22kV CABLES

TYPE	CORES	INSULATION	AREA (SQ. mm)	OVERALL DIAMETER (mm)	RAC (OHM/km)	X50 (OHM/km) TREFOIL	X50 (OHM/km) FLAT TOUCH	PWC ITEM NUMBER	BURIED CURRENT CAPACITY (A)		BURIED CAPACITY (MVA)		MINIMUM BENDING RADIUS (mm)		MAXIMUM PULLING TENSION (kN)
									DIRECT	DUCT	DIRECT	DUCT	WITH TENSION	WITHOUT TENSION	
Cu	3	PAPER	25	55.0	0.842	0.124	N/A	9076•	105	93	4.00	3.54	850	-	-
Cu	3	PAPER	120	69.0	0.179	0.089	N/A	9084•	255	225	9.72	8.58	1070	-	-
Cu	3	PAPER	240	83.0	0.0905	0.081	N/A	-•	370	320	14.10	12.20	1290	-	-
Cu	1	XLPE	35	37.2	0.668	0.159	0.174	286047	158	142	6.02	5.41	1110	740	2.4
Cu	1	XLPE	120	44.0	0.196	0.127	0.143	286054	335	305	12.77	11.62	1350	900	8.23
Cu	1	XLPE	240	49.3	0.0978	0.115	0.130	286062	475	415	18.10	15.81	1530	1020	16.46
Cu	1	XLPE	630	60.4	0.0407	0.101	0.117	413426	841	728	32.05	27.74	1950	1300	20
Al	1	XLPE	240	46.6	0.161	0.116	0.177	411618	352	313	13.41	11.93	1250	750	7.7
Al	1	XLPE	400	54.0	0.102	0.108	0.123	502180	455	403	17.34	15.36	1430	860	10.2
Al	1	XLPE	630	57.7	0.0632	0.101	0.116	500972	593	523	22.60	19.93	1610	960	20

11kV CABLES

TYPE	CORES	INSULATION	AREA (SQ. mm)	OVERALL DIAMETER (mm)	RAC (OHM/km)	X50 (OHM/km) TREFOIL	X50 (OHM/km) FLAT TOUCH	PWC ITEM NUMBER	BURIED CURRENT CAPACITY (A)		BURIED CAPACITY (MVA)		MINIMUM BENDING RADIUS (mm)		MAXIMUM PULLING TENSION (kN)
									DIRECT	DUCT	DIRECT	DUCT	WITH TENSION	WITHOUT TENSION	
Al	3	PAPER	300	66.0	0.122	0.071	N/A	9480•	310	300	5.91	5.72	920	-	-
Al	3	PAPER	400	80.0	0.095	0.069	N/A	9506•	395	340	7.53	6.48	990	-	-
Al	3	XLPE	400	87.0	0.102	0.0876	N/A	-	500	420	9.53	8.00	1490	990	60
Al	1	XLPE	35	22.3	1.11	0.144	0.159	286005	134	108	2.55	2.05	850	550	1.8
Al	1	XLPE	95	27.7	0.410	0.123	0.138	286013	231	189	4.40	3.60	1000	675	4.8
Al	1	XLPE	240	34.7	0.161	0.107	0.123	286021	380	318	7.24	6.06	1250	850	12
Al	1	XLPE	400	40.5	0.102	0.101	0.116	286039	485	417	9.24	7.94	1500	925	20
Al	1	XLPE	630	48.4	0.0636	0.0950	0.110	500984	620	533	11.81	10.15	1600	1100	32
Al	3x1	TRIPLEX V-90	95	60.7	0.410	0.118	N/A	504514	231	192	4.40	3.66	1400	1080	14
Al	3x1	TRIPLEX V-90	240	75.8	0.161	0.103	N/A	504542	380	317	7.24	6.04	1730	1300	36
Al	3x1	TRIPLEX V-90	400	88.3	0.102	0.0965	N/A	504543	484	417	9.22	7.94	2050	1540	60
Cu	3	PAPER	50	45.0	0.456	0.086	N/A	9282•	145	125	2.76	2.38	540	-	-
Cu	3	PAPER	185	63.0	0.086	0.073	N/A	9266•	315	265	6.00	5.05	755	-	-
Cu	3	XLPE	300	77.0	0.0796	0.0904	N/A	501840•	560	470	10.67	8.95	1380	920	63
Cu	1	V-75 PVC	35	23.2	0.668	0.147	0.163	9092	174	140	3.31	2.67	420	280	2.5
Cu	1	XLPE	240	40.0	0.0978	0.115	0.130	500960	483	417	9.20	7.94	1400	950	17
Cu	1	XLPE	300	42.6	0.0788	0.112	0.127	414409	541	466	10.31	8.88	1450	1000	21
Cu	1	XLPE	400	46.1	0.0628	0.107	0.122	501797	607	523	11.56	9.96	1600	1050	28
Cu	1	XLPE	800	59.7	0.0341	0.0960	0.111	501770	829	741	15.79	14.12	2000	1350	56
Cu	3x1	TRIPLEX V-90	500	96.4	0.0516	0.0923	N/A	501798•	668	575	12.73	10.95	1560	1040	105

NOTES:

1. Rac: MAX AC RESISTANCE AT 65°C
2. X50: EQUIVALENT STAR REACTANCE AT 50Hz
3. BENDING RADIUS VALUES GIVEN FOR NYLON PROTECTED CABLES.
5. ALL RATING ARE BASED ON THE FOLLOWING:
   - GROUND TEMP 25°C
   - AIR TEMP 40°C
   - DEPTH OF LAYING 0.8M THERMAL RESISTIVITY OF SOIL 1.2KM/W
6. MAXIMUM PULLING TENSION IS FOR SINGLE CABLE PULLS. FOR MULTI CABLE PULLS, DO NOT EXCEED THE MAXIMUM SINGLE CABLE PULL TENSION UNLESS;
   - CABLE MANUFACTURER IS CONSULTED TO DETERMINE GREATER ALLOWABLE PULLING TENSIONS, OR
   - OTHER COMPLIANT INSTALLATION METHODS ARE ADOPTED TO DETERMINE INSTALLATION METHOD AND MAXIMUM ALLOWABLE TENSIONS
7. • INDICATES THAT THE ITEMS ARE OBSOLETE OR SUPERSEDED AND ARE NOT TO BE ORDERED OR INSTALLED.
8. TRIPLEX BENDING RADIUS IS PER BUNDLE.

NO	DESCRIPTION	DRN	DATE	CKD	APPD
16	UPDATED 22kV CABLES BURIED CAPACITY.	P.BH.	JUN'22	P.BH.	B.V.
15	UPDATED 11kV CABLES BENDING RADIUS.	A.N.	SEP'21	A.N.	B.V.
14	UPDATED 22kV PILC CABLE ELECTRICAL RATINGS. REFORMATTED NOTES.	A.N.	JUL'21	A.N.	B.C.
13	UPDATED SHEET 2. REMOVED NOTE 4. ADDED 11kV TRIPLEX AND SINGLE CORE	A.N.	MAY'21	C.C.C.	B.V.
12	ADD NOTE 6.	C.C.	JAN'21	B.V.	B.C.
11	TITLEBLOCK & DRAWING NUMBER FORMATTED	K.T.	APR'19	C.C.	C.C.
10	ITEMS ADDED	K.T.	APR'16	I.B.	B.C.
9	HV CABLE DATA UPDATED AND NOTE 4 & 5 ADDED	A.S.	DEC'14	A.T.	B.C.

AMENDMENTS

PowerWater
NORTHERN TERRITORY

DES	T. TANG
DRN	pmc
CKD	A. GREENWOOD
APPD	C.H. YAU
SCALE	N.T.S.
ISSUED	MAR'94
ALL DIM. IN mm	
DRAFTING STANDARD TO A.S.1100	

POWER STANDARD DRAWING

DESIGN DATA
UNDERGROUND HV CABLES
ELECTRICAL & PHYSICAL CHARACTERISTICS
SHEET 1 of 2

A3 | DRAWING NUMBER S02-04-02-05_1 | 16 AMDT

CAD PRODUCT - DO NOT AMEND MANUALLY

LV CABLES

TYPE	CORES	INSULATION	AREA (SQ. mm)	OVERALL DIAMETER (mm)	RAC (OHM/km)	X50 (OHM/km) TREFOIL	X50 (OHM/km) FLAT TOUCH	PWC ITEM NUMBER	BURIED CURRENT CAPACITY (A)		BURIED CAPACITY (kVA)		MINIMUM BENDING RADIUS (mm)	MAXIMUM PULLING TENSION (kN)
									DIRECT	DUCT	DIRECT	DUCT		
Cu	3.5	PAPER	95	44.4	0.247	0.063	N/A	9175*	265	220	190	158	530	-
Cu	3.5	PAPER	120	49.4	0.191	0.062	N/A	11106*	310	255	223	183	600	-
Cu	3.5	PAPER	240	63.2	0.095	0.062	N/A	9225*	450	375	323	270	760	-
Cu	1	V-75 PVC	120	22.9	0.1790	0.089	0.0103	9472*	317	252	228	164	130	-
Cu	1	V-75 PVC	300	34.3	0.0736	0.086	0.0993	9498*	524	434	377	312	200	-
Cu	1	V-75 PVC	500	41.8	0.0487	0.084	0.0971	9464*	668	571	480	410	240	-
Cu FLX	1	R-EP-90	35	12.6	0.607	0.0991	0.114	402707	180	134	129	96	52	0.53
Cu FLX	1	R-EP-90	70	15.7	0.311	0.0917	0.107	406718	262	203	188	146	66	1.05
Cu FLX	1	R-EP-90	150	21.5	0.1465	0.0870	0.102	300368	400	316	288	227	129	2.25
Cu FLX	1	R-EP-90	300	29.3	0.0743	0.0842	0.0994	400784	589	491	423	353	176	4.05
Cu	1	XLPE X-90	25	14.8	0.842	0.102	0.121	R 9449 B 9456	151	113	109	81	222	1.75
Al WB	1	XLPE X-90	35	14.5	0.607	0.0982	0.113	R 406850* B 406853*	140	106	101	76	250	1.50
Al WB	1	XLPE X-90	185	24.6	0.117	0.0835	0.0988	9316*	352	283	253	203	450	9.30
Al WB	1	XLPE X-90	240	27.8	0.0905	0.0818	0.0970	401015	409	333	294	239	520	12.00
Cu FLX	1	XLPE X-HF-110	240	27.6	0.0943	0.0808	0.0960	289645*	583	481	419	346	83	16.84
Cu FLX	1	XLPE X-HF-110	400	34.6	0.0572	0.0788	0.0941	502488	746	648	536	466	104	20
Cu FLX	1	XLPE X-HF-110	500	38.5	0.0452	0.0780	0.0932	502489	843	729	606	524	115	20

NOTES:

1. Rac: MAX AC RESISTANCE AT 60°C
2. X50 : EQUIVALENT STAR REACTANCE AT 50 Hz
3. VALUES ARE IN ACCORDANCE WITH AS 3008.1.1
4. * INDICATES THAT THE ITEMS ARE OBSOLETE/SUPERSEDED AND ARE NOT TO BE ORDERED OR INSTALLED.

NO	DESCRIPTION	DRN	DATE	CKD	APPD
8	UPDATED SHEET 1.	P.BH.	JUN'22	P.BH.	B.V.
7	UPDATED SHEET 1.	A.N.	SEP'21	A.N.	B.V.
6	UPDATED SHEET 1.	A.N.	JUL'21	A.N.	B.C.
5	ADDED 240 SQ.MM X-HF-110 & 25 SQ.MM Cu XLPE X-90. REFORMATTED TABLE. UPDATED VALUES. ADDED NOTE 3. EDITED NOTES 1 AND 2.	A.N.	MAY'21	C.C.C.	B.V.
4	TITLEBLOCK & DRAWING NUMBER FORMATTED	K.T.	APR'19	C.C.	C.C.
3	CABLES ADDED, STOCK CODES UPDATED	KT	APR16	IB	BC
2	240 AL XLPE KVA RATING CORRECTED	AT	AUG'14	BC	BC

AMENDMENTS

PowerWater
NORTHERN TERRITORY

DES	R.SOOD
DRN	A.SCHMID
CKD	R.SOOD
APPD	B.CHEUNG
SCALE	N.T.S.
ISSUED	AUG'06
ALL DIM. IN mm	
DRAFTING STANDARD TO A.S.1100	

POWER STANDARD DRAWING

DESIGN DATA
UNDERGROUND LV CABLES
ELECTRICAL AND PHYSICAL CHARACTERISTICS
SHEET 2 of 2

A3 | DRAWING NUMBER S02-04-02-05_2 | 8 AMDT

CAD PRODUCT - DO NOT AMEND MANUALLY