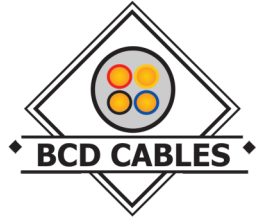


BCD CABLES TYPE F17

0361TQ Welding Cable 450/750v



Construction:

Flexible Class 6 Plain Copper Conductors, EPR Insulation, HOFR Sheath,

Size	Class of Conductor	Diameter of Wires	Nominal Thickness of Sheath	Overall Diameter Min.	Overall Diameter Max.	Nominal Weight
mm ²		mm	mm	mm	mm	kg/Km
16	6	0.21	2	8.8	11	220
25	6	0.21	2	10.1	12.7	310
35	6	0.21	2	11.4	14.2	415
50	6	0.21	2.2	13.2	16.5	560
70	6	0.21	2.4	15.3	19.2	780
95	6	0.21	2.6	17.1	21.4	1030
120	5	0.51	2.8	19.2	24	1305
185	5	0.51	3.2	23.1	28.9	2050

Duty Cycle and Current Carrying Capacity:

The current carrying capacity of a welding cable depends on the length of the duty cycle. The duty cycle is the length of time during which a loaded current passes through the cable over an operation period of 5 minutes, expressed as a percentage of that period. For example, if the current is flowing for the whole minutes the duty cycle is 100%, and if the current is flowing for 1 minute the duty cycle is 20%. As conductor temperature varies according to the time in use as well as current, ratings shown are given as a guide.

The permissible loading of the cable for duty cycles other than those shown in the table can be calculated using the following formula:

$$I = I_{100} \sqrt{100/F}$$

Where:

I :is the maximum permissible loading current for the required duty cycle.

I₁₀₀ :is the maximum permissible loading current for a duty cycle of 100%.

F :is the required duty cycle calculated as a percentage of the 5 minute operation period.

Typical guidance values for different welding processes are as follows:

Fully automatic welding 100%

Semi-automatic welding 65 - 85%

Manual Welding 30 - 60%

Very infrequent or occasional welding 20%

Loading Current Values (amperes)

Size	Loading Current in Amps for the Following Duty Cycles			
	100%	85%	60%	30%
16	135	145	175	245
25	180	195	230	330
35	225	245	290	410
50	285	310	370	520
70	355	385	460	650
95	430	470	560	790
120	500	540	650	910
185	660	715	850	1200

Correction Factors

Cable operating temperature also varies according to the prevailing ambient temperature. These cables are designed to give optimum performance up to an operating temperature of 85°C at an ambient temperature of 25°C. The reduction factors for increased ambient temperature are:

Ambient Temperature	30°C	35°C	40°C	45°C	50°C	55°C
Correction Factor	0.96	0.91	0.87	0.82	0.76	0.79

Conductor Resistance (ohms per kilometre) and Voltage Drop

Size	Maximum Resistance at 20°C Tinned	Voltage Drop (For Guidance Only)		
		Volts Per 100 Amp Per 10 Metres		
		DC Current *		
mm ²	ohms/Km	20°C	60°C	85°C
		V	V	V
16	1.24	1.24	1.43	1.56
25	0.795	0.795	0.92	0.998
35	0.565	0.565	0.654	0.709
50	0.393	0.393	0.455	0.493
70	0.277	0.277	0.321	0.348
95	0.21	0.21	0.246	0.264
120	0.164	0.164	0.19	0.206
185	0.108	0.108	0.125	0.136



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