



TRANSMISSION PROJECT
DIVISION

ENGINEERING MANAGEMENT

PROCESS SPECIFICATION

TB-4-221-509-013

REVISION: 00

PAGE : 1 OF 5

SPECIFICATION FOR MS WELDING (AT SITE)

1.0 THIS SPECIFICATION COVERS THE MS WELDING OF STRIP/ROD AT SITE WHICH IS USUALLY REQUIRED FOR BELOW GROUND EARTHING MAT

THIS SPECIFICATION IS CONSIDERED AS QUALIFIED PROCESS SPECIFICATION AS THE SAME HAS BEEN IN THE PAST PROJECTS. HOWEVER PROCESS QUALIFICATION SHALL BE DONE IF THE CHANGES ARE MADE BASED ON THE CUSTOMER REQUIREMENT

2.0 PROCESS/MATERIAL SPECIFICATION

STANDARD	AS PER IS 2062-1992 (1)
WELDING PROCESS	MANUAL METAL ARC WELDING/SHIELDED METAL ARC WELDING
PARENT MEUL	MS BLACK ROD/STRIP/GI STRIP
JOINT DESIGN	AS ILLUSTRATED BY SKETCHES IN ENCLOSED ANNEXURE
FILLET METAL	VORTIC (OR) VORDLAN OF ESAB (1) LTD. (OR) OVERCORD-S OF ADVANCE OERLIKON LTD. (OR) EQUIVALENT
SIZE OF FILLER METAL	4 mm
PREHEATING AND POST WELD HEAT TREATMENT	NOT REQUIRED

APPROVED SUBJECT TO NIT
FOR THE CONTROL OF
DOCUMENTS CONTAINED IN THIS
LETTER No. 141
Date 29-07-04
MANAGER (TND)
TURNKEY PROJECT
BHEL RAIPUR

[Signature]

REVISION NO.	01	02	03	PREPARED	CHECKED				
DATE	17.1.96	4.3.96	24.7.01	DKM	SN			MR	
REVISION NO.				Dt. of first Issue				APPROVED	
DATE				31.8.94				HEAD TBEM	

COPY RIGHT AND CONFIDENTIAL
The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED
it must not be used directly or indirectly in anyway detrimental to the interest of the company.



TRANSMISSION PROJECT
DIVISION

ENGINEERING MANAGEMENT

PROCESS SPECIFICATION

54
TB-4-221--509-013

REVISION: 00

PAGE : 2 OF 5

TYPE OF CURRENT AND RANGE : AC, 100-170 A, 40-50 V, 1 PHASE,
THROUGH WELDING TRANSFORMER

3.0 PROCEDURE

3.1 CLEANING THE JOINT:

THE JOINTS TO BE WELDED SHALL BE CLEANED USING WIRE BRUSH AND WIPED CLEAN WITH CLEAN & DRY CLOTH.

3.2 THE JOINTS SHALL BE ARRANGED WITH OVER LAPPING AS ILLUSTRATED IN THE ENCLOSED SKETCHES

3.3 WELDING: (MS BLACK ROD OR STRIP)

3.3.1 WEAVE BEAD FOR THE ROOT RUN AS WELL AS SUBSEQUENT PASSES SHALL BE EMPLOYED.

3.3.2 THE ROOT RUN SHOULD BE CHECKED FOR CRACKS USING A MAGNIFYING GLASS. CRACKS IF NOTICED MAY BE REMOVED BY GRINDING AND RE-WELDING. WELD SLAG SHOULD BE REMOVED BEFORE STARTING THE SUBSEQUENT RUN.

3.3.3 AFTER COMPLETING THE WELDING OF JOINT, IT SHOULD BE ALLOWED TO COOL NATURALLY AND THEN CLEANED. AFTER CLEANING, FIRST ONE COAT OF PRIMER (RED OXIDE) AND THEN TWO COATS OF BLACK BITUMEN PAINT SHALL BE APPLIED TO PREVENT CORROSION.

3.4 WELDING: (GI STRIP-ABOVE GROUND)

3.4.1 PROCEDURE SHALL BE SAME AS GIVEN ABOVE AT 3.3.1 AND 3.3.2 FOR MS BLACK ROD OR STRIP.

3.4.2 AFTER COMPLETING THE WELDING OF JOINT IT SHOULD BE ALLOWED TO COOL NATURALLY AND THEN CLEANED. AFTER CLEANING, FIRST ONE COAT OF PRIMER (RED OXIDE) AND THEN TWO COATS OF ZINC RICH PAINT SHALL BE APPLIED TO THE WELD PORTION TO COVER IT UNIFORMLY AND ADEQUATELY TO PREVENT CORROSION.

4.0 PREQUALIFICATION OF WELDERS

THIS SHALL BE CARRIED OUT AS PER SYSTEM NO. "TBSM 417"

[Signature]

APPROVED BY
DATE
COMMENTS
BY LETTER NO. 16
TKP/F
29-07-04
MANAGER (TECH)
TURNKEY PROJECT
BHEL

[Signature]



TRANSMISSION PROJECT
DIVISION

ENGINEERING MANAGEMENT

PROCESS SPECIFICATION

TB-4-221-509-013

REVISION: 00

PAGE : 3 OF 5

5.0 REFERENCES

- (1) IS:2062-1992
-STEEL FOR GENERAL STRUCTURAL PURPOSES. ✓
- (2) SECTION DX OF AMERICAN SOCIETY OF MECHANICAL ENGINEERS
(ASME), (1992) ✓

COPY RIGHT AND CONFIDENTIAL

The information on this document is the property of BHARAT HEAVY ELECTRICALS LIMITED
it must not be used directly or indirectly in anyway detrimental to the interest of the company.

APPROVED SUBJECT TO NIT
AND INCORPORATION OF
COMMENTS CONTAINED IN THIS
LETTER NO. 161.....
TKP F..6.....
29-07-04.....
WKS
IN CHARGE (TECH)
FOR KEY PROJECT
SIGNED BY

[Handwritten signature]

[Handwritten signature]



TRANSMISSION PROJECT
DIVISION

ENGINEERING MANAGEMENT

PROCESS SPECIFICATION

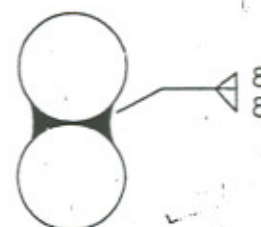
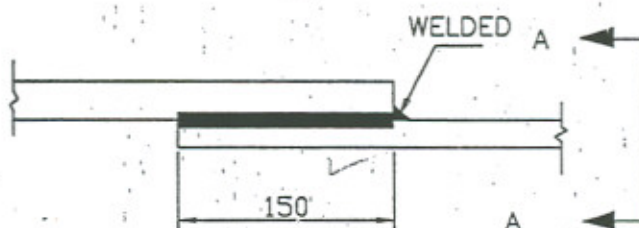
TB-4-221-509-013

REVISION: 00

PAGE : 4 OF 5

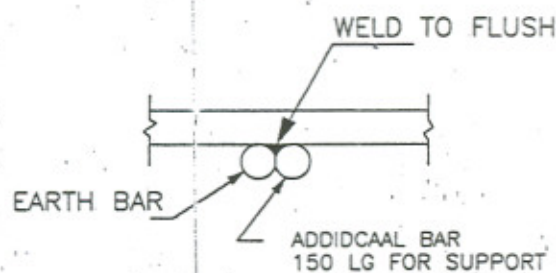
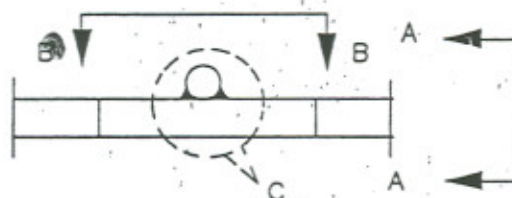
ROD TO ROD

1. STRAIGHT LAP JOINT/RISER

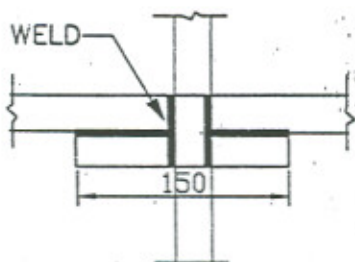


VIEW A-A

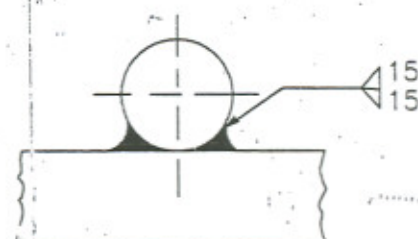
2. RIGHT ANGLED/CROSS JOINT



VIEW A-A

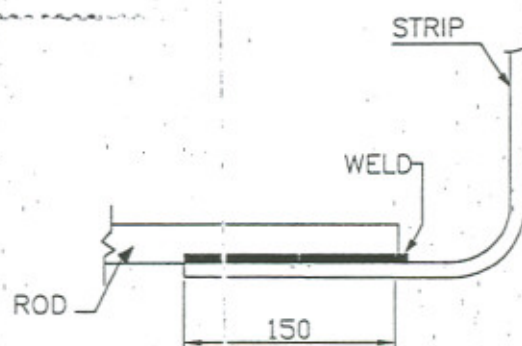
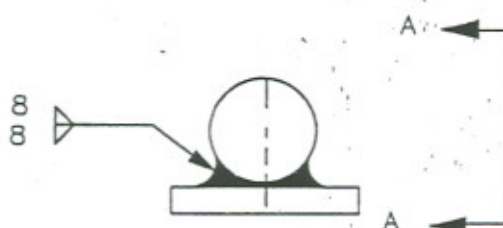


VIEW B-B



VIEW C

3. ROD TO STRIP/RIGHT ANGLE BEND



VIEW A-A

NOTE :- ALL DIMENSIONS ARE IN MM.

Mr. M. K. Vyas



TRANSMISSION PROJECT
DIVISION

ENGINEERING MANAGEMENT

PROCESS SPECIFICATION

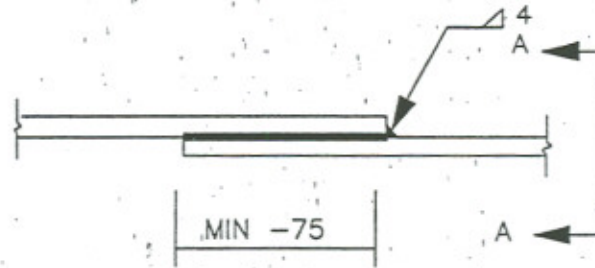
TB-4-221-509-013

REVISION: 00

PAGE : 5 OF 5

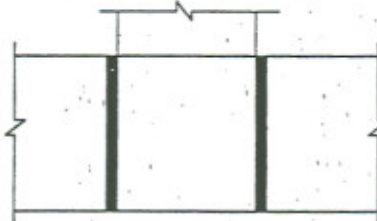
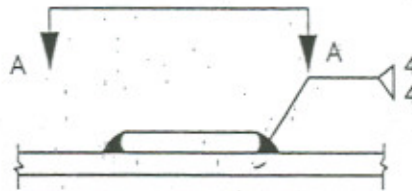
C. STRIP TO STRIP

1. STRAIGHT LAP JOINT/RISER



VIEW-A-A

2. CROSS LAP JOINT



VIEW A-A

NOTE :- ALL DIMENSIONS ARE IN MM.

COPY RIGHT AND CONFIDENTIAL

The information contained herein is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.

APPROVED BY: [Signature]
AND INCORPORATED OF
COMMENTS CONTAINED IN THIS
CHANGE LETTER No. 141
Date: 29.07.04
[Signature] (MANAGER TECH)
TURNKEY PROJECT
THERMIRA