

# SINGLE CORE 3.3kV 110° FLEX

Highly flexible, single core rubber cables



## APPLICATION

- Internal switchboard cabling
- Sub-mains
- Electrical traction vehicles
- Battery bank connections
- Machine & equipment cabling
- Steelworks, cranes & hoists
- Stacker & reclaimer cabling
- DC wiring
- 415/ 1000V installations
- Submersible to 100 metres

## DESIGN

Single core 3.3kV flex cables consist of extra finely stranded tinned copper conductors laid up to provide an extremely flexible design. The Protolon R-EP-110 elastomer insulation is rated at 3.3kV with an oil resistant, flame retardant PCP sheath completing the construction.

The cable is in accordance with AS1125, AS3116 and VDE0250 part 602. for NSGAfoeu.

**Permissible thermal short-circuit currents for 1 s duration (conductor temperature at start of short-circuit: 110°C):**

[mm <sup>2</sup> ]	4	6	10	16	25	35	50	70	95	120	150	185 ....	240
[kA]	..0.488	0.732	1.22	1.95	3.05	4.27.	6.10	8.54	11.6	14.6	18.3	....22.6	... 29.3

Permissible short-circuit currents for other durations are available.

The thermal as well as the dynamic short-circuit strength must be taken into account. The cables must in particular be firmly fixed to protect them from the effects of peak short-circuit currents.

## OPERATING TEMPERATURE

- Minimum permissible ambient temperature -40°C
- Maximum permissible conductor temperature 110°C
- Maximum permissible short circuit temperature 250°C
- Minimum ambient temperature for optimum fully flexible operation -25°C

## MINIMUM BENDING RADII

The following minimum bending radii should be observed to ensure operating reliability.

For fixed installation 6 x cable diameter

When freely flexing 8 x cable diameter

## CURRENT CARRYING CAPACITY

Current ratings are based on continuous operation at an ambient temperature of 40°C. At other temperatures these values must be converted using the following table.

°C	15	20	25	30	35	40	45	50	55	60	65	70	75	80
Factor	1.26	1.20	1.15	1.12	1.05	1.00.	0.94	0.88	0.81	0.73	0.65	0.57	0.47	0.34

Current ratings are based on AS/NZS 3008.1.1:1998. Table 8 Current- Carrying Capacities of Three Single-Core 0.6/1kV Sheathed and Unsheathed non-armoured cables R-E-110

## TENSILE STRENGTH

The maximum allowable tensile stress is 15N/mm<sup>2</sup>.

This ensures no conductor damage will occur in operation.

## VOLTAGE RATING

- Rated voltage: 0.6/1kV to 3.3kV AC
- Maximum operating voltages in:
  - 3 phase AC operation  $U_0/U = 2.1/3.6kV$
  - DC operation  $U_0/U = 2.7/5.4kV$
- AC test voltage = 6kV

## CURRENT CARRYING CAPACITY





The core insulation is white.

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## Selection and ordering data

No. of cores x conductor	Part No.	Approx No. of strand x Max.	Diameter of bare conductor stand	Cable overall diameter		Cable weight  kg/km	Current carrying capacity when installed			
				Min	Max		Unenclosed Spaced	Unenclosed Spaced from surface	Unenclosed Touching	Enclosed
mm <sup>2</sup>		mm	mm	mm	mm					
							A	A	A	A
1x1.5	5DF2 043	28 x 0.26	1.5	5.7	6.2	47	31	27	25	22
1x2.5	5DF2 053	45 x 0.26	1.9	6.1	6.6	60	43	38	36	32
1 x 4	5DF2 063	51 x 0.31	2.5	6.6	7.1	77	57	50	47	41
1 x 6	5DF2 073	75 x 0.31	3.2	7.1	7.6	97	73	63	59	51
1 x 10	5DF2 103	77 x 0.41	4.1	8.6	9.1	153	99	86	81	71
1 x 16	5DF2 123	123 x .041	6.5	10.0	10.8	213	130	115	105	93
1 x 25	5DF2 133	190 x 0.41	6.8	12.0	12.8	328	175	155	145	125
1 x 35	5DF2 143	268 x 0.41	8.1	13.1	13.9	421	220	190	175	150
1 x 50	5DF2 153	384 x 0.41	9.6	14.5	15.3	562	265	230	215	180
1 x 70	5DF2 163	545 x 0.41	11.2	16.3	17.3	750	340	290	270	235
1 x 95	5DF2 173	724 x 0.41	13.2	16.6	19.6	997	420	365	340	285
1 x 120	5DF2 183	926 x 0.41	14.9	20.7	21.7	1259	490	420	395	335
1 x 150	5DF2 203	1154 x 0.41	16.6	22.7	23.7	1534	570	485	455	380
1 x 185	5DF2 213	1407 x 0.41	18.0	24.7	25.7	1853	660	560	530	450
1 x 240	5DF2 223	1866 x 0.41	21.2	27.9	29.4	2428	790	670	630	550
1 x 300	5DF2 233	1551 x 0.51	23.6	31.0	32.5	3006	910	780	730	630
1 x 400	5DF2 243	1995 x 0.51	27.2	32.5	39.5	4332	1070	910	850	720