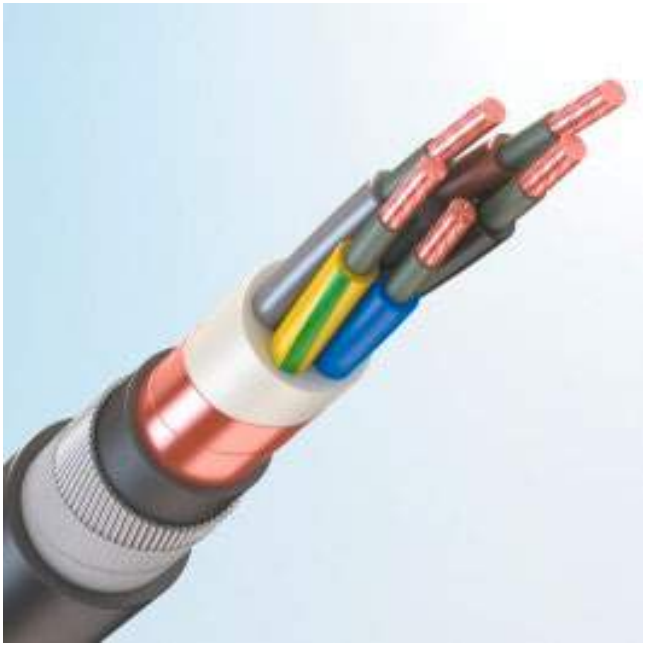
CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REKRng(A)-FRHF	TOFLEX REKRng(A)-FRHF-HL	
2x1,5 RE	1	18.7	140.3	712	712	211.9
2x2,5 RE	1	19.5	146.3	781	781	229.8
2x4 RE	1	20.4	153.2	863	863	251.0
2x6 RE	1	22.2	166.7	1115	1115	279.6
2x10 RE	1	24.2	181.4	1324	1324	334.1
2x16 RE	1	26.1	195.6	1588	1588	385.3
2x16 RM	1	27.0	202.4	1670	1670	410.5
2x25 RE	1	29.1	218.1	2005	2005	479.9
2x25 RM	1	29.8	223.4	2068	2068	501.6
2x50 RM	1	37.2	278.9	3430	3430	767.6
2x95 RM	1	46.8	350.9	5598	5598	1182.7
3x1,5 RE	1	19.3	144.8	760	760	222.9
3x2,5 RE	1	20.2	151.3	838	838	241.5
3x4 RE	1	21.2	158.7	934	934	263.5
3x6 RE	1	23.0	172.8	1219	1219	292.6
3x10 RE	1	25.1	188.3	1463	1463	348.3
3x16 RE	1	27.2	203.7	1780	1780	399.7
3x16 RM	1	28.1	210.9	1862	1862	424.8
3x25 RE	1	30.4	227.9	2274	2274	497.2
3x35 RM	1	34.9	261.6	3085	3085	632.1
4x1,5 RE	1	20.4	152.8	827	827	244.7
4x2,5 RE	1	21.3	160.0	927	927	265.7
4x4 RE	1	23.2	174.3	1201	1201	295.0
4x6 RE	1	24.9	186.4	1390	1390	338.4
4x10 RE	1	26.7	200.5	1656	1656	383.6
4x16 RE	1	29.0	217.6	2053	2053	440.5
4x16 RM	1	30.1	225.8	2141	2141	468.3
4x25 RE	1	33.4	250.8	2893	2893	555.8
4x25 RM	1	35.1	263.1	3036	3036	624.8
4x35 RM	1	37.9	284.2	3660	3660	719.0
5x1,5 RE	1	22.4	167.7	1060	1060	274.3
5x2,5 RE	1	23.4	175.8	1196	1196	298.1
5x4 RE	1	25.1	188.1	1367	1367	342.2
5x6 RE	1	26.4	198.2	1567	1567	374.0
5x10 RE	1	28.5	214.0	1894	1894	424.9
5x25 RE	1	37.1	278.6	3476	3476	688.5
5x25 RM	1	38.1	285.7	3571	3571	716.9

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

15. SHIELDED, ARMOURED WITH FULL LAY-UP FROM STEEL GALVANIZED WIRES

IEC 60502-1



15.3 Cables sheathed with halogen-free polymer compound

- **TOFLEX REKVng(A)-FRLS**
- **TOFLEX GREKVng(A)-FRLS**
- **Cu/MGT/HEPR/OSC R/LSPVC/SWA/LSPVC**

Possible options:

«ng(A)-FRHF-HL»

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GREKV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑥ **Separation layer** – corresponds to the type of the outer sheath.
⑦ **Armour** – steel galvanized wires.
⑧ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free polymer compounds.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free polymer compounds.

Ordering example:

«TOFLEX REKPng(A)-FRHF-HL3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX REKPng(A)-FRHF-HL3×95/50RM(N,G)-1 IEC 60502-1»

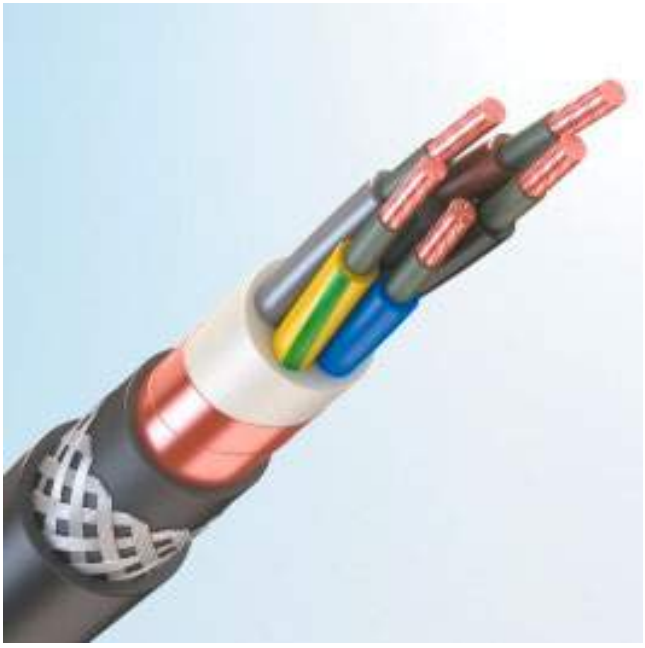
CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REKPng(A)-FRHF	TOFLEX REKPng(A)-FRHF-HL	
2x1,5 RE	1	18.7	140.3	728	728	211.9
2x2,5 RE	1	19.5	146.3	798	798	229.8
2x4 RE	1	20.4	153.2	881	881	251.0
2x6 RE	1	22.2	166.7	1134	1134	279.6
2x10 RE	1	24.2	181.4	1347	1347	334.1
2x16 RE	1	26.1	195.6	1613	1613	385.3
2x16 RM	1	27.0	202.4	1696	1696	410.5
2x25 RE	1	29.1	218.1	2033	2033	479.9
2x25 RM	1	29.8	223.4	2097	2097	501.6
2x50 RM	1	37.2	278.9	3474	3474	767.6
2x95 RM	1	46.8	350.9	5663	5663	1182.7
3x1,5 RE	1	19.3	144.8	776	776	222.9
3x2,5 RE	1	20.2	151.3	855	855	241.5
3x4 RE	1	21.2	158.7	953	953	263.5
3x6 RE	1	23.0	172.8	1238	1238	292.6
3x10 RE	1	25.1	188.3	1487	1487	348.3
3x16 RE	1	27.2	203.7	1806	1806	399.7
3x16 RM	1	28.1	210.9	1890	1890	424.8
3x25 RE	1	30.4	227.9	2304	2304	497.2
3x35 RM	1	34.9	261.6	3126	3126	632.1
4x1,5 RE	1	20.4	152.8	844	844	244.7
4x2,5 RE	1	21.3	160.0	945	945	265.7
4x4 RE	1	23.2	174.3	1221	1221	295.0
4x6 RE	1	24.9	186.4	1414	1414	338.4
4x10 RE	1	26.7	200.5	1682	1682	383.6
4x16 RE	1	29.0	217.6	2081	2081	440.5
4x16 RM	1	30.1	225.8	2170	2170	468.3
4x25 RE	1	33.4	250.8	2926	2926	555.8
4x25 RM	1	35.1	263.1	3077	3077	624.8
4x35 RM	1	37.9	284.2	3705	3705	719.0
5x1,5 RE	1	22.4	167.7	1079	1079	274.3
5x2,5 RE	1	23.4	175.8	1216	1216	298.1
5x4 RE	1	25.1	188.1	1391	1391	342.2
5x6 RE	1	26.4	198.2	1593	1593	374.0
5x10 RE	1	28.5	214.0	1921	1921	424.9
5x25 RE	1	37.1	278.6	3519	3519	688.5
5x25 RM	1	38.1	285.7	3615	3615	716.9

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

16. SHIELDED, ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1



16.1 Cables with PVC sheath

- **TOFLEX REPVng(A)-FRLS**
- **TOFLEX GREPVng(A)-FRLS**
- **Cu/HEPR/OSCR/LSPVC/SWB/LSPVC**

Possible options:

«ng(A)-FRLS-HL»

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GREPV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑥ **Separation layer** – corresponds to the type of the outer sheath.
⑦ **Armour** – with full lay-up from galvanized steel wires.
⑧ **Outer sheath:**
- **«ng(A)-FRLS»** – made from PVC-compound with low fire hazard, low smoke and gas emission.
- **«ng(A)-FRLS-HL»** – made from cold-resistant PVC-compound with low fire hazard, low smoke and gas emission.

Ordering example:

«TOFLEX REPVng(A)-FRLS 3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX REPVng(A)-FRLS 3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

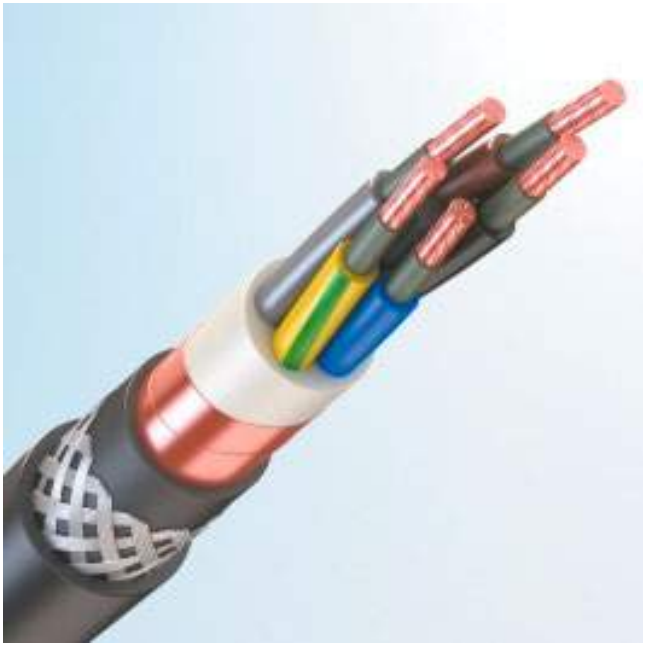
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REPVng(A)-FRLS	TOFLEX REPVng(A)-FRLS-HL	
2x1,5 RE	1	17.1	128.6	508	494	202.7
2x2,5 RE	1	17.9	134.6	566	551	220.6
2x4 RE	1	18.9	141.5	639	623	241.9
2x6 RE	1	19.9	149.0	727	711	265.7
2x10 RE	1	21.4	160.7	882	864	304.5
2x16 RE	1	23.3	174.9	1098	1078	354.5
2x16 RM	1	24.6	184.7	1184	1160	395.1
2x25 RE	1	26.7	200.4	1476	1450	464.5
2x25 RM	1	27.4	205.7	1530	1504	486.2
2x35 RM	1	29.4	220.7	1832	1803	550.4
2x50 RM	1	33.2	249.2	2431	2398	698.9
2x70 RM	1	37.6	282.2	3122	3078	893.0
2x95 RM	1	41.8	313.7	3955	3905	1089.5
2x120 RM	1	45.8	343.7	4836	4773	1307.9
2x150 RM	1	49.8	373.7	5782	5713	1542.2
2x185 RM	1	53.8	403.7	6889	6815	1784.7
3x1,5 RE	1	17.8	133.1	542	527	213.7
3x2,5 RE	1	18.6	139.6	611	595	232.4
3x4 RE	1	19.6	147.0	698	682	254.3
3x6 RE	1	20.7	155.1	805	788	278.7
3x10 RE	1	22.4	167.6	995	976	318.1
3x16 RE	1	24.8	186.0	1294	1270	384.3
3x16 RM	1	25.8	193.2	1354	1329	409.4
3x25 RE	1	28.0	210.2	1724	1696	481.8
3x25 RM	1	28.8	215.8	1782	1754	503.3
3x35 RM	1	30.9	231.9	2164	2134	566.4
3x50 RM	1	36.2	271.3	3041	2999	786.7
3x70 RM	1	39.6	297.1	3754	3707	911.7
3x95 RM	1	44.5	334.0	4856	4804	1136.2
3x120 RM	1	48.7	365.6	5966	5899	1356.2
3x150 RM	1	52.6	394.6	7089	7017	1561.5
4x1,5 RE	1	18.8	141.1	601	585	235.5
4x2,5 RE	1	19.8	148.3	683	666	256.5
4x4 RE	1	20.9	156.6	790	772	281.1
4x6 RE	1	22.1	165.7	920	901	308.5
4x10 RE	1	24.4	182.8	1182	1158	368.1
4x16 RE	1	26.7	199.9	1519	1494	425.1
4x16 RM	1	27.7	208.1	1586	1559	452.8
4x25 RE	1	30.3	227.1	2049	2019	535.2
4x25 RM	1	31.1	233.4	2115	2085	558.9
4x35 RM	1	33.9	254.5	2635	2602	649.4
4x50 RM	1	39.2	294.2	3660	3614	872.3
4x70 RM	1	43.1	323.1	4546	4495	1008.9
4x95 RM	1	49.7	373.1	6089	6021	1353.8
4x120 RM	1	53.1	398.4	7285	7212	1497.8
5x1,5 RE	1	20.0	150.0	672	655	260.4
5x2,5 RE	1	21.1	158.1	769	751	284.2
5x4 RE	1	22.3	167.4	898	879	312.1
5x6 RE	1	24.1	180.5	1089	1066	358.6

5x10 RE	1	26.2	196.3	1371	1346	409.5
5x16 RE	1	28.7	215.5	1777	1749	473.6
5x16 RM	1	30.0	224.7	1853	1823	504.8
5x25 RE	1	33.2	248.9	2469	2436	619.9
5x25 RM	1	34.9	262.0	2626	2585	692.2
5x35 RM	1	38.0	285.3	3275	3230	799.0
5x50 RM	1	42.6	319.7	4379	4328	976.5
5x70 RM	1	48.5	364.1	5744	5677	1252.3
5x95 RM	1	54.2	406.6	7349	7274	1515.0

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

16. SHIELDED, ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1



16.2 Cables sheathed with cross-linked highly elastic polymer compound

- **TOFLEX REPRng(A)-FRHF**
- **TOFLEX GREPRng(A)-FRHF**
- **Cu/MGT/HEPR/OSCR/HFFR/SWB/XLHFFR**

Possible options:

"ng(A)-FRHF-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GREPV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑥ **Separation layer** – corresponds to the type of the outer sheath.
⑦ **Armour** – with full lay-up from galvanized steel wires.
⑧ **Outer sheath:**
- **«ng(A)-FRHF»** – made from halogen-free cross-linked highly elastic polymer compound with low fire hazard.
- **«ng(A)-FRHF-HL»** – made from cold-resistant halogen-free cross-linked highly elastic polymer compound with low fire hazard.

Ordering example:

«TOFLEX REPRng(A)-FRHF3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX REPRng(A)-FRHF3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

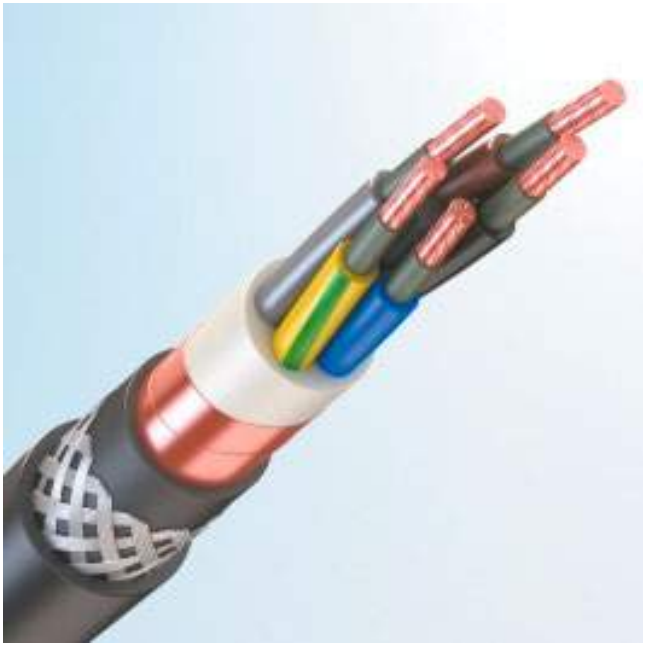
Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REPVng(A)-FRLS	TOFLEX REPVng(A)-FRLS-HL	
2x1,5 RE	1	17.1	128.6	462	462	202.7
2x2,5 RE	1	17.9	134.6	517	517	220.6
2x4 RE	1	18.9	141.5	587	587	241.9
2x6 RE	1	19.9	149.0	672	672	265.7
2x10 RE	1	21.4	160.7	821	821	304.5
2x16 RE	1	23.3	174.9	1030	1030	354.5
2x16 RM	1	24.6	184.7	1105	1105	395.1
2x25 RE	1	26.7	200.4	1388	1388	464.5
2x25 RM	1	27.4	205.7	1440	1440	486.2
2x35 RM	1	29.4	220.7	1733	1733	550.4
2x50 RM	1	33.2	249.2	2315	2315	698.9
2x70 RM	1	37.6	282.2	2967	2967	893.0
2x95 RM	1	41.8	313.7	3777	3777	1089.5
2x120 RM	1	45.8	343.7	4613	4613	1307.9
2x150 RM	1	49.8	373.7	5532	5532	1542.2
2x185 RM	1	53.8	403.7	6614	6614	1784.7
3x1,5 RE	1	17.8	133.1	494	494	213.7
3x2,5 RE	1	18.6	139.6	560	560	232.4
3x4 RE	1	19.6	147.0	645	645	254.3
3x6 RE	1	20.7	155.1	748	748	278.7
3x10 RE	1	22.4	167.6	932	932	318.1
3x16 RE	1	24.8	186.0	1216	1216	384.3
3x16 RM	1	25.8	193.2	1272	1272	409.4
3x25 RE	1	28.0	210.2	1633	1633	481.8
3x25 RM	1	28.8	215.8	1688	1688	503.3
3x35 RM	1	30.9	231.9	2062	2062	566.4
3x50 RM	1	36.2	271.3	2898	2898	786.7
3x70 RM	1	39.6	297.1	3594	3594	911.7
3x95 RM	1	44.5	334.0	4672	4672	1136.2
3x120 RM	1	48.7	365.6	5734	5734	1356.2
3x150 RM	1	52.6	394.6	6835	6835	1561.5
4x1,5 RE	1	18.8	141.1	550	550	235.5
4x2,5 RE	1	19.8	148.3	629	629	256.5
4x4 RE	1	20.9	156.6	732	732	281.1
4x6 RE	1	22.1	165.7	858	858	308.5
4x10 RE	1	24.4	182.8	1107	1107	368.1
4x16 RE	1	26.7	199.9	1435	1435	425.1
4x16 RM	1	27.7	208.1	1498	1498	452.8
4x25 RE	1	30.3	227.1	1951	1951	535.2
4x25 RM	1	31.1	233.4	2014	2014	558.9
4x35 RM	1	33.9	254.5	2523	2523	649.4
4x50 RM	1	39.2	294.2	3506	3506	872.3
4x70 RM	1	43.1	323.1	4374	4374	1008.9
4x95 RM	1	49.7	373.1	5857	5857	1353.8
4x120 RM	1	53.1	398.4	7034	7034	1497.8
5x1,5 RE	1	20.0	150.0	618	618	260.4
5x2,5 RE	1	21.1	158.1	711	711	284.2
5x4 RE	1	22.3	167.4	836	836	312.1
5x6 RE	1	24.1	180.5	1015	1015	358.6

5x10 RE	1	26.2	196.3	1290	1290	409.5
5x16 RE	1	28.7	215.5	1686	1686	473.6
5x16 RM	1	30.0	224.7	1757	1757	504.8
5x25 RE	1	33.2	248.9	2360	2360	619.9
5x25 RM	1	34.9	262.0	2494	2494	692.2
5x35 RM	1	38.0	285.3	3128	3128	799.0
5x50 RM	1	42.6	319.7	4210	4210	976.5
5x70 RM	1	48.5	364.1	5521	5521	1252.3
5x95 RM	1	54.2	406.6	7095	7095	1515.0

FIRE-RESISTANT POWER CABLES WITH HARD GRADE ETHYLENE PROPYLEN RUBBER (HEPR) INSULATION

16. SHIELDED, ARMOURED WITH BRAIDING FROM STEEL GALVANIZED WIRES

IEC 60502-1



16.3 Cables sheathed with halogen-free polymer compound

- **TOFLEX REPPng(A)-FRHF**
- **TOFLEX GREPPng(A)-FRHF**
- **Cu/MGT/HEPR/OSCR/HFFR/SWB/HFFR**

Possible options:

"ng(A)-FRHF-HL"

DESIGN FEATURES

① **Electrical conductor** – copper of 1st, 2nd class; copper flexible (version GREPV) of 5th class (according to IEC 60228).
② **Thermal barrier** – micatape double-layer lapping.
③ **Insulation** – hard grade ethylene propylene rubber (HEPR).
④ **Inner sheath** – corresponds to the type of the outer sheath.
⑤ **Shield** – is made from copper foil, copper tape or copper wires. Cable shield has flexible conductors and copper wire braid. The cross section of the copper wires shield is indicated after the slash in the cable label size.
⑥ **Separation layer** – corresponds to the type of the outer sheath.
⑦ **Armour** – with full lay-up from galvanized steel wires.
⑧ **Outer sheath:**
- **«ng(A)-FRHF»** — made from halogen-free polymer compounds.
- **«ng(A)-FRHF-HL»** — made from cold-resistant halogen-free polymer compounds.

Ordering example:

«TOFLEX REPPng(A)-FRHF-HL3×95RM(N,G)-1 IEC 60502-1»

«TOFLEX REPPng(A)-FRHF-HL3×95/50RM(N,G)-1 IEC 60502-1»

CABLE FEATURES

Conductor cross section, mm²	Voltage, kV	Outer wire diameter, mm	Minimum bending radius, mm	Weight for 1 km wire,kg		Amount of combustible materials, l/km
				TOFLEX REPPng(A)-FRHF	TOFLEX REPPng(A)-FRHF-HL	
2x1,5 RE	1	17.1	128.6	476	476	202.7
2x2,5 RE	1	17.9	134.6	532	532	220.6
2x4 RE	1	18.9	141.5	603	603	241.9
2x6 RE	1	19.9	149.0	689	689	265.7
2x10 RE	1	21.4	160.7	839	839	304.5
2x16 RE	1	23.3	174.9	1050	1050	354.5
2x16 RM	1	24.6	184.7	1128	1128	395.1
2x25 RE	1	26.7	200.4	1414	1414	464.5
2x25 RM	1	27.4	205.7	1466	1466	486.2
2x35 RM	1	29.4	220.7	1762	1762	550.4
2x50 RM	1	33.2	249.2	2347	2347	698.9
2x70 RM	1	37.6	282.2	3011	3011	893.0
2x95 RM	1	41.8	313.7	3826	3826	1089.5
2x120 RM	1	45.8	343.7	4676	4676	1307.9
2x150 RM	1	49.8	373.7	5601	5601	1542.2
2x185 RM	1	53.8	403.7	6689	6689	1784.7
3x1,5 RE	1	17.8	133.1	509	509	213.7
3x2,5 RE	1	18.6	139.6	576	576	232.4
3x4 RE	1	19.6	147.0	661	661	254.3
3x6 RE	1	20.7	155.1	765	765	278.7
3x10 RE	1	22.4	167.6	951	951	318.1
3x16 RE	1	24.8	186.0	1240	1240	384.3
3x16 RM	1	25.8	193.2	1297	1297	409.4
3x25 RE	1	28.0	210.2	1661	1661	481.8
3x25 RM	1	28.8	215.8	1716	1716	503.3
3x35 RM	1	30.9	231.9	2092	2092	566.4
3x50 RM	1	36.2	271.3	2941	2941	786.7
3x70 RM	1	39.6	297.1	3641	3641	911.7
3x95 RM	1	44.5	334.0	4724	4724	1136.2
3x120 RM	1	48.7	365.6	5802	5802	1356.2
3x150 RM	1	52.6	394.6	6907	6907	1561.5
4x1,5 RE	1	18.8	141.1	566	566	235.5
4x2,5 RE	1	19.8	148.3	646	646	256.5
4x4 RE	1	20.9	156.6	750	750	281.1
4x6 RE	1	22.1	165.7	877	877	308.5
4x10 RE	1	24.4	182.8	1130	1130	368.1
4x16 RE	1	26.7	199.9	1461	1461	425.1
4x16 RM	1	27.7	208.1	1525	1525	452.8
4x25 RE	1	30.3	227.1	1981	1981	535.2
4x25 RM	1	31.1	233.4	2045	2045	558.9
4x35 RM	1	33.9	254.5	2556	2556	649.4
4x50 RM	1	39.2	294.2	3552	3552	872.3
4x70 RM	1	43.1	323.1	4425	4425	1008.9
4x95 RM	1	49.7	373.1	5925	5925	1353.8
4x120 RM	1	53.1	398.4	7107	7107	1497.8
5x1,5 RE	1	20.0	150.0	635	635	260.4
5x2,5 RE	1	21.1	158.1	729	729	284.2
5x4 RE	1	22.3	167.4	855	855	312.1
5x6 RE	1	24.1	180.5	1038	1038	358.6

5x10 RE	1	26.2	196.3	1315	1315	409.5
5x16 RE	1	28.7	215.5	1714	1714	473.6
5x16 RM	1	30.0	224.7	1786	1786	504.8
5x25 RE	1	33.2	248.9	2393	2393	619.9
5x25 RM	1	34.9	262.0	2534	2534	692.2
5x35 RM	1	38.0	285.3	3173	3173	799.0
5x50 RM	1	42.6	319.7	4261	4261	976.5
5x70 RM	1	48.5	364.1	5588	5588	1252.3
5x95 RM	1	54.2	406.6	7170	7170	1515.0

NORMATIVE REFERENCES

Cable and wire products comply with IEC 60502-1, are manufactured, tested and gauged strictly in accordance with the following standards:

- **IEC 60331-21:1999**

  Tests for electric cables under fire conditions - Circuit integrity - Part 21: Procedures and requirements - Cables of rated voltage up to and including 0,6/1,0 Kv.
- **IEC 60331-23:1999**

  Tests for electric cables under fire conditions - Circuit integrity - Part 23: Procedures and requirements - Electric data cables.
- **IEC 60331-25:1999**

  Tests for electric cables under fire conditions - Circuit integrity - Part 25: Procedures and requirements - Optical fibre cables.
- **IEC 60332-1-2:2004+AMD1:2015 CSV**

  Consolidated version

  Tests on electric and optical fibre cables under fire conditions - Part 1-2: Test for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame.
- **IEC 60332-1-3:2004+AMD1:2015 CSV**

  Consolidated version

  Tests on electric and optical fibre cables under fire conditions - Part 1-3: Test for vertical flame propagation for a single insulated wire or cable - Procedure for determination of flaming droplets/particles.
- **IEC 60332-2-2:2004**

  Tests on electric and optical fibre cables under fire conditions - Part 2-2: Test for vertical flame propagation for a single small insulated wire or cable - Procedure for diffusion flame.
- **IEC 60332-3-21:2000**

  Tests on electric cables under fire conditions - Part 3-21: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A F/R.
- **IEC 60332-3-22:2000+AMD1:2008 CSV**

  Consolidated version

  Tests on electric and optical fibre cables under fire conditions - Part 3-22: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category A.
- **IEC 60332-3-23:2000+AMD1:2008 CSV**

  Consolidated version

  Tests on electric and optical fibre cables under fire conditions - Part 3-23: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category B.
- **IEC 60332-3-24:2000+AMD1:2008 CSV**

  Consolidated version

  Tests on electric and optical fibre cables under fire conditions - Part 3-24: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category C.
- **IEC 60332-3-25:2000+AMD1:2008 CSV**

  Consolidated version

  Tests on electric and optical fibre cables under fire conditions - Part 3-25: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category D.
- **IEC 60754-1:2011**

  Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content.
- **IEC 60754-2:2011**

  Test on gases evolved during combustion of materials from cables - Part 2: Determination of acidity (by pH measurement) and conductivity.
- **IEC 61034-2:2005+AMD1:2013 CSV**

  Consolidated version

  Measurement of smoke density of cables burning under defined conditions - Part 2: Test procedure and requirements.
- **IEC 60721-3-1:1997**

  Classification of environmental conditions - Part 3 Classification of groups of environmental parameters and their severities - Section 1: Storage.
- **IEC 60721-3-2:1997**

  Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 2: Transportation.
- **IEC 60721-3-3:1994+AMD1:1995+AMD2:1996 CSV**

  Consolidated version

  Classification of environmental conditions - Part 3-3: Classification of groups of environmental parameters and their severities - Stationary use at weather protected locations.
- **IEC 60721-3-4:1995**

  Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 4: Stationary use at non-weather protected locations.
- **IEC 60721-3-5:1997**

  Classification of environmental conditions - Part 3: Classification of groups of environmental parameters and their severities - Section 5: Ground vehicle installations.
- **IEC 60721-3-6:1987+AMD1:1991 CSV**

  Consolidated version

  Classification of environmental conditions. Part 3: Classification of groups of environmental parameters and their severities. Ship environment.
- **IEC 60721-3-7:1995+AMD1:1996 CSV**

  Consolidated version

  Classification of environmental conditions - Part 3-7: Classification of groups of environmental parameters and their severities - Portable and non-stationary use.
- **IEC 68-1:1989**

  The standard lists a series of environmental test procedures, and their severities, designed to assess the ability of electro technical products to perform under expected conditions of service.

REFERENCE INFORMATION

CURRENT CARRYING CAPACITY

Current carrying capacity is given for an ambient temperature 30 °C when laying in the air and 20 °C when laying in the ground.

Continuous current carrying capacity of cables with copper conductors when laying in the air and in the ground shall correspond to the values indicated in the tables 1, 2 and 3. To determine the current capacity of cables with aluminium conductors the values from the tables 1, 2 and 3 need to multiply by 0,77.

Table 1. Single-conductor cables

Cross-section, mm2	Continuous current capacity, A					
	In the air	In pipes in the air	In the ground		In pipes in the ground	
			σ=1	σ=1.5	σ=1	σ=1.5
1.5	29	20	35	32	22	21
2.5	39	28	45	39	30	27
4	50	37	58	51	38	35
6	63	48	73	64	48	44
10	85	66	97	85	63	59
16	119	88	125	110	88	77
25	156	117	160	141	113	100
35	188	144	191	169	136	121
50	228	175	226	199	166	150
70	287	222	277	244	204	184
95	343	269	331	292	242	217
120	411	312	377	332	274	251
150	458	355	420	370	324	287
185	527	417	476	419	364	323
240	610	490	550	484	427	379
300	691	570	620	546	484	429
400	823	669	700	616	564	500
500	946	781	790	695	638	565
630	1114	891	886	780	728	645
800	1263	1034	904	795	741	656

Table 2. Double-conductor cables

Cross-section, mm2	Continuous current capacity, A					
	In the air	In pipes in the air	In the ground		In pipes in the ground	
			σ=1	σ=1.5	σ=1	σ=1.5
1.5	31	26	36	33	27	26
2.5	41	34	47	43	35	33
4	53	44	62	55	46	43
6	67	55	77	69	58	54
10	91	74	103	92	77	72
16	122	99	134	120	102	95
25	161	131	175	154	133	124
35	196	159	210	185	161	150
50	238	194	251	220	194	180
70	295	243	304	267	240	222
95	363	298	367	322	291	269
120	418	343	417	365	333	307

150	472	391	465	407	375	345
185	544	450	527	461	428	393
240	636	526	606	531	494	453
300	739	608	688	601	563	514

Table 3. Three-, four-, five conductor cables

Cross-section, mm2	Continuous current capacity, A					
	In the air	In pipes in the air	In the ground		In pipes in the ground	
			σ=1	σ=1.5	σ=1	σ=1.5
1.5	36	20	31	27	21	20
2.5	34	26	40	36	28	26
4	45	35	52	45	36	33
6	56	44	65	56	45	42
10	76	60	88	78	60	56
16	102	80	114	101	79	74
25	134	105	148	130	103	95
35	163	128	178	157	124	115
50	198	154	211	185	152	141
70	248	194	259	227	189	174
95	305	233	311	274	226	206
120	351	268	355	311	260	238
150	404	309	394	345	299	272
185	461	355	446	392	340	307
240	549	422	515	454	402	360
300	641	495	595	524	464	415

At an ambient temperature different from 30 ° C when laying in the air and 20 ° C when laying in the ground, to the nominal current capacity the correction factors listed in Table 4 should be applied.

Table 4

Predicted temperature, °C	Correction factors at ambient temperature, °C											
	-5	0	5	10	15	20	25	30	35	40	45	50
15	1.13	1.1	1.06	1.03	1.0	0.97	0.93	0.89	0.86	0.82	0.77	0.73
25	1.21	1.18	1.14	1.11	1.07	1.04	1.0	0.96	0.92	0.88	0.83	0.78

Admissible current capacities for cables in overload mode during the laying in the ground can be calculated by multiplying the corresponding values from the tables 1, 2 and 3 by factor 1.17.

Admissible current capacities for cables in overload mode during the laying in the air can be calculated by multiplying the corresponding values from the tables 1, 2 and 3 by factor 1.20.

Admissible current of 1 sec. short-circuit must not exceed the values listed in the table 5.

Table 5

Nominal section of conductor, mm²	Admissible current of 1 sec. short-circuit, kA, for cables with	
	copper conductors	aluminium conductors
1.5	0.21	—
2.5	0.34	0.22
4	0.54	0.36
6	0.81	0.52
10	1.36	0.87
16	2.16	1.40
25	3.46	2.24
35	4.80	3.09

50	6.50	4.18
70	9.38	6.12
95	13.0	8.48
120	16.43	10.71
150	20.26	13.16
185	25.35	16.53
240	33.32	21.70
300	41.64	27.12
400	55.20	36.16
500	49.50	32.50
630	86.95	56.95
800	110.40	72.33

For the short circuit lasting for more or less than 1 second, the short circuit current values are determined by multiplying 1 second short circuit current value by the correction factor K according to the formula, where t is the duration of short circuit, in seconds:

$$K=1/\sqrt{t}$$

Maximum duration of short-circuit must not exceed 5 seconds.

WINDING CABLES ONTO DRUM

Table 6. Winding onto drum

D, mm	Number												
	8	8a	8b	10	12	12a	14	16a	17a	18a	20	20a	22c
2	10,000												
5	2,300	4,000	5,050										
6	1,600	2,800	3,500										
7	1,200	2,050	2,550	3,900									
8	900	1,550	1,950	3,000	4,650								
9	700	1,250	1,550	2,350	3,650								
10	600	1,000	1,250	1,900	3,000	4,200							
11	500	850	850	1,600	2,450	3,500	4,850						
12	400	700	800	1,350	2,050	2,950	4,100						
13	350	600	750	1,150	1,750	2,500	3,500						
14		500	650	1,000	1,500	2,150	3,000	4,550					
15		450	550	850	1,300	1,850	2,600	3,950	4,850				
16		400	500	750	1,150	1,650	2,300	3,450	4,250				
17		350	450	650	1,050	1,450	2,050	3,050	3,750	4,200			
18		300	400	600	900	1,300	1,800	2,750	3,350	3,750			
19			350	550	800	1,150	1,650	2,450	3,000	3,350			
20			300	500	750	1,050	1,450	2,200	2,700	3,000	4,550		
21				450	650	950	1,350	2,000	2,450	2,750	4,100		
22				400	600	850	1,200	1,850	2,250	2,500	3,750		
23				350	550	800	1,100	1,700	2,050	2,300	3,450		
24				350	500	750	1,000	1,550	1,900	2,100	3,150		
25				300	500	650	950	1,400	1,750	1,950	2,900		
26					450	600	850	1,300	1,600	1,800	2,700		
27					400	600	800	1,200	1,500	1,650	2,500		
28					400	550	750	1,150	1,400	1,550	2,300		
29					350	500	700	1,050	1,300	1,450	2,150		
30					350	450	650	1,000	1,200	1,350	2,000		

31					300	450	600	900	1,150	1,250	1,900		
32						400	600	850	1,050	1,200	1,750		
33						400	550	800	1,000	1,100	1,650		
34						350	500	750	950	1,050	1,550		
35						350	500	700	900	1,000	1,500		
36						350	450	700	850	950	1,400		
37						300	450	650	800	900	1,300		
38							400	600	750	850	1,250		
39							400	600	700	800	1,200		
40							350	550	650	750	1,100		
41							350	500	650	700	1,050		
42							350	500	600	650	1,000		
43							300	450	600	650	950		
44							300	450	550	600	900		
45								450	550	600	900		
46								400	500	550	850		
47								400	500	550	800		
48									450	500	750		
49									450	500	750		
50									400	450	700		
51									400	450	650		
52									350	450	650		
53									350	400	600		
54												350	550
55												350	500
56												350	500
57												350	500
58												300	450
59												300	450
60												300	400
61												300	400
62												250	400
63												250	400
64												250	350
65												250	350
66												250	350
67												250	350
68												200	350
69												200	300
70												200	300
71												200	300
72												200	300
73												200	300
74												200	250
75												200	250
76												200	250
77												150	250
78												100	250
79												100	250
80													200

Output product catalogue

POWER CABLES with hard grade ethylene propylene rubber (HEPR) insulation TOFLEX®

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Output product catalogue

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ТОМСККАБЕЛЬ

Limited liability company Tomskcable
3 Smirnova St. Tomsk, 634059, Russian Federation
Tel./fax +7 3822 49 89 89
e-mail: cable@tomskcable.ru
www.tomskcable.ru

Sales department tel.:

West region	+7 3822 49 71 47
Central region	+7 3822 49 71 50
East region	+7 3822 49 71 48
CIS Countries	+7 3822 49 71 49