

# Cables for Neon Signs according to EN 50143

Mandatory markings:

1. Norm reference "EN 50143";
2. Type listed as shown below (A, B, ... K, chart 1)
3. Voltage to Earth and between cable allowed
4. Manufacturer or seller name.

List of high-voltage cables specified in EN 50143.

Cable type 'A': A rigid, single-core, 85°C elastomer insulated cable, with a lead-alloy screen and no sheath.

Cable type 'B': A flexible, single-core, 150°C silicone elastomer insulated cable.

Cable type 'C': A flexible, single-core, 150°C silicone elastomer insulated cable and sheathed, either with PVC or a polymeric compound having low emission of smoke and poisonous gases when affected by fire.

Cable type 'D': A flexible, single-core, 150°C silicone elastomer insulated cable, wire-braided and sheathed, either with PVC or a polymeric compound having low emission of smoke and poisonous gases when affected by fire.

Cable type 'E': A flexible, single-core, PVC-insulated cable with a metal zinc tape screen and a flexible protective conductor. The cable has an overall sheath of PVC.

Cable type 'F': A flexible, single-core, PVC-insulated cable with a flexible protective conductor and an overall sheath of PVC.

Cable type 'G': A flexible, single-core, PVC-insulated cable.

Cable type 'H': A flexible, single-core, polyethylene-insulated cable with an overall sheath of PVC. The nominal thickness of the polyethylene insulation is 3 mm.

Cable type 'K': A flexible, single-core, polyethylene-insulated cable with an overall sheath of PVC. The nominal thickness of the polyethylene insulation is 1,5 mm.

Chart 1

Type	Description	U <sub>o</sub>	U	Diameter (ext.)	Temperature	Copper section
		Voltage to Gnd	Btwn cables		max	
		kV	kV	mm	°C	mm <sup>2</sup>
<b>A</b>	Rubber with lead screen	5	10	8,2 - 9,8	90	1,5
<b>B</b>	Silicone	5	10	6 - 7,2	180	1
<b>C</b>	Silicone, PVC sheathed	5	10	7,8 - 9	90	1
<b>D</b>	Silicone, wire-braided and sheathed	5	10	8,8 - 10,2	90	1
<b>E</b>	PVC with a metal zinc tape screen	5	10	9,5 - 11,5	70	1,5
<b>F</b>	PVC with a flexible conductor and PVC sheath	5	10	8,5 - 10,5	70	1,5
<b>G</b>	Single-core, PVC insulated cable	5	10	6,2 - 7,5	70	1,5
<b>H</b>	Polyethylene with an overall sheath of PVC	5	10	7 - 7,8	60	1
<b>K</b>	Polyethylene with an overall sheath of PVC	2,5	5	4 - 4,8	60	1

Recommended limiting values for the total wiring length from tube to transformer

Voltage to earth	1 kV		2 kV		3 kV		4 kV		5 kV	
	Hg	Ne	Hg	Ne	Hg	Ne	Hg	Ne	Hg	Ne
Cable type B, C, F, G, H, K (length in metres)	40	20	30	15	20	10	15	7	10	5
Cable type A, D, E (length in metres)	24	12	16	8	12	6	9	4	6	3

**Note:** If, for example, the distance between the transformer and the point where the high-voltage cables were connected to the tubes is 20 m, then the total wiring length for the purposes of table 6 will be 40 m (see Figure 7).