



GENERAL NOTES:

1. THE CMEN LINK MUST BE A MINIMUM 70mm² COVERED COPPER CONDUCTOR.
2. CONSTRUCTION TEAM/ COMMISSIONING OFFICER MUST ENSURE SUBSTATION IS IN CMEN CONFIGURATION.
3. ALL EARTHING CONDUCTORS SHALL BE THOROUGHLY CLEANED AND DEBURRED AT CONNECTION POINTS BEFORE CONNECTION.
4. TRANSFORMER TANK, LV SWITCHBOARD FRAME, PADMOUNT ENCLOSURE, HV CABLE SCREENS AND HV SWITCHGEAR FRAME MUST BE CONNECTED TO THE HV EARTH BAR.
5. NEUTRALS OF LV CABLES AND TRANSFORMER NEUTRAL TO BE CONNECTED TO NEUTRAL BAR ON THE LV BOARD.
6. EACH EARTHING CONNECTION MADE TO AN EARTHING BAR MUST BE FIXED WITH A SEPARATE M12 BOLT, AS REQUIRED THE EARTH BAR MAYBE EXTENDED WITH ADDITIONAL COPPER BAR OF AT LEAST THE SAME SIZE, FIXED WITH TWO M12 BOLTS.
7. ALL EARTHING FASTENERS ARE STAINLESS STEEL.
8. SEPARATION BETWEEN BURIED EARTHING AND NON-BONDED METALLIC EQUIPMENT IS REQUIRED. SEPARATION DISTANCE IS TO BE SPECIFIED IN THE PARTICULAR DESIGN FOR THE SUBSTATION.
9. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SHOWN.
10. EARTHING CONDUCTORS MUST BE LABELLED IN ACCORDANCE WITH "P007127 - EARTHING DESIGN AND CONSTRUCTION MANUAL".
11. PADMOUNT SUBSTATION EARTHING CONFIGURATION / TYPE LABELS MUST BE INSTALLED ON THE INSIDE OF THE LV AND HV ACCESS DOORS.
12. CONFIGURATION/CONSTRUCTION SHOWN IS A CMEN ARRANGEMENT CONNECTED TO AN EARTHING GRID-FOR SEPARATELY EARTHED ARRANGEMENTS OR ELECTRODE CONSTRUCTIONS SEE ALTERNATE ASSEMBLIES.
13. EARTHING CONDUCTORS ENTERING THE SUBSTATION MUST BE A MINIMUM 70MM² COVERED COPPER CABLE. COPPER BAR OR STRAP MUST NOT BE USED.
14. TYPICAL CONNECTION SHOWN- REFERENCE INTERFACE TABLE FOR ACTUAL.
15. EARTHING MUST BE ASSESSED, DESIGNED AND VALIDATED IN ACCORDANCE WITH "P007127 - EARTHING DESIGN AND CONSTRUCTION MANUAL".
16. EXCESS JOINTING COMPOUND APPLIED TO EARTHING CONNECTIONS MUST BE REMOVED AFTER INSTALLATION.
17. PRE APPLIED JOINTING COMPOUND IN EARTHING CONNECTIONS MUST BE REMOVED PRIOR TO INSTALLATION WHEN INSTALLING INTO AN AQUATIC ENVIRONMENT.
18. 2X MINIMUM 70mm² COPPER CONDUCTORS MUST BE CONNECTED BETWEEN THE INSTALLED EARTH GRID AND EACH PADMOUNT SUBSTATION.
19. EARTHING CONDUCTORS CONNECTING TO THE EARTH GRID AND THE ADJACENT SUBSTATION MUST MAINTAIN A MINIMUM 150mm CLEARANCE BELOW THE INSTALLED GRADING RING.

GRADING RING NOTES:

1. SITE EXCAVATION DETAILS PROVIDED IN DRAWING D303-0019.
2. TWO CONNECTION POINTS ARE REQUIRED BETWEEN THE EARTH GRADING RING AND THE HV EARTH BAR IN CASE ONE CONNECTION FAILS.
3. GRADING RING TO BE INSTALLED 1000mm FROM EACH FACE OF THE SUBSTATION ENCLOSURE.
4. IF THE SUBSTATION IS UPGRADED THE GRADING RING POSITION MUST BE CHECKED AND RELOCATED AS REQUIRED - DISTANCE BETWEEN UPGRADED SUBSTATIONS MUST BE BETWEEN 3m AND 10m.
5. AS REQUIRED ADDITIONAL EARTH STAKES MAYBE INSTALLED AND ATTACHED TO THE GRADING RING ENSURING THE RING IS BURIED TO THE CORRECT DEPTH.

ITEM	UA TYPE	DESCRIPTION	STOCK CODE	QTY	DRAWING NO
1	P	EARTHING ROD, dia 13 x 1440mm, COPPER CLAD STEEL, EXTENDABLE, NO CLIP	1161222	8	D110-0001
2	P	CONDUCTOR, AERIAL, HBBC, 70mm ² , 19/2.14 (19/083)	1068830	AR	D102-0005
3	P	LUG, SHEAR-BOLT, 25-95mm ² , M13 BOLT HOLE, TINNED ALUMINIUM	1193219	8	D103-0022
4	P	CABLE, BUILDING, 70mm ² , IC, 19/2.14, 0.6/1kV, V-75, BLACK, PVC INSULATED	1069603	AR	D102-0012
5	P	LABEL, EARTHING, GRADING RING FOR EARTHING CONDUCTORS, 90 x 10.5mm, S/STEEL	1202086	4	D107-0017
6	P	CABLE TIE FOR EARTHING CONDUCTOR LABELS 4.6 x 200mm S/STEEL GR316	1202042	28	D107-0027
7	P	LABEL, EARTHING, HV EARTH GRID FOR EARTHING CONDUCTORS, 90 x 10.5mm, S/STEEL	1202097	4	D107-0018
8	P	LABEL, EARTHING, HV BOND TO PADMOUNT ADJ, FOR EARTHING CONDUCTORS, 90 x 10.5mm, S/STEEL	1202119	2	D107-0020
9	P	LABEL, EARTHING, LV BOND TO PADMOUNT ADJ, FOR EARTHING CONDUCTORS, 90 x 10.5mm, S/STEEL	1202130	2	D107-0021
10	P	LABEL, EARTHING, PADMOUNT, SUBSTATION EARTHING TYPE, CMEN EARTHED	1202207	4	D107-0029
11	P	LABEL, EARTHING, CMEN BOND FOR EARTHING CONDUCTORS, 90 x 10.5mm, S/STEEL	1202108	2	D107-0019
12	I	INTERFACE, EARTHING PARTS, CONNECTIONS AND ACCESSORIES	SELECT	28	D199-0001

No.	DESCRIPTION	CHKD	AUTH	DATE
A	IMAGE UPDATED	JJP	WNI	
B	C CRIMP, IMAGE & BOM UPDATE	BAN	WJC	15/11/2019
C	NOTES AND TITLE AMENDED - KV	NAA	WJC	12/08/2022
D	EARTH STOCK CODE UPDATE	JJP	WJC	17/11/2023

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Scale: 3rd Dim

Designed: J. Primmer

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Branch Manager: W. Cleland 15/11/2019

DWG Drawing No. and Revision:

STANDARD CONSTRUCTION, DISTRIBUTION UNDERGROUND, STATIONS, SA, EARTHING, CMEN EARTHING WITH GRID PADMOUNT SUBSTATION

3m - 10m SEPARATION

Scale: _____ Date: _____ Sheet No.: _____

Project No.: _____ Stock Code: _____

Status: **Current**

A1 **D303-0022** Rev **D**