



Welcome to Clynder Cables

Clynder Cables has over thirty years of experience in the supply of UK manufactured industrial electrical cables to the UK, European and International markets. We specialise in single core cables, such as our famous Tri-rated cable and hold both UL and CSA accreditations.

We offer high quality products with consistent colours and short lead times because we know reliability is everything when sourcing cable. All of our cable is manufactured in the UK.

Clynder Cables was founded in Huyton, Merseyside in 1983 and quickly established itself as the leading brand for British made high quality tri-rated panel and switchgear wiring. In 2002 the company relocated to Manchester, where it strengthened the distribution side of the business, expanded the product range and promoted the Clynder Cables brand.

Our cable is supplied mainly to the control panel industry through most of the well known electrical wholesalers and distributors in the UK & Ireland.

In recent years Clynder has broadened its product range with the "Superflex" range of highly flexible tri-rated panel wiring, cables with remarkable properties of flexibility and bending radius. Other products include 2491X and 2491B equipment wires.

TRI-RATED PANEL WIRES

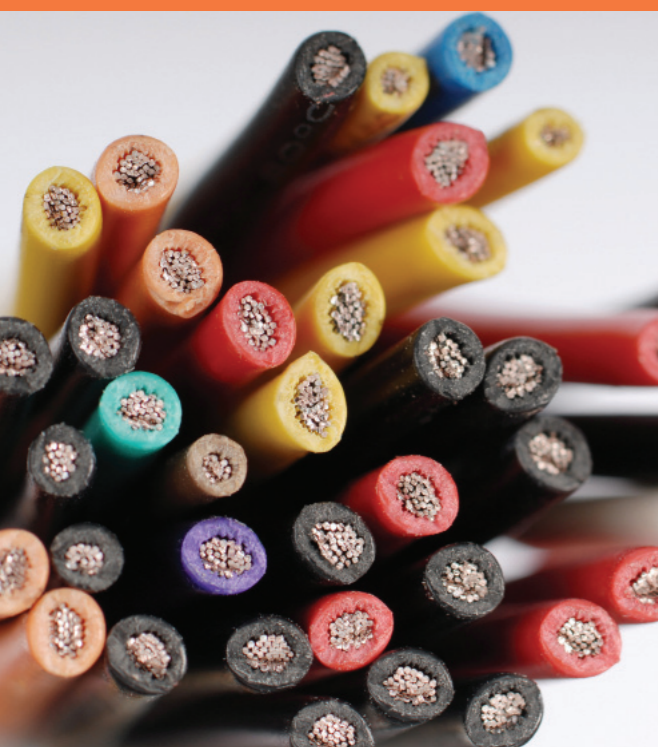
Certified to American UL Styles 1015,1028,1283 and 1284, and Canadian CSA C22.2 type TEW. Manufactured to UK BS6231 type CK.

These cables have Class 5 conductors and are suitable for use at alternating voltages not exceeding 600V to earth and direct voltages not exceeding 1000V to earth. The conductors are plain annealed copper.

Size (sq.mm)	Approx AWG	Nom r/t (mm)	Nom Diam (mm)	Max Temp °C	AWM Style No.	Max* Amps
0.5	22	0.8	2.6	105	1015	11
0.75	20	0.8	2.8	105	1015	14
1	18	0.8	3.0	105	1015	17
1.5	16	0.8	3.3	105	1015	21
2.5	14	0.8	3.7	105	1015	30
4	12	0.8	4.3	105	1015	41
6	10	0.8	5.1	105	1015	53
10	8	1.2	6.8	105	1028	75
16	6	1.6	9.2	105	1283	100
25	4	1.6	10.6	105	1283	136
35	2	1.6	11.6	105	1283	167
50	1	2.1	14.4	105	1284	204
70	2/0	2.1	16.5	105	1284	259
95	3/0	2.1	18.7	105	1284	321
120	4/0	2.1	20.0	105	1284	362

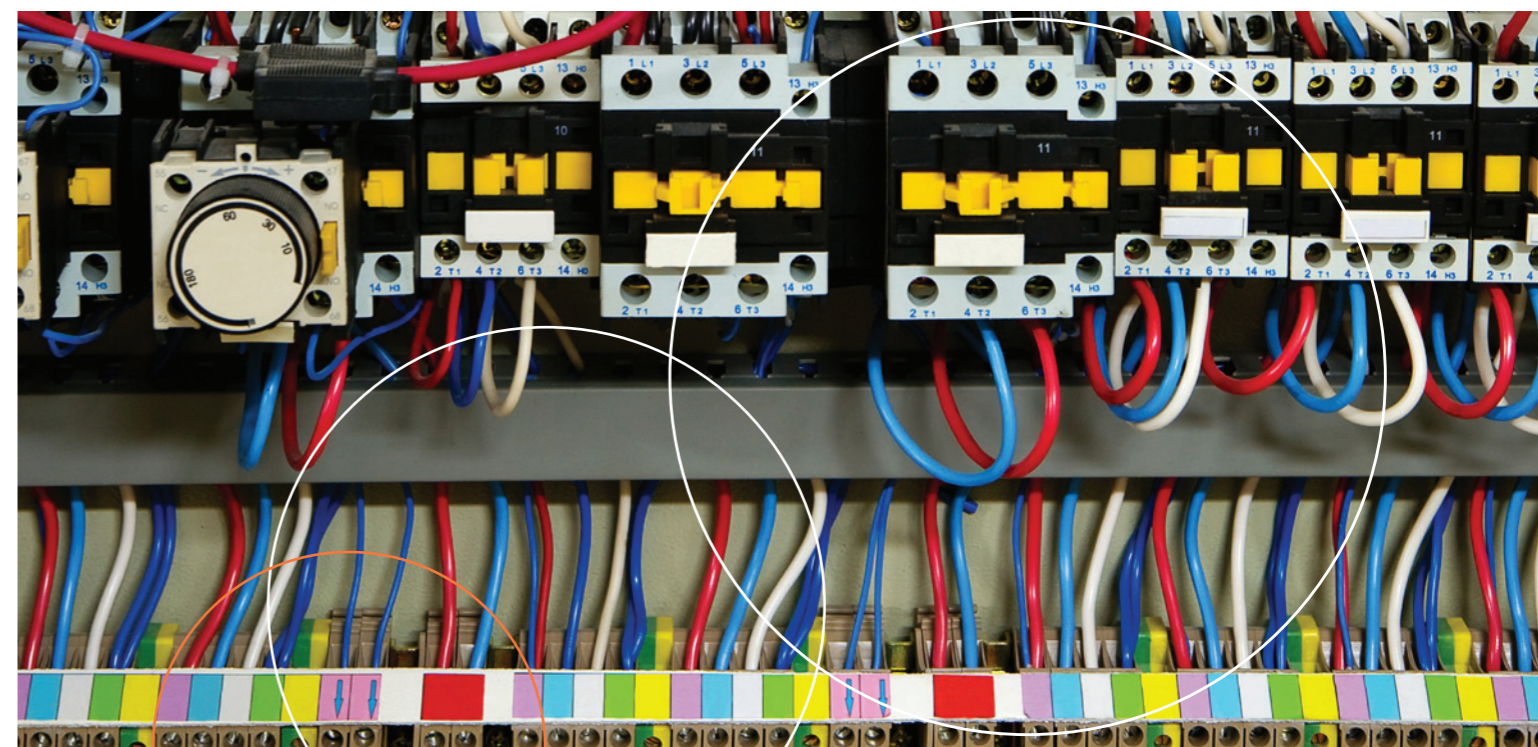


Manufactured using High temperature PVC.
* Single conductor in free air at an ambient of 35°C and allowing a conductor temperature rise of 35°C.



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SHEATHED TRI-RATED FLEXIBLE CABLE

Construction:

Plain annealed copper conductor
 PVE Insulation ; Heat Resisting 105°C
 PVC Sheath Heat Resisting 90°C

Size (sq.mm)	Approx. AWG	Core Radial Thickness of Insulation mm	Sheath Radial Thickness mm	Nominal Diameter mm	Max Amps*
2.5	14	0.8	0.8	5.45	30
4	12	0.8	0.9	6.05	41
6	10	0.8	0.9	6.90	53
10	8	1.14	0.9	8.55	75
16	6	1.55	1.0	11.30	100
25	4	1.55	1.1	13.00	136
35	2	1.55	1.1	14.35	167
50	1	2.05	1.1	17.45	204

Manufactured using High temperature PVC.
 * Single conductor in free air at an ambient of 35°C and allowing a conductor temperature rise of 35°C.

SUPERFLEXES - SUPER FLEXIBLE TRI-RATED PANEL WIRES

Tri-rated Panel Wires having increased flexibility, these are certified to American UL Styles 1015,1028,1283 and 1284, and Canadian CSA C22.2 type TEW. These cables are for use at alternating voltages not exceeding 600V to earth and direct voltages not exceeding 1000V to earth. The conductors are plain annealed copper.

Size (sq.mm)	Approx AWG	Nom r/t (mm)	Nom Diam (mm)	Max Temp °C	AWM Style No.	Max Amps*
10	8	1.2	6.8	105	1028	75
16	6	1.6	9.2	105	1283	100
25	4	1.6	10.6	105	1283	136
35	2	1.6	11.6	105	1283	167
50	1	2.1	14.4	105	1284	204
70	2/0	2.1	16.5	105	1284	259
95	3/0	2.1	18.7	105	1284	321
120	4/0	2.1	20.0	105	1284	362
150‡	250 MCM	2.4	24.5	105	1284	418
185‡	350 MCM	2.4	26.7	105	1284	480
240‡	450 MCM	2.4	31.5	105	1284	593

Manufactured using High temperature PVC.
 * Single conductor in free air at an ambient of 35°C and allowing a conductor temperature rise of 35°C.
 ‡ Cables above 120mm² in size are UL certified only.

2491B

These are unsheathed cables insulated with cross-linked low smoke halogen free compound. They are manufactured to BS7211 and are suitable for electrical power, lighting and internal wiring in applications where smoke and toxic fumes arising in a fire situation may threaten life or equipment. 0.75mm² and 1.0mm² are rated at 300/500V (2491B) and larger sizes are rated at 450/750V (6701B). Sizes 0.75mm² to 10mm² inclusive are BASEC certified. The conductors are plain annealed copper.

NOTE : BS7211 was withdrawn at the end of 2012 and replaced by BS EN 50525. The cable constructions and HAR codes are not affected.

Size (mm ²)	Conductor Class	Insulation r/t (mm)	Nom overall Diam (mm)	Harmonised Code	Max Amps*
0.75	5	0.6	2.7	H05Z-K	6
1	5	0.6	2.8	H05Z-K	10
1.5	5	0.7	3.4	H07Z-K	15
2.5	5	0.8	4.1	H07Z-K	25
4	5	0.8	4.8	H07Z-K	32
6	5	0.8	5.3	H07Z-K	47
10	5	1.0	6.8	H07Z-K	65
16	5	1.0	8.1	H07Z-K	87
25	5	1.2	10.2	H07Z-K	114
35	5	1.2	11.7	H07Z-K	141
50	5	1.4	13.9	H07Z-K	182
70	5	1.4	16.0	H07Z-K	234
95	5	1.6	18.2	H07Z-K	284
120	5	1.6	20.2	H07Z-K	330
150	5	1.8	22.5	H07Z-K	381
185	5	2.0	24.9	H07Z-K	436
240	5	2.2	28.4	H07Z-K	515

* 2 cables clipped direct

2491X

These are PVC insulated, unsheathed cables for voltages up to and including 450/750V, used for electrical power, lighting and internal wiring. 2491X types have class 5 conductors, whilst 6491X types have either class 1 or class 2 conductors. These cables are to BS EN 50525 Conductors up to and including 1mm². are rated at 300/500V. Above this the voltage rating is 450/750V. Sizes 0.5mm² to 2.5mm² inclusive are BASEC certified. The conductors are plain annealed copper.

NOTE : BS6004 was withdrawn at the end of 2012 and replaced by BS EN 50525. The cable constructions and HAR codes are not affected.

Size (mm ²)	Conductor Class	Insulation r/t (mm)	Nom overall Diam (mm)	Harmonised Code	Max Amps*
0.5	5	0.6	2.5	H05V-K	3
0.75	5	0.6	2.7	H05V-K	6
1	5	0.6	2.8	H05V-K	10
1.5	5	0.7	3.4	H07V-K	15
2.5	5	0.8	4.1	H07V-K	25
4	5	0.8	4.8	H07V-K	32
6	5	0.8	5.3	H07V-K	47
10	5	1.0	6.8	H07V-K	65
16	5	1.0	8.1	H07V-K	87
25	5	1.2	10.2	H07V-K	114
35	5	1.2	11.7	H07V-K	141
50	5	1.4	13.9	H07V-K	182
70	5	1.4	16.0	H07V-K	234
95	5	1.6	18.2	H07V-K	284
120	5	1.6	20.2	H07V-K	330
150	5	1.8	22.5	H07V-K	381
185	5	2.0	24.9	H07V-K	436
240	5	2.2	28.4	H07V-K	515

* 2 cables clipped direct

PVC INSULATED CABLES FOR SWITCHGEAR AND CONTROL GEAR WIRING BS6231

These cables are for use at alternating voltages not exceeding 600V to earth and direct voltages not exceeding 1000V to earth.

The conductors are plain annealed copper.

Type	Size (sq.mm)	Conductor Class	Nom r/t (mm)	Max Diam (mm)	Max Temp °C	Type	Size (sq.mm)	Conductor Class	Nom r/t (mm)	Max Diam (mm)	Max Temp °C
BU	1	1	0.8	3.2	70	CU*	1	1/1.13	0.8	3.2	90
	1.5	1	0.8	3.5	70		1	1/1.38	0.8	3.5	90
	2.5	1	0.8	3.9	70		1	1/1.78	0.8	3.9	90
BR	1	2	0.8	3.3	70	CR*	2	7/0.44	0.8	3.3	90
	1.5	2	0.8	3.6	70		2	7/0.53	0.8	3.6	90
	2.5	2	0.8	4.2	70		2	7/0.67	0.8	4.2	90
	4	2	0.8	4.8	70		2	7/0.85	0.8	4.8	90
	6	2	0.8	5.4	70		2	7/1.04	0.8	5.4	90
	10	2	1.0	6.8	70		2	7/1.35	1.0	6.8	90
	16	2	1.0	8.0	70		2	7/1.70	1.0	8.0	90
	25	2	1.2	9.8	70		2	7/2.14	1.2	9.8	90
	35	2	1.2	11.0	70		2	19/1.35	1.2	11.0	90
	50	2	1.4	13.0	70		2	19/1.78	1.4	13.0	90
	70	2	1.4	15.0	70		2	19/2.14	1.4	15.0	90
	95	2	1.6	17.0	70		2	37/1.78	1.6	17.0	90
	120	2	1.6	19.0	70		2	37/2.03	1.6	19.0	90
150	2	1.8	21.0	70	2	37/2.23	1.8	21.0	90		
185	2	2.0	23.5	70	2	37/2.52	2.0	23.5	90		
240	2	2.2	26.5	70	2	61/2.25	2.2	26.5	90		

* Manufactured using Heat Resisting PVC.

Type	Size (sq.mm)	Conductor Class	Nom r/t (mm)	Max Diam (mm)	Max Temp °C	Type	Size (sq.mm)	Conductor Class	Nom r/t (mm)	Max Diam (mm)	Max Temp °C
BK	0.5	5	0.8	3.0	70	CK*	0.5	5	0.8	3.0	90
	0.75	5	0.8	3.2	70		0.75	5	0.8	3.2	90
	1	5	0.8	3.4	70		1	5	0.8	3.4	90
	1.5	5	0.8	3.7	70		1.5	5	0.8	3.7	90
	2.5	5	0.8	4.2	70		2.5	5	0.8	4.2	90
	4	5	0.8	4.8	70		4	5	0.8	4.8	90
	6	5	0.8	6.3	70		6	5	0.8	6.3	90
	10	5	1.0	7.8	70		10	5	1.0	7.8	90
	16	5	1.0	9.0	70		16	5	1.0	9.0	90
	25	5	1.2	11.5	70		25	5	1.2	11.5	90
	35	5	1.2	13.0	70		35	5	1.2	13.0	90
	50	5	1.4	15.0	70		50	5	1.4	15.0	90
	70	5	1.4	17.5	70		70	5	1.4	17.5	90
95	5	1.6	19.5	70	95	5	1.6	19.5	90		
120	5	1.6	21.5	70	120	5	1.6	21.5	90		
150	5	1.8	24.0	70	150	5	1.8	24.0	90		
185	5	2.0	26.5	70	185	5	2.0	26.5	90		
240	5	2.2	30.0	70	240	5	2.2	30.0	90		

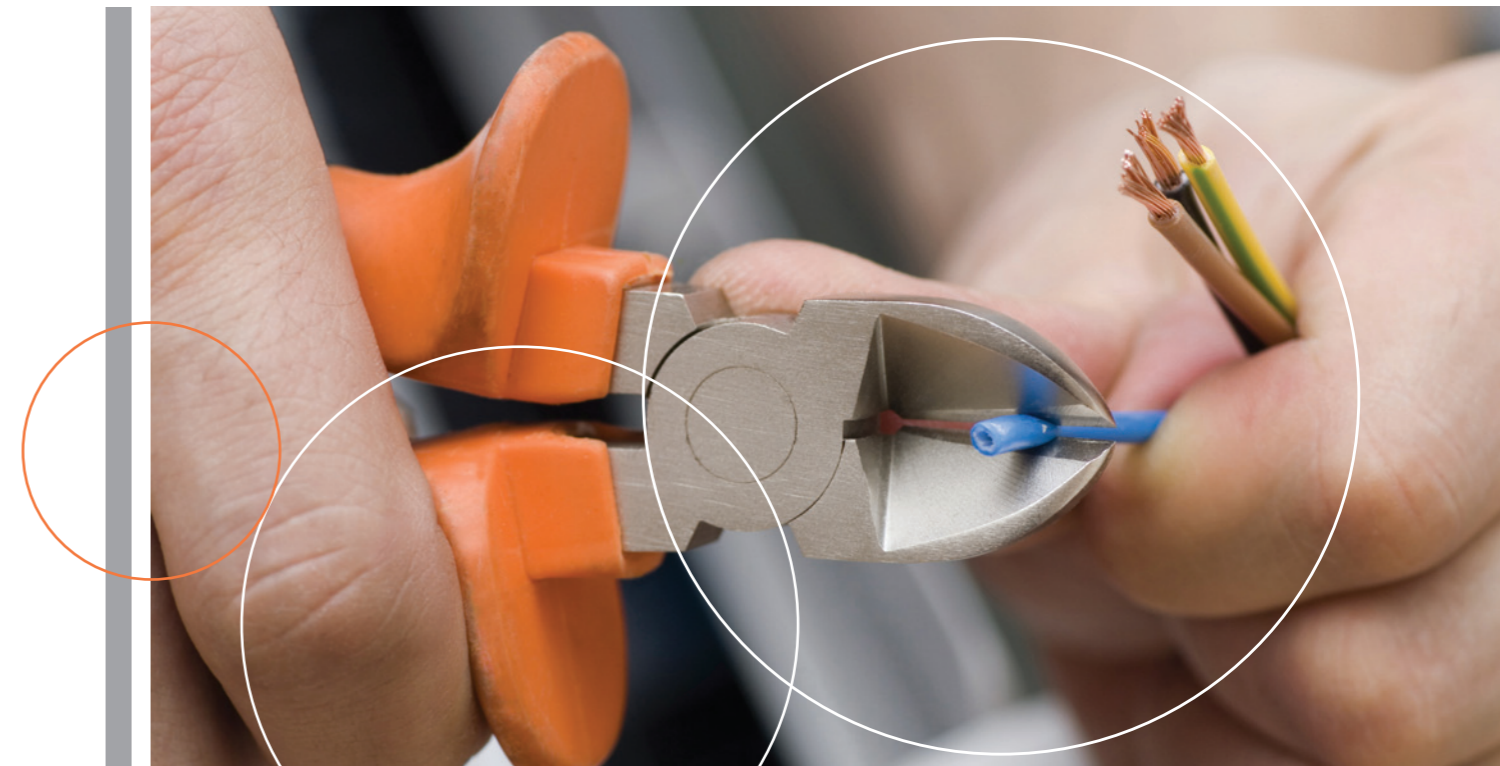
* Manufactured using Heat Resisting PVC.

85°C PVC INSULATED EQUIPMENT WIRES TO DEF STAN 61-12 PT 6

These are single core unsheathed and sheathed cables used for internal wiring of switch, control, metering, relay and instrument panels of power switchgear and electronic equipment. They are also used for such purposes as internal connections in rectifier equipment and in motor starters and controllers.

Type	Conductor (TCW)	Insulation r/t (mm)		Diameter (mm)		Over Screen		Over PVC Sheath		Max working Voltage (ac)
		Nom	Min	Over Insulation Min	Over Insulation Max	Min	Max	Min	Max	
1	1/0.6	0.2	0.15	0.95	1.05	-	-	-	-	750
1	7/0.2	0.2	0.15	0.95	1.05	-	-	-	-	750
2	1/0.6	0.3	0.25	1.10	1.30	-	-	-	-	1000
2	1/0.9	0.3	0.25	1.40	1.60	-	-	-	-	1000
2,2SB,2SBM	7/0.2	0.3	0.25	1.10	1.30	1.55	1.85	2.50	3.05	1000
2,2SB,2SBM	16/0.2	0.3	0.25	1.45	1.65	1.90	2.20	2.85	3.40	1000
2, 2SB	24/0.2	0.45	0.4	1.95	2.15	2.40	2.70	-	-	1000
3	1/0.6	0.45	0.4	1.40	1.60	-	-	-	-	1500
3	1/1.13	0.45	0.4	1.95	2.15	-	-	-	-	1500
3,3SB,3SBM	16/0.2	0.6	0.5	2.00	2.25	2.45	2.80	3.40	4.00	1500
3,3SB,3SBM	24/0.2	0.6	0.5	2.20	2.45	2.65	3.00	3.60	4.20	1500
3, 3SB	32/0.2	0.6	0.5	2.40	2.65	2.85	3.20	-	-	1500
3	63/0.2	0.6	0.5	2.90	3.15	-	-	-	-	1500

Note: SB type wires have a braid over the insulation.
SBM type wires have a braid over the insulation and an overall PVC sheath.
Other types of DEF STAN equipment wires are also available on request. Please contact our sales department.
Note: The number of strands per conductor is nominal and may vary



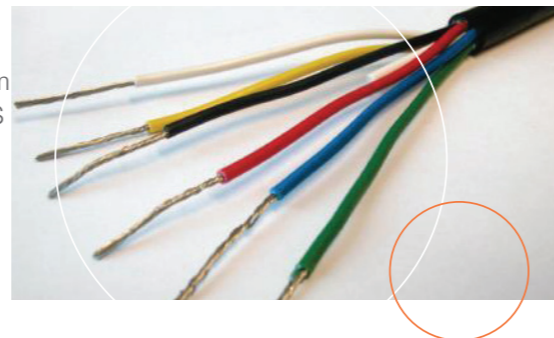
DEF STANDARD 61-12 PT 4 & PT 5 MULTICORES

These are produced as sub-miniature with a conductor size of 7/0.2mm (Pt 4) and a maximum current of 1 amp, or small, with a conductor size of 16/0.2mm (Pt 5) and a maximum current of 2.5 amps. If a current greater than 2.5 amps is needed a conductor size of 37/0.315mm is used with up to 4 cores. In this case the current should not exceed 13 amps. The cables are produced unscreened and either individually or overall screened. The screening is with a tinned copper braid. The insulation is type 2 (BS7655) for 7/0.2mm conductors and type T11 (BS EN 50363) for the 16/0.2mm and 37/0.315mm conductors. The sheathing compounds are PVC type TM2 (BS EN 50363). These cables are also available in heat resisting PVC by quoting the reference number and duplicating the final letter.

eg heat resisting version of 7-2-2A is 7-2-2AA

The maximum voltage for these cables is 440 volts rms at frequencies up to 1.6Khz.

The cables are used for instrumentation purposes, data processing, computers and other electronic equipment.



DEF STAN 61-12 Pt 4 (Unscreened core) 7/0.2mm conductor

Type	No. of Cores	Diameter (mm)		Approx Weight (Kg/Km)	NATO Stock No. 6145-99-
		Minimum	Maximum		
7-2-2A	2	3.10	3.60	13	110-8621
7-2-3A	3	3.30	3.80	16	110-8624
7-2-4A	4	3.60	4.10	20	110-8627
7-2-6A	6	4.30	4.80	30	110-8630
7-2-8A	8	5.30	5.80	42	N/A
7-2-12A	12	5.80	6.40	53	110-8633
7-2-18A	18	7.10	7.70	80	110-8636
7-2-25A	25	8.40	9.00	100	110-8639
7-2-36A	36	9.50	10.10	140	110-8642

DEF STAN 61-12 Pt 4 (Collectively Screened cores) 7/0.2mm conductor

Type	No. of Cores	Diameter over braid screen (mm)		Overall Diameter (mm)		Approx Wt (Kg/Km)	NATO Stock No. 6145-99-
		Minimum	Maximum	Minimum	Maximum		
7-2-2C	2	2.70	3.20	3.60	4.10	23	110-8622
7-2-3C	3	2.90	3.40	3.80	4.30	27	110-8625
7-2-4C	4	3.20	3.70	4.10	4.60	32	110-8628
7-2-6C	6	4.20	4.70	5.30	5.90	55	110-8631
7-2-8C	8	4.40	4.90	5.70	6.00	67	N/A
7-2-12C	12	5.60	6.10	6.60	7.20	83	110-8635
7-2-18C	18	6.50	7.10	7.90	8.50	110	110-8637
7-2-25C	25	7.80	8.40	9.20	9.80	150	110-8640
7-2-36C	36	8.80	9.50	10.40	11.20	200	110-8643

DEF STAN 61-12 Pt 4 (Individually Screened cores) 7/0.2mm conductor

Type	No of Cores	Diameter (mm)		Approx Weight (Kg/Km)	NATO Stock No. 6145-99-
		Minimum	Maximum		
7-2-2D	2	4.00	4.50	22	110-8623
7-2-3D	3	4.30	4.80	29	110-8626
7-2-4D	4	4.80	5.40	40	110-8629
7-2-6D	6	5.80	6.40	58	110-8632
7-2-8D	8	6.20	6.80	76	N/A
7-2-12D	12	7.90	8.50	110	110-8635
7-2-18D	18	9.30	9.90	150	110-8638
7-2-25D	25	11.30	12.10	210	110-8641
7-2-36D	36	12.70	13.50	290	110-8644

DEF STAN 61-12 Pt 5 Pt 5 (Unscreened cores) 16/0.2mm conductor

Type	No. of Cores	Diameter (mm)		Approx Wt (Kg/Km)	NATO Stock No. 6145-99-
		Minimum	Maximum		
16-2-2A	2	5.10	5.90	34	111-6715
16-2-3A	3	5.40	6.20	42	111-6722
16-2-4A	4	5.90	6.70	52	111-6726
16-2-6A	6	6.90	7.70	75	111-6733
16-2-8A	8	7.80	8.20	95	N/A
16-2-12A	12	9.10	9.90	120	111-6743
16-2-18A	18	10.50	11.50	180	111-6749
16-2-25A	25	12.60	13.60	230	111-6727

DEF STAN 61-12 Pt 5 (Collectively Screened cores) 16/0.2mm conductor

Type	No. of Cores	Diameter over braid screen (mm)		Overall Diameter (mm)		Approx Wt (Kg/Km)	NATO Stock No. 6145-99-
		Minimum	Maximum	Minimum	Maximum		
16-2-2C	2	4.45	4.95	6.10	6.90	69	111-6717
16-2-3C	3	4.75	5.25	6.40	7.20	79	111-6724
16-2-4C	4	5.90	5.90	6.90	7.70	92	111-6728
16-2-6C	6	6.10	6.90	7.90	8.70	120	111-6735
16-2-8C	8	6.60	7.40	8.60	9.00	140	N/A
16-2-12C	12	8.30	9.10	10.00	11.00	190	111-6745
16-2-18C	18	9.80	10.60	11.50	12.50	250	111-6751
16-2-25C	25	11.80	12.80	13.60	14.60	320	1116758
16-2-36C	36	13.40	14.40	15.50	16.70	450	111-6760

DEF STAN 61-12 Pt 5 (Individually Screened cores) 16/0.2mm conductor

Type	No of Cores	Diameter (mm)		Approx Wt (Kg/Km)	NATO Stock No. 6145-99-
		Minimum	Maximum		
16-2-2D	2	6.00	6.80	47	111-6718
16-2-3D	3	6.40	7.20	60	111-6725
16-2-4D	4	7.00	7.80	75	111-6729
16-2-6D	6	8.30	9.10	110	111-6736
16-2-8D	8	9.60	10.40	145	N/A
16-2-12D	12	10.80	11.80	190	111-6741
16-2-18D	18	12.80	13.80	270	111-6746
16-2-25D	25	15.30	16.50	360	111-6752

DEF STAN 61-12 Pt 5 (Collectively Screened cores) 37/0.315mm conductor

Type	No. of Cores	Diameter over braid screen (mm)		Overall Diameter (mm)		Approx Wt (Kg/Km)	NATO Stock No. 6145-99-
		Minimum	Maximum	Minimum	Maximum		
37-3-2R	2 (Flat)	4.2 x 7.7	5.0 x 8.5	9.50 x 6.0	10.3 x 6.80	150	111-6719
37-3-4R	4	9.10	9.90	10.80	11.80	253	111-6732

Note: Other types of DEF STAN cables are available on request. Please contact our sales department.

DEF STANDARD 61-12 Pt 4 & Pt 5 MULTICORES



CORE COLOUR TABLE FOR CABLES IN ACCORDANCE WITH DEF STAN 61-12 PTS 4 & 5

COLOURS	CORES							
	2	3	4	6	12	18	25	36
Red	*	*	*	*	*	*	*	*
Blue	*	*	*	*	*	*	*	*
Green		*	*	*	*	*	*	*
Yellow			*	*	*	*	*	*
White			*	*	*	*	*	*
Black			*	*	*	*	*	*
Brown				*	*	*	*	*
Violet					*	*	*	*
Orange					*	*	*	*
Pink						*	*	*
Turquoise						*	*	*
Grey					*	*	*	*
Red/Blue						*	*	*
Green/Red						*	*	*
Yellow/Red						*	*	*
White/Red						*	*	*
Red/Black						*	*	*
Red/Brown						*	*	*
Yellow/Blue						*	*	*
White/Blue						*	*	*
Blue/Black						*	*	*
Orange/Blue						*	*	*
Green/Blue						*	*	*
Grey/Blue						*	*	*
Yellow/Green						*	*	*
White/Green						*	*	*
Green/Black						*	*	*
Orange/Green						*	*	*
Grey/Green						*	*	*
Yellow/Brown						*	*	*
White/Brown						*	*	*
Brown/Black						*	*	*
Grey/Brown						*	*	*
Yellow/Violet						*	*	*
Violet/Black						*	*	*
White/Violet						*	*	*

CLYNDER COLOURS



Colours shown are for illustrative purposes only

CONVERSION TABLES

Useful Formulae for Copper Conductors

Weight kg / km = $d^2 \times n \times k \times 6.982$
 Resistance, ohms / km = $21.95 \times k \div d^2 \div n$
 Cross Section, mm² = $d^2 \times n \times 0.785$
 Conductor, diameter, mm = $\sqrt{x \cdot d \cdot 1.15}$ (1.30 for ropes)
 d = single wire diameter, mm
 n = number of wires
 k = laying up factor - bunch 1.01, strand 1.02, rope 1.04

Metric & Imperial Measures

Length
 1 centimeter (cm) = 10mm = 0.3937in
 1 metre (m) = 100cm = 1.0936yd
 1 kilometre = 1000cm = 0.6214 mile
 1 inch (in) = 2.54cm
 1 yard (yd) = 36in = 0.9144m
 1 mile = 1760yd = 1.6093km

Temperature

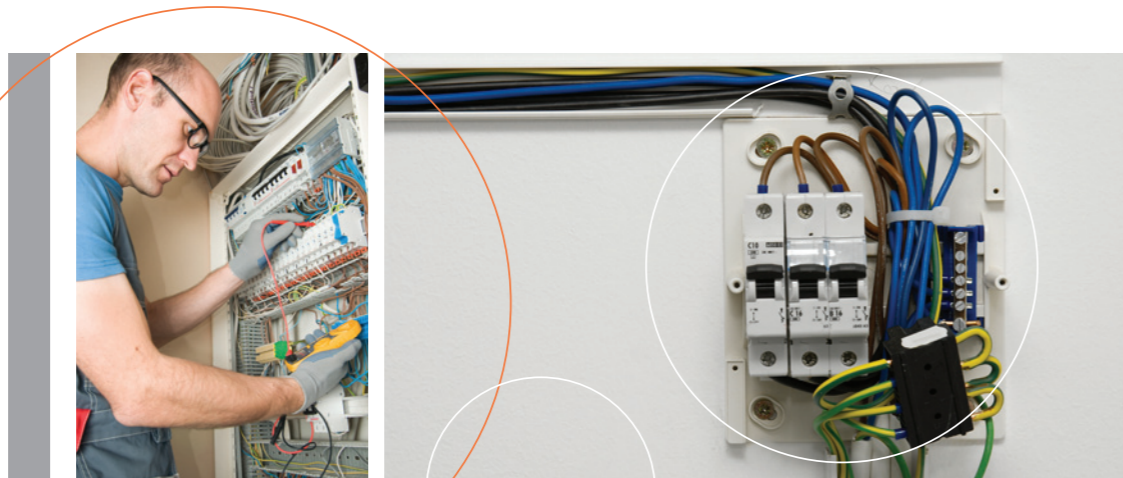
°C	°F
0	32
5	41
15	59
20	68
30	86
40	104
50	122
60	140
70	158
80	176
90	194
100	212

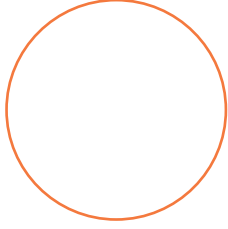
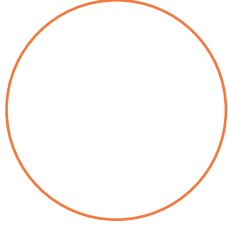
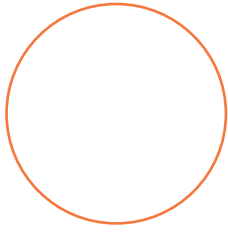
°C = 5/9 (°F - 32)

°F = 9/5 (°C + 32)

Electrical Units

1 ohm / 1000yd = 1.0936 Ω/km
 1 ohm / 100ft = 3.28 Ω/km
 1µF/mile = 0.62µF/km
 megohm/mile = 1.61 MΩ/km
 1µµ/foot = 3.28 of/m
 1 decibel/mile = 71.5 mN/m





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