SECTION THREE - LOW VOLTAGE CABLES

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CONSTRUCTION

Nexans low voltage cables are designed in accordance with relevant New Zealand, Australian or British Standards and specific customer requirements (where applicable) to provide optimum performance for the end application.

The standards referred to for PVC insulation are:

- AS/NZS 4961
- AS/NZS 5000.1
- AS/NZS 5000.2
- BS 6346

The standards referred to for XLPE and Cross-linked halogen-free Polyolefin insulation are:

- AS/NZS 3191
- AS/NZS 5000.1
- AS/NZS 4026
- AS/NZS 4961

Component Detail

Conductor

Conductors are made from either plain or tinned copper or solid or stranded aluminium. Depending on the cable construction, conductors may be either bunched, circular, compacted or shaped.

Conductor Data								
Cross Sectional Area	1.5	2.5	4	6	10	16	25	35
Nominal Diameter and No. of Wires	3/0.75	7/0.67	7/0.85	7/1.04	7/1.35	7/1.70	7/2.14	19/1.53

Flexible Conductor Data								
Cross Sectional Area	1.5	2.5	4	6	10	16	25	35
Wire Diameter and No. of Wires	30/0.25	49/0.25	80/0.25	119/0.25	77/0.40	119/0.40	189/0.40	266/0.4

Insulation

The insulation materials used are as follows:

1. PVC (Polyvinyl Chloride), meeting the requirements of: V-75 (AS/NZS 3808), V-90 (AS/NZS 3808), and TI1 (BS EN 50363-3.).
2. XLPE (Cross-linked Polyethylene), meeting the requirements of: X-90 (AS/NZS 3808, AS 3560) and GP8 (BS 7655: Section 1.3.).
3. A Cross-linked halogen-free Polyolefin, meeting the requirements of: X-HF-90 (AS/NZS 3808).
4. A Cross-linked halogen-free Polyolefin, meeting the requirements of: X-HF-110 (AS/NZS 3808).

Core Assembly

The cores of cables having flat profiles are laid side by side during the subsequent process. In circular cables, the cores are laid up and the interstices filled with a non-hygroscopic material where necessary to achieve a circular cable cross-section. The laid-up core assembly may be bound with helically applied non-hygroscopic tapes.

Neutral Screen

In neutral screened cables, a screen of plain annealed copper or tinned annealed copper wires is helically applied over the core of a single core cable or the core assembly of a multicore cable.

Bedding and Armour (Multicore cables)

In multicore armoured cables, a bedding of PVC is extruded over the core assembly followed by a layer of helically applied galvanised mild steel wires.

Outer Sheath

A sheath of PVC or a X-HF thermoplastic, halogen-free polymeric with suitable temperature rating is extruded over the underlying components.
Additional protective coverings may be applied depending on the environment in which the cable is installed, e.g., a nylon over sheath and an additional sacrificial PVC layer are often specified for protection against termite attack.

Fire Rated Fire Performance

When a cable type is assigned a wiring system code it means that a cable, representative of its group as defined by AS/NZS 3013, has satisfied the test criteria for that rating.

As an example, of a WS52W rating, all components of the Wiring System are capable of resisting exposure to fire for 120 min and have a mechanical damage comparable to 15 Joule impact and 1.0 kN of cutting force when tested to methods of AS/NZS 3013 and passed the water spray test within 30 minutes of fire test.

To understand what a WS rating means, reference to section 3 of AS/NZS 3013 is recommended, however the table below gives a brief overview of how the WS ratings relate to the electrical and mechanical performance of fire rated cables and elements in both normal service and fire conditions.

WS	1st Numeral Electrical performance		2nd Numeral Mechanical performance		Supplementary letter
	Number	Level of circuit integrity in fire condition	Number	Level of protection against mechanical damage	Water spray test applied
Characteristic lettering "WS"	1	15 min	1	Light	The letter "W" shall be applied as appropriate
	2	30 min	2	Moderate	
	3	60 min	3	Heavy	
	4	90 min	4	Very heavy	
	5	120min	5	Extremely heavy	

AS/NZS 3000 – The wiring rules contains an informative section which can be found in Appendix H – WS classification of wiring systems. This section gives guidance about designation, application and mechanical protection classifications that result in compliant installations and suitable alternatives.

CURRENT RATINGS

The current carrying capacity of a cable is determined by the following factors:

1. Current flowing in a conductor generates heat and causes the conductor temperature to rise above the ambient temperature.
2. Different methods of installation or the presence of external heat sources such as adjacent cables vary the rate of heat dissipation.
3. The insulation material determines the maximum conductor temperature which can be sustained continuously over the expected life of the cable.

In all cases, the ratings given are the single circuit ratings, corresponding to continuous loading at the maximum conductor temperature appropriate to the insulation material.

Environmental Conditions

The current ratings are based on the following operational conditions: ambient air temperature of 30°C, soil temperature of 15°C, soil thermal resistivity of 1.2 K.m/W and depth of burial of 0.5 m. Where conditions vary from those on which the ratings are based, appropriate rating factors from Tables 3.1 to 3.4 need to be applied.

Methods of Installation

The methods of installation for which the ratings are applicable are shown graphically in Figure 2.1 (Section 2 General Technical Information). Arrangements which are shown one above the other for the same installation method are deemed to have the same current carrying capacity.

Earthing conductors and lightly loaded neutral conductors of three phase circuits are ignored for current rating purposes and are generally not shown in the graphical representations of the cable and installation methods. Thus, where two single core cables or a two-core cable is shown the current rating applies to single phase operation; where three single core cables or a three-core cable is shown the current rating applies to two or three phase operation.

Groups of Circuits

For groups of circuits unenclosed in air, the spacings and arrangements which need to be maintained to prevent derating are given in Figure 2.2 (Section 2 General Technical Information). Where underground circuits are spaced by more than 2 m from adjacent circuits, no derating applies. Also, if adjacent circuits are operated at less than 35% of their current carrying capacity they may be excluded from considerations as their contribution to mutual heating will be small. Where a number of circuits are installed in close proximity in such a way that they are not thermally independent, the appropriate rating factors from Tables 3.5, 3.6, (Section 3 Low Voltage ≥ 0.6/1 kV Cables) and Tables 2.1, 2.2 (Section 2 General Technical Information) need to be applied.

Cables in Parallel

For cables operated in parallel, each parallel leg is regarded as a separate circuit for current rating purposes and the appropriate rating factors for grouping are applicable. Refer also to Figure 2.3 (Section 2 General Technical Information) for the arrangements of single core cables so as to ensure equal current sharing between parallel legs of the same phase.

Solar Radiation

For cables exposed to direct sunlight, the effect of solar radiation is to increase the surface temperature of the cable and hence limit the temperature rise due to the load in the conductors. Where possible, cables should be shielded from the direct rays of the sun without restricting ventilation. Otherwise, the effect of solar radiation should be taken into account, either by calculation in accordance with IEC 60287, or as an approximation by adding 20°C to the ambient air temperature and applying the appropriate rating factor.

LOW VOLTAGE RATING FACTORS

Table 3.1 Ambient Air Temperature Variation

Insulation Type	Air Temperature (°C)								
	15	20	25	30	35	40	45	50	55
PVC	1.18	1.12	1.06	1.00	0.94	0.88	0.80	0.72	0.63
XLPE	1.15	1.09	1.05	1.00	0.95	0.91	0.85	0.80	0.74

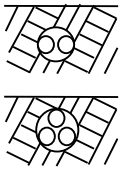
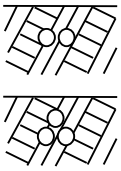
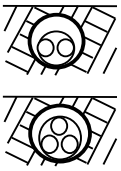
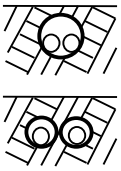
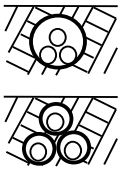
Table 3.2 Soil Temperature Variation

Insulation Type	Soil Temperature (°C)						
	10	15	20	25	30	35	40
PVC	1.04	1.00	0.95	0.91	0.86	0.81	0.75
XLPE	1.04	1.00	0.96	0.93	0.91	0.87	0.83

Table 3.3 Depth of Burial Variation

Depth of Burial	Laid Direct			In Underground Ducts	
	Up to 50mm^2	Above 50mm^2 Up to 300mm^2	Above 300mm^2	Single Core	Multicore
0.5	1.00	1.00	1.00	1.00	1.00
0.6	0.99	0.98	0.97	0.98	0.99
0.8	0.97	0.96	0.94	0.95	0.97
1.0	0.95	0.94	0.92	0.93	0.96
1.25	0.94	0.92	0.90	0.90	0.95
1.5	0.93	0.91	0.89	0.89	0.94
1.75	0.92	0.89	0.87	0.88	0.94
2.0	0.91	0.88	0.86	0.87	0.93
2.5	0.90	0.87	0.85	0.86	0.93
3.0 (or deeper)	0.89	0.86	0.83	0.85	0.92

Table 3.4 Soil Thermal Resistivity Variation

Soil Thermal Resistivity (K.m/W)					
0.8	1.09	1.16	1.03	1.06	1.08
0.9	1.07	1.11	1.02	1.04	1.06
1.0	1.04	1.07	1.02	1.03	1.04
1.2	1.00	1.00	1.00	1.00	1.00
1.5	0.92	0.90	0.95	0.94	0.92
2.0	0.81	0.80	0.88	0.86	0.83
2.5	0.74	0.72	0.83	0.80	0.77
3.0	0.69	0.66	0.78	0.75	0.71

LOW VOLTAGE RATING FACTORS

Table 3.5 Groups of Circuits Laid Direct

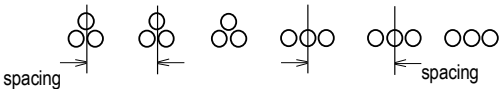
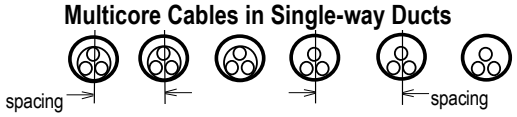
No. of Circuits	Single Core Cables 						Multicore Cables 				
	Touching		Spacing (m)				Touching	Spacing (m)			
	Trefoil	Flat	0.15	0.30	0.45	0.60		0.15	0.30	0.45	0.60
2	0.78	0.81	0.83	0.88	0.91	0.93	0.81	0.87	0.91	0.93	0.95
3	0.66	0.70	0.73	0.79	0.84	0.87	0.70	0.78	0.84	0.88	0.90
4	0.61	0.64	0.68	0.74	0.81	0.85	0.63	0.74	0.81	0.86	0.89
5	0.56	0.60	0.64	0.73	0.79	0.83	0.59	0.70	0.78	0.84	0.87
6	0.53	0.57	0.61	0.71	0.78	0.82	0.55	0.68	0.77	0.83	0.87
7	0.50	0.54	0.59	0.69	0.76	0.82	0.52	0.66	0.75	0.82	0.86
8	0.49	0.53	0.57	0.68	0.76	0.81	0.50	0.64	0.75	0.81	0.86
9	0.47	0.51	0.56	0.67	0.75	0.81	0.48	0.63	0.74	0.81	0.85
10	0.46	0.50	0.55	0.67	0.75	0.80	0.47	0.62	0.73	0.80	0.85
11	0.44	0.49	0.54	0.66	0.74	0.80	0.45	0.61	0.73	0.80	0.85
12	0.43	0.48	0.53	0.66	0.74	0.80	0.44	0.60	0.72	0.80	0.84

Table 3.6 Groups of Circuits In Underground Ducts

No. of Circuits	Single Core Cables in Multiway Ducts or Multicore Cables in Single-way Ducts 				Single Core Cables in Single-way Ducts 		
	Touching	Spacing (m)			Touching	Spacing (m)	
		0.30	0.45	0.60		0.45	0.60
2	0.90	0.93	0.95	0.96	0.87	0.91	0.93
3	0.83	0.88	0.91	0.93	0.78	0.84	0.87
4	0.79	0.85	0.89	0.92	0.74	0.81	0.85
5	0.75	0.83	0.88	0.91	0.70	0.79	0.83
6	0.73	0.82	0.87	0.90	0.69	0.78	0.82
7	0.71	0.81	0.86	0.89	0.67	0.76	0.82
8	0.70	0.80	0.85	0.89	0.66	0.76	0.81
9	0.68	0.79	0.85	0.89	0.65	0.75	0.81
10	0.67	0.79	0.85	0.89	0.64	0.75	0.80
11	0.66	0.78	0.84	0.88	0.63	0.74	0.80
12	0.66	0.78	0.84	0.88	0.63	0.74	0.80

VOLTAGE DROPS

In order to ensure satisfactory operation of electrical equipment, it is necessary to maintain the voltage at which it is supplied within certain limits.

Voltage Drop Limitations

In New Zealand, the nominal supply system is 230/400 volts. The maximum voltage drop from the point of supply to any point in the installation is required to be no more than 5% of the nominal supply voltage, ie, 11.5 V for 230 V phase to earth or 20 V for 400 V phase to phase.

The voltage drop limitation applying to a circuit needs to be assessed taking account of the function of the circuit and its relationship with other circuits. For example, other voltage drop limits may apply in ELV circuits or may be dictated by motor starting considerations.

Also, the voltage drop in mains and submains circuits should take account of the voltage drop in final sub-circuits (and vice versa) to ensure the total voltage drop in the installation is within the required limits.

Use of Tabulated mV/A.m Figures

The voltage drop (mV/A.m) values given in this publication have been obtained from AS/NZS 3008.1.2. They represent the worst-case conditions, whereby it is assumed that the cable is operating at maximum rated temperature and is supplying a load having a power factor equal to the power factor of the cable. For three phase circuits, balanced loading is assumed.
On this basis, where the cable size and type, load current and length of run are known, the voltage drop can be calculated from the following:

$$V_d = \frac{V_t * I * L}{1000} (V)$$

Where: V_t = the Tabulated Voltage Drop Figure for the Cable (mV/A.m), I = the Load Current (A), and L = the Length of Run (m). This formula is used to calculate the voltage drop in a circuit when the cable size is known. Rearrangement of this equation gives the maximum mV/A.m value for compliance with a specific voltage drop.

$$V_C = \frac{1000 * V_d}{I * L} \text{ (mV/A.m)}$$

This formula should be used to select the cable size necessary to meet a specific voltage drop limitation. The size selected should have a tabulated mV/A.m figure not greater than the calculated value of V_C.

Unbalanced Three Phase Circuits

In many three phase circuits the loading on each phase is not equal. In these cases, current will flow in the neutral conductor and the tabulated three phase mV/A.m values will not strictly apply.

Where the imbalance is known to be small, a conservative method of voltage drop assessment is to assume balanced three phase load conditions but use the current flowing in the most heavily loaded phase.

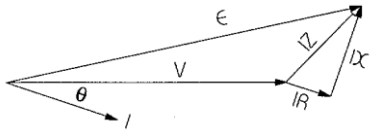
However, where the imbalance is significant, or not readily determined, it may be necessary to revert to a single-phase basis. The single-phase voltage drop limit and the tabulated single-phase mV/A.m should be used unless more precise calculations are performed using vector methods to calculate the neutral current and then geometrically summing the voltage drops in the phase and neutral conductors.

VOLTAGE DROPS

Instances can arise where it is desired to make a more precise determination than would arise from the use of tabulated mV/A.m figures. The following methods can be used in these cases.

Phasor Diagram

The relationships between the various current and voltage elements in a cable circuit are shown in the following phasor diagram (lagging power factor).



Where: **I** = Current Flowing in Cable, **E** = Voltage at Supply, **V** = Voltage at Load, $\mathbf{V_d = E - V}$, **IZ** = Voltage Drop associated with Cable Impedance, and **cos θ** = Power Factor of Load.

Given values for **E, I, R, X** and **θ**, the magnitude of **V** can be determined vectorially and subtracted from **E** to give the difference in voltage between the supply and load ends of the circuit. As the magnitude of the permissible voltage drop is very much smaller than the supply and load voltages, the difference between **E** and **V** is approximately equal to the magnitude of IZ. The following formulae make use of this simplification. For additional information refer to AS/NZS 3008.1.2.

Circuit Impedance and Load Power Factor

In the cases where the load power factor is not known, the load power factor is assumed to be equal to the cable power factor and the voltage drop calculated in terms of the cable impedance as follows:

$$\mathbf{V_{d1f} = 2 * I * L * Z \ (V/m) \ Single \ phase}$$

$$\mathbf{V_{d3f} = \sqrt{3} * I * L * Z \ (V/m) \ Three \ phase}$$

Where: **I** = Load Current (A), **L** = Length of Run (m), Z (Cable Impedance) = $\sqrt{R_c^2 + X_L^2}$ (Ω/m), $\mathbf{R_c}$ = Conductor Resistance (Ω/m), and $\mathbf{X_L}$ = Cable Inductive Reactance (Ω/m) at operating temperature and frequency. ($\mathbf{X_L = 0}$ for direct current operation) and values of $\mathbf{R_c}$ and $\mathbf{X_L}$ are given in Tables 3.32 to 3.39.

Where the load power factor **cos θ** is known, the relevant formulae are:

$$\mathbf{V_{d1f} = 2 * I * L * (R_c * \cos\theta \pm X_L * \sin\theta) \ (V/m)}$$

$$\mathbf{V_{d3f} = \sqrt{3} * I * L * (R_c * \cos\theta \pm X_L * \sin\theta) \ (V/m)}$$

In these formulae, the second term in brackets is added for lagging power factors and subtracted for leading power factors. For unity power factor, **sin θ = 0** so the second term disappears.

Cables Operated Below Full Load

In many situations, cables are operated at loads considerably less than their full rated current. The conductor temperature in such cases will be less than the maximum figure on which the tabulated mV/A.m values are based. For a given load current, the actual conductor temperature θ_o (°C) can be calculated from the following:

$$\theta_o = \theta_a + (\theta_r - \theta_a) \times \left\{\frac{I_o}{I_r}\right\}^2$$

Where: $\mathbf{I_o}$ = Actual Load Current (A), $\mathbf{I_r}$ = Rated Current (A), θ_r = Rated Conductor Temperature (°C), and θ_a = Ambient Temperature (°C) corresponding to rated current.

The value of $\mathbf{R_C}$ to be used in the voltage drop calculations can then be obtained from Table 3.32 or 3.35 using the next higher value of conductor temperature. Special computer programs are commercially available to calculate voltage drop allowing for cables that are not loaded at their full rated current.

SELECTION PROCEDURES

In accordance with AS/NZS 3008.1.2:2017 and AS/NZS 3000:2018, the four main factors which affect the minimum size of cable required for a particular installation are:

1. The cable current-carrying capacity, which is influenced by the cable materials and construction, the conditions of the cable environment and the method of installation due to their effects on the dissipation of heat from the conductors.
2. The voltage drop in the cable circuit, which is a function of load current, load power factor, and length of the cable run.
3. The temperature rise under short-circuit conditions, which is a function of both the magnitude and duration of the short-circuit current and is limited by the cable materials.
4. The maximum fault loop impedance which will still allow the protective device to trip within the specified time.

Procedures

To select the cable size required, based on the above considerations, follow the steps listed:

Current-Carrying Capacity

1. Determine the minimum current for which the cable is to be rated, taking account of the maximum demand of the circuit and the type and rating of the overcurrent protection device.
2. Ascertain how the cables are to be installed, and the conditions in the cable environment. From the tables of rating factors, select any rating factor(s) which are applicable.
3. Divide the rating from step 1. by the appropriate factor(s).
4. From the current rating tables, select a cable which, for the appropriate method of installation, has a tabulated rating not less than the value obtained from 3.

Voltage Drop

1. Determine the Load Current I (A) to be carried by the cable, and the Route Length L (m) of the circuit.
2. Establish the maximum voltage drop $\mathbf{V_d}$ (V) permitted in the circuit (taking account of any other voltage drops in series).
3. Evaluate the equation $Vc = \frac{1000 * Vd}{I * L}$ (mV/A.m). This value is the maximum mV/A.m figure which will give the required voltage drop.
4. From the voltage drop tables, select a cable for the appropriate method of installation which has a tabulated mV/A.m figure not greater than this value.

Short Circuit Temperature

1. Determine the Maximum Duration **t** (s) and Magnitude $\mathbf{I_{sc}}$ (A) of the prospective Short Circuit Current.
2. Evaluate the equation $\mathbf{I_1 = I_{sc} * \sqrt{t}\ (A)}$. This is the required short circuit rating converted to a one second basis.
3. From the conductor short-circuit ratings tables, select a cable with a rating no less than the value obtained from 2.

Fault Loop Impedance

1. Determine the maximum fault loop impedance which will still allow the protective device to trip within the specified time.
2. From the above calculate the maximum length of cable run to comply with the maximum fault loop impedance. Refer to AS/NZS 3000:2018, Clause 1.5.5.3 and Appendix B.

General

For any circuit, the cable size selected should not be less than the largest of the sizes calculated to meet the above limitations (this is the smallest size which will meet all of the requirements).

In practice, the current-carrying capacity will be found to prevail in short-run/high-current circuits while voltage drop considerations will usually prevail in long-run/low-current circuits. It is unusual for short-circuit temperature requirements to determine the conductor size required for low voltage cable circuits.

MINIMUM COPPER EARTHING CONDUCTOR SIZE

Nominal Size of Active Conductor mm²	Nominal Size of Copper Earthing Conductor	
	With Copper Active Conductors mm²	With Aluminium Active Conductors mm²
1	1 *	-
1.5	1.5 *	-
2.5	2.5	-
4	2.5	-
6	2.5	-
10	4	-
16	6	4
25	6	6
35	10	6
50	16	10
70	25	10
95	25	16
120	35	25
150	50	25
185	70	35
240	95	50
300	120	70
400	≥120†	≥95†
500	≥120†	≥95†
630	≥120†	≥120†
>630	≥25% of active size†	≥25% of active size†

* These earthing conductors may be used only where incorporated in a multicore cable or flexible cord, other than a lift travelling cable, in accordance with Clause 5.3.3.4 (b) and (c) of AS/NZS 3000:2018.

† A larger earthing conductor may be required to satisfy Clause 5.3.3.1.1 of AS/NZS 3000:2018.

Disclaimer

Nexans has taken every precaution to ensure that the information contained in the above table is in line with the requirements of the appropriate New Zealand Standards and correct electrical practice. However, we accept no liability of any kind with respect to the information presented here.

It is the responsibility of the Electrician signing the Certificate of Compliance to ensure that all the requirements of the Wiring Regulations are met.

CONDUIT WIRES

Circular construction
Copper conductor
PVC insulation

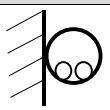
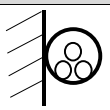
Product Sheet No. 010-01 A			
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
V90 Insulation			
1.0*	0.8	2.8	0.017
1.5	0.8	3.3	0.022
2.5	0.8	3.8	0.034
4	1.0	4.7	0.055
V75 Insulation			
6	1.0	5.3	0.076
10	1.0	6.2	0.12
16	1.0	7.2	0.18
25	1.2	8.9	0.28
35	1.2	10.1	0.38
50	1.4	11.7	0.51
70	1.4	13.5	0.72
95	1.6	15.8	1.0
120	1.6	17.5	1.2
150	1.8	19.4	1.7
GN/YE Earthing Conductors			
1.5	0.6	2.8	0.020
2.5	0.7	3.6	0.032
Issue: June 2019			
0.6/1 kV. Made to AS/NZS 5000.1			

* Solid conductor

Notes:
1. Conductors 1.5 mm2 and above are circular stranded.
2. Standard colours: Red, White, Blue, Black, Green/Yellow (other colours can be supplied if required).
3. Subject to confirmation, similar cables can be manufactured to other specifications.

CONDUIT WIRES

Circular construction
Copper conductor
PVC insulation
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 010-01 B				
Conductor Size				
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
1.0	15	51.6	14	44.7
1.5	21	33.0	17	28.6
2.5	27	18.0	24	15.6
4	36	11.2	32	9.71
6	47	7.50	40	6.49
10	62	4.46	54	3.86
16	80	2.81	71	2.43
25	107	1.78	92	1.54
35	128	1.29	114	1.12
50	157	0.963	136	0.834
70	194	0.680	173	0.589
95	242	0.507	209	0.439
120	276	0.415	247	0.359
150	321	0.352	278	0.305
Issue: June 2019 **0.6/1 kV. Made to AS/NZS 5000.1**				

The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

SINGLE CORE CU TPS CABLES

Circular construction
Copper conductor
PVC insulation
PVC sheath

Product Sheet No. 020-01 A				
Conductor Size (mm2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
1.0*	0.6	0.8	3.8	0.026
1.5#	0.6	0.8	4.3	0.034
2.5	0.7	0.8	4.9	0.048
4	0.8	0.9	6.0	0.073
6	0.8	0.9	6.5	0.096
10	1.0	0.9	7.8	0.15
16	1.0	1.0	9.3	0.22
Issue: June 2019 **450/750 V. Made to AS/NZS 5000.2**				

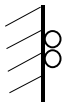
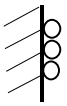
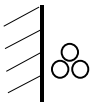
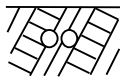
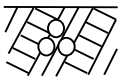
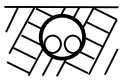
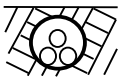
* Solid conductor
# 3 wire conductor

Notes:
1. Conductors 2.5 mm2 and above are circular stranded.
2. Standard colours: Insulation - Red or Black; Sheath - White. Other colours can be supplied if required.
3. Subject to confirmation, similar cables can be manufactured to other specifications.

SINGLE CORE CU TPS CABLES

Circular construction
Copper conductor
PVC insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 020-01 B

Conductor Size														
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
1.0	15	51.6	15	44.7	16	44.7	24	51.6	18	44.7	20	51.6	18	44.7
1.5	18	33.0	18	28.6	19	28.6	31	33.0	22	28.6	25	33.0	22	28.6
2.5	26	18.0	26	15.6	29	15.6	43	18.0	30	15.6	35	18.0	30	15.6
4	35	11.2	35	9.71	38	9.71	56	11.2	40	9.71	45	11.2	40	9.71
6	46	7.50	46	6.49	48	6.49	71	7.50	50	6.49	57	7.50	50	6.49
10	62	4.46	62	3.86	66	3.86	94	4.46	65	3.86	76	4.46	65	3.86
16	82	2.81	82	2.43	88	2.43	134	2.81	114	2.43	98	2.81	86	2.43

Issue: June 2019

450/750 V. Made to AS/NZS 5000.2

Notes:

1. Refer to Product Sheet 010-01 B for current ratings and voltage drops for these cables enclosed in conduit or trunking.
2. Content from AS/NZS 3008.1.2:2017 has been reproduced with the permission from Standards New Zealand under Copyright Licence 000926. Please see the Standard for full details.

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

TWO CORE CU TPS CABLES

Flat construction
Copper conductor
PVC insulation
PVC sheath

Product Sheet No. 020-02 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Size (mm)**	**Linear Mass (kg/m)**
1.0*	0.6	0.9	6.3 x 4.0	0.050
1.5#	0.6	0.9	7.3 x 4.6	0.065
2.5	0.7	1.0	8.7 x 5.3	0.096
4	0.8	1.1	10.5 x 6.3	0.15
6	0.8	1.1	11.6 x 7.0	0.20
10	1.0	1.2	14.3 x 8.4	0.31
16	1.0	1.3	17.2 x 10.0	0.46
Issue: June 2019 **450/750 V. Made to AS/NZS 5000.2**				

Product Sheet No. 020-02 A (with Pilot)				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Size (mm)**	**Linear Mass (kg/m)**
2 x 16 + 2.5	1.0	1.3	9.9 x 20.4	0.50
Issue: June 2019 **450/750 V. Made to AS/NZS 5000.2**				

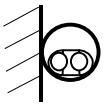
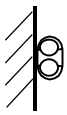
* Solid conductor
# 3 wire conductor

Notes:

1. Conductors 2.5 mm2 and above are circular stranded.
2. Standard colours: Insulation - Red, Black, Orange (pilot); Sheath - White. Other colours can be supplied if required.
3. Subject to confirmation, similar cables can be manufactured to other specifications.

TWO CORE CU TPS CABLES

Flat construction
Copper conductor
PVC insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 020-02 B				
Conductor Size				
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
1.0	15	51.6	16	51.6
1.5	18	33.0	21	33.0
2.5	26	18.0	30	18.0
4	34	11.2	39	11.2
6	44	7.50	50	7.50
10	59	4.46	68	4.46
16	78	2.81	91	2.81
25	103	1.78	122	1.78
Issue: June 2019				
450/750 V. Made to AS/NZS 5000.2				

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The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

TWO CORE & EARTH CU TPS CABLES

Flat construction
Copper conductor
PVC insulation
PVC sheath

Product Sheet No. 020-03 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Size (mm)**	**Linear Mass (kg/m)**
1.0*	0.6	0.9	8.6 x 4.0	0.070
1.5#	0.6	0.9	10.1 x 4.6	0.090
2.5	0.7	1.0	11.9 x 5.3	0.14
4 (2.5)	0.8	1.1	14.8 x 6.4	0.19
6 (2.5)	0.8	1.1	16.4 x 6.9	0.24
10 (4)	1.0	1.2	18.8 x 8.4	0.37
16 (6)	1.0	1.3	24.0 x 9.8	0.59
Issue: June 2019				
450/750 V. Made to AS/NZS 5000.2				

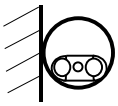
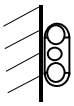
* Solid conductor
# 3 wire conductor

Notes:

1. Conductors 2.5 mm2 and above are circular stranded.
2. Standard colours: Insulation - Black, Red, Green/Yellow (earth); Sheath - White. Other colours can be supplied if required.
3. Reduced earth size shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.

TWO CORE & EARTH CU TPS CABLES

Flat construction
Copper conductor
PVC insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 020-03 B				
Conductor Size				
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
1.0	15	51.6	16	51.6
1.5	18	33.0	21	33.0
2.5	26	18.0	30	18.0
4	34	11.2	39	11.2
6	44	7.50	50	7.50
10	59	4.46	68	4.46
16	78	2.81	91	2.81
Issue: June 2019				
450/750 V. Made to AS/NZS 5000.2				

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The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

THREE CORE CU TPS CABLES

Flat construction
Copper conductor
PVC insulation
PVC sheath

Product Sheet No. 020-04 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Size (mm)**	**Linear Mass (kg/m)**
1.0*	0.6	0.9	8.6 x 4.0	0.071
1.5#	0.6	0.9	10.1 x 4.6	0.090
2.5	0.7	1.0	12.0 x 5.3	0.14
Issue: June 2019 **450/750 V. Made to AS/NZS 5000.2**				

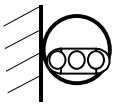
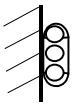
* Solid conductor
# 3 wire conductor

Notes:

1. Conductors 2.5 mm2 and above are circular stranded.
2. Standard colours: Insulation - Red, White, Blue; Sheath – Light Yellow. Other colours can be supplied if required.
3. Subject to confirmation, similar cables can be manufactured to other specifications.

THREE CORE CU TPS CABLES

Flat construction
Copper conductor
PVC insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 020-04 B				
Conductor Size				
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
1.0	13	44.7	14	44.7
1.5	16	28.6	17	28.6
2.5	23	15.6	25	15.6
Issue: June 2019				
450/750 V. Made to AS/NZS 5000.2				

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The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

THREE CORE & EARTH CU TPS CABLES

Flat construction
Copper conductor
PVC insulation
PVC sheath

Product Sheet No. 020-05 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Size (mm)**	**Linear Mass (kg/m)**
1.0*	0.6	0.9	10.9 x 4.0	0.093
1.5#	0.6	0.9	13.0 x 4.6	0.12
2.5	0.7	1.0	15.4 x 5.3	0.18
4 (2.5)	0.8	1.1	18.2 x 6.4	0.26
6 (2.5)	0.8	1.1	19.9 x 7.1	0.33
10 (4)	1.0	1.2	24.8 x 8.4	0.51
16 (6)	1.0	1.3	31.0 x 9.7	0.80
Issue: June 2019				
450/750 V. Made to AS/NZS 5000.2				

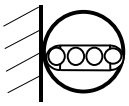
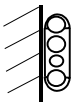
* Solid conductor
# 3 wire conductor

Notes:

1. Conductors 2.5 mm2 and above are circular stranded.
2. Standard colours: Insulation - Red, White, Blue, Green/Yellow (earth); Sheath - Blue. Other colours can be supplied if required.
3. Reduced earth size shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.

THREE CORE & EARTH CU TPS CABLES

Flat construction
Copper conductor
PVC insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 020-05 B				
Conductor Size				
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
1.0	13	44.7	14	44.7
1.5	16	28.6	17	28.6
2.5	23	15.6	25	15.6
4	29	9.71	33	9.71
6	38	6.49	42	6.49
10	50	3.86	58	3.86
16	66	2.43	78	2.43
Issue: June 2019				
450/750 V. Made to AS/NZS 5000.2				

The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

FOUR CORE CU TPS CABLES

Flat construction
Copper conductor
PVC insulation
PVC sheath

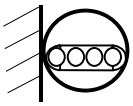
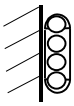
Product Sheet No. 020-06 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Size (mm)**	**Linear Mass (kg/m)**
2.5	0.7	1.0	15.4 x 5.3	0.18
4	0.8	1.1	19.1 x 6.5	0.29
Issue: June 2019				
450/750 V. Made to AS/NZS 5000.2				

Notes:

1. Conductors 2.5 mm2 and above are circular stranded.
2. Standard colours: Insulation - Red, White, Blue, Black; Sheath - White. Other colours can be supplied if required.
3. Subject to confirmation, similar cables can be manufactured to other specifications.

FOUR CORE CU TPS CABLES

Flat construction
Copper conductor
PVC insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 020-06 B				
Conductor Size				
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
2.5	23	15.6	25	15.6
4	39	9.71	33	9.71
Issue: June 2019 **450/750 V. Made to AS/NZS 5000.2**				

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The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

FOUR CORE & EARTH CU TPS CABLES

Flat construction
Copper conductor
PVC insulation
PVC sheath

Product Sheet No. 020-07 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Size (mm)**	**Linear Mass (kg/m)**
1.0*	0.6	0.9	13.2 x 4.1	0.11
1.5#	0.6	0.9	16.6 x 4.5	0.15
2.5	0.7	1.0	18.0 x 5.3	0.71
Issue: January 2018 **450/750 V. Made to AS/NZS 5000.2**				

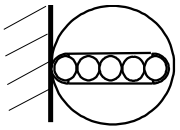
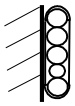
* Solid conductor
# 3 wire conductor

Notes:

1. Conductors 2.5 mm2 and above are circular stranded.
2. Standard colours: Insulation - Red, White, Blue, Black, Green/Yellow (earth); Sheath – Light Yellow. Other colours can be supplied if required.
3. Subject to confirmation, similar cables can be manufactured to other specifications.

FOUR CORE & EARTH CU TPS CABLES

Flat construction
Copper conductor
PVC insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 020-07 B				
Conductor Size				
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
1.0	13	44.7	14	44.7
1.5	16	28.6	17	28.6
2.5	23	15.6	25	15.6
Issue: January 2018				
450/750 V. Made to AS/NZS 5000.2				

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The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

TWO CORE & EARTH CU ENVIROLEX TPS CABLES

Flat construction
Copper conductor
XLPE insulation
HFS-90-TP sheath

Product Sheet No. 020-08 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Size (mm)**	**Linear Mass (kg/m)**
1.0*	0.6	0.9	8.7 x 4.1	0.070
1.5	0.6	0.9	10.0 x 4.6	0.087
2.5	0.7	1.0	11.2 x 5.0	0.11
4 (2.5)	0.8	1.1	13.5 x 6.2	0.16
6 (2.5)	0.8	1.1	14.5 x 6.8	0.21
Issue: January 2018 **450/750 V. Made to AS/NZS 5000.2**				

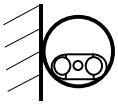
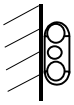
* Solid conductor

Notes:

1. Conductors 2.5 mm2 and above are circular stranded.
2. Standard colours: Insulation - Black, Red, Green/Yellow (earth); Sheath - Green. Other colours can be supplied if required.
3. Reduced earth size shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.

TWO CORE & EARTH CU
ENVIROLEX TPS CABLES

Flat construction
Copper conductor
XLPE insulation
HFS-90-TP sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 020-08 B				
Conductor Size				
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
1.0	18	54.0	19	54.0
1.5	22	34.6	24	34.6
2.5	31	18.9	34	18.9
4	41	11.8	46	11.8
6	51	7.85	58	7.85
Issue: January 2018				
450/750 V. Made to AS/NZS 5000.2				

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The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

SINGLE CORE CU PVC NEUTRAL SCREEN CABLES

Circular construction
Copper conductor
PVC insulation
Copper neutral screen
PVC sheath

Product Sheet No. 080-01 A

Conductor Size (mm^2)	Thickness of Insulation (mm)	Neutral Screen		Thickness of Sheath (mm)	Nominal Overall Diameter (mm)	Linear Mass (kg/m)
		Physical Area (mm^2)	Nominal No. & Size (mm)			
2.5	0.8	4	20x 0.53	1.8	8.7	0.14
2.5	0.8	4	20x 0.53	3.2	11.5	0.20
4	1.0	6	25 x 0.53	3.2	12.5	0.24
6	1.0	6	27 x 0.53	3.2	13.1	0.28
10	1.0	10	29 x 0.67	3.2	14.2	0.38
16	1.0	16	20 x 1.01	3.2	15.9	0.51
25	1.2	25	25 x 1.13	3.2	17.9	0.73
35	1.2	35	24 x 1.36	3.2	19.5	0.93
50	1.4	48	21 x 1.70	3.2	21.8	1.2

Issue: June 2019

0.6/1 kV. Made to AS/NZS 4961

Product Sheet No. 080-01 A (with Pilot)

Conductor Size (mm^2)	Thickness of Insulation (mm)	Neutral Screen		Thickness of Sheath (mm)	Nominal Overall Diameter (mm)	Linear Mass (kg/m)
		Physical Area (mm^2)	Nominal No. & Size (mm)			
16 + 4P	1.0	16	46 x 0.67	3.2	22.2 x 15.2	0.67
25 + 4P	1.2	26	44 x 0.86	3.2	26.2 x 17.3	0.93

Issue: June 2019

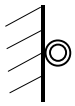
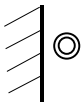
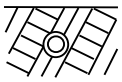
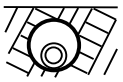
0.6/1 kV. Made to AS/NZS 4961

Notes:

1. Conductors are circular stranded.
2. Standard colours: Insulation – Red, Orange (pilot); Sheath – Black.
3. Subject to confirmation, similar cables can be manufactured to other specifications.
4. Only Neutral Screen cable with a 3.2 mm sheath can be direct buried in accordance with AS/NZS 3000 without further mechanical protection.

SINGLE CORE CU PVC NEUTRAL SCREEN CABLES

Circular construction
Copper conductor
PVC insulation
Copper neutral screen
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 080-01 B								
Conductor Size								
(mm^2)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
2.5	30	18.0	31	18.0	33	18.0	33	18.0
4	39	11.2	42	11.2	43	11.2	43	11.2
6	50	7.50	52	7.50	55	7.50	55	7.50
10	68	4.46	73	4.46	73	4.46	73	4.46
16	91	2.81	97	2.81	125	2.81	95	2.81
25	122	1.78	129	1.78	162	1.78	123	1.78
35	149	1.28	158	1.28	196	1.28	150	1.28
50	181	0.958	194	0.958	232	0.958	178	0.958
Issue: June 2019 **0.6/1 kV. Made to AS/NZS 4961**								

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The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

TWO CORE CU PVC NEUTRAL SCREEN CABLES

Circular construction
Copper conductor
PVC insulation
Copper neutral screen
PVC sheath

Product Sheet No. 080-02 A						
Conductor Size	Thickness of Insulation	Neutral Screen		Thickness of Sheath	Nominal Overall Diameter	Linear Mass
		Physical Area	Nominal No. & Size			
(mm^2)	(mm)	(mm^2)	(mm)	(mm)	(mm)	(kg/m)
2.5	0.8	5	24 x 0.53	1.8	12.4 x 8.6	0.19
2.5	0.8	5	24 x 0.53	3.2	15.2 x 11.6	0.28
4	1.0	6	29 x 0.53	3.2	17.2 x 12.5	0.35
6	1.0	7	32 x 0.53	3.2	18.0 x 13.0	0.42
10	1.0	10	47 x 0.53	3.2	20.1 x 14.0	0.56
16	1.0	16	46 x 0.67	3.2	22.2 x 15.2	0.76
25	1.2	26	44 x 0.86	3.2	26.1 x 17.3	1.1
35	1.2	35	44 x 1.01	3.2	28.9 x 18.8	1.4
Issue: June 2019 **0.6/1 kV. Made to AS/NZS 4961**						

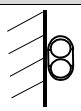
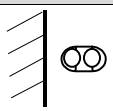
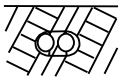
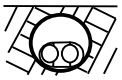
Product Sheet No. 080-02 A (with Pilot)						
Conductor Size	Thickness of Insulation	Neutral Screen		Thickness of Sheath	Nominal Overall Diameter	Linear Mass
		Physical Area	Nominal No. & Size			
(mm^2)	(mm)	(mm^2)	(mm)	(mm)	(mm)	(kg/m)
2 x 16 + 4P	1.0	16	46 x 0.67	3.2	23.3	0.92
Issue: June 2019 **0.6/1 kV. Made to AS/NZS 4961**						

Notes:

1. Conductors are circular stranded.
2. Standard colours: Insulation – Red, White, Orange (pilot); Sheath – Black.
3. Subject to confirmation, similar cables can be manufactured to other specifications.
4. Only Neutral Screen cable with a 3.2 mm sheath can be direct buried in accordance with AS/NZS 3000 without further mechanical protection.

TWO CORE CU PVC NEUTRAL SCREEN CABLES

Circular construction
Copper conductor
PVC insulation
Copper neutral screen
PVC sheath
Current ratings (A) and voltage drops (mV/A.m) *

Product Sheet No. 080-02 B								
Conductor Size								
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/Am)**	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
2.5	25	15.6	26	15.6	28	15.6	28	15.6
4	33	9.71	35	9.71	36	9.71	36	9.71
6	42	6.49	46	6.49	46	6.49	46	6.49
10	58	3.86	62	3.86	61	3.86	61	3.86
16	78	2.43	82	2.43	106	2.43	80	2.43
25	104	1.54	111	1.54	138	1.54	103	1.54
35	128	1.11	137	1.11	165	1.11	125	1.11
Issue: June 2019								
0.6/1 kV. Made to AS/NZS 4961								

* This table relates to two and three phase operations - for single phase operation Product Sheet 080-01B is applicable

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30 °C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

THREE CORE CU PVC NEUTRAL SCREEN CABLES

Circular construction
Copper conductor
PVC insulation
Copper neutral screen
PVC sheath

Product Sheet No. 080-03 A

Conductor Size (mm^2)	Thickness of Insulation (mm)	Neutral Screen		Thickness of Sheath (mm)	Nominal Overall Diameter (mm)	Linear Mass (kg/m)
		Physical Area (mm^2)	Nominal No. & Size (mm)			
2.5	0.8	7	30 x 0.53	1.8	12.9	0.36
2.5	0.8	7	30 x 0.53	3.2	16.0	0.36
4	1.0	8	37 x 0.53	3.2	18.1	0.47
6	1.0	9	42 x 0.53	3.2	19.1	0.56
10	1.0	11	48 x 0.53	3.2	21.0	0.74
16	1.0	16	46 x 0.67	3.2	23.6	1.01

Issue: June 2019

0.6/1 kV. Made to AS/NZS 4961

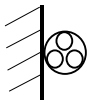
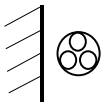
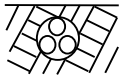
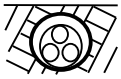
Notes:

1. Conductors are circular stranded.
2. Standard Colours: Insulation - Red, White, Blue; Sheath – Black.
3. Subject to confirmation, similar cables can be manufactured to other specifications.
4. Only Neutral Screen cable with a 3.2 mm sheath can be direct buried in accordance with AS/NZS 3000 without further mechanical protection.

THREE CORE CU PVC NEUTRAL SCREEN CABLES

Circular construction
Copper conductor
PVC insulation
Copper neutral screen
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 080-03 B

Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
2.5	25	15.6	26	15.6	28	15.6	28	15.6
4	33	9.71	35	9.71	36	9.71	36	9.71
6	42	6.49	46	6.49	46	6.49	46	6.49
10	58	3.86	62	3.86	61	3.86	61	3.86
16	78	2.43	82	2.43	106	2.43	80	2.43

Issue: June 2019

0.6/1 kV. Made to AS/NZS 4961

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

FOUR CORE CU PVC NEUTRAL SCREEN CABLES

Circular construction
Copper conductor
PVC insulation
Copper neutral screen
PVC sheath

Product Sheet No. 080-04 A						
Conductor Size (mm^2)	Thickness of Insulation (mm)	Neutral Screen		Thickness of Sheath (mm)	Nominal Overall Diameter (mm)	Linear Mass (kg/m)
		Physical Area (mm^2)	Nominal No. & Size (mm)			
2.5	0.8	8	34 x 0.53	1.8	14.1	0.31
2.5	0.8	8	34 x 0.53	3.2	17.0	0.41
4	1.0	9	42 x 0.53	3.2	19.3	0.55
6	1.0	10	46 x 0.53	3.2	20.6	0.66
10	1.0	12	54 x 0.53	3.2	22.6	0.88
16	1.0	17	47 x 0.67	3.2	25.4	1.22
Issue: June 2019						
0.6/1 kV. Made to AS/NZS 4961						

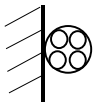
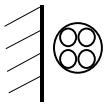
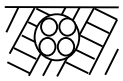
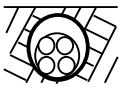
Notes:

1. Circular stranded conductor.
2. Standard colours: Insulation - Red, White, Blue, Black; Sheath – Black.
3. Subject to confirmation, similar cables can be manufactured to other specifications.
4. Only Neutral Screen cable with a 3.2 mm sheath can be direct buried in accordance with AS/NZS 3000 without further mechanical protection.

FOUR CORE CU PVC NEUTRAL SCREEN CABLES

Circular construction
Copper conductor
PVC insulation
Copper neutral screen
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 080-04 B

Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
2.5	25	15.6	26	15.6	28	15.6	28	15.6
4	33	9.71	35	9.71	36	9.71	36	9.71
6	42	6.49	46	6.49	46	6.49	46	6.49
10	58	3.86	62	3.86	61	3.86	61	3.86
16	78	2.43	82	2.43	106	2.43	80	2.43

Issue: June 2019

0.6/1 kV. Made to AS/NZS 4961

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

THREE CORE CU XLPE NEUTRAL SCREEN CABLES

Circular construction
Copper conductor
XLPE insulation
Copper neutral screen
PVC sheath

Product Sheet No. 081-01 A						
Conductor Size	Thickness of Insulation	Neutral Screen		Thickness of Sheath	Nominal Overall Diameter	Linear Mass
		Physical Area	Nominal No. & Size			
(mm^2)	(mm)	(mm^2)	(mm)	(mm)	(mm)	(kg/m)
16	0.7	16	46 x 0.67	3.2	23.0	0.97
25	0.9	26	44 x 0.86	3.2	25.6	1.3
35	0.9	35	44 x 1.01	3.2	26.0	1.7
50	1.0	48	48 x 1.13	3.2	29.0	2.2
70	1.1	68	47 x 1.36	3.2	33.1	3.1
95	1.1	95	42 x 1.70	3.2	37.0	4.1
Issue: June 2019						
0.6/1 kV. Made to AS/NZS 4961						

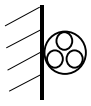
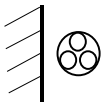
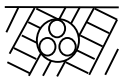
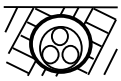
Product Sheet No. 081-01 A (with Pilot)						
Conductor Size	Thickness of Insulation	Neutral Screen		Thickness of Sheath	Nominal Overall Diameter	Linear Mass
		Physical Area	Nominal No. & Size			
(mm^2)	(mm)	(mm^2)	(mm)	(mm)	(mm)	(kg/m)
3 x 16 + 4P	0.7	17	48 x 0.67	3.2	24.8	1.1
Issue: June 2019						
0.6/1 kV. Made to AS/NZS 4961						

Notes:

1. Conductors 50 mm2 and above are shaped stranded.
2. Standard colours: Insulation - Red, White, Blue, Orange (pilot); Sheath – Black.
3. Subject to confirmation, similar cables can be manufactured to other specifications.
4. Only Neutral Screen cable with a 3.2 mm sheath can be direct buried in accordance with AS/NZS 3000 without further mechanical protection.

THREE CORE CU XLPE NEUTRAL SCREEN CABLES

Circular construction
Copper conductor
XLPE insulation
Copper neutral screen
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 081-01 B								
Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
16	91	2.55	97	2.55	118	2.55	87	2.55
25	122	1.61	131	1.61	153	1.61	114	1.61
35	151	1.17	162	1.17	184	1.17	139	1.17
50	185	0.868	198	0.868	218	0.868	166	0.868
70	234	0.609	252	0.609	269	0.609	207	0.609
95	289	0.450	311	0.450	323	0.450	249	0.450
Issue: June 2019 0.6/1 kV. Made to AS/NZS 4961								

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The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

FOUR CORE CU XLPE NEUTRAL SCREEN CABLES

Circular construction
Copper conductor
XLPE insulation
Copper neutral screen
PVC sheath

Product Sheet No. 081-02 A						
Conductor Size (mm^2)	Thickness of Insulation (mm)	Neutral Screen		Thickness of Sheath (mm)	Nominal Overall Diameter (mm)	Linear Mass (kg/m)
		Physical Area (mm^2)	Nominal No. & Size (mm)			
16	0.7	16	46 x 0.67	3.2	24.1	1.1
25	0.9	26	44 x 0.86	3.2	28.0	1.6
35	0.9	35	44 x 1.01	3.2	29.4	2.1
50	1.0	48	48 x 1.13	3.2	32.3	2.7
70	1.1	68	47 x 1.36	3.2	36.7	3.8
95	1.1	94	65 x 1.36	3.2	40.3	5.2
Issue: June 2019						
0.6/1 kV. Made to AS/NZS 4961						

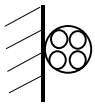
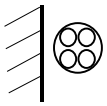
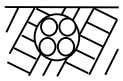
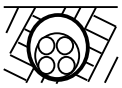
Notes:

1. Conductors 50 mm2 and above are shaped stranded.
2. Standard colours: Insulation - Red, White, Blue, Black; Sheath – Black.
3. Subject to confirmation, similar cables can be manufactured to other specifications.
4. Only Neutral Screen cable with a 3.2 mm sheath can be direct buried in accordance with AS/NZS 3000 without further mechanical protection.

FOUR CORE CU XLPE NEUTRAL SCREEN CABLES

Circular construction
Copper conductor
XLPE insulation
Copper neutral screen
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 081-02 B

Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
16	91	2.55	97	2.55	118	2.55	87	2.55
25	122	1.61	131	1.61	153	1.61	114	1.61
35	151	1.17	162	1.17	184	1.17	139	1.17
50	185	0.868	198	0.868	218	0.868	166	0.868
70	234	0.609	252	0.609	269	0.609	207	0.609
95	289	0.450	311	0.450	323	0.450	249	0.450

Issue: June 2019

0.6/1 kV. Made to AS/NZS 4961

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

SINGLE CORE AL XLPE NEUTRAL SCREEN CABLES

Circular construction
Aluminium conductor
XLPE insulation
Copper neutral screen
PVC sheath

Product Sheet No. 082-01 A						
Conductor Size	Thickness of Insulation	Neutral Screen		Thickness of Sheath	Nominal Overall Diameter	Linear Mass
		Physical Area	Nominal No. & Size			
(mm^2)	(mm)	(mm^2)	(mm)	(mm)	(mm)	(kg/m)
70	1.1	41	28 x 1.36	3.2	21.5	0.87
95	1.1	57	25 x 1.70	3.2	23.9	1.1
120	1.2	71	22 x 2.03	3.2	26.1	1.4
185	1.6	110	22 x 2.52	3.2	31.1	2.0
Issue: June 2019 **0.6/1 kV. Made to AS/NZS 4961**						

Product Sheet No. 082-01 A (with Pilot)						
Conductor Size	Thickness of Insulation	Neutral Screen		Thickness of Sheath	Nominal Overall Diameter	Linear Mass
		Physical Area	Nominal No. & Size			
(mm^2)	(mm)	(mm^2)	(mm)	(mm)	(mm)	(kg/m)
70 + 4P	1.1	42	29 x 1.36	3.2	28.6 x 21.2	1.1
Issue: June 2019 **0.6/1 kV. Made to AS/NZS 4961**						

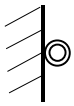
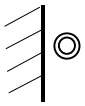
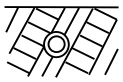
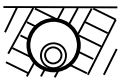
Notes:

1. Conductors are compacted stranded.
2. Standard colours: Insulation - Red, Orange (pilot); Sheath – Black.
3. Subject to confirmation, similar cables can be manufactured to other specifications.
4. Only Neutral Screen cable with a 3.2 mm sheath can be direct buried in accordance with AS/NZS 3000 without further mechanical protection.

SINGLE CORE AL XLPE NEUTRAL SCREEN CABLES

Circular construction
Aluminium conductor
XLPE insulation
Copper neutral screen
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 082-01 B

Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
70	213	1.15	229	1.15	249	1.15	189	1.15
95	263	0.835	283	0.835	299	0.835	231	0.835
120	307	0.666	329	0.666	341	0.666	264	0.666
185	406	0.448	436	0.448	433	0.448	345	0.448

Issue: June 2019

0.6/1 kV. Made to AS/NZS 4961

Note: Content from AS/NZS 3008.1.2:2017 has been reproduced with the permission from Standards New Zealand under Copyright Licence 000926. Please see the Standard for full details.

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

THREE CORE AL XLPE NEUTRAL SCREEN CABLES

Circular construction
Aluminium conductor
XLPE insulation
Copper neutral screen
PVC sheath

Product Sheet No. 082-03 A						
Conductor Size	Thickness of Insulation	Neutral Screen		Thickness of Sheath	Nominal Overall Diameter	Linear Mass
		Physical Area	Nominal No. & Size			
(mm^2)	(mm)	(mm^2)	(mm)	(mm)	(mm)	(kg/m)
35*	0.9	26	44 x 0.86	3.2	28.1	1.0
50*	1.0	29	50 x 0.86	3.2	31.0	1.2
70	1.1	42	52 x 1.01	3.2	32.4	1.6
95	1.1	57	57 x 1.13	3.2	35.9	2.0
185	1.6	116	50 x 1.70	3.2	47.0	3.7
Issue: June 2019						
0.6/1 kV. Made to AS/NZS 4961						

Product Sheet No. 082-03 A (With Pilot)						
Conductor Size	Thickness of Insulation	Neutral Screen		Thickness of Sheath	Nominal Overall Diameter	Linear Mass
		Physical Area	Nominal No. & Size			
(mm^2)	(mm)	(mm^2)	(mm)	(mm)	(mm)	(kg/m)
95 + 10P	1.1	57	57 x 1.13	3.2	39.0	2.2
120 + 10P	1.2	73	50 x 1.36	3.2	39.6	2.5
185 + 10P	1.6	114	50 x 1.70	3.2	48.0	3.7
300 + 10P	1.8	185	57 x 2.03	3.2	57.4	5.6
Issue: June 2019						
0.6/1 kV. Made to AS/NZS 4961						

* Circular compacted conductor

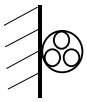
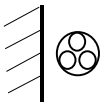
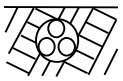
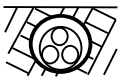
Notes:

1. Conductors 70 mm^2 and above are shaped stranded conductor.
2. Standard colours: Insulation - Red, White, Blue; Sheath – Black.
3. Subject to confirmation, similar cables can be manufactured to other specifications.
4. Only Neutral Screen cable with a 3.2 mm sheath can be direct buried in accordance with AS/NZS 3000 without further mechanical protection.

THREE CORE AL XLPE NEUTRAL SCREEN CABLES

Circular construction
Aluminium conductor
XLPE insulation
Copper neutral screen
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 082-03 B

Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
35	117	1.93	125	1.93	142	1.93	108	1.93
50	143	1.43	154	1.43	170	1.43	128	1.43
70	182	0.993	196	0.993	209	0.993	161	0.993
95	224	0.723	242	0.723	250	0.723	194	0.723
120	262	0.577	282	0.577	286	0.577	225	0.577
185	347	0.388	374	0.388	364	0.388	291	0.388
300	475	0.258	514	0.258	477	0.258	391	0.258

Issue: June 2019

0.6/1 kV. Made to AS/NZS 4961

Note: Content from AS/NZS 3008.1.2:2017 has been reproduced with the permission from Standards New Zealand under Copyright Licence 000926. Please see the Standard for full details.

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

SINGLE CORE CU VINTOL CABLES

Circular construction
Copper conductor
PVC insulation
PVC sheath

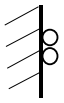
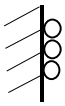
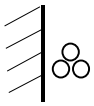
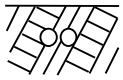
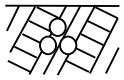
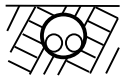
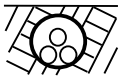
Product Sheet No. 110-01 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
4	1.0	1.4	7.7	0.10
16	1.0	1.4	10.0	0.23
25	1.2	1.4	11.8	0.35
35	1.2	1.4	13.0	0.45
50	1.4	1.4	14.6	0.57
70	1.4	1.4	16.4	0.82
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 5000.1				

Notes:
1. Conductors are circular stranded.
2. Standard colours: Insulation - Natural; Sheath – Red, White, Blue, Black.
3. Subject to confirmation, similar cables can be manufactured to other specifications.

SINGLE CORE CU VINTOL CABLES

Circular construction
Copper conductor
PVC insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 110-01 B

Conductor Size														
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
4	35	11.2	35	9.71	38	9.71	56	11.2	40	9.71	45	11.2	40	9.71
16	82	2.81	82	2.43	88	2.43	134	2.81	114	2.43	98	2.81	86	2.43
25	111	1.78	111	1.55	117	1.54	174	1.78	147	1.54	128	1.78	110	1.54
35	136	1.29	136	1.12	145	1.12	209	1.29	176	1.12	153	1.29	134	1.12
50	166	0.963	166	0.840	178	0.834	248	0.963	209	0.834	185	0.963	158	0.834
70	210	0.680	210	0.597	225	0.589	305	0.680	256	0.589	227	0.680	198	0.589

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

Note: Content from AS/NZS 3008.1.2:2017 has been reproduced with the permission from Standards New Zealand under Copyright Licence 000926. Please see the Standard for full details.

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

SINGLE CORE AL VINTOL CABLES

Circular construction
Aluminium conductor
PVC insulation
PVC sheath

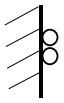
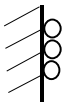
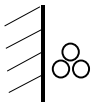
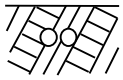
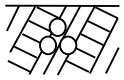
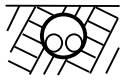
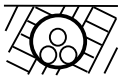
Product Sheet No. 110-01 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
25	1.2	1.4	11.7	0.18
35	1.2	1.4	13.4	0.24
50	1.4	1.4	14.7	0.29
70	1.4	1.4	16.4	0.39
95	1.6	1.5	19.0	0.52
120	1.6	1.5	20.7	0.62
150	1.8	1.6	22.8	0.75
185	2.0	1.7	25.1	0.92
240	2.2	1.8	26.8	1.1
Issue: June 2019 **0.6/1 kV. Made to AS/NZS 5000.1**				

Notes:
1. Conductors are circular stranded.
2. Standard colours: Insulation - Natural; Sheath – Red, White, Blue, Black.
3. Subject to confirmation, similar cables can be manufactured to other specifications.

SINGLE CORE AL VINTOL CABLES

Circular construction
Aluminium conductor
PVC insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 110-01 B

Conductor Size														
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
25	86	2.95	86	2.55	91	2.55	135	2.95	114	2.55	99	2.95	86	2.55
35	105	2.14	105	1.85	112	1.85	162	2.14	136	1.85	119	2.14	103	1.85
50	129	1.58	129	1.37	138	1.37	191	1.58	162	1.37	143	1.58	123	1.37
70	163	1.10	163	0.956	174	0.952	237	1.10	199	0.952	176	1.10	154	0.952
95	203	0.804	203	0.702	218	0.696	283	0.811	238	0.696	215	0.811	185	0.696
120	237	0.645	237	0.565	254	0.558	323	0.653	272	0.558	245	0.653	216	0.558
150	272	0.535	272	0.472	292	0.463	362	0.545	304	0.463	281	0.545	242	0.463
185	318	0.439	317	0.391	341	0.380	411	0.452	344	0.380	320	0.452	278	0.380
240	381	0.352	381	0.319	408	0.305	477	0.368	400	0.305	376	0.368	325	0.305

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

SINGLE CORE CU CANTOL CABLES

Circular construction
Copper conductor
XLPE insulation
PVC sheath

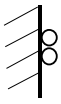
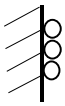
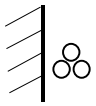
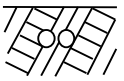
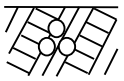
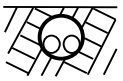
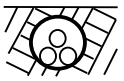
Product Sheet No. 120-01 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
16	0.7	1.4	9.4	0.21
25	0.9	1.4	10.9	0.31
35	0.9	1.4	11.9	0.41
50	1.0	1.4	13.4	0.54
70	1.1	1.4	15.0	0.75
95	1.1	1.5	16.9	1.0
120	1.2	1.5	18.6	1.3
150	1.4	1.6	20.6	1.6
185	1.6	1.6	22.8	1.9
240	1.7	1.7	25.5	2.5
300	1.8	1.8	28.1	3.1
400	2.0	1.9	31.8	4.0
500	2.2	2.0	35.7	5.0
630	2.4	2.2	40.1	6.4
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 5000.1				

Notes:
1. Conductors are compact circular stranded.
2. Standard colours: Insulation - Natural; Sheath - Black. Other colours can be supplied if required.
3. Subject to confirmation, similar cables can be manufactured to other specifications.

SINGLE CORE CU CANTOL CABLES

Circular construction
Copper conductor
XLPE insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 120-01 B

Conductor Size														
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
16	95	2.95	95	2.55	101	2.55	149	2.95	125	2.55	107	2.95	925	2.55
25	129	1.87	129	1.62	138	1.62	192	1.87	162	1.62	140	1.87	121	1.62
35	158	1.35	158	1.18	169	1.17	230	1.35	193	1.17	168	1.35	147	1.17
50	194	1.01	194	0.878	207	0.872	273	1.01	229	0.872	202	1.01	174	0.872
70	246	0.710	246	0.623	264	0.615	335	0.710	280	0.615	249	0.710	217	0.615
95	306	0.528	306	0.467	328	0.457	401	0.528	335	0.457	305	0.528	261	0.457
120	358	0.431	358	0.385	384	0.373	457	0.431	381	0.373	348	0.431	304	0.373
150	413	0.365	413	0.330	443	0.316	514	0.365	428	0.316	391	0.365	342	0.316
185	480	0.311	479	0.285	515	0.269	581	0.311	484	0.269	453	0.311	388	0.269
240	574	0.262	573	0.245	616	0.227	674	0.262	560	0.227	532	0.262	456	0.227
300	666	0.233	662	0.222	713	0.202	761	0.233	630	0.202	601	0.233	525	0.202
400	779	0.211	772	0.205	832	0.183	865	0.211	715	0.183	699	0.211	596	0.183
500	903	0.196	893	0.193	961	0.170	977	0.196	805	0.170	791	0.196	693	0.170
630	1045	0.184	1032	0.182	1111	0.159	1098	0.184	902	0.159	916	0.184	778	0.159

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

SINGLE CORE AL CANTOL CABLES

Circular construction
Aluminium conductor
XLPE insulation
PVC sheath

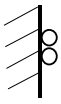
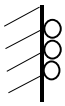
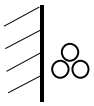
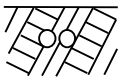
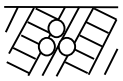
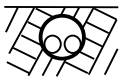
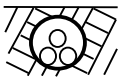
Product Sheets No. 130-01 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
25	0.9	1.4	10.9	0.15
35	0.9	1.4	11.8	0.18
50	1.0	1.4	13.3	0.24
70	1.1	1.4	15.0	0.32
95	1.1	1.5	16.9	0.42
120	1.2	1.5	18.5	0.51
150	1.4	1.6	20.6	0.62
185	1.6	1.6	22.7	0.76
240	1.7	1.7	25.5	0.97
300	1.8	1.8	27.9	1.2
400	2.0	1.9	31.3	1.5
500	2.2	2.0	35.0	1.9
630	2.4	2.2	39.4	2.4
800	2.6	2.3	44.7	3.0
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 5000.1				

Notes:
1. Conductors are compact circular stranded.
2. Standard colours: Insulation - Natural; Sheath - Black. Other colours can be supplied if required.
3. Subject to confirmation, similar cables can be manufactured to other specifications.

SINGLE CORE AL CANTOL CABLES

Circular construction
Aluminium conductor
XLPE insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 130-01 B

Conductor Size														
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
25	100	3.08	100	2.67	107	2.67	149	3.08	125	2.67	109	3.08	93	2.67
35	122	2.24	122	1.94	131	1.94	179	2.24	150	1.94	131	2.24	113	1.94
50	150	1.65	150	1.44	161	1.43	212	1.65	178	1.43	157	1.65	135	1.43
70	191	1.15	191	1.00	205	0.997	260	1.15	217	0.997	194	1.15	169	0.997
95	238	0.840	238	0.733	255	0.727	311	0.840	260	0.727	236	0.840	203	0.727
120	278	0.672	278	0.589	298	0.582	355	0.672	296	0.582	270	0.672	236	0.582
150	320	0.557	320	0.491	344	0.482	398	0.557	332	0.482	303	0.557	266	0.482
185	374	0.455	373	0.404	402	0.394	453	0.455	377	0.394	352	0.455	303	0.394
240	449	0.363	448	0.327	482	0.314	526	0.363	438	0.314	415	0.363	356	0.314
300	520	0.307	519	0.281	559	0.266	595	0.307	495	0.266	471	0.307	412	0.266
400	615	0.261	613	0.243	659	0.226	683	0.261	567	0.226	552	0.261	473	0.226
500	722	0.228	717	0.216	773	0.197	780	0.228	646	0.197	631	0.228	556	0.197
630	849	0.204	842	0.198	906	0.177	891	0.204	736	0.177	744	0.204	635	0.177
800	-	-	964	0.182	1037	0.161	-	-	825	0.161	-	-	706	0.161

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

TWO CORE & EARTH CU REMOLEX CABLES

Circular construction
Copper conductor
PVC insulation
PVC sheath

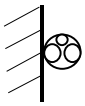
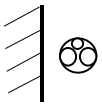
Product Sheet No. 021-02 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
1.5*	0.6	1.2	8.8	0.12
2.5	0.7	1.2	9.7	0.16
4 (2.5)	0.8	1.3	11.3	0.21
6 (2.5)	0.8	1.3	12.2	0.26
10 (4)	1.0	1.3	16.1	0.44
Issue: June 2019				
450/750 V. Made to AS/NZS 5000.2				

* 3 wire conductor

Notes:
1. Conductors 2.5 mm2 and above are circular stranded.
2. Standard colours: Insulation - Red, Black, Green/Yellow (earth); Sheath – Black.
3. Reduced earth size shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.

TWO CORE & EARTH CU REMOLEX CABLES

Circular construction
Copper conductor
PVC insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 021-02 B				
Conductor Size				
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
1.5	21	33.0	22	33.0
2.5	30	18.0	31	18.0
4	39	11.2	42	11.2
6	50	7.50	52	7.50
10	68	4.46	73	4.46
Issue: June 2019				
450/750 V. Made to AS/NZS 5000.2				

The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

THREE CORE & EARTH CU REMOLEX CABLES

Circular construction
Copper conductor
PVC insulation
PVC sheath

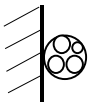
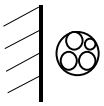
Product Sheet No. 021-03 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
1.5*	0.6	1.2	9.6	0.15
2.5	0.7	1.3	10.8	0.20
4 (2.5)	0.8	1.3	12.4	0.27
6 (2.5)	0.8	1.3	13.5	0.34
10 (4)	1.0	1.4	16.6	0.54
16 (6)	1.0	1.5	19.0	0.76
Issue: June 2019				
450/750 V. Made to AS/NZS 5000.2				

* 3 wire conductor

Notes:
1. Conductors 2.5 mm2 and above are circular stranded.
2. Standard colours: Insulation - Red, White, Blue, Green/Yellow (earth); Sheath - Black.
3. Reduced earth size shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.

THREE CORE & EARTH CU REMOLEX CABLES

Circular construction
Copper conductor
PVC insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 021-03 B				
Conductor Size				
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
1.5	17	28.6	18	28.6
2.5	25	15.6	26	15.6
4	33	9.71	35	9.71
6	42	6.49	46	6.49
10	58	3.86	62	3.86
16	78	2.43	82	2.43
Issue: June 2019				
450/750 V. Made to AS/NZS 5000.2				

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The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

FOUR CORE & EARTH CU REMOLEX CABLES

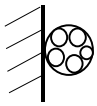
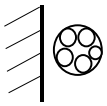
Circular construction
Copper conductor
PVC insulation
PVC sheath

Product Sheet No. 021-04 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
1.5	0.6	1.2	10.4	0.17
2.5	0.7	1.3	11.8	0.24
4 (2.5)	0.8	1.4	13.9	0.34
Issue: June 2019 **450/750 V. Made to AS/NZS 5000.2**				

Notes:
1. Conductors 2.5 mm2 and above are circular stranded.
2. Standard colours: Insulation - Red, White, Blue, Black, Green/Yellow (earth); Sheath – Black.
3. Reduced earth size shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.

FOUR CORE & EARTH CU REMOLEX CABLES

Circular construction
Copper conductor
PVC insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 021-04 B				
Conductor Size				
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
1.5	17	28.6	18	28.6
2.5	25	15.6	26	15.6
4	33	9.71	35	9.71
Issue: June 2019				
450/750 V. Made to AS/NZS 5000.2				

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The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

TWO CORE & EARTH CU CEMPEX CABLES

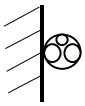
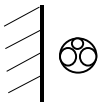
Circular construction
Copper conductor
XLPE insulation
PVC sheath

Product Sheet No. 161-02 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
10 (4)	0.7	1.8	14.9	0.39
16 (6)	0.7	1.8	16.9	0.51
25 (6)	0.9	1.8	19.9	0.74
Issue: January 2018 **0.6/1 kV. Made to AS/NZS 5000.1**				

Notes:
1. Conductors 16 mm2 and above are circular stranded.
2. Standard colours: Insulation - Red, Black, Green/Yellow (earth); Sheath – Black.
3. Reduced earth size shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.

TWO CORE & EARTH CU CEMPEX CABLES

Circular construction
Copper conductor
XLPE insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 161-02 B				
Conductor Size				
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
10	80	4.68	86	4.68
16	107	2.96	114	2.96
25	144	1.86	154	1.86
Issue: January 2018				
0.6/1 kV. Made to AS/NZS 5000.1				

The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

THREE CORE & EARTH CU CEMPEX CABLES

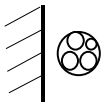
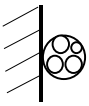
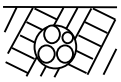
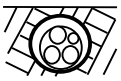
Circular construction
Copper conductor
XLPE insulation
PVC sheath

Product Sheet No. 161-03 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
4 (2.5)	0.7 (0.7)	1.8	13.3	0.28
6 (2.5)	0.7 (0.7)	1.8	14.2	0.35
10 (4)	0.7 (0.7)	1.8	16.3	0.52
16 (6)	0.7 (0.7)	1.8	18.6	0.71
25 (6)	0.9 (0.7)	1.8	21.5	1.0
35 (10)	0.9 (0.7)	1.8	24.1	1.4
50 (16)	1.0 (0.7)	1.8	27.2	1.8
70 (25)	1.1 (0.9)	1.9	31.2	2.6
95 (25)	1.1 (0.9)	2.0	35.6	3.4
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 5000.1				

Notes:
1. Conductors are circular stranded, sizes 16 mm2 and above are compacted.
2. Standard colours: Insulation - Red, White, Blue, Green/Yellow (earth); Sheath – Black.
3. Earth size and insulation thickness shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.

THREE CORE & EARTH CU CEMPEX CABLES

Circular construction
Copper conductor
XLPE insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 161-03 B								
Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
4	42	10.2	39	10.2	40	10.2	40	10.2
6	53	6.80	50	6.80	49	6.80	49	6.80
10	73	4.05	68	4.05	67	4.05	67	4.05
16	97	2.55	91	2.55	118	2.55	87	2.55
25	131	1.61	122	1.61	153	1.61	114	1.61
35	162	1.17	151	1.17	184	1.17	139	1.17
50	198	0.868	185	0.868	218	0.868	166	0.868
70	252	0.609	234	0.609	269	0.609	207	0.609
95	311	0.450	289	0.450	323	0.450	249	0.450
Issue: June 2019								
0.6/1 kV. Made to AS/NZS 5000.1								

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The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

FOUR CORE & EARTH CU CEMPEX CABLES

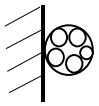
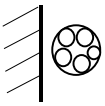
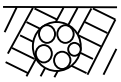
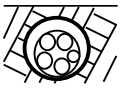
Circular construction
Copper conductor
XLPE insulation
PVC sheath

Product Sheet No. 161-04 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
2.5	0.7	1.8	14.5	0.30
4 (2.5)	0.7 (0.7)	1.8	15.6	0.37
6 (2.5)	0.7 (0.7)	1.8	15.7	0.43
10 (4)	0.7 (0.7)	1.8	19.2	0.66
16 (6)	0.7 (0.7)	1.8	20.5	0.90
25 (6)	0.9 (0.7)	1.8	23.9	1.3
35 (10)	0.9 (0.7)	1.8	26.6	1.7
50 (16)	1.0 (0.7)	1.8	30.3	2.3
70 (25)	1.1 (0.9)	2.0	34.9	3.3
95 (25)	1.1 (0.9)	2.1	39.0	4.4
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 5000.1				

Notes:
1. Conductors are circular stranded, sizes 16 mm2 and above are compacted.
2. Standard colours: Insulation - Red, White, Blue, Black, Green/Yellow (earth); Sheath – Black.
3. Earth size and insulation thickness shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.

FOUR CORE & EARTH CU CEMPEX CABLES

Circular construction
Copper conductor
XLPE insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 161-04 B								
Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
2.5	29	16.4	31	16.4	31	16.4	31	16.4
4	39	10.2	42	10.2	40	10.2	40	10.2
6	50	6.80	53	6.80	49	6.80	49	6.80
10	68	4.05	73	4.05	67	4.05	67	4.05
16	91	2.55	97	2.55	118	2.55	87	2.55
25	122	1.61	131	1.61	153	1.61	114	1.61
35	151	1.17	162	1.17	184	1.17	139	1.17
50	185	0.868	198	0.868	218	0.868	166	0.868
70	234	0.609	252	0.609	269	0.609	207	0.609
95	289	0.450	311	0.450	323	0.450	249	0.450
Issue: June 2019								
0.6/1 kV. Made to AS/NZS 5000.1								

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The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

TWO CORE CU PVC ARMOURED MAINS CABLES

Circular construction
Copper conductor
PVC insulation
Extruded bedding
Galvanised steel wire armour
PVC sheath

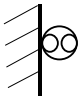
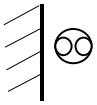
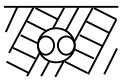
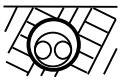
Product Sheet No. 140-02 A							
Conductor Size	Thickness of		Armour Wire Size	Thickness of Sheath	Nominal Diameters		Linear Mass
	Insulation	Bedding			Bedding	Overall	
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/m)
2.5*	0.8	1.0	0.9	1.8	9.6	14.9	0.43
4*	1.0	1.0	0.9	1.8	11.5	17.1	0.58
6*	1.0	1.0	1.25	1.8	12.6	18.9	0.74
Issue: June 2019							
0.6/1 kV. Made to AS/NZS 5000.1							

* Circular stranded conductor

Notes:
1. Standard Colours: Insulation – Red, Black; Sheath – Black.
2. Subject to confirmation, similar cables can be manufactured to other specifications.

TWO CORE CU PVC ARMOURED MAINS CABLES

Circular construction
Copper conductor
PVC insulation
Extruded bedding
Galvanised steel wire armour
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 140-02 B								
Conductor Size								
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
2.5	30	18.0	31	18.0	33	18.0	33	18.0
4	39	11.2	42	11.2	43	11.2	43	11.2
6	50	7.50	52	7.50	55	7.50	55	7.50
Issue: June 2019								
0.6/1 kV. Made to AS/NZS 5000.1								

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

THREE CORE CU PVC ARMOURED MAINS CABLES

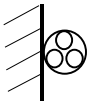
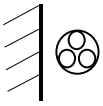
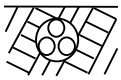
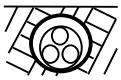
Circular construction
Copper conductor
PVC insulation
Extruded bedding
Galvanised steel wire armour
PVC sheath

Product Sheet No. 140-03 A							
Conductor Size	Thickness of		Armour Wire Size	Thickness of Sheath	Nominal Diameters		Linear Mass
	Insulation	Bedding			Bedding	Overall	
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/m)
2.5	0.8	1.0	0.9	1.8	10.2	15.8	0.48
4	1.0	1.0	1.25	1.8	12.2	18.5	0.71
6	1.0	1.0	1.25	1.8	13.4	19.7	0.83
10	1.0	1.0	1.25	1.8	15.3	21.6	1.0
16	1.0	1.0	1.25	1.8	17.5	23.8	1.3
25	1.2	1.0	1.6	1.8	19.0	26.0	1.8
Issue: June 2019							
0.6/1 kV. Made to AS/NZS 5000.1							

Notes:
1. Standard Colours: Insulation – Red, White, Blue; Sheath – Black.
2. Subject to confirmation, similar cables can be manufactured to other specifications.

THREE CORE CU PVC ARMOURED MAINS CABLES

Circular construction
Copper conductor
PVC insulation
Extruded bedding
Galvanised steel wire armour
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 140-03 B								
Conductor Size								
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
2.5	25	15.6	26	15.6	28	15.6	28	15.6
4	33	9.71	35	9.71	36	9.71	36	9.71
6	42	6.49	46	6.49	46	6.49	46	6.49
10	58	3.86	62	3.86	61	3.86	61	3.86
16	78	2.43	82	2.43	106	2.43	80	2.43
25	104	1.54	111	1.54	138	1.54	103	1.54
Issue: June 2019								
0.6/1 kV. Made to AS/NZS 5000.1								

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The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

FOUR CORE CU PVC ARMOURED MAINS CABLES

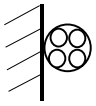
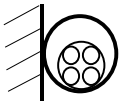
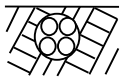
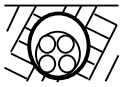
Circular construction
Copper conductor
PVC insulation
Extruded bedding
Galvanised steel wire armour
PVC sheath

Product Sheet No. 140-04 A							
Conductor Size	Thickness of		Armour Wire Size	Thickness of Sheath	Nominal Diameters		Linear Mass
	Insulation	Bedding			Bedding	Overall	
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/m)
2.5	0.8	1.0	0.9	1.8	11.2	16.7	0.54
4	1.0	1.0	1.25	1.8	13.5	19.7	0.81
6	1.0	1.0	1.25	1.8	14.8	21.1	0.96
10	1.0	1.0	1.25	1.8	16.9	23.2	1.2
Issue: June 2019							
0.6/1 kV. Made to AS/NZS 5000.1							

Notes:
1. Standard Colours: Insulation – Red, White, Blue, Black; Sheath – Black.
2. Subject to confirmation, similar cables can be manufactured to other specifications.

FOUR CORE CU PVC ARMOURED MAINS CABLES

Circular construction
Copper conductor
PVC insulation
Extruded bedding
Galvanised steel wire armour
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 140-04 B								
Conductor Size								
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
2.5	25	15.6	23	15.6	28	15.6	28	15.6
4	33	9.71	29	9.71	36	9.71	36	9.71
6	42	6.49	38	6.49	46	6.49	46	6.49
10	58	3.86	50	3.86	61	3.86	61	3.86
Issue: June 2019 **0.6/1 kV. Made to AS/NZS 5000.1**								

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

FOUR CORE CU XLPE ARMOURED MAINS CABLES

Circular construction
Copper conductor
XLPE insulation
Extruded bedding
Galvanised steel wire armour
PVC sheath

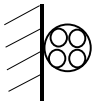
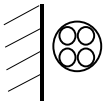
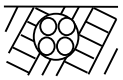
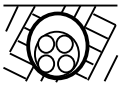
Product Sheet No. 160-04 A							
Conductor Size	Thickness of		Armour Wire Size	Thickness of Sheath	Nominal Diameters		Linear Mass
	Insulation	Bedding			Bedding	Overall	
(mm^2)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(kg/m)
16*	0.7	1.0	1.25	1.8	17.9	24.2	1.4
25*	0.9	1.0	1.6	1.8	21.3	28.3	2.0
35	0.9	1.0	1.6	1.9	22.7	29.9	2.5
50	1.0	1.0	1.6	2.0	25.6	33.0	3.1
70	1.1	1.2	2.0	2.2	29.7	38.3	4.4
95	1.1	1.2	2.0	2.3	33.4	42.3	5.6
120	1.2	1.4	2.5	2.5	37.2	47.5	7.2
150	1.4	1.4	2.5	2.6	43.7	54.1	8.9
185	1.6	1.4	2.5	2.8	46.7	57.6	11
240	1.7	1.6	2.5	3.0	52.2	63.5	13
300	1.8	1.6	2.5	3.2	57.5	69.2	16
400	2.0	1.8	3.15	3.5	65.0	78.5	21
Issue: June 2019							
0.6/1 kV. Made to AS/NZS 5000.1							

* Circular stranded conductor

Notes:
1. Conductors 25 mm2 and above are shaped stranded.
2. Standard Colours: Insulation – Red, White, Blue, Black; Sheath – Black.
3. Subject to confirmation, similar cables can be manufactured to other specifications.

FOUR CORE CU XLPE ARMOURED MAINS CABLES

Circular construction
Copper conductor
XLPE insulation
Extruded bedding
Galvanised steel wire armour
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 160-04 B								
Conductor Size								
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
16	91	2.55	97	2.55	118	2.55	87	2.55
25	122	1.61	131	1.61	153	1.61	114	1.61
35	151	1.17	162	1.17	184	1.17	139	1.17
50	185	0.868	198	0.868	218	0.868	166	0.868
70	234	0.609	252	0.609	269	0.609	207	0.609
95	289	0.450	311	0.450	323	0.450	249	0.450
120	337	0.366	363	0.366	368	0.366	289	0.366
150	385	0.307	415	0.307	412	0.307	325	0.307
185	444	0.259	480	0.259	465	0.259	372	0.259
240	527	0.216	569	0.216	539	0.216	440	0.216
300	604	0.190	653	0.190	607	0.190	495	0.190
400	695	0.171	754	0.171	685	0.171	561	0.171
Issue: June 2019 **0.6/1 kV. Made to AS/NZS 5000.1**								

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The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

MULTICORE CONTROL CABLES

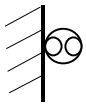
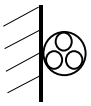
Circular construction
Copper conductor
PVC insulation
PVC sheath

Product Sheet No. 050-01 A				
Number of Cores	Thickness of Insulation (mm)	Thickness of Sheath (mm)	Nominal Overall Diameter (mm)	Linear Mass (kg/m)
1.5mm² (3W) Conductor Size				
2	0.6	1.2	8.5	0.11
3	0.6	1.2	8.9	0.12
4	0.6	1.2	9.7	0.15
7	0.6	1.3	11.7	0.23
12	0.6	1.4	15.3	0.38
19	0.6	1.5	18.1	0.56
27	0.6	1.6	22.0	0.75
37	0.6	1.6	24.6	0.99
2.5mm² (7W) Conductor Size				
2	0.7	1.2	9.6	0.14
3	0.7	1.2	10.2	0.17
4	0.7	1.3	11.3	0.21
7	0.7	1.3	13.3	0.32
12	0.7	1.5	17.9	0.55
19	0.7	1.6	21.1	0.80
27	0.7	1.7	25.7	1.07
37	0.7	1.8	28.9	1.43
Issue: June 2019 450/750 V. Made to AS/NZS 5000.3				

Notes:
1. Other core configurations can be supplied if required.
2. Core identification is by the means of numbers.
3. Subject to confirmation, similar cables can be manufactured to other specifications.
4. Multicore Control Cables can also be manufactured with a Green/Yellow earth.

MULTICORE CONTROL CABLES

Circular construction
Copper conductor
PVC insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 050-01 B				
Conductor Size				
(mm^2)	(A)	(mV/A.m)	(A)	(mV/A.m)
1.5	21	33.0	17	28.6
2.5	30	18.0	25	15.6
Issue: June 2019 450/750 V. Made to NZS 5000.3				

Note: Content from AS/NZS 3008.1.2:2017 has been reproduced with the permission from Standards New Zealand under Copyright Licence 000926. Please see the Standard for full details.

The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

Multi Circuit Operation

The current ratings given above are single circuit ratings, i.e, they relate to a single set of 2 or 3 loaded conductors. Whilst these cables are not intended for use as power cables, if they are to be operated with more than one set of conductors loaded for significant periods, the ratings given above should be reduced by application of an appropriate rating factor from the following table:

Rating Factors for No. of Circuits												
No. of circuits	2	3	4	5	6	8	10	12	14	16	18	20 or more
Rating factor	0.80	0.70	0.65	0.60	0.57	0.52	0.48	0.45	0.43	0.41	0.39	0.38

A cable consisting of n loaded conductors should be considered as n/2 circuits of two loaded conductors or n/3 circuits of three loaded conductors as applicable.

MULTICORE ARMOURED CONTROL CABLES

Circular construction
Copper conductor
PVC insulation
Extruded bedding
Galvanised steel wire armour
PVC sheath

Product Sheet No. Cables 060-01 A

Number of Cores	Thickness of		Armour Wire Size	Thickness of Sheath	Nominal Diameters		Linear Mass
	Insulation (mm)	Bedding (mm)	(mm)	(mm)	Bedding (mm)	Overall (mm)	(kg/m)
1.5mm² (3W) Conductor Size							
2	0.6	0.8	0.9	1.4	7.7	12.4	0.32
3	0.6	0.8	0.9	1.4	8.1	12.9	0.33
4	0.6	0.8	0.9	1.4	8.9	13.7	0.38
7	0.6	0.8	0.9	1.4	10.7	15.4	0.49
12	0.6	0.8	1.25	1.5	14.1	19.7	0.85
19	0.6	0.8	1.25	1.6	16.7	22.5	1.1
27	0.6	1.0	1.6	1.7	20.8	27.5	1.6
37	0.6	1.0	1.6	1.8	23.3	30.3	1.9
2.5mm² (7W) Conductor Size							
2	0.7	0.8	0.9	1.4	8.8	13.5	0.36
3	0.7	0.8	0.9	1.4	9.3	14.1	0.41
4	0.7	0.8	0.9	1.4	10.2	15.0	0.47
7	0.7	0.8	1.25	1.5	12.3	18.0	0.73
12	0.7	0.8	1.25	1.6	16.4	22.3	1.1
19	0.7	1.0	1.6	1.7	19.8	26.6	1.6
27	0.7	1.0	1.6	1.8	24.2	31.2	2.1
37	0.7	1.0	1.6	1.9	27.2	34.4	2.5

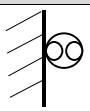
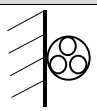
Issue: June 2019

0.6/1 kV. Made to BS 6346

Notes:
1. Other core configurations can be supplied if required.
2. Core identification is by the means of numbers.
3. Subject to confirmation, similar cables can be manufactured to other specifications.
4. Multicore Control Cables can also be manufactured with a Green/Yellow earth.

MULTICORE ARMOURED CONTROL CABLES

Circular construction
Copper conductor
PVC insulation
Extruded bedding
Galvanised steel wire armour
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. Cables 060-01 B				
Conductor Size				
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
1.5	21	33.0	17	28.6
2.5	30	18.0	25	15.6
Issue: June 2019				
0.6/1 kV. Made to BS 6346				

Note: Content from AS/NZS 3008.1.2:2017 has been reproduced with the permission from Standards New Zealand under Copyright Licence 000926. Please see the Standard for full details.

The values in this table are for typical New Zealand installation conditions of:-
Ambient Air Temperature 30°C

Multi Circuit Operation

The current ratings given above are single circuit ratings, i.e they relate to a single set of 2 or 3 loaded conductors. Whilst these cables are not intended for use as power cables, if they are to be operated with more than one set of conductors loaded for significant periods, the ratings given above should be reduced by application of an appropriate rating factor from the following table:

Rating Factors for No. of Circuits												
No. of circuits	2	3	4	5	6	8	10	12	14	16	18	20 or more
Rating factor	0.80	0.70	0.65	0.60	0.57	0.52	0.48	0.45	0.43	0.41	0.39	0.38

A cable consisting of n loaded conductors should be considered as n/2 circuits of two loaded conductors or n/3 circuits of three loaded conductors as applicable.

VAROLEX CABLES

Circular construction
Copper conductor
XLPE insulation
PVC bedding
Copper tape
PVC sheath

Product Sheet No. 070-01 A					
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Combined Earth Size (mm^2)**	**Nominal Diameter Over Tape (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
2.5*	0.7	2.5*	10.9	14.6	0.32
4	0.7	4.5	13.0	16.6	0.44
6	0.7	4.5	13.8	17.5	0.51
10	0.7	4.5	14.8	18.5	0.62
16	0.8	7.5	17.0	20.6	0.86
25	0.9	12	19.2	22.8	1.2
35	0.9	18	21.9	25.6	1.6
50	1.0	30	25.1	28.8	2.1
70	1.1	30	28.1	32.0	2.8
95	1.1	48	33.9	38.0	3.9
120	1.2	48	38.9	43.2	4.7
150	1.4	75	42.6	47.3	5.9
185	1.6	75	47.5	52.0	7.1
240	1.7	105	53.6	58.9	9.2
Issue: June 2019					
0.6/1 kV. Made to AS/NZS 5000.1					

* Split earth not feasible, therefore a single earth conductor is utilised.

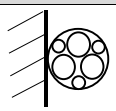
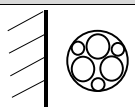
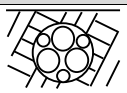
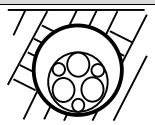
Notes:

1. Conductors are circular stranded.
2. Standard colours: Insulation - Red, White, Blue, Green/Yellow (earth); Sheath – Black.
3. These cables are specifically designed to suit the wide range of requirements of Variable Speed Drives. All features reducing the transmission of electromagnetic interference have been considered: the cable minimises capacitance of the power conductors, has an electrically balanced construction including split earths and has a copper screen.

VAROLEX CABLES

Circular construction
Copper conductor
XLPE insulation
PVC bedding
Copper tape
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 070-01 B

Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
2.5	29	16.4	31	16.4	31	16.4	31	16.4
4	39	10.2	42	10.2	40	10.2	40	10.2
6	50	6.80	53	6.80	49	6.80	49	6.80
10	68	4.05	73	4.05	67	4.05	67	4.05
16	91	2.55	97	2.55	118	2.55	87	2.55
25	122	1.61	131	1.61	153	1.61	114	1.61
35	151	1.17	162	1.17	184	1.17	139	1.17
50	185	0.868	198	0.868	218	0.868	166	0.868
70	234	0.609	252	0.609	269	0.609	207	0.609
95	289	0.450	311	0.450	323	0.450	249	0.450
120	337	0.366	363	0.366	368	0.366	289	0.366
150	385	0.307	415	0.307	412	0.307	325	0.307
185	444	0.259	480	0.259	465	0.259	372	0.259
240	527	0.216	569	0.216	539	0.216	440	0.216

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

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The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C	Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m	Soil Temperature	15°C

The cable size should be confirmed with the Drive manufacturer before installation due to the possible derating caused by Harmonics.

FOUR CORE AL XLPE URD CABLES

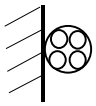
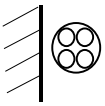
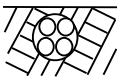
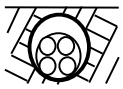
Circular construction
Aluminium conductor
XLPE insulation
PVC sheath

Product Sheet No. 171-04 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
50	1.0	1.8	29.1	0.94
70	1.1	2.0	32.0	1.3
95	1.1	2.1	36.6	1.6
120	1.2	2.3	39.8	2.0
185	1.6	2.6	49.6	3.1
240	1.7	2.8	55.3	3.9
300	1.8	3.0	60.2	4.9
Issue: June 2019				
0.6/1 kV. Made to AS 4026				

Notes:
1. Conductors 70 mm^2 and above are shaped stranded.
2. Standard Colours: Insulation – Red, White, Blue, Black; Sheath – Black.
3. Subject to confirmation, similar cables can be manufactured to other specifications.

FOUR CORE AL XLPE URD CABLES

Circular construction
Aluminium conductor
XLPE insulation
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 171-04 B								
Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
50	143	1.43	154	1.43	170	1.43	128	1.43
70	182	0.993	196	0.993	209	0.993	161	0.993
95	224	0.723	242	0.723	250	0.723	194	0.723
120	262	0.577	282	0.577	286	0.577	225	0.577
185	347	0.388	374	0.388	364	0.388	291	0.388
240	413	0.307	446	0.307	423	0.307	345	0.307
300	475	0.258	514	0.258	477	0.258	391	0.258
Issue: June 2019 0.6/1 kV. Made to AS 4026								

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The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

SINGLE CORE CU ALSECURE CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
Fibre Glass Tape (MICA Tape)
X-HF-110 insulation
HFS-110-TP sheath

Product Sheet No. 181-01 A

Conductor Size (mm^2)	Thickness of Insulation (mm)	Thickness of Sheath (mm)	Nominal Overall Diameter (mm)	Linear Mass (kg/m)
10	0.7	1.4	8.9	0.18
16	0.7	1.4	10.1	0.24
25	0.9	1.4	11.6	0.34
35	0.9	1.4	13.5	0.44
50	1.0	1.4	15.3	0.63
70	1.1	1.4	17.2	0.82
95	1.1	1.5	19.3	1.10
120	1.2	1.5	21.6	1.34
150	1.4	1.6	23.5	1.62
185	1.6	1.6	26.2	1.96
240	1.7	1.7	29.1	2.54
300	1.8	1.8	31.8	3.09
400	2.0	1.9	35.9	3.96
500	2.2	2.0	40.8	5.10
630	2.4	2.2	45.0	6.46

Issue: June 2019

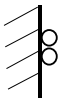
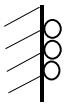
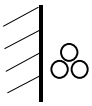
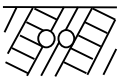
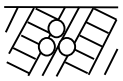
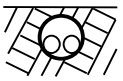
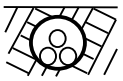
0.6/1 kV. Made to AS/NZS 5000.1

Notes:
1. Conductors are flexible circular stranded (Class 5).
2. Standard colours: Insulation - White; Sheath - Red.
3. Subject to confirmation, similar cables can be manufactured to other specifications.
4. AS/NZS 3013- WS525W rating (See explanatory information)

SINGLE CORE CU ALSECURE CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
Fibre Glass Tape (MICA Tape)
X-HF-110 insulation
HFS-110-TP sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 181-01 B

Conductor Size														
(mm^2)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
10	86	4.97	86	4.30	76	4.30	93	4.97	82	4.30	91	4.97	81	4.30
16	112	3.13	112	2.70	100	2.70	163	3.13	138	2.70	119	3.13	103	2.70
25	149	1.99	149	1.72	133	1.72	210	1.99	178	1.72	152	1.99	133	1.72
35	184	1.44	184	1.24	166	1.24	252	1.44	213	1.24	187	1.44	160	1.24
50	233	1.07	232	0.924	210	0.924	299	1.07	251	0.924	228	1.07	199	0.924
70	292	0.759	292	0.650	265	0.650	367	0.759	308	0.650	282	0.759	243	0.650
95	352	0.567	352	0.481	319	0.481	441	0.567	369	0.481	331	0.567	284	0.481
120	417	0.465	417	0.392	381	0.392	501	0.465	420	0.392	381	0.465	335	0.392
150	482	0.397	482	0.331	440	0.331	563	0.397	472	0.331	439	0.397	378	0.331
185	552	0.342	552	0.280	505	0.280	637	0.342	533	0.280	492	0.342	428	0.280
240	664	0.291	663	0.235	608	0.235	740	0.291	618	0.235	581	0.291	510	0.235
300	766	0.262	764	0.208	701	0.208	836	0.262	696	0.208	669	0.262	575	0.208
400	920	0.240	915	0.187	840	0.187	952	0.240	791	0.187	778	0.240	687	0.187
500	1069	0.225	1059	0.172	972	0.172	1079	0.225	894	0.172	906	0.225	773	0.172
630	1250	0.213	1235	0.160	1133	0.160	1217	0.213	1004	0.160	1036	0.213	878	0.160

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

The values in this table are for typical New Zealand installation conditions of:-

Maximum operating Temperature	110°C
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

TWO CORE & EARTH CU ALSECURE CABLES (FLEXIBLE)

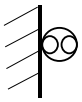
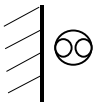
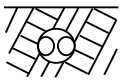
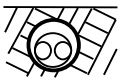
Circular construction
Flexible Copper conductor
Fibre Glass Tape (MICA Tape)
X-HF-110 insulation
HFS-110-TP sheath

Product Sheet No. 182-01 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
2.5	0.7	1.8	14.2	0.27
Issue: January 2018 **0.6/1 kV. Made to AS/NZS 5000.1**				

Notes:
1. Standard colours: Insulation - Red, Black, Green/Yellow (earth); Sheath – RED.
2. Subject to confirmation, similar cables can be manufactured to other specifications.
3. AS/NZS 3013- WS525W rating (See explanatory information)

TWO CORE & EARTH CU ALSECURE CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
Fibre Glass Tape (MICA Tape)
X-HF-110 insulation
HFS-110-TP sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 182-01 B								
Conductor Size								
(mm²)	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**	**(A)**	**(mV/A.m)**
2.5	41	27.0	44	27.0	41	27.0	39	27.0
Issue: June 2019								
0.6/1 kV. Made to AS/NZS 5000.1								

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The values in this table are for typical New Zealand installation conditions of:-

Maximum operating Temperature	110°C
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

FOUR CORE & EARTH CU ALSECURE CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
Fibre Glass Tape (MICA Tape)
X-HF-110 insulation
HFS-110-TP sheath

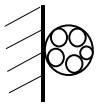
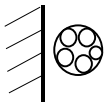
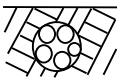
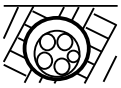
Product Sheet No. 181-03 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
1.5	0.7	1.8	15.3	0.29
2.5	0.7	1.8	16.7	0.32
4 (2.5)	0.7 (0.7)	1.8	17.9	0.46
6 (2.5)	0.7 (0.7)	1.8	18.1	0.52
10 (4)	0.7 (0.7)	1.8	21.1	0.80
16 (6)	0.7 (0.7)	1.8	23.9	1.10
25 (6)	0.9 (0.7)	1.8	27.7	1.75
35 (10)	0.9 (0.7)	1.8	31.5	2.30
50 (16)	1.0 (0.7)	2.0	35.9	3.12
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 5000.1				

Notes:
1. Note class 2 conductor 1.5mm2 to 6mm2.
2. Standard colours: Insulation - Red, White, Blue, Black, Green/Yellow (earth); Sheath – Red.
3. Earth size and insulation thickness shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.
5. AS/NZS 3013- WS525W rating (See explanatory information)

FOUR CORE & EARTH CU ALSECURE CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
Fibre Glass Tape (MICA Tape)
X-HF-110 insulation
HFS-110-TP sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 181-03 B

Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
1.5	26	31.9	28	31.9	25	31.9	25	31.9
2.5	34	17.4	36	17.4	35	17.4	33	17.4
4	45	10.8	48	10.8	46	10.8	43	10.8
6	58	7.22	61	7.22	56	7.22	54	7.22
10	80	4.29	86	4.29	75	4.29	75	4.29
16	106	2.70	113	2.70	129	2.70	96	2.70
25	140	1.71	150	1.71	167	1.71	125	1.71
35	173	1.24	185	1.24	201	1.24	152	1.24
50	218	0.920	233	0.920	240	0.920	189	0.920

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

The values in this table are for typical New Zealand installation conditions of:-

Maximum operating Temperature	110°C
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

SINGLE CORE CU ENVIROLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-HF-110 insulation
HFS-110-TP sheath

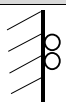
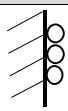
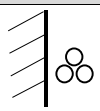
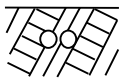
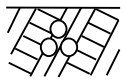
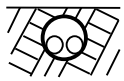
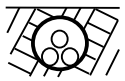
Product Sheet No. 183-01 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
10	0.7	1.4	8.5	0.14
16	0.7	1.4	9.8	0.23
25	0.9	1.4	11.3	0.31
35	0.9	1.4	12.6	0.40
50	1.0	1.4	14.2	0.56
70	1.1	1.4	16.2	0.75
95	1.1	1.5	18.3	0.98
120	1.2	1.5	20.7	1.13
150	1.4	1.6	22.5	1.51
185	1.6	1.6	24.8	1.79
240	1.7	1.7	27.7	2.40
300	1.8	1.8	31.0	2.90
400	2.0	1.9	35.4	3.89
500	2.2	2.0	40.0	4.98
630	2.4	2.2	44.0	6.29
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 5000.1				

Notes:
1. Conductors are flexible circular stranded (Class 5).
2. Standard colours: Insulation - White; Sheath - Black.
3. Subject to confirmation, similar cables can be manufactured to other specifications.

SINGLE CORE CU ENVIROLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-HF-110 insulation
HFS-110-TP sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 183-01 B

Conductor Size														
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
10	86	4.97	86	4.30	76	4.30	93	4.97	82	4.30	91	4.97	81	4.30
16	112	3.13	112	2.70	100	2.70	163	3.13	138	2.70	119	3.13	103	2.70
25	149	1.99	149	1.72	133	1.72	210	1.99	178	1.72	152	1.99	133	1.72
35	184	1.44	184	1.24	166	1.24	252	1.44	213	1.24	187	1.44	160	1.24
50	233	1.07	232	0.924	210	0.924	299	1.07	251	0.924	228	1.07	199	0.924
70	292	0.759	292	0.650	265	0.650	367	0.759	308	0.650	282	0.759	243	0.650
95	352	0.567	352	0.481	319	0.481	441	0.567	369	0.481	331	0.567	284	0.481
120	417	0.465	417	0.392	381	0.392	501	0.465	420	0.392	381	0.465	335	0.392
150	482	0.397	482	0.331	440	0.331	563	0.397	472	0.331	439	0.397	378	0.331
185	552	0.342	552	0.280	505	0.280	637	0.342	533	0.280	492	0.342	428	0.280
240	664	0.291	663	0.235	608	0.235	740	0.291	618	0.235	581	0.291	510	0.235
300	766	0.262	764	0.208	701	0.208	836	0.262	696	0.208	669	0.262	575	0.208
400	920	0.240	915	0.187	840	0.187	952	0.240	791	0.187	778	0.240	687	0.187
500	1069	0.225	1059	0.172	972	0.172	1079	0.225	894	0.172	906	0.225	773	0.172
630	1250	0.213	1235	0.162	1133	0.162	1217	0.213	1004	0.162	1036	0.213	878	0.162

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

The values in this table are for typical New Zealand installation conditions of:-

Maximum operating Temperature	110°C
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

TWO CORE & EARTH CU ENVIROLEX CABLES (FLEXIBLE)

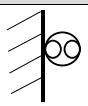
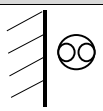
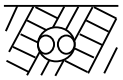
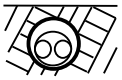
Circular construction
Flexible Copper conductor
X-HF-90 insulation
HFS-90-TP sheath

Product Sheet No. 184-01 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
1.5	0.7	1.8	10.7	0.15
2.5	0.7	1.8	11.6	0.19
4 (2.5)	0.7 (0.7)	1.8	12.9	0.24
6 (2.5)	0.7 (0.7)	1.8	13.6	0.30
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 5000.1				

Notes:
1. Standard colours: Insulation - Red, Black, Green/Yellow (earth); Sheath – Orange.
2. Reduced earth size shown in brackets ( ).
3. Subject to confirmation, similar cables can be manufactured to other specifications.

TWO CORE & EARTH CU ENVIROLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-HF-90 insulation
HFS-90-TP sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 184-01 B								
Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
1.5	25	34.7	26	34.7	26	34.7	27	34.7
2.5	33	25.4	35	25.4	36	25.4	35	25.4
4 (2.5)	44	11.8	47	11.8	48	11.8	46	11.8
6 (2.5)	56	7.87	61	7.87	60	7.87	58	7.87
Issue: June 2019 0.6/1 kV. Made to AS/NZS 5000.1								

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The values in this table are for typical New Zealand installation conditions of:-

Maximum operating Temperature	90°C
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

THREE CORE & EARTH CU ENVIROLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-HF-90 insulation
HFS-90-TP sheath

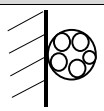
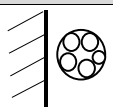
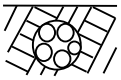
Product Sheet No. 184-02 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
1.5	0.7	1.8	11.5	0.18
2.5	0.7	1.8	12.2	0.24
4 (2.5)	0.7 (0.7)	1.8	13.0	0.29
6 (2.5)	0.7 (0.7)	1.8	14.9	0.35
10 (4)	0.7 (0.7)	1.8	17.7	0.52
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 5000.1				

Notes:
1. Standard colours: Insulation - Red, White, Blue, Black, Green/Yellow (earth); Sheath – Orange..
2. Earth size and insulation thickness shown in brackets ( ).
3. Subject to confirmation, similar cables can be manufactured to other specifications.

THREE CORE & EARTH CU ENVIROLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-HF-90 insulation
HFS-90-TP sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 184-02 B

Conductor Size								
(mm^2)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
1.5	21	30.0	22	30.0	21	30.0	22	30.0
2.5	29	16.4	30	16.4	31	16.4	30	16.4
4	37	10.2	40	10.2	40	10.2	39	10.2
6	47	6.81	51	6.81	49	6.81	48	6.81
10	67	4.05	73	4.05	67	4.05	66	4.05

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

The values in this table are for typical New Zealand installation conditions of:-

Maximum operating Temperature	90°C
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

FOUR CORE & EARTH CU ENVIROLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-HF-90 insulation
HFS-90-TP sheath

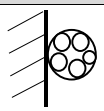
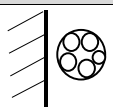
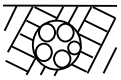
Product Sheet No. 184-03 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
1.5	0.7	1.8	12.5	0.21
2.5	0.7	1.8	13.6	0.28
4 (2.5)	0.7 (0.7)	1.8	15.0	0.34
6 (2.5)	0.7 (0.7)	1.8	16.2	0.42
10 (4)	0.7 (0.7)	1.8	19.5	0.64
16 (6)	0.7 (0.7)	1.8	22.8	0.89
25 (6)	0.9 (0.7)	1.8	26.5	1.30
35 (10)	0.9 (0.7)	1.8	29.5	1.77
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 5000.1				

Notes:
1. Standard colours: Insulation - Red, White, Blue, Black, Green/Yellow (earth); Sheath – Orange..
2. Earth size and insulation thickness shown in brackets ( ).
3. Subject to confirmation, similar cables can be manufactured to other specifications.

FOUR CORE & EARTH CU ENVIROLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-HF-90 insulation
HFS-90-TP sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 184-03 B

Conductor Size								
(mm^2)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
1.5	21	30.0	22	30.0	21	30.0	22	30.0
2.5	29	16.4	30	16.4	31	16.4	30	16.4
4	37	10.2	40	10.2	40	10.2	39	10.2
6	47	6.81	51	6.81	49	6.81	48	6.81
10	67	4.05	73	4.05	67	4.05	66	4.05
16	89	2.55	96	2.55	118	2.55	85	2.55
25	119	1.61	128	1.61	153	1.61	110	1.61
35	149	1.17	158	1.17	184	1.17	136	1.17

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

The values in this table are for typical New Zealand installation conditions of:-

Maximum operating Temperature	90°C
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

VAROLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
XLPE insulation
PVC bedding
Copper tape
PVC sheath

Product Sheet No. 070-02 A

Conductor Size (mm^2)	Thickness of Insulation (mm)	Combined Earth Size (mm^2)	Nominal Diameter Over Tape (mm)	Nominal Overall Diameter (mm)	Linear Mass (kg/m)
2.5*	0.7	2.5*	11.0	14.6	0.32
4	0.7	4.5	13.2	16.8	0.44
6	0.7	4.5	15.1	18.7	0.51
10	0.7	4.5	15.7	19.3	0.62
16	0.8	7.5	18.0	21.6	0.86
25	0.9	12	20.9	24.5	1.2
35	0.9	18	23.5	27.1	1.6
50	1.0	30	27.8	31.4	2.1
70	1.1	30	32.0	35.8	2.8
95	1.1	48	36.1	40.3	3.9
120	1.2	48	40.9	45.3	4.7
150	1.4	75	45.6	50.2	5.9
185	1.6	75	50.4	55.2	7.1
240	1.7	105	56.5	61.7	9.2
300	1.8	150	63.2	69.0	12.07

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

* Split earth not feasible, therefore a single earth conductor is utilised.

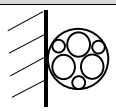
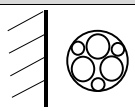
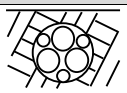
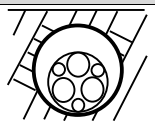
Notes:

1. Conductors are circular stranded. (Class 5 & 6)
2. Standard colours: Insulation - Red, White, Blue, Green/Yellow (earth); Sheath – Black.
3. These cables are specifically designed to suit the wide range of requirements of Variable Speed Drives. All features reducing the transmission of electromagnetic interference have been considered: the cable minimises capacitance of the power conductors, has an electrically balanced construction including split earths and has a copper screen.

VAROLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
XLPE insulation
PVC bedding
Copper tape
PVC sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 070-02 B

Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
2.5	29	16.4	30	16.4	31	16.4	30	16.4
4	37	10.2	40	10.2	40	10.2	39	10.2
6	47	6.80	51	6.80	49	6.80	48	6.80
10	67	4.05	73	4.05	67	4.05	66	4.05
16	89	2.55	96	2.55	118	2.55	85	2.55
25	119	1.61	128	1.61	153	1.61	110	1.61
35	149	1.17	158	1.17	184	1.17	136	1.17
50	187	0.868	200	0.868	218	0.868	166	0.868
70	235	0.609	253	0.609	269	0.609	207	0.609
95	282	0.450	303	0.450	323	0.450	242	0.450
120	333	0.366	360	0.366	368	0.366	284	0.366
150	383	0.307	413	0.307	412	0.307	321	0.307
185	436	0.259	471	0.259	465	0.259	363	0.259
240	519	0.216	562	0.216	539	0.216	430	0.216
300	593	0.190	642	0.190	607	0.190	484	0.190

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

Notes: Content from AS/NZS 3008.1.2:2017 has been reproduced with the permission from Standards New Zealand under Copyright Licence 000926. Please see the Standard for full details.

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C	Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m	Soil Temperature	15°C

The cable size should be confirmed with the Drive manufacturer before installation due to the possible derating caused by Harmonics.

SINGLE CORE CU VERSOLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-HF-90 insulation
TPE(5V-90) sheath

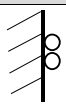
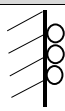
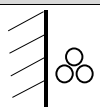
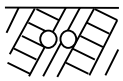
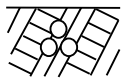
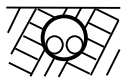
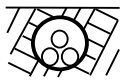
Product Sheet No. 185-01 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
10	0.7	1.4	9.2	0.16
16	0.7	1.4	10.2	0.22
25	0.9	1.4	11.8	0.32
35	0.9	1.4	13.1	0.43
50	1.0	1.4	14.9	0.58
70	1.1	1.4	16.9	0.81
95	1.1	1.5	18.9	1.04
120	1.2	1.5	21.4	1.28
150	1.4	1.6	22.9	1.56
185	1.6	1.6	26.0	1.85
240	1.7	1.7	29.2	2.43
300	1.8	1.8	32.3	3.01
400	2.0	1.9	36.4	3.95
500	2.2	2.0	41.0	5.04
630	2.4	2.2	46.8	6.56
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 5000.1				

Notes:
1. Conductors are flexible circular stranded (Class 5).
2. Standard colours: Insulation - White; Sheath - Black
3. Subject to confirmation, similar cables can be manufactured to other specifications.

SINGLE CORE CU VERSOLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-HF-90 insulation
TPE(5V-90) sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 185-01 B

Conductor Size														
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
10	70	4.68	70	4.05	76	4.05	83	4.68	72	4.05	82	4.68	71	4.05
16	94	2.95	94	2.55	100	2.55	149	2.95	125	2.55	105	2.95	91	2.55
25	125	1.87	125	1.62	133	1.62	192	1.87	162	1.62	136	1.87	117	1.62
35	155	1.35	155	1.17	166	1.17	230	1.35	193	1.17	165	1.35	143	1.17
50	196	1.01	196	0.872	210	0.872	273	1.01	229	0.872	203	1.01	174	0.872
70	248	0.710	248	0.615	265	0.615	335	0.710	280	0.615	248	0.710	217	0.615
95	298	0.528	298	0.457	319	0.457	401	0.528	335	0.457	295	0.528	254	0.457
120	354	0.431	354	0.373	381	0.373	457	0.431	381	0.373	341	0.431	299	0.373
150	410	0.365	409	0.316	440	0.316	514	0.365	428	0.316	394	0.365	338	0.316
185	471	0.311	470	0.269	505	0.269	581	0.311	484	0.269	441	0.311	382	0.269
240	567	0.262	565	0.227	608	0.227	674	0.262	560	0.227	520	0.262	445	0.227
300	653	0.233	650	0.202	701	0.202	761	0.233	630	0.202	586	0.233	513	0.202
400	787	0.211	780	0.183	840	0.183	865	0.211	715	0.183	696	0.211	593	0.183
500	913	0.196	903	0.170	972	0.170	977	0.196	805	0.170	784	0.196	687	0.170
630	1066	0.184	1052	0.159	1133	0.159	1098	0.184	902	0.159	920	0.184	780	0.159

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

The values in this table are for typical New Zealand installation conditions of:-

Maximum operating Temperature	90°C
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

TWO CORE & EARTH CU VERSOLEX CORDS/CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-90 insulation
TPE(5V-90) sheath

Product Sheet No. 186-01 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
1.5	0.7	1.6	10.2	0.10
2.5	0.7	1.8	11.5	0.19
4 (2.5)	0.7 (0.7)	1.9	12.9	0.25
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 3191				

Notes:
1. Conductors are flexible circular stranded (Class 5).
2.Standard cord colours: Insulation - Brown, Light Blue, Green/Yellow (earth); Sheath – Black.
3. Reduced earth size shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.
5. Note this family conductor size up to 4mm2 can be used as cord OR power cable.
6. For cord application AS/NZS 3191-"Heavy Duty" criteria apply.
7. For power cable application AS/NZS 5000.1 apply.

TWO CORE & EARTH CU VERSOLEX CORDS/CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-90 insulation
TPE(5V-90) sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 186-01 B – (Cord only)

- 60°C Maximum operating temperature

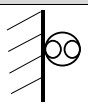
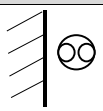
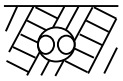
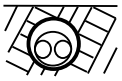
Conductor Size (mm²)	(A)	(mV/A.m)
1.5	16	30.8
2.5	20	18.4
4 (2.5)	25	11.4

Issue: June 2019

0.6/1 kV. Made to AS/NZS 3191

Product Sheet No. 186-01 B – (Cable only)

- 90°C Maximum operating temperature

Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
1.5	30	34.7	32	34.7	30	34.7	27	34.7
2.5	41	25.4	44	25.4	41	25.4	35	25.4
4 (2.5)	54	11.8	57	11.8	54	11.8	46	11.8

Issue: June 2019

0.6/1 kV. Made to AS/NZS 3191

The values in this table are for typical New Zealand installation conditions of:-

Maximum operating Temperature	60°C or 90°C
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

THREE CORE & EARTH CU VERSOLEX CORDS/CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-90 insulation
TPE(5V-90) sheath

Product Sheet No. 186-02 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
1.5	0.7	1.7	11.2	0.17
2.5	0.7	1.9	12.6	0.24
4 (2.5)	0.7 (0.7)	2.0	14.2	0.31
Issue: June 2019 **0.6/1 kV. Made to AS/NZS 3191**				

Notes:
1. Conductors are flexible circular stranded (Class 5).
2.Standard cord colours: Insulation - Brown, Light Blue, White, Green/Yellow (earth); Sheath – Black.
3. Reduced earth size shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.
5. Note this family conductor size up to 4mm2 can be used as cord OR power cable.
6. For cord application AS/NZS 3191-"Heavy Duty" criteria apply.
7. For power cable application AS/NZS 5000.1 apply.

THREE CORE & EARTH CU VERSOLEX CORDS/CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-90 insulation
TPE(5V-90) sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 186-02 B – (Cord only)

- 60°C Maximum operating temperature

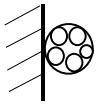
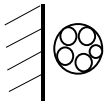
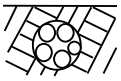
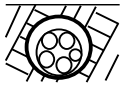
Conductor Size (mm²)	(A)	(mV/A.m)
1.5	16	26.7
2.5	20	16.0
4 (2.5)	25	9.92

Issue: June 2019

0.6/1 kV. Made to AS/NZS 3191

Product Sheet No. 186-02 B – (Cable only)

- 90°C Maximum operating temperature

Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
1.5	21	30.0	22	30.0	21	30.0	22	30.0
2.5	29	16.4	30	16.4	31	16.4	30	16.4
4	39	10.2	40	10.2	40	10.2	39	10.2

Issue: June 2019

0.6/1 kV. Made to AS/NZS 3191

The values in this table are for typical New Zealand installation conditions of:-

Maximum operating Temperature	60°C or 90°C
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

THREE CORE & EARTH CU VERSOLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-HF-90 insulation
TPE(5V-90) sheath

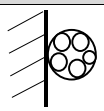
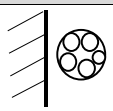
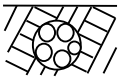
Product Sheet No. 187-02 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
6 (2.5)	0.7 (0.7)	1.8	14.9	0.35
Issue: June 2019 **0.6/1 kV. Made to AS/NZS 5000.1**				

Notes:
1. Conductors are flexible circular stranded (Class 5).
2. Standard cord colours: Insulation - Red, White, Blue, Green/Yellow (earth); Sheath – Black.
3. Reduced earth size shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.
5. Note this family conductor size above 6mm2 can be used as power cable only.

THREE CORE & EARTH CU VERSOLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-HF-90 insulation
TPE(5V-90) sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 187-02 B

Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
6	37	6.8	51	6.8	49	10.2	48	6.8

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

The values in this table are for typical New Zealand installation conditions of:-

Maximum operating Temperature	90°C
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

FOUR CORE & EARTH CU VERSOLEX CORDS/CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-90 insulation
TPE(5V-90) sheath

Product Sheet No. 186-03 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
1.5	0.7	1.8	12.3	0.21
2.5	0.7	2.0	13.9	0.29
4 (2.5)	0.7 (0.7)	2.2	15.9	0.40
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 3191				

Notes:
1. Conductors are flexible circular stranded (Class 5).
2. Standard cord colours: Insulation - Brown, Light Blue, White, Black, Green/Yellow (earth); Sheath – Black.
3. Reduced earth size shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.
5. Note this family conductor size up to 4mm2 can be used as cord OR power cable.
6. For cord application AS/NZS 3191-"Heavy Duty" criteria apply.
7. For power cable application AS/NZS 5000.1 apply.

FOUR CORE & EARTH CU VERSOLEX CORDS/CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-90 insulation
TPE(5V-90) sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 186-03 B – (Cord only)

- 60°C Maximum operating temperature

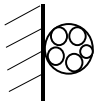
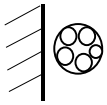
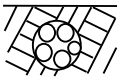
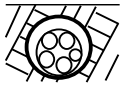
Conductor Size (mm²)	(A)	(mV/A.m)
1.5	16	26.7
2.5	20	16.0
4 (2.5)	25	9.92

Issue: June 2019

0.6/1 kV. Made to AS/NZS 3191

Product Sheet No. 186-03 B – (Cable only)

- 90°C Maximum operating temperature

Conductor Size								
(mm²)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
1.5	21	30.0	22	30.0	21	30.0	22	30.0
2.5	29	16.4	30	16.4	31	16.4	30	16.4
4	39	10.2	40	10.2	40	10.2	39	10.2

Issue: June 2019

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The values in this table are for typical New Zealand installation conditions of:-

Maximum operating Temperature	60°C or 90°C
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

FOUR CORE & EARTH CU VERSOLEX CORDS/CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-HF-90 insulation
TPE(5V-90) sheath

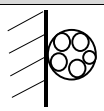
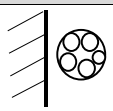
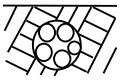
Product Sheet No. 187-03 A				
Conductor Size (mm^2)	**Thickness of Insulation (mm)**	**Thickness of Sheath (mm)**	**Nominal Overall Diameter (mm)**	**Linear Mass (kg/m)**
6 (2.5)	0.7 (0.7)	1.8	16.2	0.42
10 (4)	0.7 (0.7)	1.8	19.5	0.64
16 (6)	0.7 (0.7)	1.8	22.8	0.89
25 (6)	0.9 (0.7)	1.8	26.5	1.30
35 (10)	0.9 (0.7)	1.8	29.8	1.77
Issue: June 2019				
0.6/1 kV. Made to AS/NZS 5000.1				

Notes:
1. Conductors are flexible circular stranded (Class 5).
2. Standard cord colours: Insulation - Red, White, Blue, Black, Green/Yellow (earth); Sheath – Black.
3. Reduced earth size shown in brackets ( ).
4. Subject to confirmation, similar cables can be manufactured to other specifications.
4. Note this family conductor size above 6mm2 can be used as power cable only.

FOUR CORE & EARTH CU VERSOLEX CABLES (FLEXIBLE)

Circular construction
Flexible Copper conductor
X-HF-90 insulation
TPE(5V-90) sheath
Current ratings (A) and voltage drops (mV/A.m)

Product Sheet No. 187-03 B

Conductor Size								
(mm^2)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)	(A)	(mV/A.m)
6	47	6.80	51	6.80	49	6.80	48	6.80
10	67	4.05	73	4.05	67	4.05	66	4.05
16	89	2.55	96	2.55	118	2.55	85	2.55
25	119	1.61	128	1.61	153	1.61	110	1.61
35	149	1.14	158	1.14	184	1.14	136	1.14

Issue: June 2019

0.6/1 kV. Made to AS/NZS 5000.1

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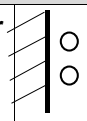
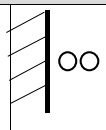
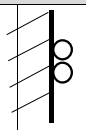
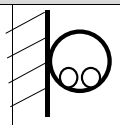
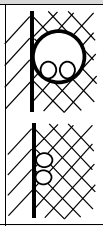
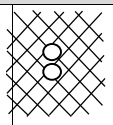
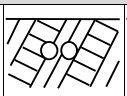
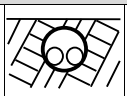
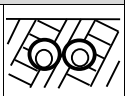
The values in this table are for typical New Zealand installation conditions of:-

Maximum operating Temperature	90°C
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

CURRENT RATINGS

Copper conductor
PVC insulation
Unarmoured
Sheathed or unsheathed

Table 3.7 Single Conductor Cu PVC Cables - Single Phase Ratings (A)

Conductor Size (mm^2)									
1	18	18	15	15	13	7	24	20	23
1.5	24	24	18	21	16	9	31	25	29
2.5	34	33	26	27	23	14	43	35	40
4	46	44	35	36	29	18	56	45	52
6	58	56	46	47	38	23	71	57	64
10	79	76	62	62	50	31	94	76	85
16	105	101	82	80	64	41	134	98	109
25	141	136	111	107	86	55	174	128	142
35	174	165	136	128	103	67	209	153	171
50	213	202	166	157	125	-	248	185	205
70	271	254	210	194	155	-	305	227	251
95	336	315	262	242	193	-	365	277	306
120	392	366	304	276	220	-	416	316	348
150	450	418	351	321	257	-	466	362	389
185	523	483	408	365	292	-	528	410	449
240	626	576	488	434	348	-	612	482	519
300	725	663	564	-	-	-	691	546	601
400	848	771	658	-	-	-	784	633	683
500	988	889	762	-	-	-	886	714	793
630	1156	1023	878	-	-	-	994	825	898

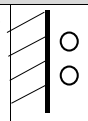
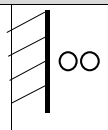
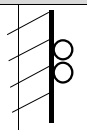
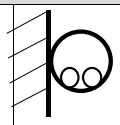
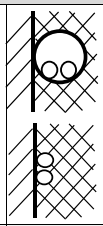
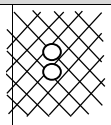
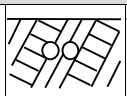
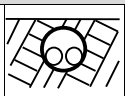
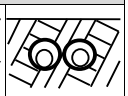
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C	Soil Thermal Resistivity	1.2 K.m/W
Soil Temperature	15°C	Depth of Burial	0.5 m

CURRENT RATINGS

Aluminium conductor
PVC insulation
Unarmoured
Sheathed or unsheathed

Table 3.8 Single Conductor Al PVC Cables – Single Phase Ratings (A)

Conductor Size (mm^2)									
16	82	79	64	62	49	32	105	76	85
25	109	105	86	83	66	42	135	99	110
35	136	129	105	99	80	52	162	119	132
50	165	156	129	122	98	-	191	143	160
70	210	197	163	150	120	-	237	176	195
95	261	244	203	187	149	-	283	215	237
120	304	284	237	214	171	-	323	245	270
150	350	325	272	250	200	-	362	281	301
185	407	377	318	284	227	-	411	320	349
240	487	449	381	340	271	-	477	376	405
300	564	520	442	-	-	-	540	427	468
400	665	610	520	-	-	-	620	499	536
500	781	711	610	-	-	-	708	572	627
630	921	832	715	-	-	-	811	672	717
800									

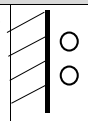
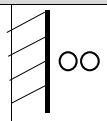
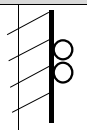
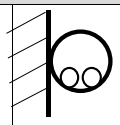
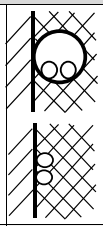
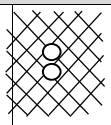
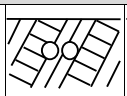
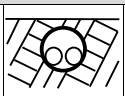
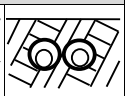
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

CURRENT RATINGS

Copper conductor
XLPE insulation (X-90)
Unarmoured
Sheathed or unsheathed

Table 3.9 Single Conductor Cu XLPE Cables – Single Phase Ratings (A)

Conductor Size (mm^2)									
1	22	22	18	18	14	9	21	21	26
1.5	29	28	22	23	18	11	28	28	32
2.5	40	40	31	33	26	15	39	39	44
4	53	52	41	42	33	21	49	49	57
6	67	66	52	52	42	26	62	62	71
10	92	90	72	72	57	35	83	83	93
16	123	119	95	92	74	47	149	107	120
25	166	160	129	124	99	64	192	140	156
35	205	195	158	149	119	79	230	168	187
50	251	238	194	183	146	-	273	202	226
70	320	300	246	224	180	-	335	249	276
95	397	372	306	281	224	-	401	305	331
120	464	432	358	321	256	-	457	348	383
150	535	496	413	362	289	-	514	391	429
185	622	574	480	426	340	-	581	453	495
240	746	684	574	507	406	-	674	532	574
300	866	790	666	-	-	-	761	601	663
400	1015	920	779	-	-	-	865	699	755
500	1186	1063	903	-	-	-	977	791	856
630	1387	1224	1045	-	-	-	1098	916	995

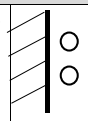
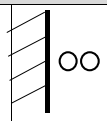
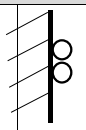
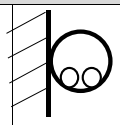
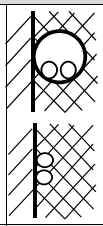
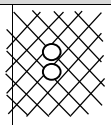
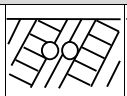
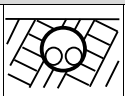
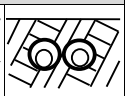
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C	Soil Thermal Resistivity	1.2 K.m/W
Soil Temperature	15°C	Depth of Burial	0.5 m

CURRENT RATINGS

Aluminium conductor
XLPE insulation (X-90)
Unarmoured
Sheathed or unsheathed

Table 3.10 Single Conductor Al XLPE Cables – Single Phase Ratings (A)

Conductor Size (mm^2)									
16	96	92	74	72	57	36	114	83	93
25	129	123	100	96	77	50	149	109	122
35	158	151	122	116	92	62	179	131	146
50	195	184	150	142	113	-	212	157	175
70	249	233	191	175	140	-	260	194	214
95	308	288	238	218	174	-	311	236	256
120	361	336	278	249	199	-	355	270	297
150	415	385	320	281	224	-	398	303	333
185	483	447	374	331	265	-	453	352	384
240	580	534	449	396	317	-	526	415	446
300	673	618	520	-	-	-	595	471	516
400	795	726	615	-	-	-	683	552	592
500	935	849	722	-	-	-	780	631	676
630	1103	994	849	-	-	-	891	744	792
800									

The values in this table are for typical New Zealand installation conditions of:-

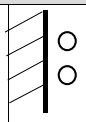
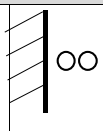
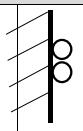
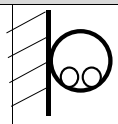
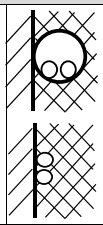
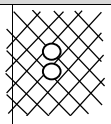
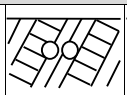
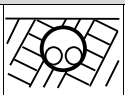
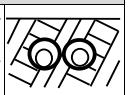
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

CURRENT RATINGS

Flexible Copper conductor
XLPE insulation (X-90)
Unarmoured
Sheathed or unsheathed

Table 3.11 Single Conductor Flex Cu XLPE Cables

– Single Phase Ratings (A)

Conductor Size (mm^2)									
1	23	23	18	19	14	9	21	22	26
1.5	29	29	22	23	18	11	28	28	32
2.5	39	37	30	31	26	15	39	37	44
4	51	51	40	41	33	21	49	48	57
6	65	64	51	51	42	26	62	60	71
10	91	89	70	70	57	35	83	82	93
16	121	117	94	90	74	47	149	105	120
25	162	155	125	120	99	64	192	136	156
35	201	191	155	145	119	79	230	165	187
50	254	240	196	184	146	-	273	203	226
70	321	301	248	224	180	-	335	248	276
95	386	361	298	273	224	-	401	295	331
120	460	428	354	315	256	-	457	341	383
150	531	493	410	370	289	-	514	394	429
185	611	563	471	415	340	-	581	441	495
240	735	674	567	497	406	-	674	520	574
300	849	776	653	-	-	-	761	586	663
400	1026	927	787	-	-	-	865	696	755
500	1199	1073	913	-	-	-	977	784	856
630	1417	1249	1066	-	-	-	1098	920	995

The values in this table are for typical New Zealand installation conditions of:-

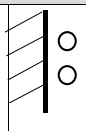
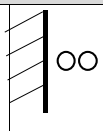
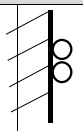
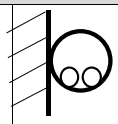
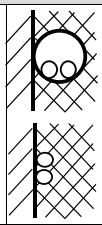
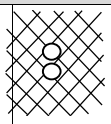
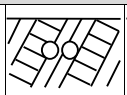
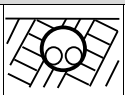
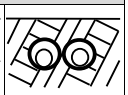
Ambient Air Temperature	30°C	Soil Thermal Resistivity	1.2 K.m/W
Soil Temperature	15°C	Depth of Burial	0.5 m

CURRENT RATINGS

Flexible Copper conductor
X-HF-110 insulation
Unarmoured
Sheathed or unsheathed

Table 3.12 Single Conductor Flex Cu X-HF-110 Cables

– Single Phase Ratings (A)

Conductor Size (mm^2)									
1	28	28	22	22	17	11	24	25	28
1.5	34	34	28	27	21	14	31	32	35
2.5	46	45	36	35	30	19	42	41	49
4	61	60	48	48	40	25	56	54	63
6	78	75	61	60	49	32	70	68	78
10	109	105	86	82	66	43	93	91	103
16	144	138	112	109	89	57	163	119	135
25	190	182	149	142	117	77	210	152	173
35	236	225	184	179	141	94	252	187	207
50	299	281	233	221	175	-	299	228	250
70	376	352	292	281	218	-	367	282	305
95	452	423	352	334	275	-	441	331	373
120	535	499	417	389	317	-	501	381	424
150	617	574	482	456	368	-	563	439	475
185	706	654	552	515	422	-	637	492	548
240	850	783	664	624	509	-	740	581	636
300	980	900	766	-	-	-	836	669	736
400	1182	1076	920	-	-	-	952	778	837
500	1380	1245	1069	-	-	-	1079	906	976
630	1636	1454	1250	-	-	-	1217	1036	1108

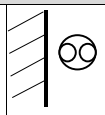
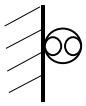
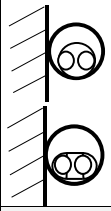
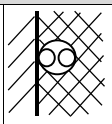
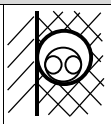
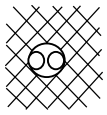
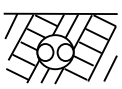
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C	Soil Thermal Resistivity	1.2 K.m/W
Soil Temperature	15°C	Depth of Burial	0.5 m

CURRENT RATINGS

Copper conductors
PVC insulation
Armoured or unarmoured -(including Neutral Screened cables)

Table 3.13 Two Conductor Cu PVC Cables – Single Phase Ratings (A)

Conductor Size (mm^2)								
1	17	16	15	13	11	8	19	19
1.5	22	21	18	16	15	10	23	23
2.5	31	30	26	23	22	15	33	33
4	42	39	34	31	27	19	43	43
6	52	50	44	40	35	25	55	55
10	73	68	59	55	48	34	73	73
16	97	91	78	73	62	46	125	95
25	129	122	103	97	82	60	162	123
35	158	149	128	120	103	74	196	150
50	194	181	152	145	122	-	232	178
70	245	229	194	184	155	-	285	222
95	302	283	233	226	186	-	342	267
120	350	328	275	262	219	-	391	310
150	400	374	309	300	247	-	438	349
185	459	430	357	344	285	-	494	399
240	544	508	415	407	332	-	572	463
300	624	583	483	466	388	-	645	531
400	719	671	549	537	440	-	729	603

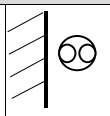
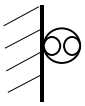
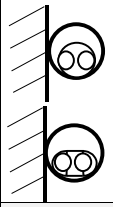
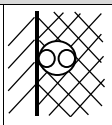
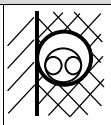
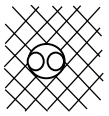
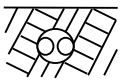
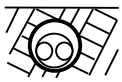
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

CURRENT RATINGS

Aluminium conductors
PVC insulation
Armoured or unarmoured - (including Neutral Screened cables)

Table 3.14 Two Conductor Al PVC Cables – Single Phase Ratings (A)

Conductor Size (mm^2)								
16	75	71	59	56	48	35	97	73
25	100	95	80	75	64	47	125	96
35	123	115	99	92	80	58	152	117
50	150	141	117	113	95	-	179	139
70	190	178	150	143	120	-	221	173
95	234	219	180	176	145	-	265	208
120	272	255	213	204	171	-	304	242
150	310	291	239	233	192	-	340	271
185	358	335	278	268	222	-	385	311
240	425	398	325	318	260	-	447	362
300	489	457	380	366	303	-	506	417
400	570	532	437	425	349	-	579	477

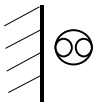
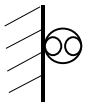
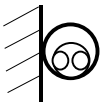
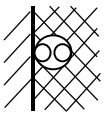
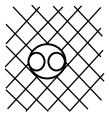
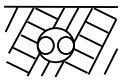
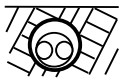
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

CURRENT RATINGS

Copper conductors
XLPE insulation (X-90)
Armoured or unarmoured - (including Neutral Screened cables)

Table 3.15 Two Conductor Cu XLPE Cables – Single Phase Ratings (A)

Conductor Size (mm^2)							
1	20	19	18	15	10	20	20
1.5	26	24	22	20	12	26	26
2.5	37	34	31	28	18	36	36
4	50	46	41	36	23	48	48
6	63	58	51	46	30	60	60
10	86	80	69	64	40	80	80
16	114	107	90	86	54	141	105
25	154	144	121	116	73	182	137
35	190	178	145	142	89	219	165
50	232	217	178	174	-	261	198
70	295	275	220	220	-	321	244
95	364	340	275	272	-	385	299
120	424	395	314	316	-	439	340
150	485	452	365	361	-	492	391
185	560	520	415	417	-	556	442
240	664	618	493	494	-	645	519
300	763	710	575	568	-	728	597
400	884	820	656	656	-	825	677

The values in this table are for typical New Zealand installation conditions of:-

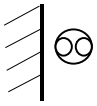
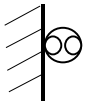
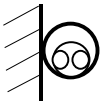
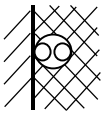
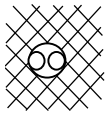
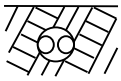
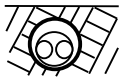
Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

CURRENT RATINGS

Flexible Copper conductor
XLPE insulation (X-90)
Unarmoured
Sheathed or unsheathed

Table 3.16 Two Conductor Flex Cu XLPE Cables

– Single Phase Ratings (A)

Conductor Size (mm^2)							
1	21	20	18	15	10	20	21
1.5	26	25	22	20	12	26	27
2.5	35	33	30	28	18	36	35
4	47	44	39	36	23	48	46
6	61	56	48	46	30	60	58
10	86	79	68	64	40	80	79
16	113	106	88	86	54	141	102
25	150	141	117	116	73	182	133
35	186	174	142	142	89	219	161
50	234	219	179	174	-	261	199
70	296	276	228	220	-	321	247
95	354	330	266	272	-	385	290
120	419	391	318	316	-	439	340
150	482	449	361	361	-	492	385
185	549	510	413	417	-	556	435
240	656	609	483	494	-	645	508
300	750	696	561	568	-	728	582
400	892	826	655	656	-	825	675

The values in this table are for typical New Zealand installation conditions of:-

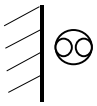
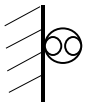
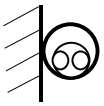
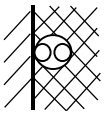
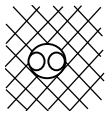
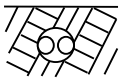
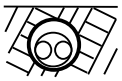
Ambient Air Temperature	30°C	Soil Thermal Resistivity	1.2 K.m/W
Soil Temperature	15°C	Depth of Burial	0.5 m

CURRENT RATINGS

Flexible Copper conductor
X-HF-110 insulation
Unarmoured
Sheathed or unsheathed

Table 3.17 Two Conductor Flex Cu X-HF-110 Cables

– Single Phase Ratings (A)

Conductor Size (mm^2)							
1	26	25	21	16	12	23	24
1.5	32	30	26	20	15	30	31
2.5	43	41	34	29	20	41	39
4	57	54	46	39	28	54	52
6	72	67	58	48	35	68	66
10	101	94	80	64	48	90	89
16	133	124	107	87	63	154	116
25	174	165	138	114	85	199	147
35	216	203	174	142	104	240	181
50	272	255	216	171	-	284	222
70	340	320	275	219	-	350	275
95	408	382	324	268	-	420	322
120	482	450	387	315	-	479	378
150	551	516	441	356	-	537	427
185	627	585	507	416	-	6007	483
240	747	698	617	503	-	705	573
300	855	797	702	574	-	796	648
400	1015	946	857	658	-	904	771

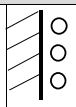
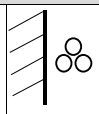
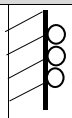
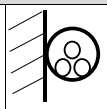
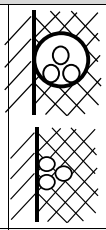
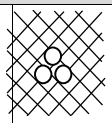
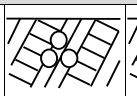
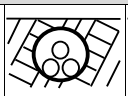
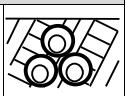
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C	Soil Thermal Resistivity	1.2 K.m/W
Soil Temperature	15°C	Depth of Burial	0.5 m

CURRENT RATINGS

Copper conductor
PVC insulation
Unarmoured
Sheathed or unsheathed

Table 3.18 Single Conductor Cu PVC Cables – Three Phase Ratings (A)

Conductor Size (mm^2)									
1	18	16	15	14	11	7	18	18	21
1.5	23	19	18	17	14	9	22	22	26
2.5	33	29	26	24	19	14	30	30	36
4	43	38	35	32	26	18	40	40	47
6	56	48	46	40	32	23	50	50	58
10	76	66	62	54	42	31	65	65	77
16	101	88	82	71	57	41	114	86	99
25	137	117	111	92	73	55	147	110	129
35	169	145	136	114	91	67	176	134	154
50	206	178	166	136	108	-	209	158	185
70	262	225	210	173	139	-	256	198	226
95	327	280	262	209	168	-	307	239	275
120	382	327	304	247	197	-	349	277	311
150	439	376	351	278	222	-	392	311	349
185	510	437	407	324	259	-	442	358	402
240	610	521	486	377	302	-	512	415	464
300	707	603	561	442	355	-	576	477	537
400	828	701	653	504	402	-	652	541	608
500	964	809	754	596	477	-	735	628	705
630	1129	931	866	670	537	-	823	703	795

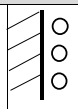
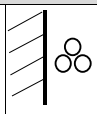
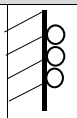
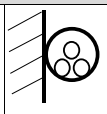
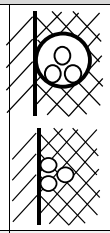
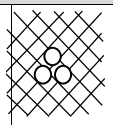
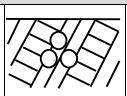
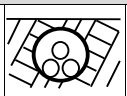
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C	Soil Thermal Resistivity	1.2 K.m/W
Soil Temperature	15°C	Depth of Burial	0.5 m

CURRENT RATINGS

Aluminium conductor
PVC insulation
Unarmoured
Sheathed or unsheathed

Table 3.19 Single Conductor Al PVC Cables – Three Phase Ratings (A)

Conductor Size (mm^2)									
16	79	67	64	55	44	32	89	66	77
25	106	91	86	72	57	43	114	86	100
35	131	112	105	89	71	52	136	103	119
50	161	138	129	105	84	-	162	123	144
70	204	174	163	135	107	-	199	154	175
95	253	218	203	162	130	-	238	185	213
120	296	254	237	193	154	-	272	216	242
150	340	292	272	217	173	-	304	242	271
185	396	341	317	253	202	-	344	278	312
240	475	408	381	307	236	-	400	325	362
300	551	473	441	348	278	-	453	375	418
400	650	556	519	400	320	-	518	430	477
500	763	651	606	480	384	-	591	505	558
630	899	762	709	548	439	-	673	575	636

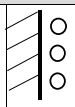
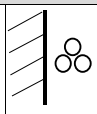
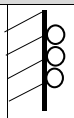
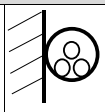
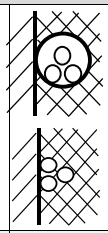
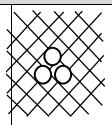
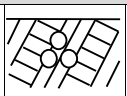
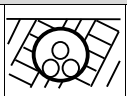
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

CURRENT RATINGS

Copper conductor
XLPE insulation
Unarmoured
Sheathed or unsheathed

Table 3.20 Single Conductor Cu XLPE Cables – Three Phase Ratings (A)

Conductor Size (mm^2)									
1	21	18	18	17	13	9	19	19	24
1.5	28	23	22	20	17	11	24	24	29
2.5	39	33	31	28	22	15	33	33	41
4	51	44	41	36	29	21	43	43	52
6	65	55	52	46	37	26	54	54	64
10	89	76	72	62	50	35	72	72	85
16	119	101	95	79	64	47	125	92	108
25	161	138	129	107	85	64	162	121	141
35	198	169	158	132	106	79	193	147	169
50	243	207	194	157	125	-	229	174	203
70	310	264	246	201	161	-	280	217	248
95	385	328	306	242	194	-	335	261	295
120	451	384	358	287	230	-	381	304	342
150	519	443	413	325	260	-	428	342	383
185	616	515	479	369	295	-	484	388	442
240	726	616	573	439	352	-	560	456	510
300	843	713	662	516	413	-	630	525	591
400	989	832	772	587	470	-	715	596	670
500	1156	961	893	696	557	-	805	693	756
630	1353	1111	1032	785	628	-	902	778	877

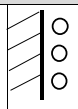
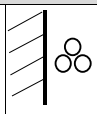
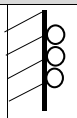
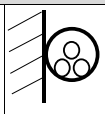
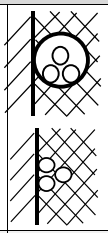
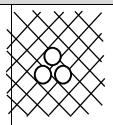
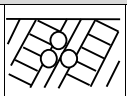
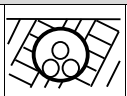
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C	Soil Thermal Resistivity	1.2 K.m/W
Soil Temperature	15°C	Depth of Burial	0.5 m

CURRENT RATINGS

Aluminium conductor
XLPE insulation
Unarmoured
Sheathed or unsheathed

Table 3.21 Single Conductor Al XLPE Cables –Three Phase Ratings (A)

Conductor Size (mm^2)									
16	92	78	74	62	50	36	97	71	85
25	124	107	100	83	66	50	125	93	110
35	154	131	122	102	83	62	150	113	131
50	188	161	150	122	98	-	178	135	157
70	241	205	191	156	125	-	217	169	193
95	298	255	238	188	151	-	260	203	229
120	350	298	278	223	178	-	296	236	265
150	403	344	320	252	201	-	332	266	296
185	470	402	373	287	230	-	377	303	343
240	564	482	448	343	275	-	438	356	397
300	656	559	519	405	323	-	495	412	460
400	776	659	613	466	373	-	567	473	525
500	912	773	717	560	448	-	646	556	598
630	1076	906	842	641	513	-	736	635	700

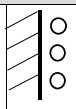
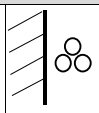
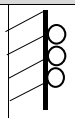
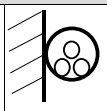
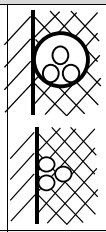
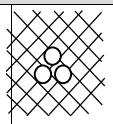
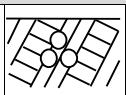
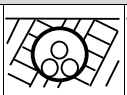
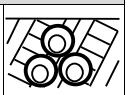
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

CURRENT RATINGS

Flexible Copper conductor
XLPE insulation (X-90)
Unarmoured
Sheathed or unsheathed

Table 3.22 Single Conductor Flex Cu XLPE Cables – Three Phase Ratings (A)

Conductor Size (mm^2)									
1	22	19	18	17	13	9	19	20	24
1.5	28	24	22	21	17	11	24	25	29
2.5	36	32	30	26	22	15	33	32	41
4	50	42	40	34	29	21	43	41	52
6	63	54	51	45	37	26	54	52	64
10	88	76	70	61	50	35	72	71	85
16	117	100	94	80	64	47	125	91	108
25	156	133	125	103	85	64	162	117	141
35	195	166	155	130	106	79	193	143	169
50	245	210	196	158	125	-	229	174	203
70	311	265	248	201	161	-	280	217	248
95	375	319	298	235	194	-	335	254	295
120	447	381	354	282	230	-	381	299	342
150	517	440	409	320	260	-	428	338	383
185	594	505	470	367	295	-	484	382	442
240	716	608	565	430	352	-	560	445	510
300	827	701	650	504	413	-	630	513	591
400	1000	840	780	586	470	-	715	593	670
500	1168	972	903	693	557	-	805	687	756
630	1382	1133	1052	791	628	-	902	780	877

The values in this table are for typical New Zealand installation conditions of:-

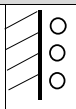
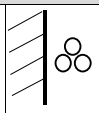
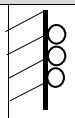
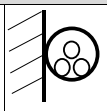
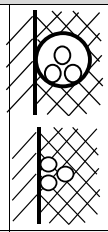
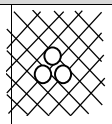
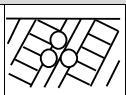
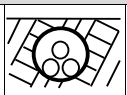
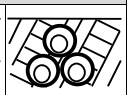
Ambient Air Temperature	30°C	Soil Thermal Resistivity	1.2 K.m/W
Soil Temperature	15°C	Depth of Burial	0.5 m

CURRENT RATINGS

Flexible Copper conductor
X-HF-110 insulation
Unarmoured
Sheathed or unsheathed

Table 3.23 Single Conductor Flex CU X-HF-110 Cables

–Three Phase Ratings (A)

Conductor Size (mm^2)									
1	27	24	22	22	15	11	21	22	25
1.5	33	29	28	28	19	14	27	28	32
2.5	45	39	36	36	27	19	38	36	45
4	59	51	48	47	35	25	49	47	57
6	75	65	61	58	44	32	60	58	71
10	106	91	86	81	61	43	82	81	93
16	139	120	112	103	79	57	138	103	122
25	185	159	149	133	107	77	178	133	157
35	229	197	184	160	129	94	213	160	187
50	289	249	232	199	156	-	251	199	225
70	364	312	292	243	200	-	308	243	275
95	439	378	352	284	244	-	369	284	334
120	521	447	417	335	288	-	420	335	378
150	601	516	482	378	327	-	472	378	424
185	689	592	552	428	384	-	533	428	489
240	829	712	663	510	470	-	618	510	565
300	958	820	764	575	536	-	696	575	654
400	1155	982	915	687	615	-	791	687	742
500	1348	1138	1059	773	740	-	894	773	864
630	1598	1327	1235	878	842	-	1004	878	975

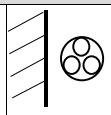
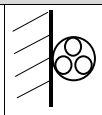
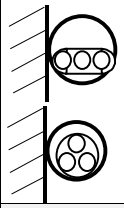
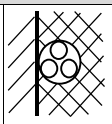
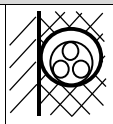
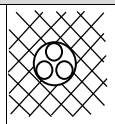
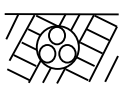
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C	Soil Thermal Resistivity	1.2 K.m/W
Soil Temperature	15°C	Depth of Burial	0.5 m

CURRENT RATINGS

Copper conductors
PVC insulation
Armoured or unarmoured - (including Neutral Screened cables)

Table 3.24 Three & Four Conductor Cu PVC Cables – Three Phase Ratings (A)

Conductor Size (mm^2)								
1	15	14	13	10	10	7	15	15
1.5	18	17	16	14	13	9	20	20
2.5	26	25	23	19	18	13	28	28
4	35	33	29	26	23	17	36	36
6	46	42	38	34	30	22	46	46
10	62	58	50	47	40	29	61	61
16	82	78	66	62	54	39	106	80
25	111	104	87	83	68	52	138	103
35	137	128	107	103	86	64	165	125
50	166	156	128	124	101	-	196	150
70	211	196	162	157	130	-	241	187
95	260	243	202	194	162	-	289	229
120	302	282	230	226	185	-	330	261
150	345	321	260	258	207	-	370	293
185	397	369	300	295	241	-	417	334
240	470	437	360	350	288	-	482	395
300	538	499	-	-	-	-	542	444
400	620	575	-	-	-	-	613	515

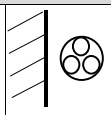
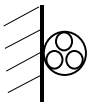
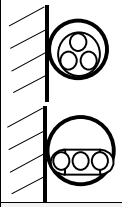
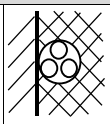
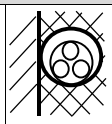
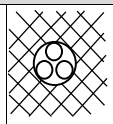
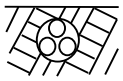
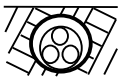
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

CURRENT RATINGS

Aluminium conductors
PVC insulation
Armoured or unarmoured - (including Neutral Screened cables)

Table 3.25 Three & Four Conductor Al PVC Cables – Three Phase Ratings (A)

Conductor Size (mm^2)								
16	64	60	51	48	41	30	83	62
25	86	81	67	65	54	40	107	80
35	106	99	83	79	66	49	129	98
50	129	121	99	97	79	-	152	116
70	163	153	127	122	100	-	187	145
95	202	188	156	150	125	-	224	177
120	235	219	179	176	144	-	256	202
150	268	250	202	200	162	-	287	228
185	310	288	235	231	188	-	326	261
240	368	343	283	274	226	-	378	309
300	424	393	-	-	-	-	427	350
400	495	458	-	-	-	-	488	411

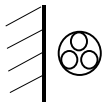
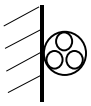
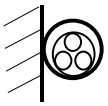
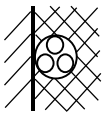
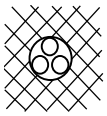
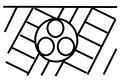
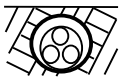
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

CURRENT RATINGS

Copper conductors
XLPE insulation
Armoured or unarmoured - (including Neutral Screened cables)

Table 3.26 Three & Four Conductor Cu XLPE Cables – Three Phase Ratings (A)

Conductor Size (mm^2)							
1	18	15	14	13	8	17	17
1.5	22	21	18	17	10	21	21
2.5	31	29	26	23	14	31	31
4	42	39	33	31	20	40	40
6	53	50	42	40	24	49	49
10	73	68	58	54	34	67	67
16	97	91	75	73	45	118	87
25	131	122	100	98	62	153	114
35	162	151	125	121	76	184	139
50	198	185	150	147	-	218	166
70	252	234	190	187	-	269	207
95	311	289	230	231	-	323	249
120	363	337	271	270	-	368	289
150	415	385	305	308	-	412	325
185	480	444	354	355	-	465	372
240	569	527	425	421	-	539	440
300	653	604	-	-	-	607	495
400	754	695	-	-	-	685	561

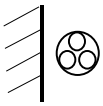
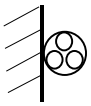
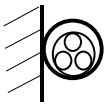
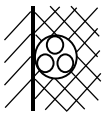
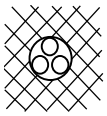
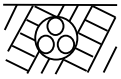
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

CURRENT RATINGS

Aluminium conductors
XLPE insulation
Armoured or unarmoured - (including Neutral Screened cables)

Table 3.27 Three & Four Conductor Al XLPE Cables – Three Phase Ratings (A)

Conductor Size (mm^2)							
16	75	70	58	56	35	91	67
25	102	95	78	76	47	119	89
35	125	117	97	94	58	142	108
50	154	143	116	114	-	170	128
70	196	182	147	145	-	209	161
95	242	224	178	179	-	250	194
120	282	262	211	209	-	286	225
150	322	299	238	240	-	320	253
185	374	347	276	277	-	364	291
240	446	413	333	330	-	423	345
300	514	475	-	-	-	477	391
400	601	554	-	-	-	546	446

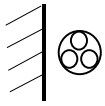
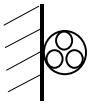
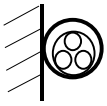
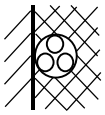
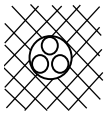
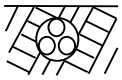
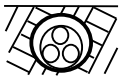
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

CURRENT RATINGS

Flexible Copper conductors
XLPE insulation (X-90)
Armoured or unarmoured

Table 3.28 Three & Four Conductor Flex Cu XLPE Cables – Three Phase Ratings (A)

Conductor Size (mm^2)							
1	18	17	15	13	8	17	18
1.5	22	21	19	17	10	21	22
2.5	30	29	25	23	14	31	30
4	40	37	32	31	20	40	39
6	51	47	41	40	24	49	48
10	73	67	57	54	34	67	66
16	96	89	74	73	45	118	85
25	128	119	98	98	62	153	110
35	158	149	122	121	76	184	136
50	200	187	150	147	-	218	166
70	253	235	190	187	-	269	207
95	303	282	222	231	-	323	242
120	360	333	266	270	-	368	285
150	413	383	301	308	-	412	321
185	471	436	345	355	-	465	363
240	562	519	417	421	-	539	430
300	642	593	-	-	-	607	484
400	761	702	-	-	-	685	575

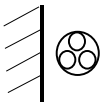
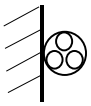
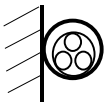
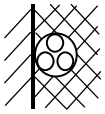
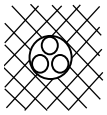
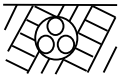
The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

CURRENT RATINGS

Flexible Copper conductors
X-HF-110 insulation
Armoured or unarmoured

Table 3.29 Three & Four Conductor Flex Cu X-HF-110 Cables – Three Phase Ratings (A)

Conductor Size (mm^2)							
1	22	20	18	14	10	20	21
1.5	28	26	22	17	13	25	25
2.5	36	34	29	25	18	35	33
4	48	45	39	32	24	46	43
6	61	58	49	41	30	56	54
10	86	80	70	55	41	75	75
16	113	106	90	73	54	129	96
25	150	140	120	100	72	167	125
35	185	173	147	120	89	201	152
50	233	218	187	149	-	240	189
70	292	273	232	185	-	294	230
95	350	327	281	231	-	353	275
120	414	385	327	266	-	402	316
150	475	442	381	308	-	452	361
185	540	503	430	352	-	510	404
240	644	598	523	426	-	591	480
300	736	683	-	-	-	667	540
400	874	809	-	-	-	756	642

The values in this table are for typical New Zealand installation conditions of:-

Ambient Air Temperature	30°C
Soil Temperature	15°C
Soil Thermal Resistivity	1.2 K.m/W
Depth of Burial	0.5 m

VOLTAGE DROPS

Table 3.30 Single Conductor Cables - Voltage Drops (mV/A.m)

Conductor Size	Conductor Temperature								
	Single Phase Touching			Three Phase Trefoil			Three Phase Flat Touching		
(mm²)	75°C	90°C	110°C	75°C	90°C	110°C	75°C	90°C	110°C
Copper Conductors									
1	51.6	54.1	57.4	44.7	46.8	49.7	44.7	46.8	49.7
1.5	33.0	34.7	36.9	28.6	30.0	31.9	28.6	30.0	31.9
2.5	18.0	18.9	20.1	15.6	16.4	17.4	15.6	16.4	17.4
4	11.2	11.8	12.5	9.71	10.2	10.8	9.71	10.2	10.8
6	7.50	7.87	8.35	6.49	6.81	7.23	6.49	6.81	7.23
10	4.46	4.68	6.67	3.86	4.05	4.30	3.86	4.05	4.30
16	2.81	2.95	3.12	2.43	2.55	2.70	2.43	2.55	2.71
25	1.78	1.87	1.99	1.54	1.62	1.72	1.55	1.62	1.72
35	1.29	1.35	1.43	1.12	1.17	1.24	1.12	1.18	1.25
50	0.963	1.01	1.07	0.834	0.872	0.924	0.840	0.878	0.929
70	0.680	0.710	0.751	0.589	0.615	0.650	0.597	0.623	0.657
95	0.507	0.528	0.556	0.439	0.457	0.481	0.449	0.467	0.491
120	0.415	0.431	0.453	0.359	0.373	0.392	0.371	0.385	0.403
150	0.352	0.365	0.382	0.305	0.316	0.331	0.319	0.330	0.344
185	0.302	0.311	0.323	0.261	0.269	0.280	0.277	0.285	0.296
240	0.255	0.262	0.271	0.221	0.227	0.235	0.240	0.245	0.252
300	0.229	0.233	0.238	0.198	0.202	0.208	0.219	0.222	0.227
400	0.209	0.211	0.216	0.181	0.183	0.187	0.202	0.205	0.208
500	0.194	0.196	0.199	0.168	0.170	0.172	0.191	0.193	0.195
630	0.181	0.184	0.185	0.157	0.159	0.160	0.181	0.182	0.184
Aluminium Conductors									
16	4.68	4.91	-	4.05	4.25	-	4.05	4.25	-
25	2.95	3.08	-	2.55	2.67	-	2.55	2.67	-
35	2.14	2.24	-	1.85	1.94	-	1.85	1.94	-
50	1.58	1.65	-	1.37	1.43	-	1.37	1.44	-
70	1.10	1.15	-	0.952	0.997	-	0.956	1.00	-
95	0.804	0.840	-	0.696	0.727	-	0.702	0.733	-
120	0.644	0.672	-	0.558	0.582	-	0.565	0.589	-
150	0.535	0.557	-	0.463	0.482	-	0.472	0.491	-
185	0.439	0.455	-	0.380	0.394	-	0.391	0.404	-
240	0.352	0.363	-	0.305	0.314	-	0.319	0.327	-
300	0.300	0.307	-	0.260	0.266	-	0.276	0.281	-
400	0.256	0.261	-	0.222	0.226	-	0.240	0.243	-
500	0.226	0.228	-	0.196	0.197	-	0.216	0.216	-
630	0.202	0.204	-	0.175	0.177	-	0.197	0.198	-
800									

PVC (V-75, V90) maximum temperature is 75°C and XLPE (X-90) maximum temperature is 90°C, X-HF-110 maximum temperature is 110°C.

VOLTAGE DROPS

Table 3.31 Multi Conductor Cables - Voltage Drops (mV/A.m)						
Conductor Size	Conductor Temperature					
	Single Phase			Three Phase		
(mm^2)	75°C	90°C	110°C	75°C	90°C	110°C
Copper Conductors						
1	51.6	54.1	57.4	44.7	46.8	49.7
1.5	33.0	34.7	36.8	28.6	30.0	31.9
2.5	18.0	18.9	20.1	15.6	16.4	17.4
4	11.2	11.8	12.5	9.71	10.2	10.8
6	7.50	7.85	8.34	6.49	6.80	7.22
10	4.46	4.68	4.95	3.86	4.05	4.29
16	2.81	2.95	3.12	2.43	2.55	2.70
25	1.78	1.86	1.98	1.54	1.61	1.71
35	1.28	1.35	1.43	1.11	1.17	1.24
50	0.958	1.00	1.063	0.829	0.868	0.920
70	0.673	0.703	0.0745	0.583	0.609	0.645
95	0.498	0.520	0.549	0.431	0.450	0.475
120	0.405	0.423	0.445	0.351	0.366	0.385
150	0.342	0.355	0.372	0.296	0.307	0.322
185	0.290	0.299	0.313	0.251	0.259	0.271
240	0.243	0.249	0.259	0.210	0.216	0.224
300	0.215	0.219	0.227	0.186	0.190	0.196
400	0.194	0.198	0.202	0.168	0.171	0.175
Aluminium Conductors						
16	4.67	4.90	-	4.04	4.24	-
25	2.93	3.08	-	2.54	2.67	-
35	2.13	2.23	-	1.84	1.93	-
50	1.57	1.65	-	1.36	1.43	-
70	1.09	1.15	-	0.948	0.993	-
95	0.798	0.835	-	0.691	0.723	-
120	0.638	0.666	-	0.552	0.577	-
150	0.528	0.550	-	0.457	0.476	-
185	0.431	0.448	-	0.373	0.388	-
240	0.343	0.355	-	0.297	0.307	-
300	0.290	0.298	-	0.251	0.258	-
400	0.245	0.249	-	0.212	0.216	-

PVC (V-75, V90) maximum temperature is 75°C, XLPE (X-90) maximum temperature is 90°C, X-HF-110 maximum temperature is 110°C

AC RESISTANCES

Table 3.32 Single Conductor Cables - AC Resistances (mΩ/m)					
Conductor Size	Conductor Temperature				
(mm^2)	45°C	60°C	75°C	90°C	110°C
Copper Conductors					
1	23.3	24.5	25.8	27.0	28.7
1.5	14.9	15.7	16.5	17.3	18.4
2.5	8.14	8.57	9.01	9.45	10.0
4	5.06	5.33	5.61	5.88	6.24
6	3.38	3.56	3.75	3.93	4.17
10	2.01	2.12	2.23	2.33	2.48
16	1.26	1.33	1.40	1.47	1.56
25	0.799	0.842	0.884	0.927	0.984
35	0.576	0.607	0.638	0.668	0.710
50	0.426	0.448	0.471	0.494	0.524
70	0.295	0.311	0.327	0.342	0.363
95	0.213	0.225	0.236	0.247	0.262
120	0.170	0.179	0.188	0.197	0.208
150	0.138	0.145	0.153	0.160	0.169
185	0.111	0.117	0.123	0.129	0.136
240	0.0862	0.0905	0.0948	0.0991	0.105
300	0.0703	0.0736	0.0770	0.0803	0.0846
400	0.0569	0.0595	0.0620	0.0646	0.0677
500	0.0467	0.0487	0.0506	0.0525	0.0547
630	0.0389	0.0404	0.0418	0.0432	0.0448
Flexible Copper Conductors					
1	21.4	22.6	23.7	24.9	26.4
1.5	14.6	15.4	16.2	17.0	18.0
2.5	8.76	9.23	9.70	10.2	10.8
4	5.44	5.73	6.02	6.31	6.70
6	3.62	3.82	4.01	4.21	4.47
10	2.10	2.21	2.32	2.44	2.59
16	1.33	1.40	1.47	1.54	1.64
25	0.857	0.903	0.949	0.995	1.06
35	0.609	0.641	0.674	0.707	0.750
50	0.424	0.447	0.470	0.493	0.523
70	0.300	0.316	0.332	0.348	0.369
95	0.227	0.240	0.252	0.264	0.280
120	0.178	0.188	0.197	0.207	0.219
150	0.144	0.151	0.159	0.166	0.176
185	0.119	0.125	0.131	0.137	0.145
240	0.0912	0.0958	0.100	0.105	0.111
300	0.0745	0.0780	0.0817	0.0853	0.0898
400	0.0587	0.0613	0.0640	0.0666	0.0699
500	0.0487	0.0507	0.0527	0.0548	0.0571
630	0.0395	0.0409	0.0424	0.0438	0.0455

AC RESISTANCES

Table 3.33 Single Conductor Cables - AC Resistances (mΩ/m)					
Conductor Size (mm^2)	Conductor Temperature				
	45°C	60°C	75°C	90°C	110°C
Aluminium Conductors					
16	2.10	2.22	2.33	2.45	-
25	1.32	1.39	1.47	1.54	-
35	0.956	1.01	1.06	1.11	-
50	0.706	0.745	0.783	0.822	-
70	0.488	0.515	0.542	0.568	-
95	0.353	0.372	0.392	0.411	-
120	0.279	0.295	0.310	0.325	-
150	0.228	0.240	0.253	0.265	-
185	0.182	0.192	0.202	0.212	-
240	0.140	0.147	0.155	0.162	-
300	0.113	0.119	0.125	0.130	-
400	0.0890	0.0936	0.0981	0.103	-
500	0.0709	0.0744	0.0779	0.0813	-
630	0.0571	0.0597	0.0623	0.0649	-

AC RESISTANCES

Table 3.34 Multi Conductor Cables - AC Resistances (mΩ/m)

Conductor Size	Conductor Temperature									
	Circular Conductors					Shaped Conductors				
(mm²)	45°C	60°C	75°C	90°C	110°C	45°C	60°C	75°C	90°C	110°C
Copper Conductors										
1	23.3	24.5	25.8	27.0	28.7	-	-	-	-	-
1.5	14.9	15.7	16.5	17.3	18.4	-	-	-	-	-
2.5	8.14	8.57	9.01	9.45	10.0	-	-	-	-	-
4	5.06	5.33	5.61	5.88	6.24	-	-	-	-	-
6	3.38	3.56	3.75	3.93	4.17	-	-	-	-	-
10	2.01	2.12	2.23	2.33	2.48	-	-	-	-	-
16	1.26	1.33	1.40	1.47	1.56	-	-	-	-	-
25	0.799	0.842	0.884	0.927	0.984	0.799	0.842	0.884	0.927	-
35	0.576	0.607	0.638	0.669	0.710	0.576	0.607	0.638	0.669	-
50	0.426	0.449	0.471	0.494	0.524	0.426	0.448	0.471	0.494	-
70	0.295	0.311	0.327	0.343	0.364	0.295	0.311	0.327	0.342	-
95	0.214	0.225	0.236	0.248	0.262	0.213	0.224	0.236	0.247	-
120	0.170	0.179	0.188	0.197	0.209	0.170	0.179	0.187	0.196	-
150	0.139	0.146	0.153	0.160	0.170	0.138	0.145	0.153	0.160	-
185	0.112	0.118	0.123	0.129	0.136	0.111	0.117	0.123	0.128	-
240	0.0870	0.0912	0.0955	0.0998	0.105	0.0859	0.0902	0.0945	0.0988	-
300	0.0712	0.0745	0.0778	0.0812	0.0852	0.0698	0.0732	0.0766	0.0800	-
400	0.0580	0.0605	0.0630	0.0656	0.0685	0.0563	0.0589	0.0615	0.0641	-
Flexible Copper Conductors										
1	21.4	22.6	23.7	24.9	26.4	-	-	-	-	-
1.5	14.6	15.4	16.2	17.0	18.0	-	-	-	-	-
2.5	8.76	9.23	9.70	10.2	10.8	-	-	-	-	-
4	5.44	5.73	6.02	6.31	6.70	-	-	-	-	-
6	3.62	3.82	4.01	4.21	4.47	-	-	-	-	-
10	2.10	2.21	2.32	2.44	2.59	-	-	-	-	-
16	1.33	1.40	1.47	1.54	1.64	-	-	-	-	-
25	0.857	0.903	0.949	0.995	1.06	-	-	-	-	-
35	0.609	0.642	0.674	0.707	0.750	-	-	-	-	-
50	0.424	0.447	0.470	0.493	0.523	-	-	-	-	-
70	0.300	0.316	0.332	0.348	0.369	-	-	-	-	-
95	0.228	0.240	0.252	0.264	0.280	-	-	-	-	-
120	0.179	0.188	0.198	0.207	0.219	-	-	-	-	-
150	0.144	0.152	0.159	0.167	0.176	-	-	-	-	-
185	0.119	0.126	0.132	0.138	0.146	-	-	-	-	-
240	0.0920	0.0965	0.101	0.106	0.111	-	-	-	-	-
300	0.0753	0.0789	0.0825	0.0860	0.0905	-	-	-	-	-
400	0.0597	0.0623	0.0649	0.0675	0.0706	-	-	-	-	-

AC RESISTANCES

Table 3.35 Multi Conductor Cables - AC Resistances (mΩ/m)										
Conductor Size	Conductor Temperature									
	Circular Conductors					Shaped Conductors				
(mm^2)	45°C	60°C	75°C	90°C	110°C	45°C	60°C	75°C	90°C	110°C
Aluminium Conductors										
16	2.10	2.22	2.33	2.45	-	2.10	2.22	2.33	2.45	-
25	1.32	1.39	1.47	1.54	-	1.32	1.39	1.47	1.54	-
35	0.956	1.01	1.06	1.11	-	0.956	1.01	1.06	1.11	-
50	0.706	0.745	0.784	0.822	-	0.706	0.745	0.783	0.822	-
70	0.488	0.515	0.542	0.569	-	0.488	0.515	0.542	0.568	-
95	0.353	0.373	0.392	0.411	-	0.353	0.372	0.392	0.411	-
120	0.280	0.295	0.310	0.325	-	0.279	0.295	0.310	0.325	-
150	0.228	0.241	0.253	0.265	-	0.228	0.240	0.253	0.265	-
185	0.182	0.192	0.202	0.212	-	0.182	0.192	0.202	0.211	-
240	0.140	0.148	0.155	0.162	-	0.139	0.147	0.154	0.162	-
300	0.113	0.119	0.125	0.131	-	0.112	0.118	0.124	0.130	-
400	0.0897	0.0943	0.0988	0.103	-	0.0886	0.0932	0.0978	0.102	-

REACTANCES

Table 3.36 Reactance at 50 Hz of Single Core Cables (mΩ/m)				
Conductor Size	Insulation Material			
	Single Phase, or Three Phase Trefoil		Three Phase Flat Touching	
(mm^2)	PVC	XLPE	PVC	XLPE
1	0.168	0.166	0.184	0.181
1.5	0.157	0.155	0.172	0.170
2.5	0.143	0.141	0.159	0.156
4	0.137	0.131	0.152	0.146
6	0.128	0.123	0.143	0.138
10	0.118	0.114	0.134	0.129
16	0.111	0.106	0.126	0.122
25	0.106	0.102	0.121	0.118
35	0.101	0.0982	0.117	0.113
50	0.0962	0.0924	0.111	0.108
70	0.0917	0.0893	0.107	0.104
95	0.0904	0.0868	0.106	0.102
120	0.0870	0.0844	0.102	0.0996
150	0.0868	0.0844	0.102	0.0996
185	0.0862	0.0835	0.101	0.0988
240	0.0847	0.0818	0.0999	0.0970
300	0.0839	0.0809	0.0991	0.0961
400	0.0829	0.0802	0.0982	0.0955
500	0.0820	0.0796	0.0973	0.0948
630	0.0800	0.0787	0.0952	0.0940
800				

REACTANCES (FLEXIBLE)

Table 3.37 Reactance at 50 Hz of Single Core Cables (mΩ/m)				
Conductor Size	Insulation Material (Flexible Cord & Flexible Cable)			
	Single Phase, or Three Phase Trefoil		Three Phase Flat Touching	
(mm^2)	PVC	XLPE	PVC	XLPE
1	0.161	0.158	0.176	0.173
1.5	0.150	0.148	0.165	0.163
2.5	0.139	0.137	0.155	0.153
4	0.132	0.126	0.147	0.141
6	0.124	0.119	0.139	0.134
10	0.112	0.107	0.127	0.123
16	0.105	0.101	0.120	0.116
25	0.101	0.0973	0.116	0.113
35	0.0961	0.0930	0.111	0.108
50	0.0938	0.0901	0.109	0.105
70	0.0894	0.0869	0.105	0.102
95	0.0885	0.0849	0.104	0.100
120	0.0854	0.0828	0.101	0.0980
150	0.0853	0.0830	0.101	0.0982
185	0.0847	0.0821	0.0999	0.0973
240	0.0835	0.0808	0.0988	0.0960
300	0.0830	0.0800	0.0982	0.0953
400	0.0814	0.0788	0.0966	0.0941
500	0.0803	0.0780	0.0955	0.0932
630	0.0789	0.0777	0.0941	0.0929
800	-	-	-	-

REACTANCES

Table 3.38 Reactance at 50 Hz of Multicore Cables (mΩ/m)

Conductor Size	Insulation Material			
	Circular Conductors		Shaped Conductors	
(mm^2)	PVC	XLPE	PVC	XLPE
1	0.119	0.114	-	-
1.5	0.111	0.107	-	-
2.5	0.102	0.0988	-	-
4	0.102	0.0930	-	-
6	0.0967	0.0887	-	-
10	0.0906	0.0840	-	-
16	0.0861	0.0805	-	-
25	0.0853	0.0808	0.0786	0.0744
35	0.0826	0.0786	0.0761	0.0725
50	0.0797	0.0751	0.0734	0.0692
70	0.0770	0.0741	0.0710	0.0683
95	0.0766	0.0725	0.0706	0.0668
120	0.0743	0.0713	0.0685	0.0657
150	0.0745	0.0718	0.0687	0.0662
185	0.0744	0.0720	0.0686	0.0663
240	0.0735	0.0709	0.0678	0.0653
300	0.0732	0.0704	0.0675	0.0649
400	0.0728	0.0702	0.0671	0.0647

REACTANCES (FLEXIBLE)

Table 3.39 Reactance at 50 Hz of Multicore Cables (mΩ/m)				
Conductor Size	Insulation Material (Flexible Cord & Flexible Cable)			
	Circular Conductors		Shaped Conductors	
(mm^2)	PVC	XLPE	PVC	XLPE
1	0.116	0.111	-	-
1.5	0.109	0.105	-	-
2.5	0.101	0.0977	-	-
4	0.100	0.0911	-	-
6	0.0954	0.0871	-	-
10	0.0876	0.0810	-	-
16	0.0835	0.0779	-	-
25	0.0829	0.0783	-	-
35	0.0801	0.0761	-	-
50	0.0799	0.0754	-	-
70	0.0773	0.0744	-	-
95	0.0771	0.0729	-	-
120	0.0753	0.0723	-	-
150	0.0755	0.0728	-	-
185	0.0754	0.0730	-	-
240	0.0749	0.0722	-	-
300	0.0747	0.0718	-	-
400	0.0738	0.0714	-	-

VOLTAGE DROP GRAPHS

This information seeks to provide a quick means of selecting the size of cable to comply with voltage drop requirements. The range of graphs is intended to cover normal stock cables available from Nexans.

Basis of Graphs

New Zealand regulations allow a maximum voltage drop of 5% from the point of supply to anywhere in the installation.

The graphs have been drawn for a voltage drop of 2.5% with the standard New Zealand supply voltages. i.e. 5.75 volts for single phase 230 volt systems, or 10 volts for three phase 400 volt systems.

For installations involving mains, sub-mains and circuits, larger cable sizes may be necessary than these graphs show, to keep the voltage drop in the complete installation under the maximum allowed by the regulations.

The graphs are drawn to allow for the highest current with the cable installed under any of the standard installation conditions as per this section or the Nexans New Zealand Handbook

It is important to check that the cable will carry the required maximum load under the particular conditions of the actual installation proposed.

In cases where the load current is significantly less than the maximum for the cable, the temperature of the conductor will be less than the maximum allowed. Hence the actual voltage drop will be lower than that shown by the graphs.

Use of the Graphs

Assuming that the load current and length of run are known.

Select the graph appropriate for the cable under consideration, whether single phase or three phase, and for single core cables whether laid in trefoil or flat configuration.

Locate the intersecting point on the graph for the required values of load current and length of run.

For this point read the conductor size indicated for the graph line either on or above the point.

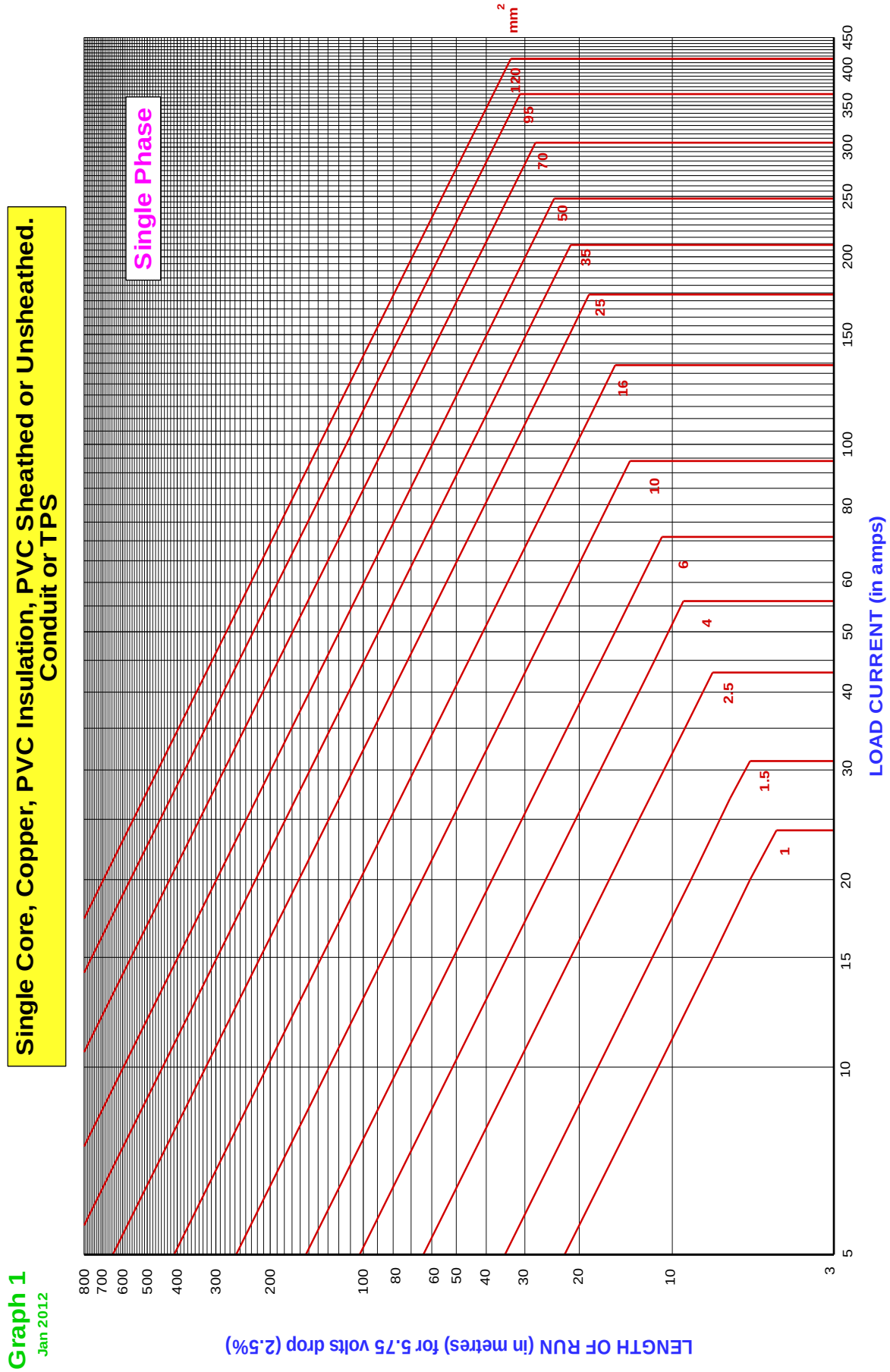
Check that the required load current is within the maximum for the cable size under the intended installation conditions, using either this section, the Nexans New Zealand Handbook or AS/NZS 3008.1.2.

Disclaimer

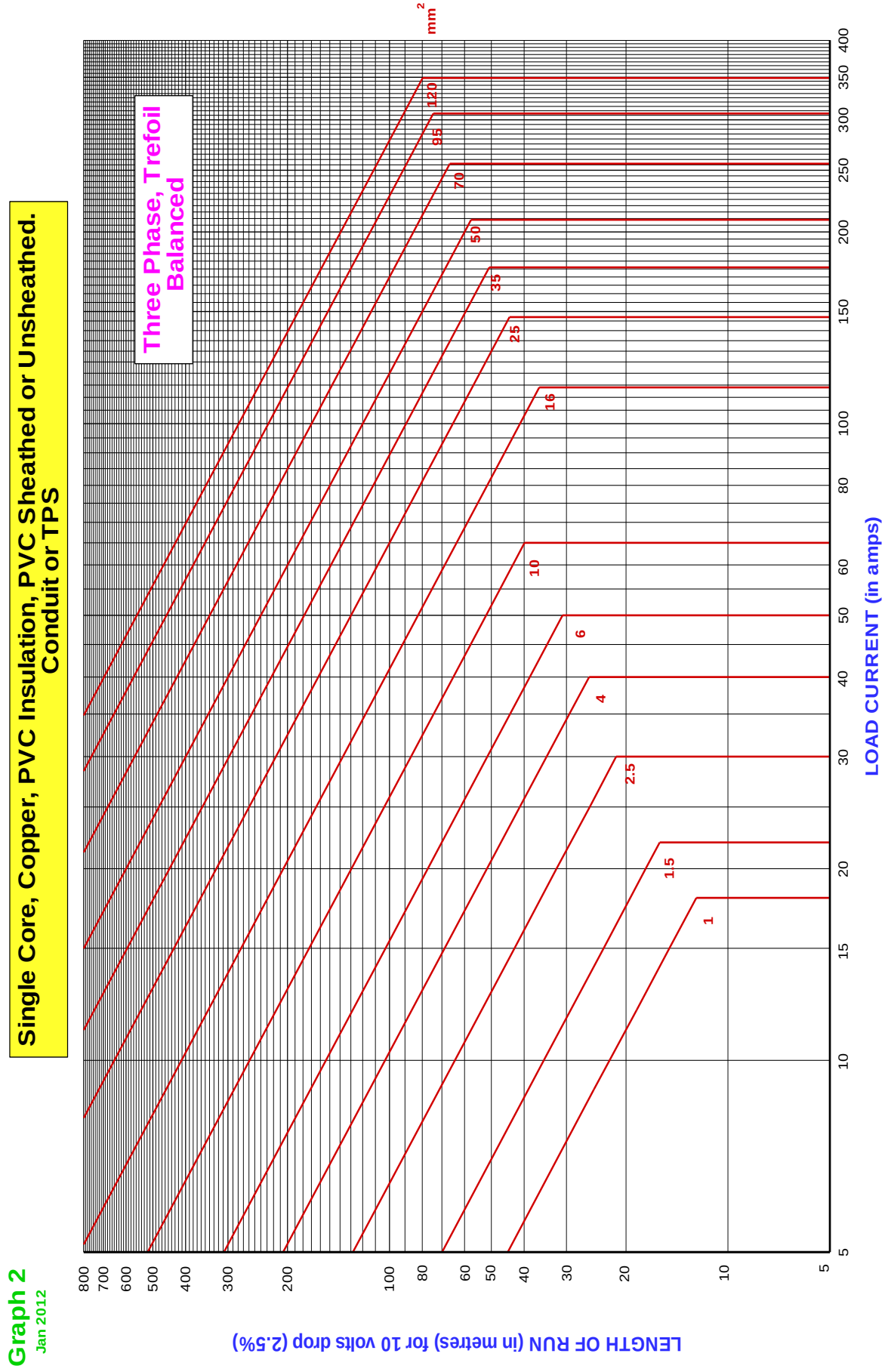
Nexans New Zealand Limited has taken every precaution to ensure that the information contained in these graphs is in line with the requirements of the appropriate New Zealand Standards and correct electrical practice. However, we accept no liability of any kind with respect to the information presented here.

It is the responsibility of the Electrician signing the Certificate of Compliance to ensure that all the requirements of the Wiring Regulations are met.

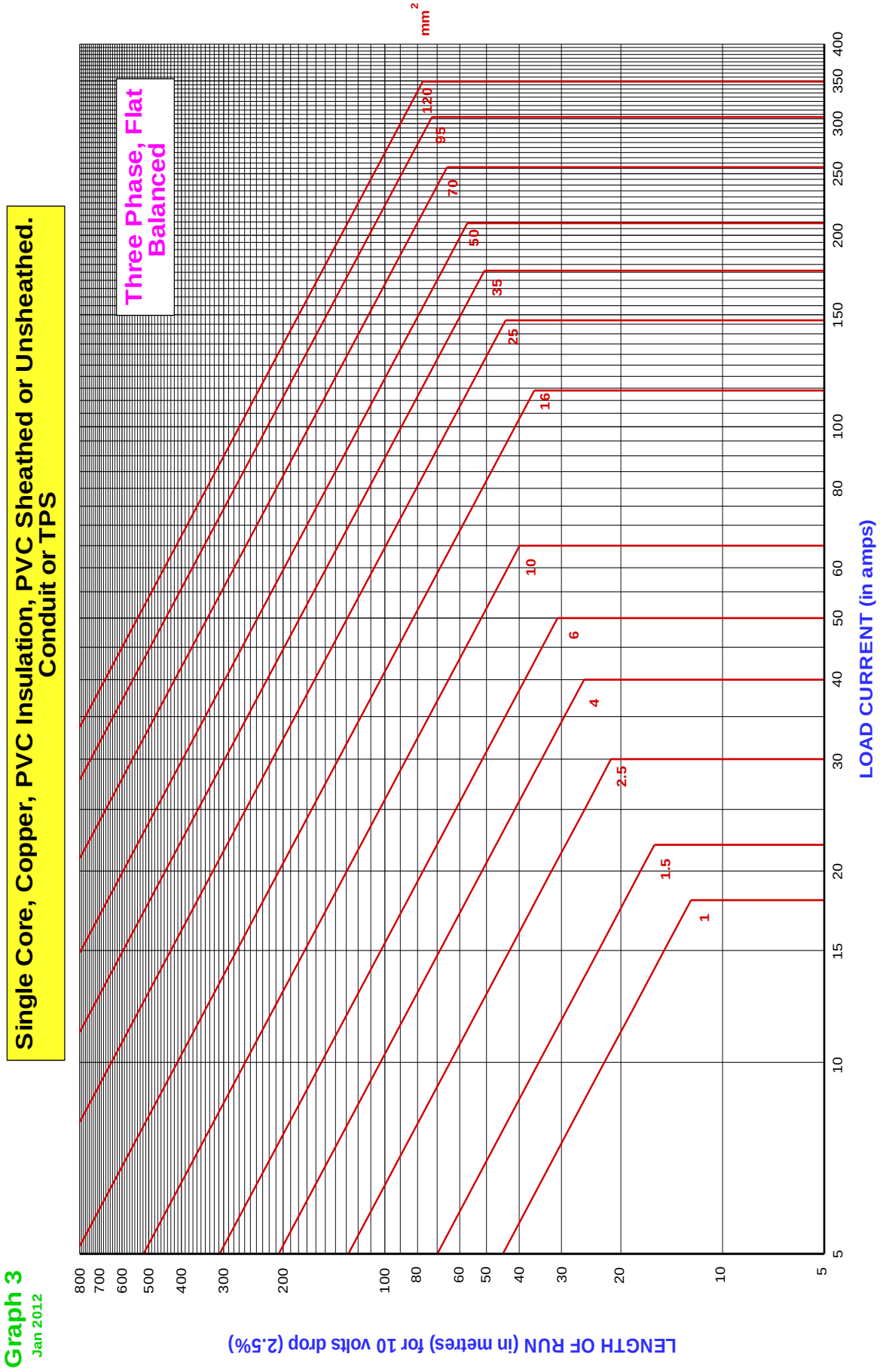
LIST OF GRAPHS



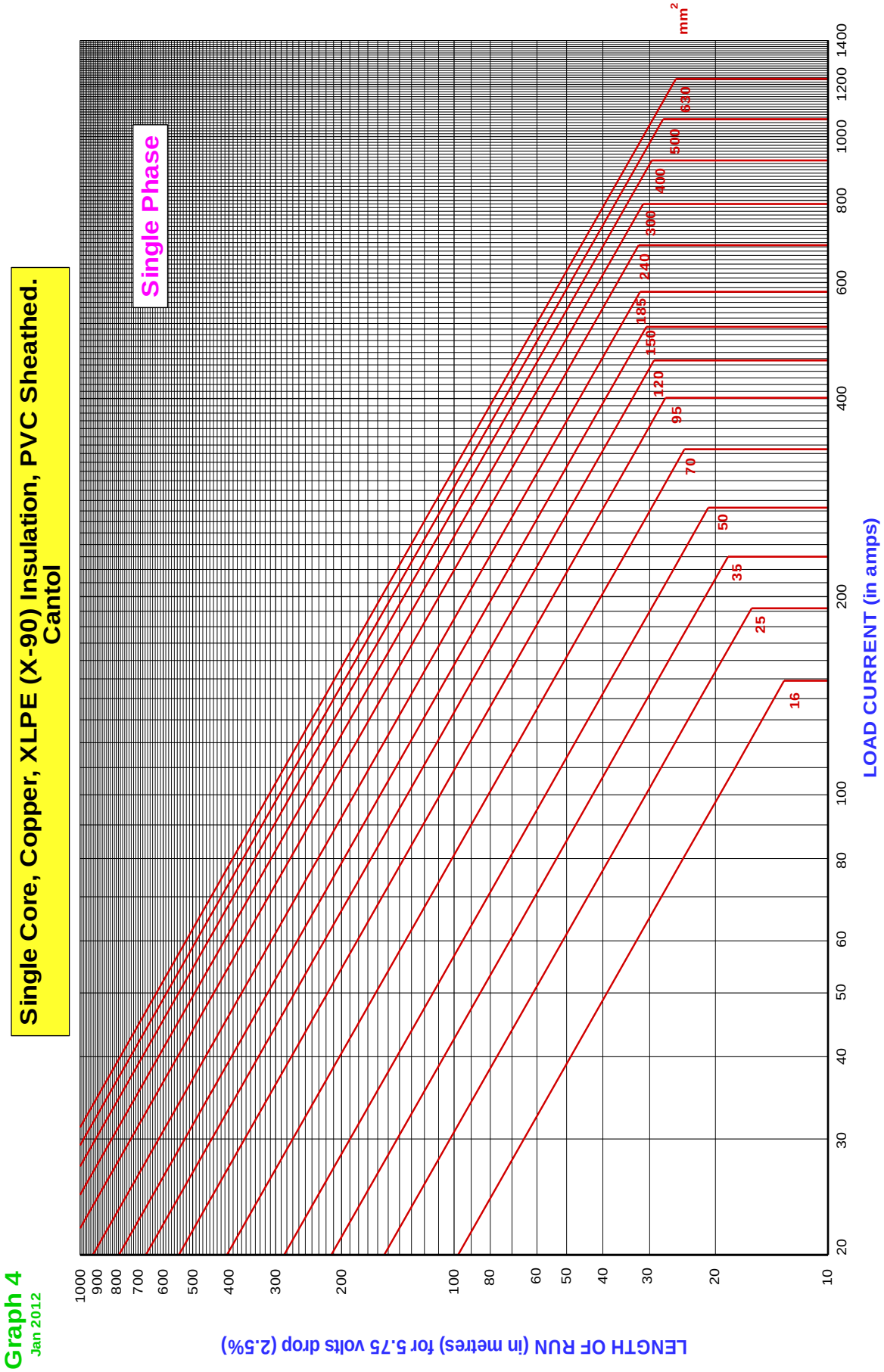
Graph 1
Jan 2012



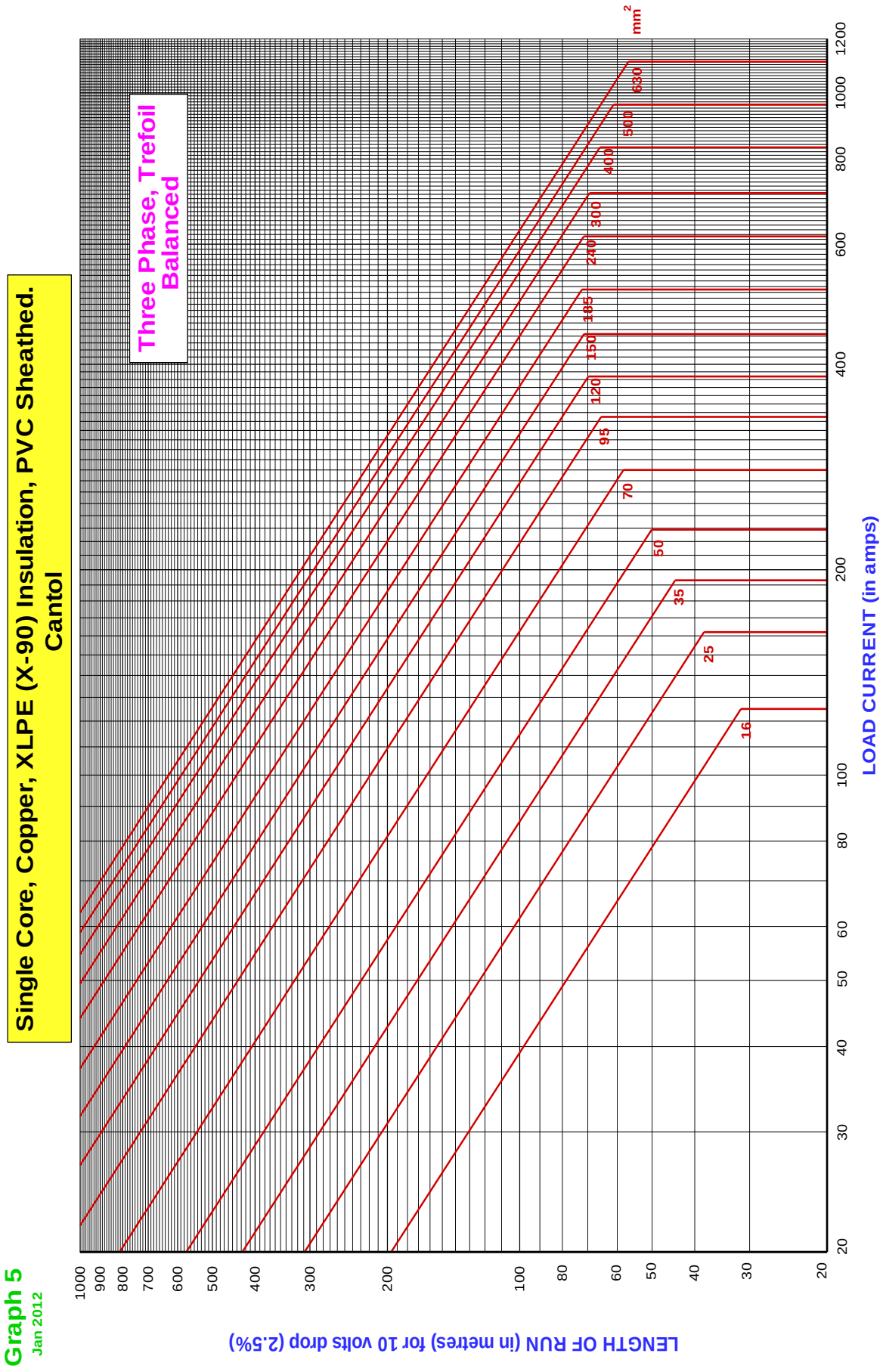
Graph 2
Jan 2012



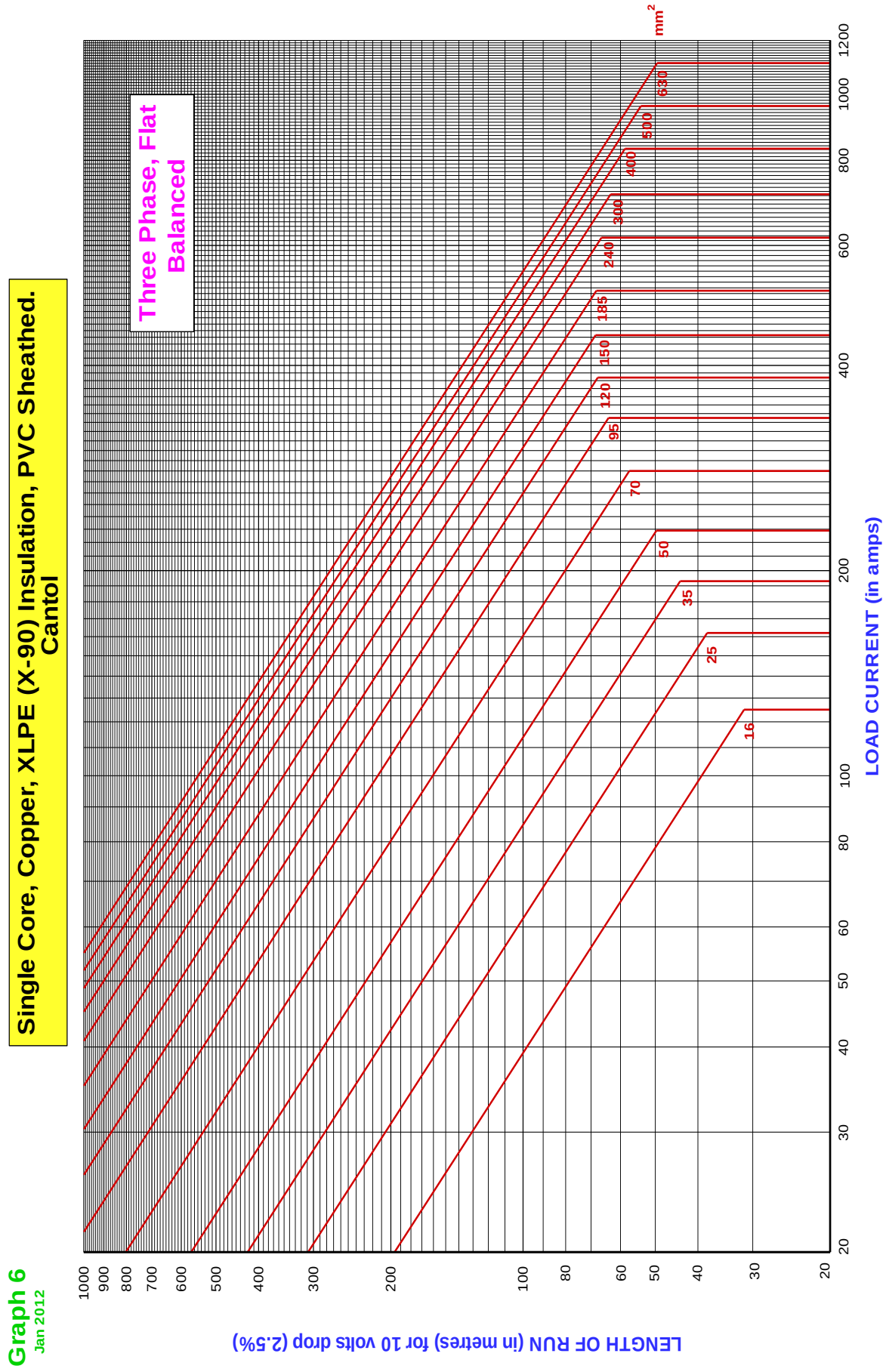
Graph 3
Jan 2012



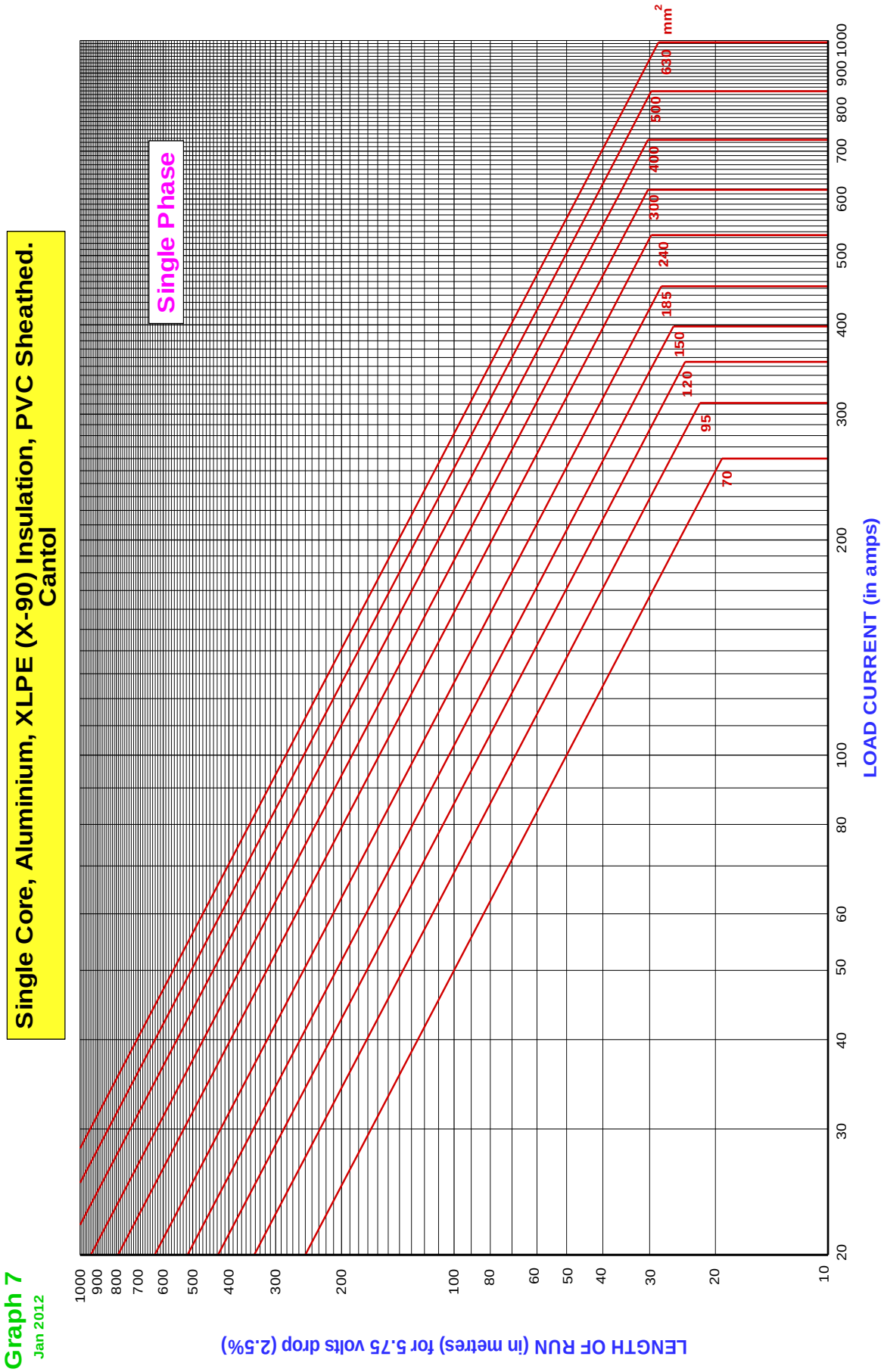
Graph 4
Jan 2012



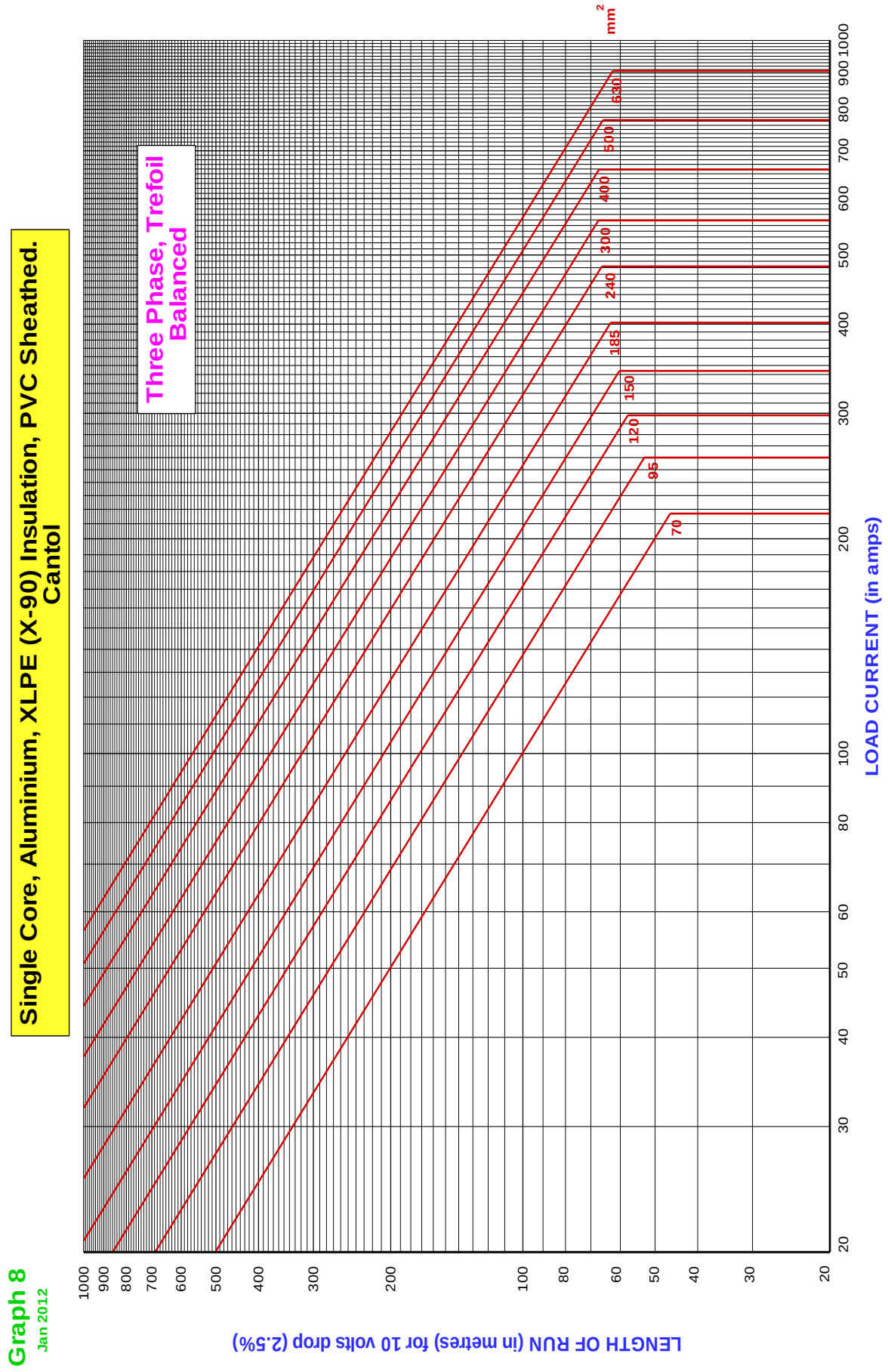
Graph 5
Jan 2012

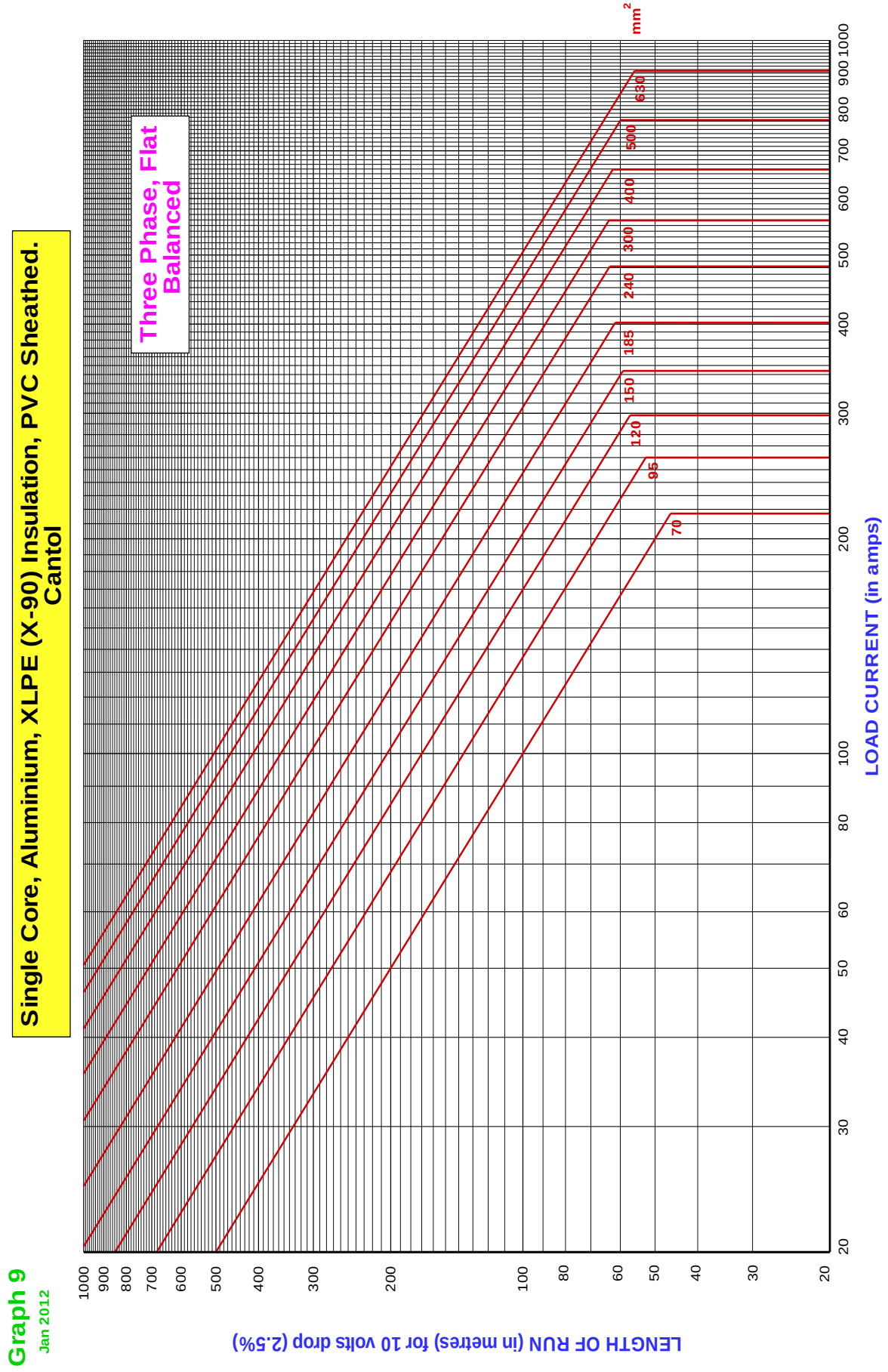


Graph 6
Jan 2012

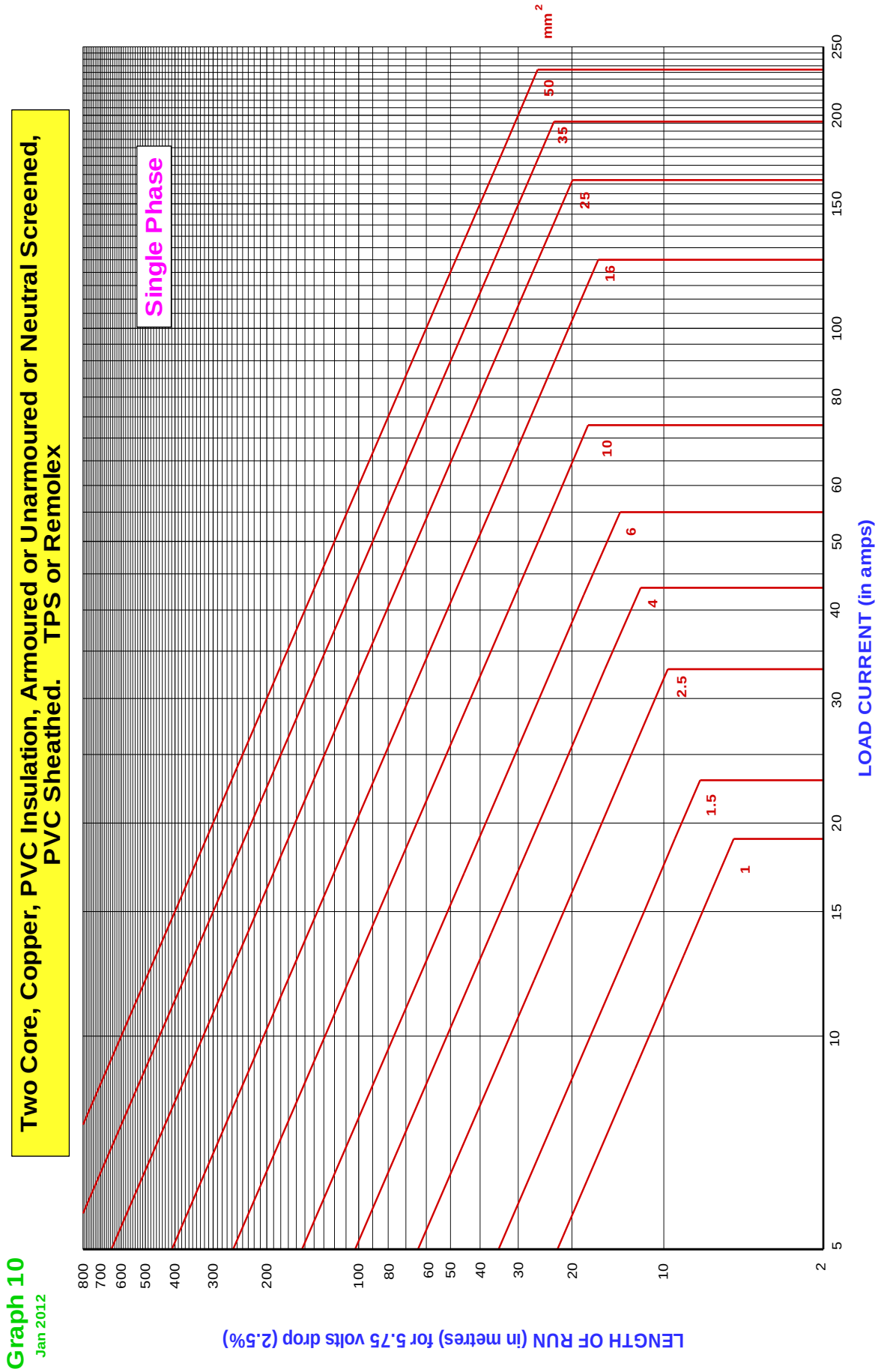


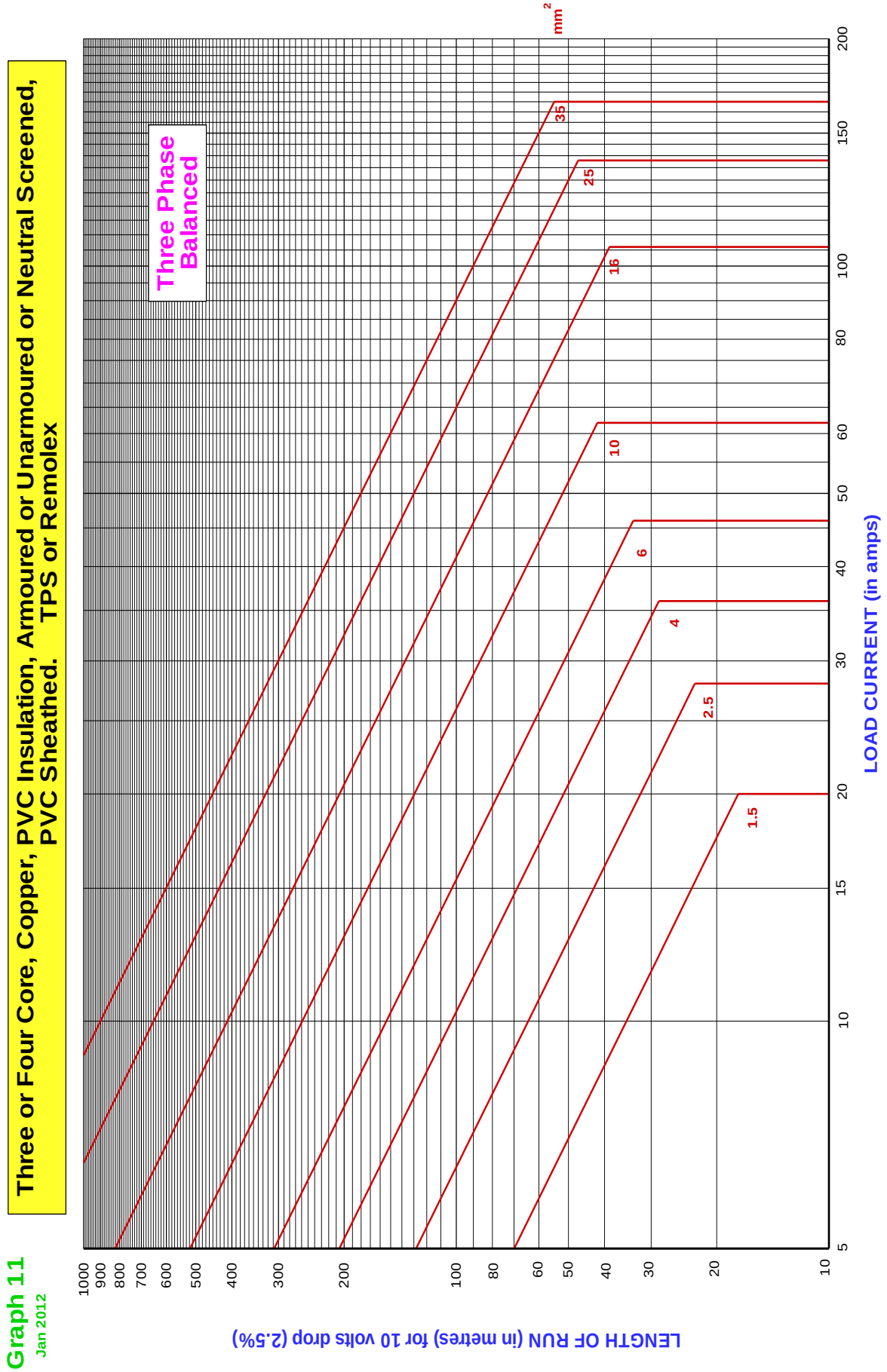
Graph 7
Jan 2012

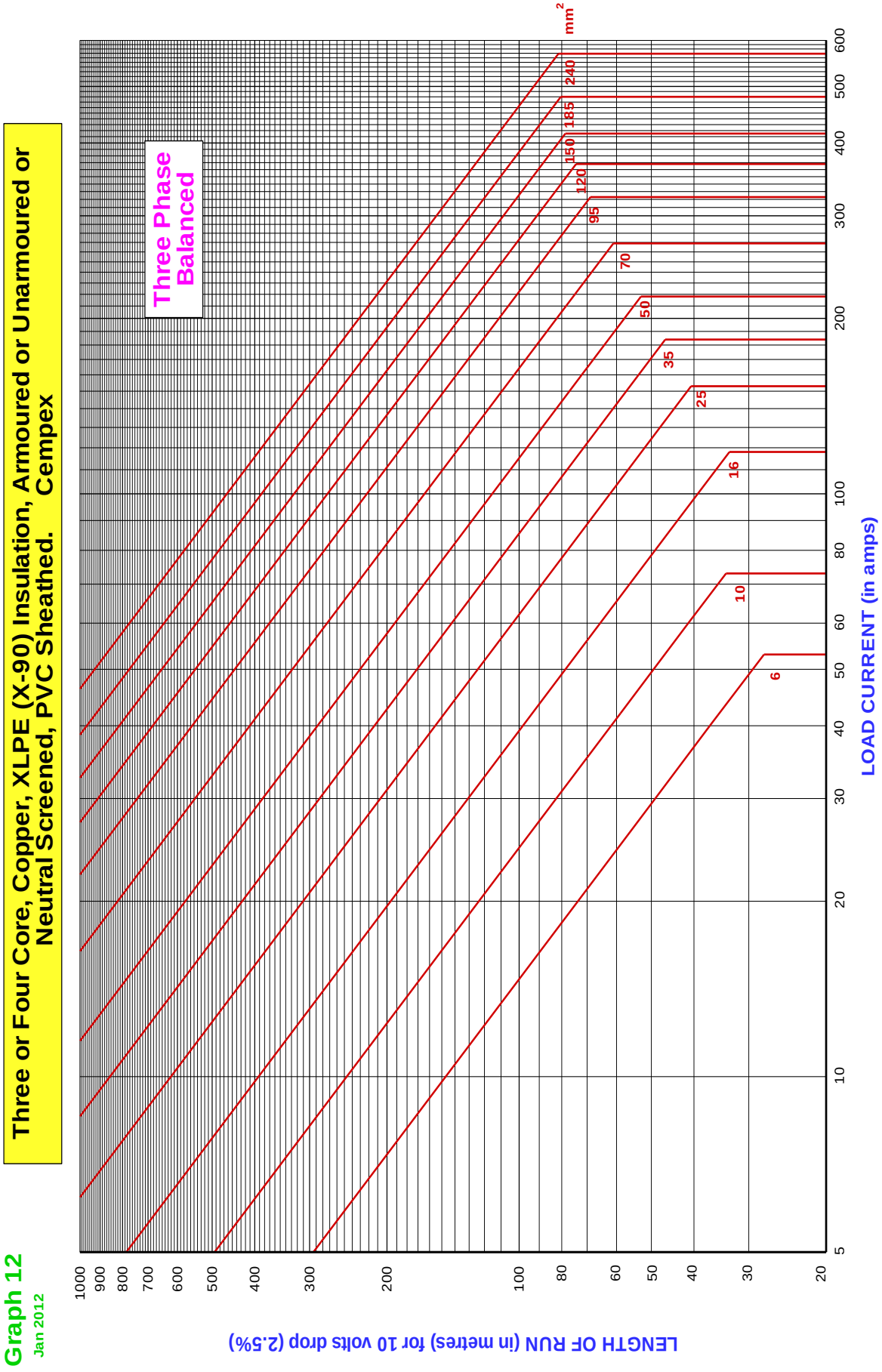

Single Core, Aluminium, XLPE (X-90) Insulation, PVC Sheathed.
Cantol
Three Phase, Trefoil
Balanced
Graph 8
Jan 2012
LENGTH OF RUN (in metres) for 10 volts drop (2.5%)
LOAD CURRENT (in amps)
mm²
70
95
120
150
185
240
300
400
500
630
1000
900
800
700
600
500
400
300
200
100
80
60
50
40
30
20



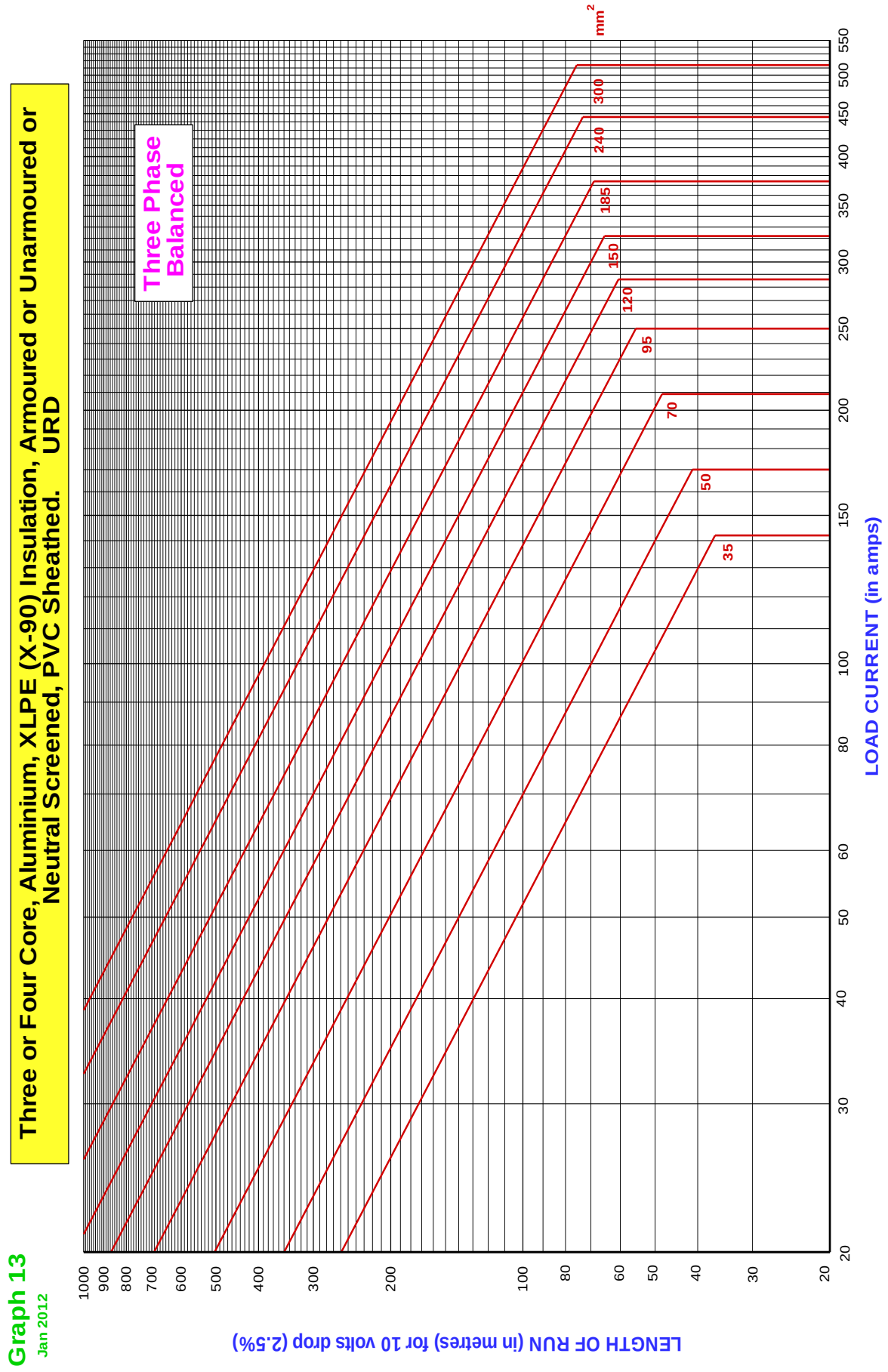
Graph 9
Jan 2012


Graph 10
Jan 2012
Two Core, Copper, PVC Insulation, Armoured or Unarmoured or Neutral Screened, PVC Sheathed. TPS or Remolex
Single Phase
mm 2
1
1.5
2.5
4
6
10
16
25
35
50
LOAD CURRENT (in amps)
LENGTH OF RUN (in metres) for 5.75 volts drop (2.5%)


Graph 11
Jan 2012
Three or Four Core, Copper, PVC Insulation, Armoured or Unarmoured or Neutral Screened, PVC Sheathed. TPS or Remolex
Three Phase Balanced
mm²
1.5
2.5
4
6
10
16
25
35
LOAD CURRENT (in amps)
LENGTH OF RUN (in metres) for 10 volts drop (2.5%)
5
10
15
20
30
40
50
60
80
100
150
200
10
20
30
40
50
60
80
100
200
300
400
500
600
700
800
900
1000



Graph 12
Jan 2012



Graph 13
Jan 2012

NOTES