WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Company Directive

STANDARD TECHNIQUE: SD8B/4 (Part 1)

Relating to LV Underground Cable Ratings

Policy Summary

This Part 1 document contains the LV cable ratings for the various types of LV cables used within Western Power Distribution at voltages from 400V to 230 Volts. It assumes that the cable will be subjected to the cyclic load as given by the curve in figure one. If other load curves are required contact the Company Cable Engineer.

This Part 1 Standard Technique should be used when designing any LV electricity distribution network that has underground cables in it.

Author	**Richard Summers**
Implementation Date	**July 2016**
Approved by	**Policy Manager**
Date	12 July 2016

IMPLEMENTATION PLAN

Introduction

This document replaces the existing version, ST:SD8B/3. The aim of these updates is to align the cable ratings with the installation methods used in other documents.

Main Changes

The main changes to this document are shown below. For a full list of changes please see the Document Revision Table.

- Air ratings for LV single core Solid Al cables updated to show seasonal temperatures
- The installation parameters for LV single core Solid Al cables have been updated to align with current installation practices.

Impact of Changes

No major impact, document aligns with current engineering practice

Implementation Actions

Team Managers will be responsible for making Planners aware of these changes

Implementation Timetable

The document can be implemented with immediate effect.

Document Revision & Review Table		
Date	**Comments**	**Author**
July 2016	• In air ratings for LV single core Solid Al updated to take into account seasonal temperatures • Parameters for the installation of LV single core Solid Al cables updated to align with current installation practices.	**Richard Summers**

1.0 INTRODUCTION

This Standard Technique replaces Standard Technique ST: SD 8B/2.

This Part 1 document of ST: SD 8B sets out the all the WPD, LV underground cable Sustained ratings, Cyclic ratings and Distribution ratings for winter, spring, summer and autumn which are to be applied to all LV cables used on the WPD network. These ratings are based on Crater for LV Cables.

2.0 UNDERGROUND CABLES

The main factors governing the rating of underground cables are: -

Maximum depth of lay;

Soil thermal resistivity Tr (g);

Ground ambient temperature (^{O}C);

Air ambient temperature (^{O}C);

Cyclic loading conditions;

Maximum permissible conductor temperature;

Proximity to other cables;

Whether the cable is laid direct in the ground, in ducts or in air.

Duct dimensions

3.0 CRITERIA

3.1 General criteria for LV cables (applies to Paper, EPR and XLPE cables)

A winter soil resistivity of 0.9^{O}Cm/W and a summer soil resistivity of 1.2^{o}Cm/W are considered realistic for the WPD area, although the possibility of localised higher values may need to be taken into account. To control the thermal resistivity of the surrounding medium then the best example would be to use cement bound sand (CBS) backfill for a cable route, but this is expensive. Generally crushed Limestone dust or crushed Granite dust 3mm to dust is suitable as this gives a Tr of 1.2^{o}Cm/W.

Ground ambient temperatures across the WPD area vary between 7^{O}C in the winter and 15^{O}C in the summer. These values apply in most locations, but winter ground temperatures in the city centres will be about 2^{O}C higher.

3.2 The current ratings quoted in this document are maximum values, based on balanced loads.

3.3 The current ratings quoted apply to cables supplying loads, during the requisite season.

3.4 The current ratings specified are to be adjusted where the conditions are known to vary from those quoted in this instruction i.e. high summer loads or grouping.

3.5 The maximum conductor temperature for paper cable is 65^{o}C. Although the maximum conductor temperature for PE, EPR and XLPE insulated cables is 90^{o}C, the maximum temperature that any LV PVC circuit is to be run at is 70°C.

3.6 When two or more cables or trefoil groups are laid in the same trench then a derating factor needs to be applied to both circuits. The amount of derating is dependant upon the spacing of the circuits. All spacing distances quoted in this document are **centre-to-centre** spacing's of the cables or trefoil groups.

3.7 Only the LV Ratings are now included in this document.

3.8 The ratings are detailed as **Sustained** - Winter, Spring, Summer and Autumn; **Cyclic** - Winter, Spring, Summer and Autumn; **Distribution** - Winter, Spring, Summer and Autumn; for each of the cable types included in this document.

3.9 Each cable type for which ratings have been generated the typical assumed installation conditions are given in the formation shown below: -

Depth of lay 0.6m;

Soil resistivity of 0.9^{O}Cm/W;

Ground ambient temperature of 10^{O}C;

Maximum conductor temperature of 80^{o}C for LV.

No allowance made for grouping of cable circuits.

4.0 DEFINITIONS

All LV single core circuits, for the purpose of this document, have been assumed to be three single-core cables laid touching, throughout their length, in trefoil formation. That the aluminium wire armours or the lead sheaths of the cables have been solidly bonded together and earthed at both ends of the circuit.

It should be noted that when single core cable, which has been laid in trefoil, a maximum of 12% of the TOTAL ROUTE LENGTH, can be laid in flat space configuration without affecting the trefoil rating. If more than 12% of the Total Route Length is laid in flat space configuration then high circulating currents will flow in the aluminium wire armours or the lead sheath of the single core cables. This must be

avoided. If the 12% cannot be achieved then contact the Company Cable Engineer at Avonbank.

4.1 Sustained, Continuous or Steady-State rating

The sustained rating is the maximum continuous current that can be carried, in defined conditions, without the assumed maximum conductor temperature being exceeded.

4.2 Cyclic rating

A cyclic rating is the maximum current that maybe carried during the prolonged application of a succession of identical 24-hour load cycles, without the assumed maximum conductor temperature being exceeded.

4.3 Distribution rating

Distribution ratings are ratings calculated for stated conditions commonly occurring on distribution systems. The tabulated ratings given are 3 to 5 day limited time cyclic ratings.

The basis of the Distribution ratings is given below: -

Quantity and value assumed in calculating Distribution Ratings	Conditions for which valid.
Assumed maximum conductor temperature	80°C
Depth of Laying 0.8m	Nominal laying depth, direct or in ducts.
Soil Ambient Temp. 10°C	Winter peak loads in UK.
Soil Thermal resistivity for cables laid direct or in ducts g = 0.9°C.m/W	(a) Summer load not greater than 75% of winter load. (b) Either special measures taken for difficult soils OR increased risk accepted.
Soil Thermal Diffusivity needed for transient conditions 0.5×10^{-6} m²/s	G = 0.9°C.m/W
Ambient conditions Cables in Air 10°C Solar gain neglected	(a)Maximum load in winter. (b) Heating from adjacent equipment not excessive. (c) Shielded from the sun.
Other Heat Sources None	No allowance made for grouping.
Cyclic Loading For cables laid direct or in ducts 24 hr load cycle.	Daily cyclic load typical domestic/commercial type.
Limited-time Rating Normal conditions restored after 3 – 5 days.	Two-feeder open-ring operation.

4.4 Utilisation factor

The percentage of a cable's distribution rating which is not exceeded during its normal operational condition. Distribution ratings are based on an initial cable utilisation of 50%; if a circuit has a higher utilisation factor such as 75% then the Distribution rating must be reduced by 2.5%.

4.5 Load Factor

The ratio of the number of units supplied during a given period, to the number of units that would be supplied, had the maximum demand been maintained throughout that period. This is usually expressed as a percentage.

4.6 Soil thermal conductivity

The soil thermal conductivity is the thermal transmission in unit time through unit area of homogeneous soil of unit thickness, when unit difference of temperature is established between its surfaces.

4.7 Soil thermal resistivity

The ratings given are calculated for a damp thermal resistivity, which is suitable for rating cables for winter-peak loads.

4.8 Ground ambient temperature

Where a cable circuit carries a sustained load and does not have a seasonal variation it should be rated for the maximum summer value of ground temperature.

4.9 Ducts

A duct up to 15m in length can be used without derating the cable. Two or more duct lengths can be used on a section, provided that there is no more than 30m of duct in a particular 250m cable section and that there is a minimum of 10m separation between each duct length. See the example given below.

Example of two 15m-duct lengths in a 250m-cable section.

The correct duct rating shall be used if 15m or more of continuous duct is installed on a particular 250m-cable section. This rating is dependant upon the type of ducting used, for this reason the ratings given in the tables contain values for both smooth walled “PVC” and “Rigiduct” (Rigiduct is a twin walled duct) type ducting.

The rating of the cable section can be restored if the ducts are bentonited after the cables have been installed. To ensure the thermal equivalence to the direct buried parts of the route, the ducts shall be completely filled with a bentonite-sand-cement mixture.

The filling medium shall be prepared by adding 20 parts of sand and 8 parts of cements, by weight, to 100 parts of a 10:1 water/bentonite mixture.

Note: - Provided the bentonite is sealed into the duct with duct seals, and then the bentonite forms a gel, which is stabilized by the cement, and the addition of sand increases the load-bearing properties of the mixture. Should it be necessary to remove this mixture, it may be flushed out of the ducts by using high-pressure water jets.

Ducts, which are filled with a bentonite mixture, shall be installed wherever possible in a concrete surround but if not, any joints in the duct run must be effectively sealed. At the duct ends, the gap around the cable must be effectively sealed to prevent migration of the bentonite mixture and preserve its moisture content under service conditions.

In general duct lengths of up to 100m can be filled where a standard 150mm nominal bore duct is installed.

Note: - When installing a three phase circuit of single core cables in a duct all three cables need to be pulled together during the installation. Otherwise if the cables are installed singularly only two cables will fit in the duct.

4.10 Cables exposed to the sun

To reduce the effect of solar radiation it is recommended that cables should be shielded from direct rays of the sun without the restriction of the ventilation.

4.11 Effects of grouping of cables

No allowance has been made for grouping in the ratings listed in the tables. Use the correction factors given in Table 1 for various grouping arrangements.

When two or more circuits of the same voltage are laid in close proximity the ratings of the cables must be reduced by multiply the group-rating factor given in Table 1 with the relevant cable rating selected from this document. It should be noted that if thermally independence of both the circuits is required, then the circuits need a centre-to-centre spacing of 2.5m.

All spacing quoted in Table 1, are a centre-to-centre spacing for the relevant circuits.

4.12 Loading Conditions

All the ratings listed in this document are calculated for a particular typical domestic/commercial daily load curve, having a **loss load factor of 0.5**. See Figure 1 for the load curve.

Ratings given for cables installed in air and clipped direct to a wall are the steady-state ratings. Cables installed in this manner **DO NOT HAVE** a Cyclic or Distribution rating just their sustained or steady state rating.

4.13 Loading Conditions - Abnormally high neutral currents

Abnormally high neutral currents which can occur due to the addition of triplen harmonic currents (3rd & 9th) generated by customers with very high proportions of single phase non-linear loads such as data centres/call centres with predominantly PC loads or special applications such as flower farms with artificial lighting controlled by single phase Thyristor dimmers. If this is the case then please refer to ST: SD6F section 6.6, where there is a cable rating assessor spreadsheet.

A simple solution where this is a problem is to use 4 core wavecon in a CNE or PME system, by combing the neutral and the earth the neutral conductor will then be at 1.5 times for a 300mm² wavecon cable.

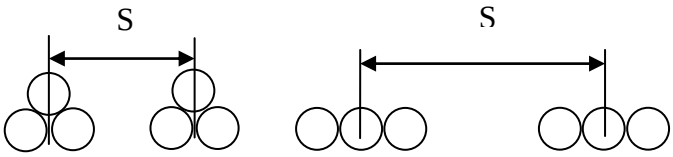
5.0 FURTHER GUIDANCE

If required, further guidance should be sought from the Company Cable Engineer, Policy Section, Avonbank, Feeder Road, Bristol where necessary.

5.1 INDEX

TABLE 1

GROUP DERATING FACTORS FOR CIRCUITS OF THREE SINGLE-CORE CABLES, IN TREFOIL or LAID FLAT, HORIZONTAL FORMATION, LAID DIRECT.



Type of Cable	No. of Circuits	Spacing of Circuits – Metre (S).					
		Touching		0.15	0.20	0.3	0.45
		Trefoil	Laid Flat				
LV Cables	2	0.77	0.80	0.82	0.84	0.88	0.90
	3	0.65	0.68	0.72	0.75	0.79	0.83
	4	0.59	0.63	0.62	0.67	0.75	0.81
	5	0.55	0.58	0.63	0.67	0.72	0.78

Figure 1

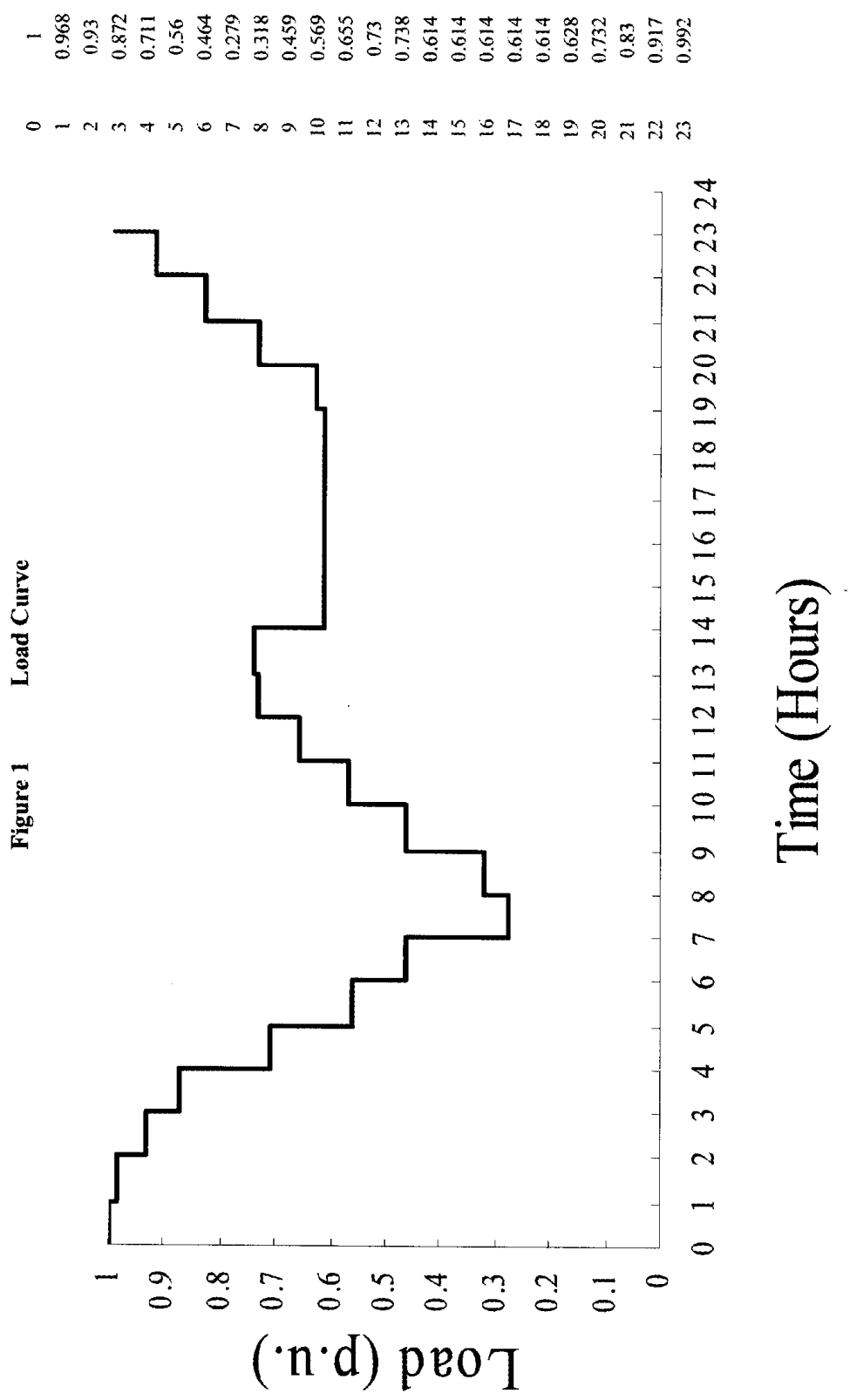


Figure 1 Load Curve
0 1
1 0.968
2 0.93
3 0.872
4 0.711
5 0.56
6 0.464
7 0.279
8 0.318
9 0.459
10 0.569
11 0.655
12 0.73
13 0.738
14 0.614
15 0.614
16 0.614
17 0.614
18 0.614
19 0.628
20 0.732
21 0.83
22 0.917
23 0.992
Load (p.u.)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Time (Hours)

TABLE A1 win

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Winter *SUSTAINED* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**SUSTAINED CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Copper conductors				
95mm² Cu.	334	262	250	329
185mm² Cu.	489	387	366	509
300mm² Cu.	637	506	476	688
Stranded & Shaped Aluminium conductors				
95mm² Al.	259	203	194	256
185mm² Al.	383	303	287	399
300mm² Al.	505	402	378	546
Solid & Shaped Aluminium conductors				
95mm² Al.	255	200	191	248
185mm² Al.	376	297	282	386
300mm² Al.	496	394	371	527

Parameters

Maximum depth of lay	0.6m
Soil Thermal Resistivity (g)	0.9^{O}C m/W
Ground Temperature	10^{O}C
Ambient Temperature	10^{O}C
Maximum Conductor Temperature	70^{O}C

Ratings based on Crater for LV cables.

TABLE A1 win

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Winter *CYCLIC* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**CYCLIC CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Copper conductors				
95mm² Cu.	369	277	262	329
185mm² Cu.	550	413	387	509
300mm² Cu.	724	544	507	688
Stranded & Shaped Aluminium conductors				
95mm² Al.	287	215	204	256
185mm² Al.	431	323	304	399
300mm² Al.	574	432	402	546
Solid & Shaped Aluminium conductors				
95mm² Al.	281	210	200	248
185mm² Al.	421	316	298	386
300mm² Al.	560	422	394	527

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9^{O}C m/W
Ground Temperature	10^{O}C
Ambient Temperature	10^{O}C
Maximum Conductor Temperature	70^{O}C

Ratings based on Crater for LV cables.

TABLE A1 win

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Winter *DISTRIBUTION* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	DISTRIBUTION CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Copper conductors				
95mm² Cu.	386	283	267	329
185mm² Cu.	577	424	396	509
300mm² Cu.	762	561	519	688
Stranded & Shaped Aluminium conductors				
95mm² Al.	300	220	207	256
185mm² Al.	452	332	310	399
300mm² Al.	604	445	412	546
Solid & Shaped Aluminium conductors				
95mm² Al.	293	215	203	248
185mm² Al.	441	324	304	386
300mm² Al.	589	432	403	527

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9^{O}C m/W
Ground Temperature	10^{O}C
Ambient Temperature	10^{O}C
Maximum Conductor Temperature	70^{O}C

Ratings based on Crater for LV cables.

TABLE A2 spr

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Spring *SUSTAINED* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**SUSTAINED CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Copper conductors				
95mm² Cu.	313	254	242	329
185mm² Cu.	456	373	354	509
300mm² Cu.	593	488	460	688
Stranded & Shaped Aluminium conductors				
95mm² Al.	243	197	188	256
185mm² Al.	358	293	278	399
300mm² Al.	471	387	365	546
Solid & Shaped Aluminium conductors				
95mm² Al.	239	193	185	248
185mm² Al.	352	287	273	386
300mm² Al.	462	380	359	527

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05^{O}C m/W
Ground Temperature	12^{O}C
Ambient Temperature	12^{O}C
Maximum Conductor Temperature	70^{O}C

Ratings based on Crater for LV cables.

TABLE A2 spr

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Spring *CYCLIC* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**CYCLIC CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Copper conductors				
95mm² Cu.	349	270	256	329
185mm² Cu.	518	402	378	509
300mm² Cu.	681	530	494	688
Stranded & Shaped Aluminium conductors				
95mm² Al.	271	210	199	256
185mm² Al.	406	315	296	399
300mm² Al.	540	420	392	546
Solid & Shaped Aluminium conductors				
95mm² Al.	265	206	196	248
185mm² Al.	397	309	291	386
300mm² Al.	527	411	385	527

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05^{o}C m/W
Ground Temperature	12^{o}C
Ambient Temperature	12^{o}C
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE A2 spr

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Spring *DISTRIBUTION* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**DISTRIBUTION CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Copper conductors				
95mm² Cu.	367	284	268	329
185mm² Cu.	547	425	397	509
300mm² Cu.				688
Stranded & Shaped Aluminium conductors				
95mm² Al.	285	220	208	256
185mm² Al.	428	333	311	399
300mm² Al.	571	447	414	546
Solid & Shaped Aluminium conductors				
95mm² Al.	279	215	204	248
185mm² Al.	418	325	305	386
300mm² Al.	558	436	405	527

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05^{O}C m/W
Ground Temperature	12^{O}C
Ambient Temperature	12^{O}C
Maximum Conductor Temperature	70^{O}C

Ratings based on Crater for LV cables.

TABLE A3 sum

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Summer *SUSTAINED* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Copper conductors				
95mm² Cu.	292	244	233	329
185mm² Cu.	425	358	340	509
300mm² Cu.	551	467	441	688
Stranded & Shaped Aluminium conductors				
95mm² Al.	223	186	178	256
185mm² Al.	327	276	263	399
300mm² Al.	430	364	345	546
Solid & Shaped Aluminium conductors				
95mm² Al.	223	186	178	248
185mm² Al.	327	276	263	386
300mm² Al.	430	364	345	527

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2^{o}C m/W
Ground Temperature	15^{o}C
Ambient Temperature	15^{o}C
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE A3 sum

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Summer *CYCLIC* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Copper conductors				
95mm² Cu.	328	262	249	329
185mm² Cu.	486	389	366	509
300mm² Cu.	638	512	478	688
Stranded & Shaped Aluminium conductors				
95mm² Al.	250	200	190	256
185mm² Al.	372	299	282	399
300mm² Al.	495	397	372	546
Solid & Shaped Aluminium conductors				
95mm² Al.	250	200	190	248
185mm² Al.	372	299	282	386
300mm² Al.	495	397	372	527

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2^{o}C m/W
Ground Temperature	15^{o}C
Ambient Temperature	15^{o}C
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE A3 sum

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Summer *DISTRIBUTION* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	DISTRIBUTION CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Copper conductors				
95mm² Cu.	347	278	263	329
185mm² Cu.	516	416	389	509
300mm² Cu.	679	550	510	688
Stranded & Shaped Aluminium conductors				
95mm² Al.	264	211	200	256
185mm² Al.	395	319	299	399
300mm² Al.	526	426	396	546
Solid & Shaped Aluminium conductors				
95mm² Al.	264	211	200	248
185mm² Al.	395	319	299	386
300mm² Al.	526	426	396	527

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2^{o}C m/W
Ground Temperature	15^{o}C
Ambient Temperature	15^{o}C
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE A4 aut

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Autumn SUSTAINED Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**SUSTAINED CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Copper conductors				
95mm² Cu.	308	252	241	329
185mm² Cu.	449	371	352	509
300mm² Cu.	583	484	457	688
Stranded & Shaped Aluminium conductors				
95mm² Al.	239	196	187	256
185mm² Al.	352	291	276	399
300mm² Al.	463	384	363	546
Solid & Shaped Aluminium conductors				
95mm² Al.	235	192	184	248
185mm² Al.	346	285	271	386
300mm² Al.	454	377	357	527

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1^{o}C m/W
Ground Temperature	12^{o}C
Ambient Temperature	12^{o}C
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE A4 aut

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Autumn *CYCLIC* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**CYCLIC CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Copper conductors				
95mm² Cu.	344	270	256	329
185mm² Cu.	510	401	377	509
300mm² Cu.	671	527	492	688
Stranded & Shaped Aluminium conductors				
95mm² Al.	267	209	199	256
185mm² Al.	400	314	295	399
300mm² Al.	532	419	391	546
Solid & Shaped Aluminium conductors				
95mm² Al.	262	205	195	248
185mm² Al.	391	307	290	386
300mm² Al.	520	409	383	527

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1^{o}C m/W
Ground Temperature	12^{o}C
Ambient Temperature	12^{o}C
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE A4 aut

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Autumn *DISTRIBUTION* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**DISTRIBUTION CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Copper conductors				
95mm² Cu.	363	284	268	329
185mm² Cu.	540	425	397	509
300mm² Cu.	711	563	521	688
Stranded & Shaped Aluminium conductors				
95mm² Al.	282	220	208	256
185mm² Al.	423	333	311	399
300mm² Al.	564	447	414	546
Solid & Shaped Aluminium conductors				
95mm² Al.	276	216	204	248
185mm² Al.	413	325	305	386
300mm² Al.	551	435	405	527

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1^{o}C m/W
Ground Temperature	12^{o}C
Ambient Temperature	12^{o}C
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE B1 win

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Winter *SUSTAINED* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**SUSTAINED CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Imperial		PVC	Rigiduct	
Copper conductors				
0.0225in² Cu.	117	93	90	108
0.04in² Cu.	154	121	117	142
0.06in² Cu.	223	175	168	212
0.10in² Cu.	276	216	207	267
0.15in² Cu.	334	262	250	329
0.20in² Cu.	383	300	286	383
0.25in² Cu.	430	339	322	439
0.30in² Cu.	489	387	366	509
0.40in² Cu.	566	449	424	600
0.50in² Cu.	637	506	476	688
Stranded & Shaped Aluminium conductors				
0.10in² Al	214	168	161	208
0.20in² Al.	298	234	223	299
0.30in² Al	383	303	287	399
Solid & Shaped Aluminium conductors				
0.10in² Al	211	165	158	202
0.20in² Al.	293	229	219	289
0.30in² Al.	376	297	282	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9^{O}C m/W
Ground Temperature	10^{O}C
Ambient Temperature	10^{O}C
Maximum Conductor Temperature	70^{O}C

Ratings based on Crater for LV cables.

TABLE B1 win

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Winter *CYCLIC* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Imperial		PVC	Rigiduct	
Copper conductors				
0.0225in² Cu.	125	97	93	108
0.04in² Cu.	166	126	121	142
0.06in² Cu.	244	184	175	212
0.10in² Cu.	303	228	217	267
0.15in² Cu.	369	277	262	329
0.20in² Cu.	425	318	301	383
0.25in² Cu.	480	360	340	439
0.30in² Cu.	550	413	387	509
0.40in² Cu.	639	481	450	600
0.50in² Cu.	724	544	507	688
Stranded & Shaped Aluminium conductors				
0.10in² Al	236	177	168	208
0.20in² Al.	331	248	234	299
0.30in² Al	431	323	304	399
Solid & Shaped Aluminium conductors				
0.10in² Al	231	174	165	202
0.20in² Al.	324	242	230	289
0.30in² Al.	421	316	298	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9^{o}C m/W
Ground Temperature	10^{o}C m/w
Ambient Temperature	10^{o}C m/w
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE B1 win

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Winter *DISTRIBUTION* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**DISTRIBUTION CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Imperial		PVC	Rigiduct	
Copper conductors				
0.0225in² Cu.	130	98	94	108
0.04in² Cu.	173	128	123	142
0.06in² Cu.	254	187	178	212
0.10in² Cu.	317	232	220	267
0.15in² Cu.	386	283	267	329
0.20in² Cu.	445	326	306	383
0.25in² Cu.	504	370	347	439
0.30in² Cu.	577	424	396	509
0.40in² Cu.	672	495	460	600
0.50in² Cu.	762	561	519	688
Stranded & Shaped Aluminium conductors				
0.10in² Al	246	181	171	208
0.20in² Al.	327	254	239	299
0.30in² Al	452	332	310	399
Solid & Shaped Aluminium conductors				
0.10in² Al	241	177	168	202
0.20in² Al.	339	248	234	289
0.30in² Al.	441	324	304	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9^{o}C m/W
Ground Temperature	10^{o}C m/w
Ambient Temperature	10^{o}C m/w
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE B2 spr

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Spring *SUSTAINED* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**SUSTAINED CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Imperial		PVC	Rigiduct	
Copper conductors				
0.0225in² Cu.	111	91	88	108
0.04in² Cu.	145	118	113	142
0.06in² Cu.	209	170	163	212
0.10in² Cu.	259	210	201	267
0.15in² Cu.	313	254	242	329
0.20in² Cu.	358	291	277	383
0.25in² Cu.	402	328	312	439
0.30in² Cu.	456	373	354	509
0.40in² Cu.	527	433	410	600
0.50in² Cu.	593	488	460	688
Stranded & Shaped Aluminium conductors				
0.10in² Al	201	163	156	208
0.20in² Al.	279	226	216	299
0.30in² Al	358	293	278	399
Solid & Shaped Aluminium conductors				
0.10in² Al	198	160	154	202
0.20in² Al.	274	222	212	289
0.30in² Al.	352	287	273	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05^{o}C m/W
Ground Temperature	12^{o}C
Ambient Temperature	12^{o}C
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE B2 spr

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Spring CYCLIC Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Imperial		PVC	Rigiduct	
Copper conductors				
0.0225in² Cu.	120	95	92	108
0.04in² Cu.	158	124	119	142
0.06in² Cu.	231	180	171	212
0.10in² Cu.	287	223	212	267
0.15in² Cu.	349	270	256	329
0.20in² Cu.	401	311	294	383
0.25in² Cu.	453	352	332	439
0.30in² Cu.	518	402	378	509
0.40in² Cu.	602	469	439	600
0.50in² Cu.	681	530	494	688
Stranded & Shaped Aluminium conductors				
0.10in² Al	223	173	165	208
0.20in² Al.	313	242	229	299
0.30in² Al	406	315	296	399
Solid & Shaped Aluminium conductors				
0.10in² Al	218	170	162	202
0.20in² Al.	306	237	225	289
0.30in² Al.	397	309	291	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05^{o}C m/W
Ground Temperature	12^{o}C m/w
Ambient Temperature	12^{o}C m/w
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE B2 spr

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Spring *DISTRIBUTION* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	DISTRIBUTION CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Imperial		PVC	Rigiduct	
Copper conductors				
0.0225in² Cu.	125	99	95	108
0.04in² Cu.	165	129	123	142
0.06in² Cu.	242	187	178	212
0.10in² Cu.	301	233	221	267
0.15in² Cu.	367	284	268	329
0.20in² Cu.	423	327	307	383
0.25in² Cu.	478	371	347	439
0.30in² Cu.	547	425	397	509
0.40in² Cu.	636	497	461	600
0.50in² Cu.	721	563	521	688
Stranded & Shaped Aluminium conductors				
0.10in² Al	234	181	171	208
0.20in² Al.	329	255	239	299
0.30in² Al	428	333	311	399
Solid & Shaped Aluminium conductors				
0.10in² Al	229	177	168	202
0.20in² Al.	322	249	234	289
0.30in² Al.	418	325	305	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05^{o}C m/W
Ground Temperature	12^{o}C m/w
Ambient Temperature	12^{o}C m/w
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE B3 sum

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Summer *SUSTAINED* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Imperial		PVC	Rigiduct	
Copper conductors				
0.0225in² Cu.	104	88	85	108
0.04in² Cu.	136	114	110	142
0.06in² Cu.	196	164	157	212
0.10in² Cu.	242	202	194	267
0.15in² Cu.	292	244	233	329
0.20in² Cu.	333	279	267	383
0.25in² Cu.	375	315	300	439
0.30in² Cu.	425	358	340	509
0.40in² Cu.	490	415	393	600
0.50in² Cu.	551	467	441	688
Stranded & Shaped Aluminium conductors				
0.10in² Al	188	157	150	208
0.20in² Al.	260	218	208	299
0.30in² Al	333	281	267	399
Solid & Shaped Aluminium conductors				
0.10in² Al	185	154	148	202
0.20in² Al.	255	214	204	289
0.30in² Al.	327	276	263	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2^{o}C m/W
Ground Temperature	15^{o}C
Ambient Temperature	15^{o}C
Maximum Conductor Temperature	70^{O}c

Ratings based on Crater for LV cables.

TABLE B3 sum

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Summer *CYCLIC* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Imperial		PVC	Rigiduct	
Copper conductors				
0.0225in² Cu.	113	93	89	108
0.04in² Cu.	149	120	116	142
0.06in² Cu.	217	175	167	212
0.10in² Cu.	270	216	206	267
0.15in² Cu.	328	262	249	329
0.20in² Cu.	377	301	285	383
0.25in² Cu.	425	341	322	439
0.30in² Cu.	486	389	366	509
0.40in² Cu.	564	453	425	600
0.50in² Cu.	638	512	478	688
Stranded & Shaped Aluminium conductors				
0.10in² Al	210	168	160	208
0.20in² Al.	294	235	222	299
0.30in² Al	381	305	287	399
Solid & Shaped Aluminium conductors				
0.10in² Al	206	165	157	202
0.20in² Al.	287	230	218	289
0.30in² Al.	372	299	282	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2^{o}C m/W
Ground Temperature	15^{o}C m/w
Ambient Temperature	15^{o}C m/w
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE B3 sum

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Summer *DISTRIBUTION* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**DISTRIBUTION CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Imperial		PVC	Rigiduct	
Copper conductors				
0.0225in² Cu.	119	97	93	108
0.04in² Cu.	157	126	121	142
0.06in² Cu.	229	184	175	212
0.10in² Cu.	285	229	217	267
0.15in² Cu.	347	278	263	329
0.20in² Cu.	399	320	301	383
0.25in² Cu.	451	363	341	439
0.30in² Cu.	516	416	389	509
0.40in² Cu.	600	486	452	600
0.50in² Cu.	679	550	510	688
Stranded & Shaped Aluminium conductors				
0.10in² Al	222	178	168	208
0.20in² Al.	311	250	235	299
0.30in² Al	404	326	305	399
Solid & Shaped Aluminium conductors				
0.10in² Al	217	174	165	202
0.20in² Al.	304	244	230	289
0.30in² Al.	395	319	299	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2^{o}C m/W
Ground Temperature	15^{o}C m/w
Ambient Temperature	15^{o}C m/w
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE B4 aut

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Autumn *SUSTAINED* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**SUSTAINED CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Imperial		PVC	Rigiduct	
Copper conductors				
0.0225in² Cu.	109	90	87	108
0.04in² Cu.	143	117	113	142
0.06in² Cu.	206	169	162	212
0.10in² Cu.	255	208	200	267
0.15in² Cu.	308	252	241	329
0.20in² Cu.	352	289	275	383
0.25in² Cu.	395	326	310	439
0.30in² Cu.	449	371	352	509
0.40in² Cu.	518	430	407	600
0.50in² Cu.	583	484	457	688
Stranded & Shaped Aluminium conductors				
0.10in² Al	198	162	155	208
0.20in² Al.	274	225	215	299
0.30in² Al	352	291	276	399
Solid & Shaped Aluminium conductors				
0.10in² Al	195	159	153	202
0.20in² Al.	269	221	211	289
0.30in² Al.	346	285	271	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1^{O}C m/W
Ground Temperature	12^{O}C
Ambient Temperature	12^{O}C
Maximum Conductor Temperature	70^{O}C

Ratings based on Crater for LV cables.

TABLE B4 aut

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Autumn *CYCLIC* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**CYCLIC CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Imperial		PVC	Rigiduct	
Copper conductors				
0.0225in² Cu.	118	95	91	108
0.04in² Cu.	156	124	119	142
0.06in² Cu.	228	179	171	212
0.10in² Cu.	283	222	211	267
0.15in² Cu.	344	270	256	329
0.20in² Cu.	396	310	293	383
0.25in² Cu.	447	351	331	439
0.30in² Cu.	510	401	377	509
0.40in² Cu.	593	467	437	600
0.50in² Cu.	671	527	492	688
Stranded & Shaped Aluminium conductors				
0.10in² Al	220	173	164	208
0.20in² Al.	308	241	228	299
0.30in² Al	400	314	295	399
Solid & Shaped Aluminium conductors				
0.10in² Al	216	169	161	202
0.20in² Al.	302	236	224	289
0.30in² Al.	391	307	290	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1^{o}C m/W
Ground Temperature	12^{o}C m/w
Ambient Temperature	12^{o}C m/w
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE B4 aut

LV CABLES (PILC) 4 CORE OIL IMPREGNATED PAPER INSULATED LEAD SHEATH AND ARMOURED

Autumn *DISTRIBUTION* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**DISTRIBUTION CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Imperial		PVC	Rigiduct	
Copper conductors				
0.0225in² Cu.	124	99	95	108
0.04in² Cu.	164	129	123	142
0.06in² Cu.	240	188	178	212
0.10in² Cu.	298	233	221	267
0.15in² Cu.	363	284	268	329
0.20in² Cu.	418	327	307	383
0.25in² Cu.	472	371	348	439
0.30in² Cu.	540	425	397	509
0.40in² Cu.	628	496	461	600
0.50in² Cu.	711	563	521	688
Stranded & Shaped Aluminium conductors				
0.10in² Al	232	181	172	208
0.20in² Al.	325	255	239	299
0.30in² Al	423	333	311	399
Solid & Shaped Aluminium conductors				
0.10in² Al	227	177	168	202
0.20in² Al.	318	249	235	289
0.30in² Al.	413	325	305	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1^{O}C m/W
Ground Temperature	12^{O}C m/w
Ambient Temperature	12^{O}C m/w
Maximum Conductor Temperature	70^{O}C

Ratings based on Crater for LV cables.

TABLE C1 win

LV CABLES (Solidal) SINGLE CORE, ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED AND ARMOURED IN TREFOIL FORMATION.

Winter *SUSTAINED* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**SUSTAINED CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Aluminium conductors				
480mm² Al.	713	569	526	844
600mm² Al.	785	628	579	947
740mm² Al.	856	688	633	1060
960mm² Al.	944	762	697	1199

Parameters

Depth of cover	0.45m
Soil Thermal Resistivity (g)	0.9°C m/W
Ground Ambient Temperature	10°C
Air Ambient Temperature	10°C
Maximum Conductor Temperature	90°C

Armour bonded and earthed at both ends

Single 150mm Duct

Ratings based on Crater for LV cables.

TABLE C1 win

LV CABLES (Solidal) SINGLE CORE, ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED AND ARMOURED IN TREFOIL FORMATION.

Winter *CYCLIC* Current Ratings

.

SIZE AND TYPE OF CABLE CONDUCTOR	**CYCLIC CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Aluminium conductors				
480mm² Al.	815	624	569	844
600mm² Al.	900	692	628	947
740mm² Al.	988	763	689	1060
960mm² Al.	1096	849	761	1199

Parameters

Depth of cover	0.45m
Soil Thermal Resistivity (g)	0.9^{o}C m/W
Ground Ambient Temperature	10^{o}C
Air Ambient Temperature	10^{o}C
Maximum Conductor Temperature	90^{o}C

Armour bonded and earthed at both ends

Single 150mm Duct

Ratings based on Crater for LV cables

TABLE C1 win

LV CABLES (Solidal) SINGLE CORE, ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED AND ARMOURED IN TREFOIL FORMATION.

Winter *DISTRIBUTION* Current Ratings

.

SIZE AND TYPE OF CABLE CONDUCTOR	**DISTRIBUTION CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Aluminium conductors				
480mm² Al.	870	652	589	844
600mm² Al.	963	724	652	947
740mm² Al.	1059	800	715	1060
960mm² Al.	1178	892	792	1199

Parameters

Depth of cover	0.45m
Soil Thermal Resistivity (g)	0.9^{o}C m/W
Ground Ambient Temperature	10^{o}C
Air Ambient Temperature	10^{o}C
Maximum Conductor Temperature	90^{o}C

Armour bonded and earthed at both ends

Single 150mm Duct

Ratings based on Crater for LV cables

TABLE C2 spr

LV CABLES (Solidal) SINGLE CORE, ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED AND ARMOURED IN TREFOIL FORMATION.

Spring *SUSTAINED* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Aluminium conductors				
480mm² Al.	660	545	506	813
600mm² Al.	726	601	557	912
740mm² Al.	792	657	607	1021
960mm² Al.	873	726	668	1155

Parameters

Depth of cover	0.45m
Soil Thermal Resistivity (g)	1.05°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	15°C
Maximum Conductor Temperature	90°C

Armour bonded and earthed at both ends

Single 150mm Duct

Ratings based on Crater for LV cables.

TABLE C2 spr

LV CABLES (Solidal) SINGLE CORE, ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED AND ARMOURED IN TREFOIL FORMATION.

Spring *CYCLIC* Current Ratings

.

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Aluminium conductors				
480mm² Al.	760	606	554	813
600mm² Al.	840	671	611	912
740mm² Al.	922	738	669	1021
960mm² Al.	1023	820	739	1155

Parameters

Depth of cover	0.45m
Soil Thermal Resistivity (g)	1.05°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	15°C
Maximum Conductor Temperature	90°C

Armour bonded and earthed at both ends

Single 150mm Duct

Ratings based on Crater for LV cables.

TABLE C2 spr

LV CABLES (Solidal) SINGLE CORE, ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED AND ARMOURED IN TREFOIL FORMATION.

Spring *DISTRIBUTION* Current Ratings

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SIZE AND TYPE OF CABLE CONDUCTOR	**DISTRIBUTION CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Aluminium conductors				
480mm² Al.	817	639	579	813
600mm² Al.	904	709	640	912
740mm² Al.	994	782	702	1021
960mm² Al.	1105	870	776	1155

Parameters

Depth of cover	0.45m
Soil Thermal Resistivity (g)	1.05^{o}C m/W
Ground Ambient Temperature	12^{o}C
Air Ambient Temperature	15^{o}C
Maximum Conductor Temperature	90^{o}C

Armour bonded and earthed at both ends

Single 150mm Duct

Ratings based on Crater for LV cables.

TABLE C3 sum

LV CABLES (Solidal) SINGLE CORE, ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED AND ARMOURED IN TREFOIL FORMATION.

Summer *SUSTAINED* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Aluminium conductors				
480mm² Al.	612	519	485	747
600mm² Al.	673	572	533	838
740mm² Al.	733	625	580	938
960mm² Al.	808	689	638	1061

Parameters

Depth of cover	0.45m
Soil Thermal Resistivity (g)	1.2°C m/W
Ground Ambient Temperature	15°C
Air Ambient Temperature	25°C
Maximum Conductor Temperature	90°C

Armour bonded and earthed at both ends

Single 150mm Duct

Ratings based on Crater for LV cables.

TABLE C3 sum

LV CABLES (Solidal) SINGLE CORE, ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED AND ARMOURED IN TREFOIL FORMATION.

Summer *CYCLIC* Current Ratings

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SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Aluminium conductors				
480mm² Al.	709	584	535	747
600mm² Al.	784	646	590	838
740mm² Al.	860	710	646	938
960mm² Al.	953	787	712	1061

Parameters

Depth of cover	0.45m
Soil Thermal Resistivity (g)	1.2°C m/W
Ground Ambient Temperature	15°C
Air Ambient Temperature	25°C
Maximum Conductor Temperature	90°C

Armour bonded and earthed at both ends

Single 150mm Duct

Ratings based on Crater for LV cables.

TABLE C3 sum

LV CABLES (Solidal) SINGLE CORE, ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED AND ARMOURED IN TREFOIL FORMATION.

Summer *DISTRIBUTION* Current Ratings

.

SIZE AND TYPE OF CABLE CONDUCTOR	**DISTRIBUTION CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Aluminium conductors				
480mm² Al.	766	621	565	747
600mm² Al.	848	689	624	838
740mm² Al.	932	758	684	938
960mm² Al.	1036	842	755	1061

Parameters

Depth of cover	0.45m
Soil Thermal Resistivity (g)	1.2^{o}C m/W
Ground Ambient Temperature	15^{o}C
Air Ambient Temperature	25^{o}C
Maximum Conductor Temperature	90^{o}C

Armour bonded and earthed at both ends

Single 150mm Duct

Ratings based on Crater for LV cables.

TABLE C4 aut

LV CABLES (Solidal) SINGLE CORE, ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED AND ARMOURED IN TREFOIL FORMATION.

Autumn *SUSTAINED* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	**SUSTAINED CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Aluminium conductors				
480mm² Al.	647	539	502	812
600mm² Al.	712	595	552	912
740mm² Al.	777	650	602	1021
960mm² Al.	856	718	662	1154

Parameters

Depth of cover	0.45m
Soil Thermal Resistivity (g)	1.1°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	15°C
Maximum Conductor Temperature	90°C

Armour bonded and earthed at both ends

Single 150mm Duct

Ratings based on Crater for LV cables.

TABLE C4 aut

LV CABLES (Solidal) SINGLE CORE, ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED AND ARMOURED IN TREFOIL FORMATION.

Autumn *CYCLIC* Current Ratings

.

SIZE AND TYPE OF CABLE CONDUCTOR	**CYCLIC CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Aluminium conductors				
480mm² Al.	747	602	551	812
600mm² Al.	826	667	608	912
740mm² Al.	906	733	665	1021
960mm² Al.	1005	814	734	1154

Parameters

Depth of cover	0.45m
Soil Thermal Resistivity (g)	1.1°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	15°C
Maximum Conductor Temperature	90°C

Armour bonded and earthed at both ends

Single 150mm Duct

Ratings based on Crater for LV cables.

TABLE C4 aut

LV CABLES (Solidal) SINGLE CORE, ALUMINIUM CONDUCTOR, XLPE INSULATED, PVC SHEATHED AND ARMOURED IN TREFOIL FORMATION.

Autumn *DISTRIBUTION* Current Ratings

.

SIZE AND TYPE OF CABLE CONDUCTOR	**DISTRIBUTION CURRENT RATINGS-AMPS**			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
Metric		PVC	Rigiduct	
Aluminium conductors				
480mm² Al.	804	637	578	812
600mm² Al.	890	706	639	912
740mm² Al.	979	778	700	1021
960mm² Al.	1088	866	774	1154

Parameters

Depth of cover	0.45m
Soil Thermal Resistivity (g)	1.1^{o}C m/W
Ground Ambient Temperature	12^{o}C
Air Ambient Temperature	15^{o}C
Maximum Conductor Temperature	90^{o}C

Armour bonded and earthed at both ends

Single 150mm Duct

Ratings based on Crater for LV cables.

TABLE D1 win

LV MAINS CABLES - Wavecon

Winter *SUSTAINED* Current Ratings

CABLE TYPE AND SIZE		SUSTAINED CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
WAVECON MAINS 3 Core Aluminium Neutral			PVC	Rigiduct	
3 phase	70mm²	207	165	158	201
3 phase	95mm²	248	199	190	245
3 phase	120mm²	282	227	217	284
3 phase	185mm²	360	293	278	373
3 phase	300mm²	478	389	367	510
WAVECON MAINS 3 & 4 Core Copper Neutral					
3 phase	95mm²	270	206	197	263
3 phase	185mm²	390	304	288	404
3 phase	300mm²	511	402	378	549

Note: - For Welsh users '**Trydan**' is the same as Wavecon.

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9°C m/w
Ground Temperature	10°C
Ambient Temperature	10°C
Maximum Conductor Temperature	90°C XLPE or 70°C PVC

Ratings based on Crater for LV cables.

TABLE D1 win

LV MAINS CABLES - Wavecon

Winter *CYCLIC* Current Ratings

CABLE TYPE AND SIZE		CYCLIC CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
WAVECON MAINS 3 Core (Trydan) Aluminium Neutral			PVC	Rigiduct	
3 phase	70mm²	226	173	165	201
3 phase	95mm²	271	209	199	245
3 phase	120mm²	309	240	228	284
3 phase	185mm²	398	311	293	373
3 phase	300mm²	534	415	389	510
WAVECON MAINS 3 & 4 Core Copper Neutral					
3 phase	95mm²	301	218	207	263
3 phase	185mm²	441	325	304	404
3 phase	300mm²	582	432	402	549

Note: - For Welsh users '**Trydan**' is the same as Wavecon.

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9^{o}C m/W
Ground Temperature	10^{o}C
Ambient Temperature	10^{o}C
Maximum Conductor Temperature	90^{o}C XLPE or 70^{o}C PVC

Ratings based on Crater for LV cables.

TABLE D1 win

LV MAINS CABLES - Wavecon

Winter *DISTRIBUTION* Current Ratings

CABLE TYPE AND SIZE		DISTRIBUTION CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
WAVECON MAINS 3 Core Aluminium Neutral			PVC	Rigiduct	
3 phase	70mm²	236	177	168	201
3 phase	95mm²	283	214	202	245
3 phase	120mm²	323	245	232	284
3 phase	185mm²	416	318	299	373
3 phase	300mm²	560	427	398	510
WAVECON MAINS 3 & 4 Core Copper Neutral					
3 phase	95mm²	316	224	211	263
3 phase	185mm²	463	334	311	404
3 phase	300mm²	612	446	412	549

Note: - For Welsh users '**Trydan**' is the same as Wavecon.

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9^{o}C m/W
Ground Temperature	10^{o}C
Ambient Temperature	10^{o}C
Maximum Conductor Temperature	90^{o}C XLPE or 70^{o}C PVC

Ratings based on Crater for LV cables.

TABLE D2 spr

LV MAINS CABLES - Wavecon

Spring *SUSTAINED* Current Ratings

CABLE TYPE AND SIZE		SUSTAINED CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
WAVECON MAINS 3 Core Aluminium Neutral			PVC	Rigiduct	
3 phase	70mm²	195	160	153	201
3 phase	95mm²	233	193	184	245
3 phase	120mm²	265	220	210	284
3 phase	185mm²	338	283	269	373
3 phase	300mm²	448	375	355	510
WAVECON MAINS 3 & 4 Core Copper Neutral					
3 phase	95mm²	251	200	191	263
3 phase	185mm²	363	294	278	404
3 phase	300mm²	475	387	365	549

Note: - For Welsh users '**Trydan**' is the same as Wavecon.

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05^{o}C m/w
Ground Temperature	12^{O}C
Ambient Temperature	12^{O}C
Maximum Conductor Temperature	90^{O}C XLPE or 70^{O}C PVC

Ratings based on Crater for LV cables.

TABLE D2 spr

LV MAINS CABLES - Wavecon

Spring *CYCLIC* Current Ratings

CABLE TYPE AND SIZE		CYCLIC CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
WAVECON MAINS 3 Core Aluminium Neutral			PVC	Rigiduct	
3 phase	70mm²	215	170	162	201
3 phase	95mm²	257	205	195	245
3 phase	120mm²	294	235	223	284
3 phase	185mm²	378	303	286	373
3 phase	300mm²	506	405	380	510
WAVECON MAINS 3 & 4 Core Copper Neutral					
3 phase	95mm²	283	213	202	263
3 phase	185mm²	414	317	297	404
3 phase	300mm²	546	421	392	549

Note: - For Welsh users '**Trydan**' is the same as Wavecon.

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05^{O}C m/W
Ground Temperature	12^{O}C
Ambient Temperature	12^{O}C
Maximum Conductor Temperature	90^{O}C XLPE or 70^{O}C PVC

Ratings based on Crater for LV cables.

TABLE D2 spr

LV MAINS CABLES - Wavecon

Spring *DISTRIBUTION* Current Ratings

CABLE TYPE AND SIZE		DISTRIBUTION CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
WAVECON MAINS 3 Core Aluminium Neutral			PVC	Rigiduct	
3 phase	70mm²	225	175	166	201
3 phase	95mm²	270	211	200	245
3 phase	120mm²	309	242	229	284
3 phase	185mm²	397	314	295	373
3 phase	300mm²	533	421	392	510
WAVECON MAINS 3 & 4 Core Copper Neutral					
3 phase	95mm²	298	221	208	263
3 phase	185mm²	437	329	307	404
3 phase	300mm²	578	438	406	549

Note: - For Welsh users '**Trydan**' is the same as Wavecon.

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05^{O}C m/W
Ground Temperature	12^{O}C
Ambient Temperature	12^{O}C
Maximum Conductor Temperature	90^{O}C XLPE or 70^{O}C PVC

Ratings based on Crater for LV cables.

TABLE D3 sum

LV MAINS CABLES - Wavecon

Summer *SUSTAINED* Current Ratings

CABLE TYPE AND SIZE		SUSTAINED CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
WAVECON MAINS 3 Core Aluminium Neutral			PVC	Rigiduct	
3 phase	70mm²	183	154	148	201
3 phase	95mm²	218	185	178	245
3 phase	120mm²	248	212	203	284
3 phase	185mm²	317	272	259	373
3 phase	300mm²	419	359	341	510
WAVECON MAINS 3 & 4 Core Copper Neutral					
3 phase	95mm²	233	192	184	263
3 phase	185mm²	337	281	267	404
3 phase	300mm²	440	370	350	549

Note: - For Welsh users '**Trydan**' is the same as Wavecon.

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2^{o}C m/w
Ground Temperature	15^{O}C
Ambient Temperature	15^{O}C
Maximum Conductor Temperature	90^{O}C XLPE or 70^{O}C PVC

Ratings based on Crater for LV cables.

TABLE D3 sum

LV MAINS CABLES - Wavecon

Summer *CYCLIC* Current Ratings

CABLE TYPE AND SIZE		CYCLIC CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
WAVECON MAINS 3 Core Aluminium Neutral			PVC	Rigiduct	
3 phase	70mm²	203	165	157	201
3 phase	95mm²	243	199	189	245
3 phase	120mm²	278	228	216	284
3 phase	185mm²	357	294	278	373
3 phase	300mm²	477	391	368	510
WAVECON MAINS 3 & 4 Core Copper Neutral					
3 phase	95mm²	265	207	196	263
3 phase	185mm²	387	306	288	404
3 phase	300mm²	511	406	380	549

Note: - For Welsh users '**Trydan**' is the same as Wavecon.

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2^{o}C m/W
Ground Temperature	15^{o}C
Ambient Temperature	15^{o}C
Maximum Conductor Temperature	90^{o}C XLPE or 70^{o}C PVC

Ratings based on Crater for LV cables.

TABLE D3 sum

LV MAINS CABLES - Wavecon

Summer *DISTRIBUTION* Current Ratings

CABLE TYPE AND SIZE		DISTRIBUTION CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
WAVECON MAINS 3 Core Aluminium Neutral			PVC	Rigiduct	
3 phase	70mm²	214	171	163	201
3 phase	95mm²	257	207	196	245
3 phase	120mm²	293	237	224	284
3 phase	185mm²	377	307	289	373
3 phase	300mm²	505	410	384	510
WAVECON MAINS 3 & 4 Core Copper Neutral					
3 phase	95mm²	281	216	204	263
3 phase	185mm²	411	321	301	404
3 phase	300mm²	544	427	397	549

Note: - For Welsh users '**Trydan**' is the same as Wavecon.

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2^{o}C m/W
Ground Temperature	15^{o}C
Ambient Temperature	15^{o}C
Maximum Conductor Temperature	90^{o}C XLPE or 70^{o}C PVC

Ratings based on Crater for LV cables.

TABLE D4 aut

LV MAINS CABLES - Wavecon

Autumn *SUSTAINED* Current Ratings

CABLE TYPE AND SIZE		SUSTAINED CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
WAVECON MAINS 3 Core Aluminium Neutral			PVC	Rigiduct	
3 phase	70mm²	192	159	153	201
3 phase	95mm²	230	191	183	245
3 phase	120mm²	261	219	209	284
3 phase	185mm²	333	281	268	373
3 phase	300mm²	441	372	353	510
WAVECON MAINS 3 & 4 Core Copper Neutral					
3 phase	95mm²	247	199	190	263
3 phase	185mm²	357	291	277	404
3 phase	300mm²	466	384	363	549

Note: - For Welsh users '**Trydan**' is the same as Wavecon.

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1^{o}C m/w
Ground Temperature	12^{O}C
Ambient Temperature	12^{O}C
Maximum Conductor Temperature	90^{O}C XLPE or 70^{O}C PVC

Ratings based on Crater for LV cables.

TABLE D4 aut

LV MAINS CABLES - Wavecon

Autumn *CYCLIC* Current Ratings

CABLE TYPE AND SIZE		CYCLIC CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
WAVECON MAINS 3 Core Aluminium Neutral			PVC	Rigiduct	
3 phase	70mm²	212	169	161	201
3 phase	95mm²	254	204	194	245
3 phase	120mm²	290	234	222	284
3 phase	185mm²	373	302	285	373
3 phase	300mm²	500	403	378	510
WAVECON MAINS 3 & 4 Core Copper Neutral					
3 phase	95mm²	279	213	202	263
3 phase	185mm²	407	315	296	404
3 phase	300mm²	538	419	391	549

Note: - For Welsh users '**Trydan**' is the same as Wavecon.

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1^{O}C m/W
Ground Temperature	12^{O}C
Ambient Temperature	12^{O}C
Maximum Conductor Temperature	90^{O}C XLPE or 70^{O}C PVC

Ratings based on Crater for LV cables.

TABLE D4 aut

LV MAINS CABLES - Wavecon

Autumn *DISTRIBUTION* Current Ratings

CABLE TYPE AND SIZE		DISTRIBUTION CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
WAVECON MAINS 3 Core Aluminium Neutral			PVC	Rigiduct	
3 phase	70mm²	223	175	166	201
3 phase	95mm²	268	211	200	245
3 phase	120mm²	306	242	229	284
3 phase	185mm²	393	314	295	373
3 phase	300mm²	528	420	392	510
WAVECON MAINS 3 & 4 Core Copper Neutral					
3 phase	95mm²	295	221	208	263
3 phase	185mm²	431	329	307	404
3 phase	300mm²	570	438	406	549

Note: - For Welsh users '**Trydan**' is the same as Wavecon.

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1^{O}C m/W
Ground Temperature	12^{O}C
Ambient Temperature	12^{O}C
Maximum Conductor Temperature	90^{O}C XLPE or 70^{O}C PVC

Ratings based on Crater for LV cables.

TABLE E1 win

LV MAINS CABLES – Consac & SAC

Winter *SUSTAINED* Current Ratings

CABLE TYPE AND SIZE		SUSTAINED CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
CONSAC			PVC	Rigiduct	
3 phase	95mm²	253	196	187	240
3 phase	185mm²	366	288	274	368
SAC					
3 phase	95mm²	223	186	178	248
3phase	185mm²	327	276	263	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9°C m/w
Ground Temperature	10°C
Ambient Temperature	10°C
Maximum Conductor Temperature	70°C

Ratings based on Crater for LV cables.

TABLE E1 win

LV MAINS CABLES – Consac & SAC

Winter *CYCLIC* Current Ratings

CABLE TYPE AND SIZE		CYCLIC CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
CONSAC			PVC	Rigiduct	
3 phase	95mm²	278	206	196	240
3 phase	185mm²	407	305	289	368
SAC					
3 phase	95mm²	250	200	190	248
3phase	185mm²	372	299	282	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9°C m/W
Ground Temperature	10°C
Ambient Temperature	10°C
Maximum Conductor Temperature	70°C

Ratings based on Crater for LV cables.

TABLE E1 win

LV MAINS CABLES – Consac & SAC

Winter *DISTRIBUTION* Current Ratings

CABLE TYPE AND SIZE		DISTRIBUTION CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
CONSAC			PVC	Rigiduct	
3 phase	95mm^2	290	210	199	240
3 phase	185mm^2	426	313	294	368
SAC					
3 phase	95mm^2	264	211	200	248
3phase	185mm^2	395	319	299	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9^{o}C m/W
Ground Temperature	10^{o}C
Ambient Temperature	10^{o}C
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE E2 spr

LV MAINS CABLES – Consac & SAC

Spring *SUSTAINED* Current Ratings

CABLE TYPE AND SIZE		SUSTAINED CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
CONSAC			PVC	Rigiduct	
3 phase	95mm²	236	190	182	240
3 phase	185mm²	342	279	266	368
SAC					
3 phase	95mm²	239	193	185	248
3phase	185mm²	352	287	273	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05°C m/w
Ground Temperature	12°C
Ambient Temperature	12°C
Maximum Conductor Temperature	70°C

Ratings based on Crater for LV cables.

TABLE E2 spr

LV MAINS CABLES – Consac & SAC

Spring *CYCLIC* Current Ratings

CABLE TYPE AND SIZE		CYCLIC CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
CONSAC			PVC	Rigiduct	
3 phase	95mm²	262	201	192	240
3 phase	185mm²	384	298	282	368
SAC					
3 phase	95mm²	265	206	196	248
3phase	185mm²	397	309	291	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05°C m/W
Ground Temperature	12°C
Ambient Temperature	12°C
Maximum Conductor Temperature	70°C

Ratings based on Crater for LV cables.

TABLE E2 spr

LV MAINS CABLES – Consac & SAC

Spring *DISTRIBUTION* Current Ratings

CABLE TYPE AND SIZE		DISTRIBUTION CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
CONSAC			PVC	Rigiduct	
3 phase	95mm^2	276	210	199	240
3 phase	185mm^2	404	313	295	368
SAC					
3 phase	95mm^2	279	215	204	248
3phase	185mm^2	418	325	305	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05^{o}C m/W
Ground Temperature	12^{o}C
Ambient Temperature	12^{o}C
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE E3 sum

LV MAINS CABLES – Consac & SAC

Summer *SUSTAINED* Current Ratings

CABLE TYPE AND SIZE		SUSTAINED CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
CONSAC			PVC	Rigiduct	
3 phase	95mm²	221	183	175	240
3 phase	185mm²	319	268	256	368
SAC					
3 phase	95mm²	223	186	178	248
3phase	185mm²	327	276	263	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2°C m/w
Ground Temperature	15°C
Ambient Temperature	15°C
Maximum Conductor Temperature	70°C

Ratings based on Crater for LV cables.

TABLE E3 sum

LV MAINS CABLES – Consac & SAC

Summer *CYCLIC* Current Ratings

CABLE TYPE AND SIZE		CYCLIC CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
CONSAC			PVC	Rigiduct	
3 phase	95mm²	246	195	186	240
3 phase	185mm²	361	289	274	368
SAC					
3 phase	95mm²	250	200	190	248
3phase	185mm²	372	299	282	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2°C m/W
Ground Temperature	15°C
Ambient Temperature	15°C
Maximum Conductor Temperature	70°C

Ratings based on Crater for LV cables.

TABLE E3 sum

LV MAINS CABLES – Consac & SAC

Summer *DISTRIBUTION* Current Ratings

CABLE TYPE AND SIZE		DISTRIBUTION CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
CONSAC			PVC	Rigiduct	
3 phase	95mm²	261	207	196	240
3 phase	185mm²	382	307	289	368
SAC					
3 phase	95mm²	264	211	200	248
3phase	185mm²	395	319	299	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2°C m/W
Ground Temperature	15°C
Ambient Temperature	15°C
Maximum Conductor Temperature	70°C

Ratings based on Crater for LV cables.

TABLE E4 aut

LV MAINS CABLES – Consac & SAC

Autumn *SUSTAINED* Current Ratings

CABLE TYPE AND SIZE		SUSTAINED CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
CONSAC			PVC	Rigiduct	
3 phase	95mm²	233	189	181	240
3 phase	185mm²	337	277	264	368
SAC					
3 phase	95mm²	235	192	184	248
3phase	185mm²	346	285	271	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1°C m/w
Ground Temperature	12°C
Ambient Temperature	12°C
Maximum Conductor Temperature	70°C

Ratings based on Crater for LV cables.

TABLE E4 aut

LV MAINS CABLES – Consac & SAC

Autumn *CYCLIC* Current Ratings

CABLE TYPE AND SIZE		CYCLIC CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
CONSAC			PVC	Rigiduct	
3 phase	95mm^2	259	201	191	240
3 phase	185mm^2	379	297	281	368
SAC					
3 phase	95mm^2	262	205	195	248
3phase	185mm^2	391	307	290	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1^{o}C m/W
Ground Temperature	12^{o}C
Ambient Temperature	12^{o}C
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE E4 aut

LV MAINS CABLES – Consac & SAC

Autumn *DISTRIBUTION* Current Ratings

CABLE TYPE AND SIZE		DISTRIBUTION CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
CONSAC			PVC	Rigiduct	
3 phase	95mm^2	272	210	200	240
3 phase	185mm^2	400	314	295	368
SAC					
3 phase	95mm^2	276	216	204	248
3phase	185mm^2	413	325	305	386

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1^{O}C m/W
Ground Temperature	12^{O}C
Ambient Temperature	12^{O}C
Maximum Conductor Temperature	70^{O}C

Ratings based on Crater for LV cables.

TABLE F1 win

LV SERVICE CABLES

Winter *SUSTAINED* Current Ratings

CABLE TYPE AND SIZE		SUSTAINED CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
HYBRID SERVICE			PVC	Rigiduct	
3 phase	25mm²	115	87	84	104
3 phase	35mm²	139	105	101	127
Single phase	25mm²	130	94	90	98
Single phase	35mm²	157	114	109	121
SPLIT COPPER CONCENTRIC					
3 phase	25mm²	177	133	128	165
Single phase	16mm²	137	99	95	105
Single phase	25mm²	176	130	123	139
COPPER CONCENTRIC					
3 phase	16mm²	117	88	85	103
3 phase	25mm²	151	115	110	138
Single phase	16mm²	133	96	92	99
Single phase	25mm²	171	124	119	132

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9°C m/w
Ground Temperature	10°C
Ambient Temperature	10°C
Maximum Conductor Temperature	70°C

Ratings based on Crater for LV cables.

TABLE F1 win

LV SERVICE CABLES

Winter *CYCLIC* Current Ratings

CABLE TYPE AND SIZE		CYCLIC CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
HYBRID SERVICE			PVC	Rigiduct	
3 phase	25mm²	125	91	88	104
3 phase	35mm²	152	110	106	127
Single phase	25mm²	144	99	95	98
Single phase	35mm²	173	120	114	121
SPLIT COPPER CONCENTRIC					
3 phase	25mm²	195	140	134	165
Single phase	16mm²	151	105	100	105
Single phase	25mm²	196	138	130	139
COPPER CONCENTRIC					
3 phase	16mm²	127	92	89	103
3 phase	25mm²	165	120	115	138
Single phase	16mm²	147	101	97	99
Single phase	25mm²	190	131	125	132

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9°C m/W
Ground Temperature	10°C
Ambient Temperature	10°C
Maximum Conductor Temperature	70°C

Ratings based on Crater for LV cables.

TABLE F1 win

LV SERVICE CABLES

Winter *DISTRIBUTION* Current Ratings

CABLE TYPE AND SIZE		DISTRIBUTION CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
HYBRID SERVICE			PVC	Rigiduct	
3 phase	25mm²	131	93	89	104
3 phase	35mm²	158	112	107	127
Single phase	25mm²	152	101	96	98
Single phase	35mm²	184	123	116	121
SPLIT COPPER CONCENTRIC					
3 phase	25mm²	204	143	136	165
Single phase	16mm²	161	107	102	105
Single phase	25mm²	208	141	133	139
COPPER CONCENTRIC					
3 phase	16mm²	132	93	90	103
3 phase	25mm²	172	122	117	138
Single phase	16mm²	156	103	98	99
Single phase	25mm²	201	134	127	132

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	0.9^{o}C m/W
Ground Temperature	10^{o}C
Ambient Temperature	10^{o}C
Maximum Conductor Temperature	70^{o}C

Ratings based on Crater for LV cables.

TABLE F2 spr

LV SERVICE CABLES

Spring *SUSTAINED* Current Ratings

CABLE TYPE AND SIZE		SUSTAINED CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
HYBRID SERVICE			PVC	Rigiduct	
3 phase	25mm²	108	85	82	104
3 phase	35mm²	130	102	98	127
Single phase	25mm²	120	91	87	98
Single phase	35mm²	144	109	105	121
SPLIT COPPER CONCENTRIC					
3 phase	25mm²	166	129	124	165
Single phase	16mm²	126	96	92	105
Single phase	25mm²	162	125	119	139
COPPER CONCENTRIC					
3 phase	16mm²	110	85	83	103
3 phase	25mm²	142	111	107	138
Single phase	16mm²	123	93	89	99
Single phase	25mm²	158	120	115	132

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05^{o}C m/w
Ground Temperature	12^{O}C
Ambient Temperature	12^{O}C
Maximum Conductor Temperature	70^{O}C

Ratings based on Crater for LV cables.

TABLE F2 spr

LV SERVICE CABLES

Spring *CYCLIC* Current Ratings

CABLE TYPE AND SIZE		CYCLIC CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
HYBRID SERVICE			PVC	Rigiduct	
3 phase	25mm²	118	89	86	104
3 phase	35mm²	143	107	103	127
Single phase	25mm²	134	97	92	98
Single phase	35mm²	161	117	111	121
SPLIT COPPER CONCENTRIC					
3 phase	25mm²	184	137	131	165
Single phase	16mm²	140	102	97	105
Single phase	25mm²	182	134	127	139
COPPER CONCENTRIC					
3 phase	16mm²	120	90	86	103
3 phase	25mm²	156	117	112	138
Single phase	16mm²	137	99	94	99
Single phase	25mm²	176	128	121	132

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05°C m/W
Ground Temperature	12°C
Ambient Temperature	12°C
Maximum Conductor Temperature	70°C

TABLE F2 spr

LV SERVICE CABLES

Spring *DISTRIBUTION* Current Ratings

CABLE TYPE AND SIZE		DISTRIBUTION CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
HYBRID SERVICE			PVC	Rigiduct	
3 phase	25mm²	124	92	88	104
3 phase	35mm²	150	110	105	127
Single phase	25mm²	143	100	95	98
Single phase	35mm²	172	120	114	121
SPLIT COPPER CONCENTRIC					
3 phase	25mm²	193	141	135	165
Single phase	16mm²	150	106	100	105
Single phase	25mm²	195	138	131	139
COPPER CONCENTRIC					
3 phase	16mm²	125	92	88	103
3 phase	25mm²	163	120	115	138
Single phase	16mm²	146	102	97	99
Single phase	25mm²	188	132	125	132

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.05^{o}C m/W
Ground Temperature	12^{o}C
Ambient Temperature	12^{o}C
Maximum Conductor Temperature	70^{o}C

TABLE F3 sum

LV SERVICE CABLES

Summer *SUSTAINED* Current Ratings

CABLE TYPE AND SIZE		SUSTAINED CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
HYBRID SERVICE			PVC	Rigiduct	
3 phase	25mm²	101	81	78	104
3 phase	35mm²	121	97	94	127
Single phase	25mm²	111	87	84	98
Single phase	35mm²	133	105	100	121
SPLIT COPPER CONCENTRIC					
3 phase	25mm²	155	125	120	165
Single phase	16mm²	116	92	88	105
Single phase	25mm²	149	119	114	139
COPPER CONCENTRIC					
3 phase	16mm²	102	82	79	103
3 phase	25mm²	132	106	103	138
Single phase	16mm²	113	89	85	99
Single phase	25mm²	145	114	110	132

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2^{o}C m/w
Ground Temperature	15^{o}C
Ambient Temperature	15^{o}C
Maximum Conductor Temperature	70^{o}C

TABLE F3 sum

LV SERVICE CABLES

Summer ***CYCLIC*** Current Ratings

CABLE TYPE AND SIZE		CYCLIC CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
HYBRID SERVICE			PVC	Rigiduct	
3 phase	25mm²	111	86	83	104
3 phase	35mm²	134	104	99	127
Single phase	25mm²	124	93	89	98
Single phase	35mm²	149	112	107	121
SPLIT COPPER CONCENTRIC					
3 phase	25mm²	173	133	127	165
Single phase	16mm²	130	98	94	105
Single phase	25mm²	168	129	122	139
COPPER CONCENTRIC					
3 phase	16mm²	112	87	84	103
3 phase	25mm²	146	113	108	138
Single phase	16mm²	126	95	91	99
Single phase	25mm²	163	123	117	132

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2°C m/W
Ground Temperature	15°C
Ambient Temperature	15°C
Maximum Conductor Temperature	70°C

TABLE F3 sum

LV SERVICE CABLES

Summer ***DISTRIBUTION*** Current Ratings

CABLE TYPE AND SIZE		DISTRIBUTION CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
HYBRID SERVICE			PVC	Rigiduct	
3 phase	25mm²	117	89	86	104
3 phase	35mm²	141	108	103	127
Single phase	25mm²	133	97	92	98
Single phase	35mm²	160	117	111	121
SPLIT COPPER CONCENTRIC					
3 phase	25mm²	183	138	132	165
Single phase	16mm²	140	103	97	105
Single phase	25mm²	181	134	127	139
COPPER CONCENTRIC					
3 phase	16mm²	118	90	86	103
3 phase	25mm²	154	117	112	138
Single phase	16mm²	136	99	94	99
Single phase	25mm²	175	128	122	132

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.2°C m/W
Ground Temperature	15°C
Ambient Temperature	15°C
Maximum Conductor Temperature	70°C

TABLE F4 aut

LV SERVICE CABLES

Autumn ***SUSTAINED*** Current Ratings

CABLE TYPE AND SIZE		SUSTAINED CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
HYBRID SERVICE			PVC	Rigiduct	
3 phase	25mm²	107	84	81	104
3 phase	35mm²	128	101	97	127
Single phase	25mm²	118	90	87	98
Single phase	35mm²	142	109	104	121
SPLIT COPPER CONCENTRIC					
3 phase	25mm²	163	128	123	165
Single phase	16mm²	124	95	91	105
Single phase	25mm²	159	124	118	139
COPPER CONCENTRIC					
3 phase	16mm²	108	85	82	103
3 phase	25mm²	139	110	106	138
Single phase	16mm²	121	92	89	99
Single phase	25mm²	155	119	114	132

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1^{o}C m/w
Ground Temperature	12^{o}C
Ambient Temperature	12^{o}C
Maximum Conductor Temperature	70^{o}C

TABLE F4 aut

LV SERVICE CABLES

Autumn ***CYCLIC*** Current Ratings

CABLE TYPE AND SIZE		CYCLIC CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
HYBRID SERVICE			PVC	Rigiduct	
3 phase	25mm²	117	89	85	104
3 phase	35mm²	141	107	103	127
Single phase	25mm²	131	96	92	98
Single phase	35mm²	158	116	111	121
SPLIT COPPER CONCENTRIC					
3 phase	25mm²	181	136	131	165
Single phase	16mm²	138	102	97	105
Single phase	25mm²	178	133	126	139
COPPER CONCENTRIC					
3 phase	16mm²	118	90	86	103
3 phase	25mm²	154	117	112	138
Single phase	16mm²	134	98	94	99
Single phase	25mm²	173	127	121	132

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1°C m/W
Ground Temperature	12°C
Ambient Temperature	12°C
Maximum Conductor Temperature	70°C

TABLE F4 aut

LV SERVICE CABLES

Autumn ***DISTRIBUTION*** Current Ratings

CABLE TYPE AND SIZE		DISTRIBUTION CURRENT RATING - AMPS			
		In Ground	In Single Way Ducts		In Air
HYBRID SERVICE			PVC	Rigiduct	
3 phase	25mm²	123	92	88	104
3 phase	35mm²	148	110	106	127
Single phase	25mm²	140	100	95	98
Single phase	35mm²	169	120	114	121
SPLIT COPPER CONCENTRIC					
3 phase	25mm²	191	141	135	165
Single phase	16mm²	148	105	100	105
Single phase	25mm²	192	138	130	139
COPPER CONCENTRIC					
3 phase	16mm²	124	92	88	103
3 phase	25mm²	162	120	115	138
Single phase	16mm²	144	102	97	99
Single phase	25mm²	185	132	125	132

Parameters

Maximum depth of lay	0.5m
Soil Thermal Resistivity (g)	1.1^{o}C m/W
Ground Temperature	12^{o}C
Ambient Temperature	12^{o}C
Maximum Conductor Temperature	70^{o}C

APPENDIX A

SUPERSEDED DOCUMENTATION

This document supersedes ST:SD8B/3 dated March 2009 which should now be withdrawn.

APPENDIX B

ASSOCIATED DOCUMENTATION

ST: CA6A/2 - Relating to the Installation of Underground Cables

APPENDIX C

KEY WORDS

Low Voltage, Wavecon, Consac, Solidal, Service Cable, Group Derating, Sustained Rating, Cyclic Rating, Distribution Rating, Laid Direct Rating, Duct Rating, Air Rating.