WESTERN POWER DISTRIBUTION

Serving the South West and Wales
Gwasanaethu'r De Orllewin a Chymru

Company Directive

STANDARD TECHNIQUE: SD8B/3 (Part 4)

Relating to 66kV Underground Cable Ratings

Policy Summary

This document contains 66kV cable ratings of the various types of 66kV cables used within Western Power Distribution South West and South Wales areas. It assumes that the cables will be subjected to the cyclic load as given by the load curve shown in figure one. If other load curves are required contact the Company Cable Engineer.

This Standard Technique should be used when designing any 66kV electricity distribution network that has underground cables in it.

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Approved by PJ Wen

Policy Manager

Date: 30-03-09

1.0 INTRODUCTION

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

This Part 4 document of ST: SD 8B sets out the all the WPD, 66kV underground cable Sustained ratings and Cyclic ratings for winter, spring, summer and autumn which are to be applied. These ratings are based on Crater for HV polymeric Cables, Crater for Oil filled 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 and duct type

3.0 CRITERIA

3.1 General criteria for 66kV cables (applies to Oil filled, 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 South West and South Wales, 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 South West and South Wales 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 such as Bristol, Cardiff, Exeter, Plymouth and Swansea 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 oil filled cable is 85^{o}C. The maximum conductor temperature for EPR and XLPE cables is 90^{o}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 66kV 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; 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 1m;

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

Ground ambient temperature of 10^{O}C;

Maximum conductor temperature of 85^{O}C for 66kV for 3 core oil filled cables and 85^{O}C for 66kV single core oil filled cables. All polymeric cables e.g. EPR and XLPE have a maximum conductor temperature of 90°C.

No allowance made for grouping of cable circuits.

4.0 DEFINITIONS

All 66kV EPR single core circuits, for the purpose of this document, have been assumed to be three single-core polymeric cables laid touching, throughout their length, in trefoil formation. That the copper wire screens 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 triplex or 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 copper wire screens 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 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 Utilisation factor

This does not apply for 66kV cables.

4.4 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.

4.5 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.

4.6 Soil thermal resistivity

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

4.7 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.

4.8 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.

4.9 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 restriction of ventilation.

4.10 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.

4.11 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 rating just their sustained or steady state rating.

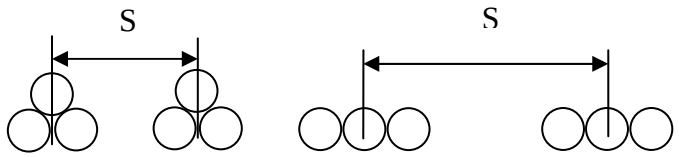
5.0 FURTHER GUIDANCE

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					
		Trefoil	Laid Flat	0.15	0.20	0.3	0.45
66kV Cables	2	0.78	0.80	0.81	0.82	0.85	0.88
	3	0.66	0.69	0.71	0.73	0.76	0.80
	4	0.60	0.63	0.65	0.67	0.72	0.76
	5	0.55	0.58	0.61	0.63	0.68	0.73

Figure 1

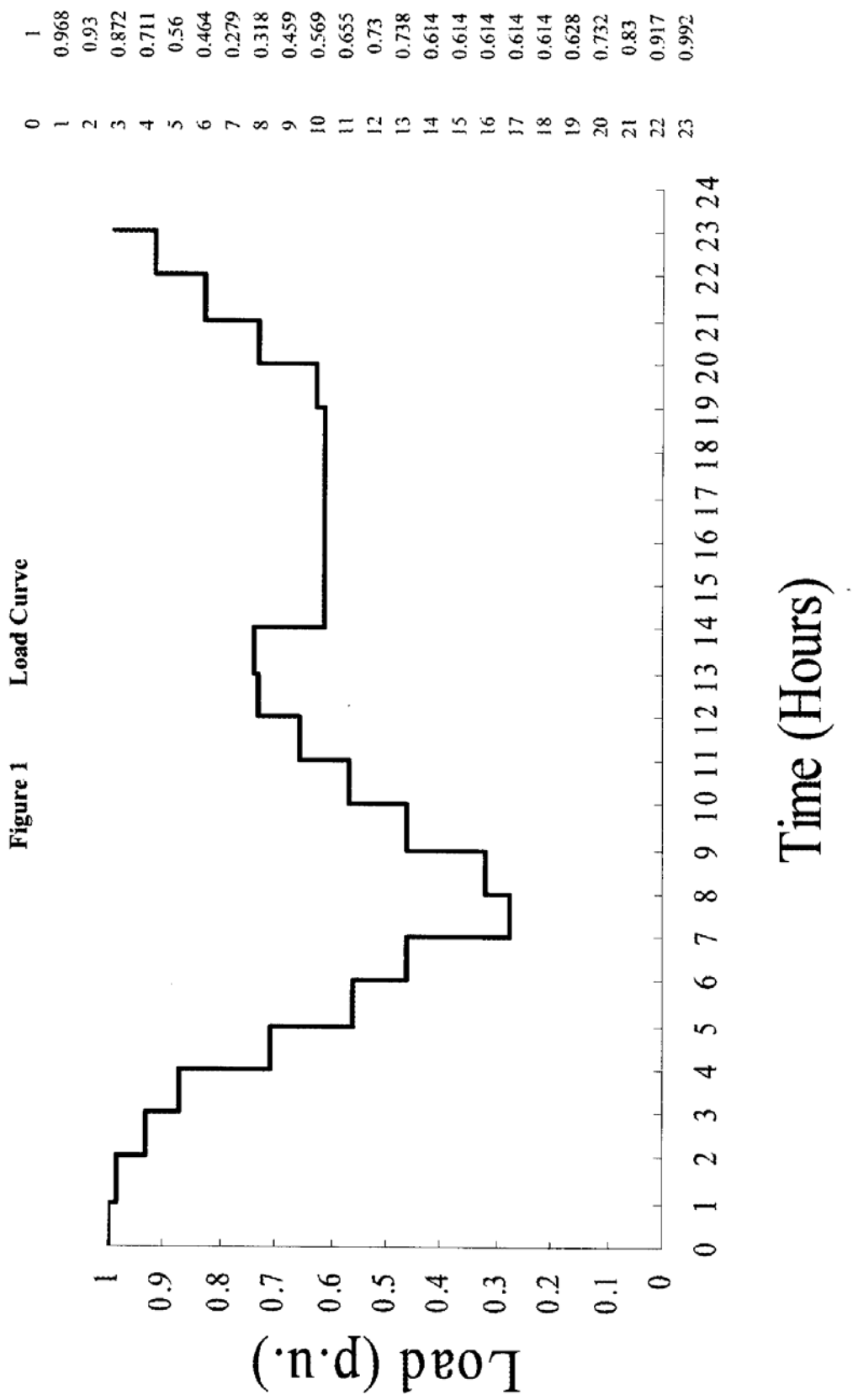


Figure 1 Load Curve
0 1
1 0.968
2 0.93
3 0.872
4 0.711
5 0.56
6 0.464
7 0.279
8 0.318
9 0.459
10 0.569
11 0.655
12 0.73
13 0.738
14 0.614
15 0.614
16 0.614
17 0.614
18 0.614
19 0.628
20 0.732
21 0.83
22 0.917
23 0.992
Load (p.u.)
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0 1 2 3 4 5 6 7 8 9 10 11 12 13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

66kV SINGLE CORE X.L.P.E. INSULATED LEAD SHEATH & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Dry design)

Winter *SUSTAINED* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	520	472	455	598
240mm² Copper	600	534	514	702
300mm² Copper	671	590	565	796
400mm² Copper	757	654	624	911
500mm² Copper	851	724	689	1044

Parameters

Maximum depth of lay 1m

Soil Thermal Resistivity (g) 0.9°C m/W

Ground Ambient Temperature 10°C

Air Ambient Temperature 10°C

Maximum Conductor Temperature 90°C

Ratings based on Crater for HV polymeric cables.

66kV SINGLE CORE X.L.P.E. INSULATED LEAD SHEATH & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Dry design)

Winter *CYCLIC* Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	598	547	529	598
240mm² Copper	694	624	601	702
300mm² Copper	780	693	666	796
400mm² Copper	884	774	741	911
500mm² Copper	1001	864	825	1044

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	0.9°C m/W
Ground Ambient Temperature	10°C
Air Ambient Temperature	10°C
Maximum Conductor Temperature	90°C

Ratings based on Crater for HV polymeric cables.

TABLE A2 – Spr

66kV SINGLE CORE X.L.P.E. INSULATED LEAD SHEATH & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Dry design)

Spring ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	486	447	433	598
240mm² Copper	559	505	487	702
300mm² Copper	626	557	536	796
400mm² Copper	704	616	591	911
500mm² Copper	791	682	651	1044

Parameters

Maximum depth of lay 1m

Soil Thermal Resistivity (g) 1.05°C m/W

Ground Ambient Temperature 12°C

Air Ambient Temperature 12°C

Maximum Conductor Temperature 90°C

Ratings based on Crater for HV polymeric cables.

66kV SINGLE CORE X.L.P.E. INSULATED LEAD SHEATH & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Dry design)

Spring ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	564	525	508	598
240mm² Copper	654	597	577	702
300mm² Copper	734	662	638	796
400mm² Copper	831	738	709	911
500mm² Copper	939	822	787	1044

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.05°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	90°C

Ratings based on Crater for HV polymeric cables.

66kV SINGLE CORE X.L.P.E. INSULATED LEAD SHEATH & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Dry design)

Summer ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	453	422	409	598
240mm² Copper	521	476	461	702
300mm² Copper	582	524	506	796
400mm² Copper	655	579	557	911
500mm² Copper	735	640	614	1044

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.2 C m/W
Ground Ambient Temperature	15°C
Air Ambient Temperature	15°C
Maximum Conductor Temperature	90°C

Ratings based on Crater for HV polymeric cables.

66kV SINGLE CORE X.L.P.E. INSULATED LEAD SHEATH & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Dry design)

Summer ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	531	500	485	598
240mm² Copper	614	568	550	702
300mm² Copper	690	629	608	796
400mm² Copper	780	701	674	911
500mm² Copper	880	779	748	1044

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.2 °C m/W
Ground Ambient Temperature	15°C
Air Ambient Temperature	15°C
Maximum Conductor Temperature	90°C

Ratings based on Crater for HV polymeric cables.

66kV SINGLE CORE X.L.P.E. INSULATED LEAD SHEATH & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Dry design)

Autumn ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	477	441	427	598
240mm² Copper	549	498	481	702
300mm² Copper	614	549	529	796
400mm² Copper	691	607	583	911
500mm² Copper	777	672	642	1044

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.1 C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	90°C

Ratings based on Crater for HV polymeric cables.

66kV SINGLE CORE X.L.P.E. INSULATED LEAD SHEATH & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Dry design)

Autumn ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	556	519	504	598
240mm² Copper	644	591	571	702
300mm² Copper	724	655	632	796
400mm² Copper	819	730	702	911
500mm² Copper	925	813	779	1044

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.1 °C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	90°C

Ratings based on Crater for HV polymeric cables.

66kV SINGLE CORE EPR INSULATED COPPER WIRE SCREEN & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Wet design)

Winter ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	479	423	409	533
240mm² Copper	552	476	458	625
300mm² Copper	616	522	501	708
400mm² Copper	691	574	550	809
500mm² Copper	777	635	606	929

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	0.9°C m/W
Ground Ambient Temperature	10°C
Air Ambient Temperature	10°C
Maximum Conductor Temperature	90°C

Ratings based on Crater for HV polymeric cables.

66kV SINGLE CORE EPR INSULATED COPPER WIRE SCREEN & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Wet design)

Winter ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	544	487	472	533
240mm² Copper	631	552	535	625
300mm² Copper	708	611	589	708
400mm² Copper	800	679	653	809
500mm² Copper	906	758	727	929

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	0.9°C m/W
Ground Ambient Temperature	10°C
Air Ambient Temperature	10°C
Maximum Conductor Temperature	90°C

Ratings based on Crater for HV polymeric cables.

TABLE B2 - Spr

66kV SINGLE CORE EPR INSULATED COPPER WIRE SCREEN & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Wet design)

Spring ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	449	402	390	533
240mm² Copper	516	451	436	625
300mm² Copper	575	494	476	708
400mm² Copper	644	543	521	809
500mm² Copper	723	599	573	929

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.05°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	90°C

Ratings based on Crater for HV polymeric cables.

66kV SINGLE CORE EPR INSULATED COPPER WIRE SCREEN & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Wet design)

Spring ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	515	467	454	533
240mm² Copper	596	530	514	625
300mm² Copper	669	585	565	708
400mm² Copper	754	648	625	809
500mm² Copper	852	722	694	929

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.05°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	90°C

Ratings based on Crater for HV polymeric cables.

66kV SINGLE CORE EPR INSULATED COPPER WIRE SCREEN & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Wet design)

Summer ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	420	380	369	533
240mm² Copper	482	426	413	625
300mm² Copper	536	466	450	708
400mm² Copper	600	511	492	809
500mm² Copper	673	563	540	929

Parameters

Maximum depth of lay 1m

Soil Thermal Resistivity (g) 1.2 C m/W

Ground Ambient Temperature 15^{o}C

Air Ambient Temperature 15^{o}C

Maximum Conductor Temperature 90^{o}C

Ratings based on Crater for HV polymeric cables.

66kV SINGLE CORE EPR INSULATED COPPER WIRE SCREEN & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Wet design)

Summer ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	487	446	435	533
240mm² Copper	562	505	491	625
300mm² Copper	629	557	539	708
400mm² Copper	708	616	595	809
500mm² Copper	798	685	660	929

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.2 °C m/W
Ground Ambient Temperature	15°C
Air Ambient Temperature	15°C
Maximum Conductor Temperature	90°C

Ratings based on Crater for HV polymeric cables.

66kV SINGLE CORE EPR INSULATED COPPER WIRE SCREEN & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Wet design)

Autumn ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	442	397	385	533
240mm² Copper	507	445	431	625
300mm² Copper	565	487	470	708
400mm² Copper	633	535	515	809
500mm² Copper	710	591	566	929

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.1 C m/W
Ground Ambient Temperature	12^{o}C
Air Ambient Temperature	12^{o}C
Maximum Conductor Temperature	90^{o}C

Ratings based on Crater for HV polymeric cables.

66kV SINGLE CORE EPR INSULATED COPPER WIRE SCREEN & M.D.P.E. OUTER SHEATH CABLES, LAID IN TREFOIL. (Wet design)

Autumn ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
185mm² Copper	509	463	457	533
240mm² Copper	588	525	509	625
300mm² Copper	659	579	560	708
400mm² Copper	743	641	619	809
500mm² Copper	839	714	687	929

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.1 ^{o}C m/W
Ground Ambient Temperature	12^{o}C
Air Ambient Temperature	12^{o}C
Maximum Conductor Temperature	90^{o}C

Ratings based on Crater for HV polymeric cables.

TABLE C1 - Win

66kV THREE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Winter ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	580	485	455	606
Aluminium conductors				
350mm² Al	528	443	415	562
Imperial sizes				
Copper conductors				
0.35in² Copper	549	460	432	571

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	0.9°C m/W
Ground Ambient Temperature	10°C
Air Ambient Temperature	10°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Winter ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	674	535	496	606
Aluminium conductors				
350mm² Al	617	491	453	562
Imperial sizes				
Copper conductors				
0.35in² Copper	636	507	470	571

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	0.9°C m/W
Ground Ambient Temperature	10°C
Air Ambient Temperature	10°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Spring ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	540	463	436	606
Aluminium conductors				
350mm² Al	492	423	397	562
Imperial sizes				
Copper conductors				
0.35in² Copper	512	439	414	571

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.05°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Spring ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm^2 Copper	635	518	481	606
Aluminium conductors				
350mm^2 Al	582	474	439	562
Imperial sizes				
Copper conductors				
0.35in^2 Copper	600	490	456	571

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.05^{o}C m/W
Ground Ambient Temperature	12^{o}C
Air Ambient Temperature	12^{o}C
Maximum Conductor Temperature	85^{o}C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Summer ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	502	440	416	606
Aluminium conductors				
350mm² Al	457	401	378	562
Imperial sizes				
Copper conductors				
0.35in² Copper	476	417	395	571

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.2°C m/W
Ground Ambient Temperature	15°C
Air Ambient Temperature	15°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Summer ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	597	497	463	606
Aluminium conductors				
350mm² Al	546	455	422	562
Imperial sizes				
Copper conductors				
0.35in² Copper	564	471	439	571

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.2°C m/W
Ground Ambient Temperature	15°C
Air Ambient Temperature	15°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Autumn ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTSAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	531	458	432	606
Aluminium conductors				
350mm² Al	483	418	393	562
Imperial sizes				
Copper conductors				
0.35in² Copper	503	435	410	571

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.1°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Autumn ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTSAINED CURRENT RATINGS-AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm^2 Copper	626	514	478	606
Aluminium conductors				
350mm^2 Al	573	471	436	562
Imperial sizes				
Copper conductors				
0.35in^2 Copper	592	487	453	571

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.1^{o}C m/W
Ground Ambient Temperature	12^{o}C
Air Ambient Temperature	12^{o}C
Maximum Conductor Temperature	85^{o}C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Winter ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	572	480	449	608
Aluminium conductors				
350mm² Al	526	441	412	572

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	0.9°C m/W
Ground Ambient Temperature	10°C
Air Ambient Temperature	10°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Winter ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	669	531	490	608
Aluminium conductors				
350mm² Al	620	491	451	572

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	0.9°C m/W
Ground Ambient Temperature	10°C
Air Ambient Temperature	10°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Spring ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	533	458	430	608
Aluminium conductors				
350mm² Al	489	420	394	572

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.05°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Spring ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	630	513	475	608
Aluminium conductors				
350mm² Al	583	474	437	572

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.05°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Summer ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	495	434	409	608
Aluminium conductors				
350mm² Al	454	398	374	572

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.2°C m/W
Ground Ambient Temperature	15°C
Air Ambient Temperature	15°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Summer ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	591	492	457	608
Aluminium conductors				
350mm² Al	547	454	420	572

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.2°C m/W
Ground Ambient Temperature	15°C
Air Ambient Temperature	15°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Autumn ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	523	453	426	608
Aluminium conductors				
350mm² Al	480	415	390	572

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.1°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV THREE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Autumn ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	621	510	472	608
Aluminium conductors				
350mm² Al	575	470	434	572

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.1°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

TABLE E1 - win

66kV SINGLE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Winter ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm^2 Copper	607	555	536	695
Aluminium conductors				
350mm^2 Al	554	511	494	648
Imperial sizes				
Copper conductors				
0.35in^2 Copper	563	512	494	640

Parameters

Maximum depth of lay	1m
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	85^{o}C

Ratings based on Crater for Oil filled cables.

TABLE E1 - win

66kV SINGLE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Winter ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm^2 Copper	703	642	617	695
Aluminium conductors				
350mm^2 Al	645	593	571	648
Imperial sizes				
Copper conductors				
0.35in^2 Copper	649	591	569	640

Parameters

Maximum depth of lay	1m
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	85^{o}C

Ratings based on Crater for Oil filled cables.

66kV SINGLE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Spring ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	570	531	514	695
Aluminium conductors				
350mm² Al	519	489	474	648
Imperial sizes				
Copper conductors				
0.35in² Copper	530	490	475	640

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.05°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

TABLE E2 - spr

66kV SINGLE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Spring ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm^2 Copper	666	622	600	695
Aluminium conductors				
350mm^2 Al	610	575	554	648
Imperial sizes				
Copper conductors				
0.35in^2 Copper	617	573	553	640

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.05^{o}C m/W
Ground Ambient Temperature	12^{o}C
Air Ambient Temperature	12^{o}C
Maximum Conductor Temperature	85^{o}C

Ratings based on Crater for Oil filled cables.

66kV SINGLE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Summer ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm^2 Copper	520	493	479	695
Aluminium conductors				
350mm^2 Al	473	453	440	648
Imperial sizes				
Copper conductors				
0.35in^2 Copper	485	455	442	640

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.2^{o}C m/W
Ground Ambient Temperature	15^{o}C
Air Ambient Temperature	15^{o}C
Maximum Conductor Temperature	85^{o}C

Ratings based on Crater for Oil filled cables.

66kV SINGLE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Summer ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	613	584	565	695
Aluminium conductors				
350mm² Al	560	538	521	648
Imperial sizes				
Copper conductors				
0.35in² Copper	569	538	521	640

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.2C m/W
Ground Ambient Temperature	15^{o}C
Air Ambient Temperature	15^{o}C
Maximum Conductor Temperature	85^{o}C

Ratings based on Crater for Oil filled cables.

66kV SINGLE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Autumn ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	646	608	587	695
Aluminium conductors				
350mm² Al	592	561	542	648
Imperial sizes				
Copper conductors				
0.35in² Copper	599	560	541	640

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.1°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV SINGLE CORE, OIL FILLED, DUCTED, LEAD SHEATH, CABLE.

Autumn ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	551	517	501	695
Aluminium conductors				
350mm² Al	502	476	461	648
Imperial sizes				
Copper conductors				
0.35in² Copper	513	477	462	640

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.1°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV SINGLE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Winter ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	586	490	470	679
Aluminium conductors				
350mm² Al	537	460	442	636
Imperial sizes				
Copper conductors				
0.35in² Copper	539	455	438	611

Parameters

Maximum depth of lay	1m
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	85^{o}C

Ratings based on Crater for Oil filled cables.

66kV SINGLE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Winter ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm^2 Copper	680	572	548	679
Aluminium conductors				
350mm^2 Al	626	538	516	636
Imperial sizes				
Copper conductors				
0.35in^2 Copper	621	529	508	611

Parameters

Maximum depth of lay	1m
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	85^{o}C

Ratings based on Crater for Oil filled cables.

66kV SINGLE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Spring ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	550	469	451	679
Aluminium conductors				
350mm² Al	503	440	423	636
Imperial sizes				
Copper conductors				
0.35in² Copper	508	436	420	611

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.05°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV SINGLE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Spring ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	644	554	532	679
Aluminium conductors				
350mm² Al	592	520	500	636
Imperial sizes				
Copper conductors				
0.35in² Copper	590	513	494	611

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.05°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV SINGLE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Summer ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	502	434	419	679
Aluminium conductors				
350mm² Al	459	407	393	636
Imperial sizes				
Copper conductors				
0.35in² Copper	464	405	465	611

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.2°C m/W
Ground Ambient Temperature	15°C
Air Ambient Temperature	15°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV SINGLE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Summer ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm^2 Copper	592	519	499	679
Aluminium conductors				
350mm^2 Al	544	487	469	636
Imperial sizes				
Copper conductors				
0.35in^2 Copper	544	481	465	611

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.2^{o}C m/W
Ground Ambient Temperature	15^{o}C
Air Ambient Temperature	15^{o}C
Maximum Conductor Temperature	85^{o}C

Ratings based on Crater for Oil filled cables.

66kV SINGLE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Autumn ***SUSTAINED*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	SUSTAINED CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm² Copper	532	456	439	679
Aluminium conductors				
350mm² Al	487	427	412	636
Imperial sizes				
Copper conductors				
0.35in² Copper	491	424	409	611

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.1°C m/W
Ground Ambient Temperature	12°C
Air Ambient Temperature	12°C
Maximum Conductor Temperature	85°C

Ratings based on Crater for Oil filled cables.

66kV SINGLE CORE, OIL FILLED, DUCTLESS, CORRUGATED ALUMINIUM SHEATH, CABLE.

Autumn ***CYCLIC*** Current Ratings

SIZE AND TYPE OF CABLE CONDUCTOR	CYCLIC CURRENT RATINGS - AMPS			
	CABLE IN GROUND	CABLE IN DUCTS		CABLE IN AIR
		PVC	Rigiduct	
Metric sizes				
Copper conductors				
260mm^2 Copper	625	541	520	679
Aluminium conductors				
350mm^2 Al	574	508	488	636
Imperial sizes				
Copper conductors				
0.35in^2 Copper	573	501	483	611

Parameters

Maximum depth of lay	1m
Soil Thermal Resistivity (g)	1.1^{o}C m/W
Ground Ambient Temperature	12^{o}C
Air Ambient Temperature	12^{o}C
Maximum Conductor Temperature	85^{o}C

Ratings based on Crater for Oil filled cables.

APPENDIX A

SUPERSEDED DOCUMENTATION

This document supersedes ST:SD8B/2 dated September 2003 which should now be withdrawn.

APPENDIX B

ASSOCIATED DOCUMENTATION

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

APPENDIX C

IMPACT ON COMPANY POLICY

This Standard Technique has been updated to add all four seasons to the cable rating document instead of just having one season as given in the previous document. In addition the document has been broken up into manageable parts, with each part being for a particular voltage level.

APPENDIX D

IMPLEMENTATION OF POLICY

This Standard Technique shall be communicated to all relevant WPD Planning and Control staff at the next Team Briefing by the relevant Team Manager.

APPENDIX E

KEY WORDS

66kV Group Derating, Sustained Rating, Cyclic Rating, Laid Direct Rating, Duct Rating, Air Rating.