

ENQUIRY		Phone: +91 431 257 79 39 Fax : +91 431 252 07 19 Email : psivasub@bheltry.co.in Web : www.bhel.com	
	Enquiry Number	Enquiry Date:	Due date for submission of quotation:
	2611200035	22.02.2012	05.04.2012
<p>You are requested to quote the Enquiry number date and due date in all your correspondences. This is only a request for quotation and not an order</p> <p>Please note that under any circumstances both <u>delayed offer</u> and <u>late offers</u> will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the date of tender opening.</p>			

Item	Description	Quantity / Kgs	Delivery Schedule
10	E309 SMAW electrode dia 4.0 mm as per the specification WCPS 247 rev.03. Batch qualification at supplier's works. (to be downloaded from web site www.bhelcom or http://tenders.gov.in)	2400	20.06.2012
20	E347 SMAW electrode dia 4.0 mm as per the specification WCPS 247 rev.03. Batch qualification at supplier's works. (to be downloaded from web site www.bhelcom or http://tenders.gov.in)	4800	20.06.2012

Important points to be taken care during submission of offer:

- 1. Submit your offer in TWO PART BID system as per annexure enclosed.**
- 2. Point to Point confirmation to BHEL's specification and commercial terms and conditions should be provided.**
- 3. BHEL shall have the right to go for Reverse Auction instead of sealed tender bid which will be decided after tender opening.**
- 4. All updates, amendments, corrigenda etc., (if any), will be posted only on the below website as and when required. There will be no publication of the same through newspaper on any other media.**

For any clarifications, please contact :

**S.Ramachandran (DGM / CP & SP) Phone: +91 431 257 7331
email : srchandran@bheltry.co.in**

**P.Sivasubramanian (Manager / SP & WC) Phone: +91 431 257 7939
email : psivasub@bheltry.co.in**

BHEL's General guidelines / instructions including Commercial terms check-list can be down loaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units>Bharat Heavy Electricals Limited page) under Enquiry reference " 2611200035 ".

Tenders should reach us before 14.00 hours on the due date. Tenders will be opened at 14.30 hours on the due date Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present.

Yours faithfully
for BHARAT HEAVY ELECTRICALS LIMITED


MANAGER / SP & WC / MFG



ENQUIRY
(IMPORTS)

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)
HIGH PRESSURE BOILER PLANT
PURCHASE DEPARTMENT - FOSSIL BOILERS
THIRUCHIRAPALLI - 620014
TAMILNADU (INDIA)

Page
1/1

PHONE :2577629
GRAMS : BHARATELEC
FAX NO: 2520719
E-mail: srchandran@bheltry.co.in
Web:

Vendor Code : 20560 Vendor Name : THE LINCOLN ELECTRIC COMPANY (AUST) PTY LTD PADSTOW, NSW.2211 AUSTRALIA 35 BRYANT STREET PADSTOW, NSW.2211, AUSTRALIA Australia	Enquiry No 2611200035 - 29	Enquiry Date 22.02.2012	Due Date for Quotation 05.04.2012
Please quote Enquiry No, Date and due date in all correspondences. This is only a request for quotation and not an order			

Item	Description	Unit	Quantity	Delivery Quantity	Schedule Date
10	54214240DBA E309 SMAW electrode dia 4.0 mm as per the specification WCPS 247 rev.03. Batch qualification at supplier's works.	KG	2400.000	2,400.00	20.06.12
20	54214540DBA E347 SMAW electrode dia 4.0 mm as per the specification WCPS 247 rev.03. Batch qualification at supplier's works.	KG	4800.000	4,800.00	20.06.12

General Note:

1) PLEASE SUBMIT YOUR DETAILED OFFER IN TWO PART BID SYSTEM AS PER ANNEXURE ENCLOSED.


2) BHEL SHALL HAVE THE RIGHT TO GO FOR REVERSE AUCTION INSTEAD OF SEALED TENDER BID WHICH WILL BE DECIDED AFTER TENDER EVALUATION.

3) TEST CERTIFICATE, GUARANTEE CERTIFICATE AND THIRD PARTY INSPECTION AS PER WCPS SHOULD BE PROVIDED.

Enclosures:

"LD clause has to be confirmed without fail."

The offers should reach us 30 minutes before the time of opening of tenders.
The offers will be opened at 14.30 hrs on the due date of tender in the presence of tenderers who have submitted their offer and who may like to be present for the tender opening. Late and delayed offers are liable to be rejected.

Yours faithfully,
For **BHARAT HEAVY ELECTRICALS LIMITED**

MANAGER / PURCHASE
(FOSSIL BOILERS)
Yours faithfully,



**BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPALLI-620 014**

SPECIFICATION

WCPS - 247

**COVERED AUSTENITIC STAINLESS STEEL WELDING ELECTRODE
FOR CLADDING, BUTTERING & BUTT WELDING**

WCPS 247 Rev 03

Rev. No.	00	01	02	03	04	05
Prepared By	-Sd- V.S 09-02-09	-Sd- S.S.R	-sd- S.K 27.12.11	<i>[Signature]</i> 19.01.12		
Reviewed By	-Sd- S.S.R 09-02-09	-Sd- S.C	-sd- M.S 27.12.11	<i>krishna</i> <i>copy</i> 19.01.12		
Approved By (BHEL)	-Sd- S.C 09-02-09	-Sd- S.C	-sd- V.A 27.12.11	<i>[Signature]</i> 19.01.12		
Approved By (CUSTOMER)	Approved As noted -Sd- R.S/BARC 17-02-09	-Sd-	-----			

Nature of Revision

- Revision 03 : The following points are added :
1. para 3.8 - All destroyed test samples shall be supplied to the purchaser along with consumable supply with proper identification
 2. para 3.9 - Test coupons for purchaser as indicated in Figures 1, 2 & 3 shall be supplied to the purchaser along with consumable supply with proper identification
 3. para 9.4 with UT technique sheet in form of Annexure II for UT acceptance criteria is also added



1.0 QUALIFYING CRITERIA:

- 1.1 Offers, from such vendors only, will be considered, who have manufactured, tested and supplied the SMAW stainless steel electrodes E309Nb-15 & E347-15, for butt welding and cladding on 20MnMoNi55 base material, in the recent past five years period.
- 1.2 A test certificate of a batch, supplied within the last five years should be enclosed with the offer. The test certificate should contain chemical analysis & mechanical properties for above electrodes. Offers without such a test certificate will not be considered.
- 1.3 Notwithstanding the qualifying criteria, purchaser shall be allowed to visit the vendor's manufacturing and testing centre for further evaluation, if required.

2.0 SCOPE:

- 2.1 This specification prescribes the requirements for corrosion resisting austenitic stainless steel covered welding electrodes E309Nb-15 & E347-15 for shielded metal arc welding (SMAW) process. The electrode shall be used for cladding and buttering on 40 mm plate of quenched and tempered low alloy steel of grade 20MnMoNi55.
- 2.2 E347-15 electrode shall also be used for butt weld using 20 mm plate of stainless steel of grade SS321.

3.0 GENERAL REQUIREMENTS

- 3.1 The electrode should be manufactured and controlled according to the latest revision of ASME Section II C SFA 5.4.
- 3.2 The electrode shall be of non synthetic type.
- 3.3 The total quantity delivered shall be in the least possible number of batches. Each batch shall be of largest possible size.
- 3.4 The electrode is intended to be used for Cladding, Buttering and Butt welding.
- 3.5 An independent third party inspection shall be engaged for carrying out welding and testing.
- 3.6 Proposed Material Sampling & Testing Plan (MSTP) is given in Table 1 (Figures 1 & 2) & Table 2 (Figure 1). Supplier may review the same and should submit the MSTP for approval prior manufacturing and testing of consumables.
- 3.7 The consumable shall be batch tested as above at supplier's works. Clearance for shipment will only be given when consumables meet all the requirement of this specification. Level of testing shall be as per schedule K of ASME section IIC SFA 5.01.



3.8 All destroyed test samples shall be supplied to the purchaser along with consumable supply with proper identification.

3.9 Test coupons for purchaser as indicated in Figures 1, 2 & 3 shall be supplied to the purchaser along with consumable supply with proper identification.

4.0 CHEMICAL COMPOSITION

4.1 Chemical composition of electrodes E309Nb-15 shall meet the requirement of ASME IIC SFA 5.4 with following restrictions:

Carbon	0.03 max
Sulphur	0.02 max
Phosphorus	0.02 max
Copper	0.20 max
N & Mo	to be reported

4.2 CHEMICAL COMPOSITION OF WELD METAL:

<u>Element</u>	<u>%</u>
Carbon	0.03 max
Manganese	2.00 max
Silicon	0.80 max
Sulphur	0.02 max
Phosphorus	0.02 max
Chromium	17.0 - 19.0
Nickel	9.0 - 11.50
Cobalt	0.20 max
Nb+Ta	8 x C% min
Molybdenum	to be reported
Nitrogen	to be reported
Copper	0.20 max

Other trace elements shall also be analysed. The supplier shall indicate the guaranteed value along with the bid.

5.0 PACKAGING

5.1 Electrode shall be suitably packaged to ensure against damage during shipment and storage under normal conditions, may be of Hermitically sealed packages or vacuum sealed tin containers. Each packet shall weigh 5 kg and also shall have equal number of electrode.

6.0 MARKING

6.1 The outside of each unit package shall be legibly marked with the following information.

6.1.1 Electrode specification and classification numbers.

6.1.2 Supplier's name, Brand name of electrode.



6.1.3 Electrode size, numbers and net weight.

6.1.4 Heat and batch number.

7.0 ELECTRODE IDENTIFICATION

7.1 The electrode shall be identified in accordance with the following.

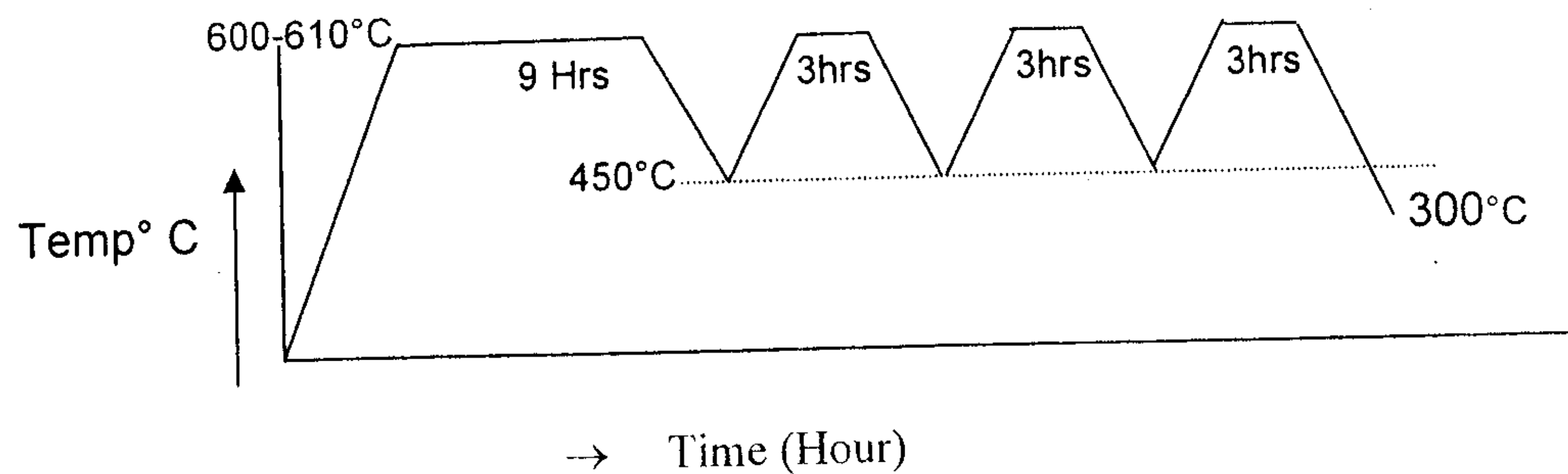
7.1.1. At least one legible imprint of the applicable AWS classification and trade name shall be applied to the electrode covering as near as practical to the grip end of the core wire but not more than 65 mm from that grip end.

7.1.2. The numbers of the imprinted electrode classification shall be of bold block type and of sufficient size to be legible.

8.0 HEAT TREATMENT

8.1 The post weld heat treatment (PWHT) of the weld deposit shall be carried out with the following heat treatment cycle: At 600 - 610 °C for 9 hours, followed by 3 cycles at 600 - 610°C for 3 hours.

Rate of heating and cooling above 300°C shall be 30°C / hour.



9.0 NON DESTRUCTIVE TESTING

9.1 NDE shall be performed, after PWHT for cladding and buttering and in as welded condition for butt weld, as per approved procedure

9.2 The welded surface shall be free from craters, cracks and weld spatters.

9.3 **Liquid Penetrant Testing (LPT):** The final machined surface after cladding, buttering and butt weld shall be subjected to surface crack examination by LPT. Surface indications of any nature and type are not acceptable.



9.4 Ultrasonic Testing (UT):

9.4.1 The cladding deposition shall be subjected to UT, from cladding side by straight beam (using special dual crystal probes) and angle beam (using special TR longitudinal wave angle beam probes having maximum sensitivity in the cladding parent metal transition zone) scanning.

9.4.2 Calibration shall be done as per ANNEXURE II. All indications equal and above 50% of the reference level shall be recorded.

9.4.3 Following indications are not acceptable:
- Any under bead cracks and disbonding defects.
- Any other indications like inclusions, porosity etc. greater than reference level.

9.4.4 Indications equal to or above recording level shall be investigated carefully and results shall be submitted.

9.4.5 UT procedure for the same shall be submitted for approval.

9.5 Radiography test (RT):

9.5.1 Butt weld shall be subjected to RT as per following acceptance:

9.5.2 No cracks, no incomplete fusion and no incomplete penetration are allowed.

9.5.3 Cluster of pores or inclusions and systematic defects are not allowed.

9.5.4 Permissible defects in 100 mm length of weld:

- Maximum size of single defect - 1 mm
- No of permissible size of defects - 3 max
- Total maximum length of all permissible defects - 2 mm

10.0 CHEMICAL AND MECHANICAL TEST (Refer Table 1 & Figures 1 & 2)

10.1 Chemical composition of weld metal of electrode E309Nb-15 is to be determined as per ASME IIC SFA 5.4. The chemical composition shall meet the requirement of para 4.1.

10.2 The chemical composition of 7 mm thick weld (cladding) deposit made with one run of the proposed electrode E309Nb-15 and the subsequent layers of E 347-15 electrode shall be checked at distance of 1 mm beginning from the surface through the entire cladding thickness. Chemical composition measured at 5.0 and 7.0 mm above the base metal shall meet the requirements of para 4.2. Other trace elements shall also be analysed. The supplier shall indicate the guaranteed values along with bid.



SPECIFICATION

WCPS - 247 Rev.03

page 6 of 8

10.3 The following tests for each batch of electrode shall be carried out after heat treatment as per para 8.0. Tensile test of pure weld deposit shall be carried out as per specification and the minimum values as below are to be obtained.

S. No.		Tensile test properties at	
		Room Temperature (20 °C)	350 °C
01	Ultimate tensile strength	515 MPa min.	452 MPa min.
02	Yield Strength (0.2% offset)	205 MPa min	136 MPa min.
03	Percentage Elongation for Gauge length = 5d where 'd' is gauge diameter of tensile test specimen	30% min.	To be reported.

10.4 Impact test (CVN, 2 mm) of pure weld shall be carried out at +20 °C in both AS WELDED and PWHT (as per para 8.1). The following values shall be met:

AS WELDED CONDITION (butt weld):

88 J/cm² - average of 3 samples, and minimum of 75 J/cm² for single value.

After PWHT (cladding):

69 J/cm² - average of 3 samples, and minimum of 50 J/cm² for single value

10.5 The resistance against inter-granular corrosion (IGC) shall be determined as per ASME A262 Practice E. The location of specimens shall be at 7.0 mm and 5.0 mm above base metal top as shown in Figure 2. At least 4 samples are to be tested in transverse direction with 2 samples having finished machined surface at 7.0 mm (above base metal) kept in tension and for the other 2 specimens finished machined surface at 5.0 mm (above base metal) kept in tension.

10.6 Bend tests shall be carried out on specimens located transverse to the direction of cladding and bent through a mandrel of 4 times the thickness of specimen over 180°. The acceptance shall be as per ANNEXURE I.

10.7 Delta ferrite shall be controlled in the range 4 to 10% in all layers (E309 Nb-15 & E347-15) in both before and after heat treated condition. The values shall preferably be controlled to the lower side in the above range. Interconnected network is not acceptable. (Use MP30 Ferritescope or equivalent)

10.8 Macro examination shall be carried out and it shall be free from cracks, gross inclusions, cavities, root defects etc. Hardness survey shall be done across the full cross section (Base metal, heat affected zone (HAZ), cladding / weld)

10.9 Micro examination shall be carried out and it shall show a proper micro structural Composition.



10.10 Hot cracking test shall be done as per DIN 50129 Type 2 for butt weld. No indications are acceptable.

For cladding hot cracking test shall be done as follows:

Cladding shall be ground / machined in steps of 0.5 mm starting from 7 mm down to base metal (2 mm deep into base metal). The ground / machined surface shall be examined by PT. No indications are acceptable.

10.11 For butt joint application, E347-15 electrodes shall be tested as per Table 2 & Figure 3 without any heat treatment and the results shall be meet the requirements of clause 4.2, 10.3 to10.5 & 10.7 to10.10.

Fillet weld test should also be done as per requirement of ASME Section IIC SFA 5.4.

Bend test shall be carried out on specimens located transverse to the direction of welding and bent through a mandrel of 2 times the thickness of specimen over 180°. There should be no crack up to 180° bend

11.0 TEST CERTIFICATE :

Two copies of test certificate along with soft copy shall be despatched along with each supply. The test certificate shall include the following information in English.

1. Purchase order number, specification number and test certificate number.
2. Specification of the consumable.
3. Size and quantity.
4. Batch number.
5. Parameter used for the deposit.
6. Chemistry.
7. Heat treatment chart.
8. Testing plan indicating location of specimen.
9. Mechanical test results including macro, micro and hardness.
10. Non destructive examinations results.
11. Delta Ferrite values.
12. Intergranular corrosion test (IGCT) results.
13. Recommendations for reconditioning and storage.



12.0 DELIVERY OF SUPPLIES

12.1 A delivery test report shall be prepared by the supplier of welding consumables, incorporating all tested results and sent for our approval. Only on acceptance of the report the supply shall be despatched.

13.0 OFFER

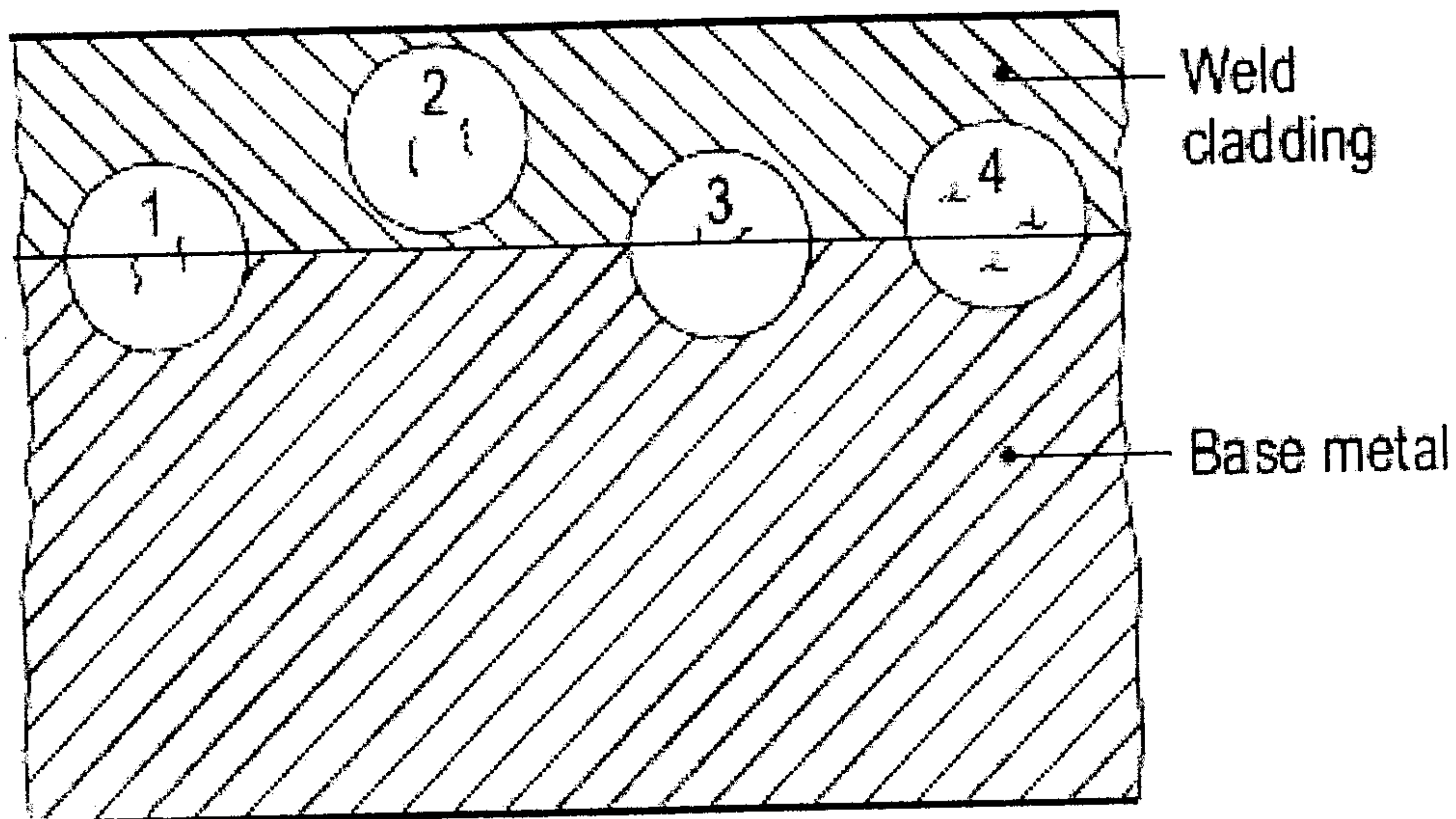
13.1 The offer of the supplier shall contain information in the same order that of the specification. Expected chemical composition including Nitrogen and Molybdenum is also to be included in the offer.

13.2 Deviation to any part of the specification shall be clearly mentioned in the offer.

13.3 The offer shall contain split up details of the rate for materials, testing and third party inspection.

ANNEXURE I

9/15



Defect type 1: Cracks which progress in base materials are not permissible

Defect type 2: Cracks in the cladding which have not connection with fusion line are not permissible

Defect type 3: Cracks in the cladding which form at an angle to and start from the fusion line are not permissible individually beyond 1.6 mm in length.

Defect type 4: Cracks which are found in the unbent condition are not permitted.

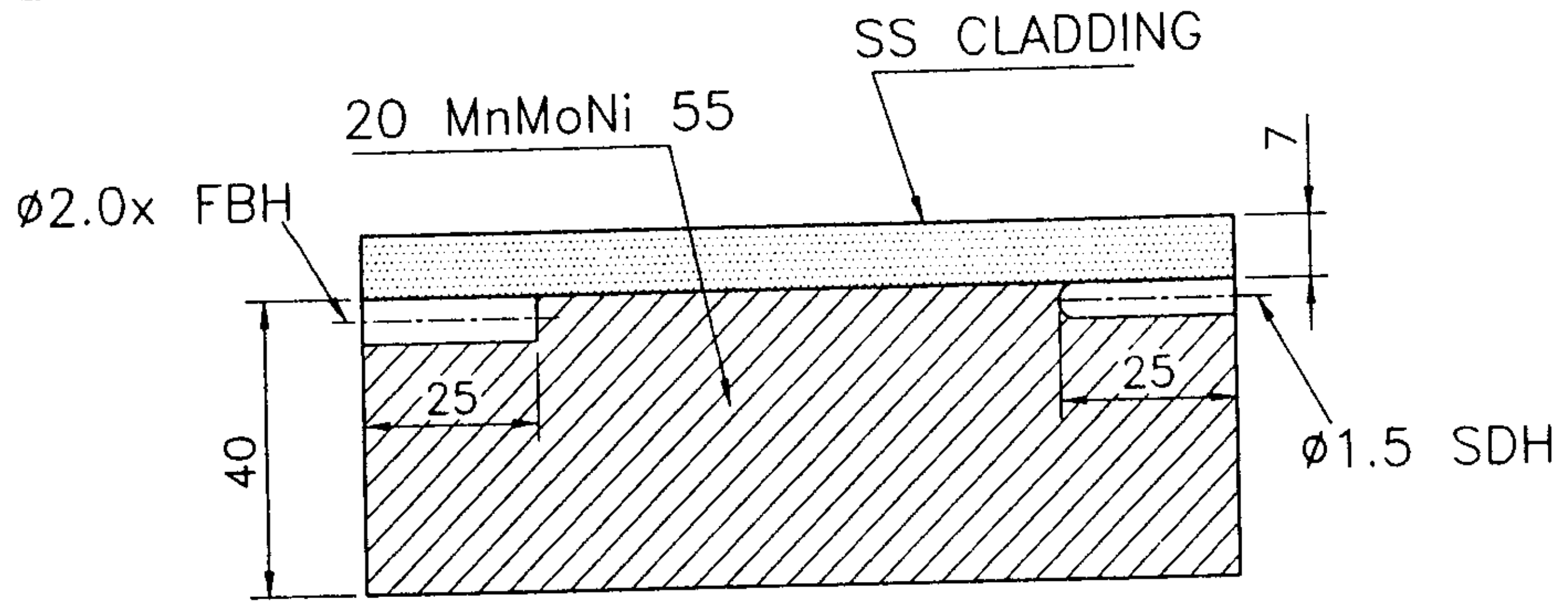
10/15

ALL DIMENSIONS ARE IN MM.

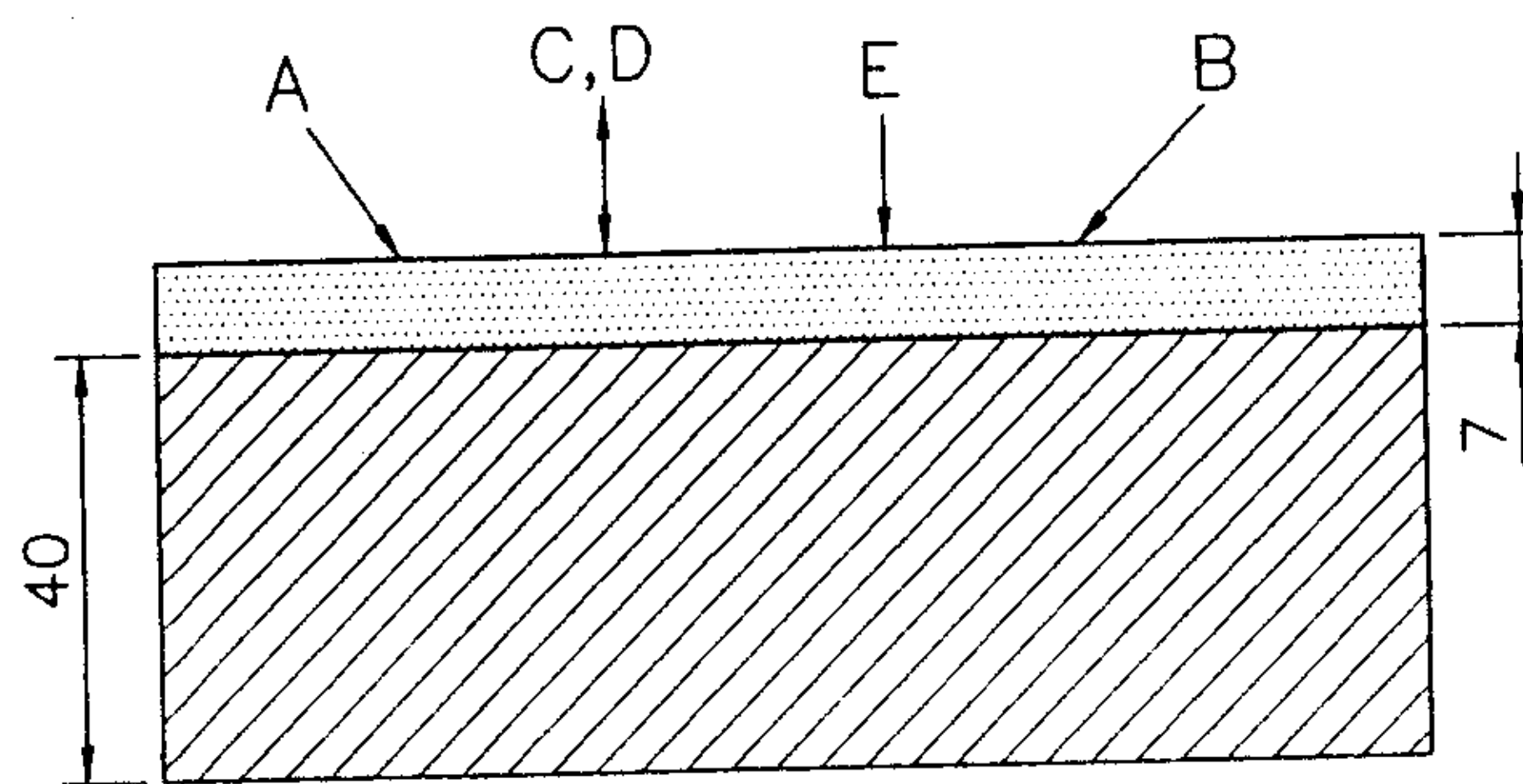
ANNEXURE II

ULTRASONIC EXAMINATION

- 01. NDE REFERENCE : ASME SECTION V ARTICLE 4
- 02. REFERENCE SENSITIVITY : 1.5 MM SDH FOR NORMAL
2.0 MM FBH FOR ANGLE
- 03. RECORDING LEVEL : EQUAL AND ABOVE 50% OF REFERENCE
- 04. REFERENCE BLOCK



05. JOINT AND SCANNING DETAILS



SCANNING DIRECTIONS	PROBE	
	FOCUSSED TR PROBE (SEL BAM 70)	MINIATURE TR NORMAL PROBE (MSEB4H)
A,B,C,D	X	--
E	--	X

06. ACCEPTANCE : AS PER PARA 9.4 OF WCPS-247.

Table 1: MSTP for Electrode E309Nb-15 & E347-15 for cladding and buttering (Refer Figures 1 & 2 for specimen layout)

S. No.	Type of test	Orientation	Legend	Specimen size (width x thickness x length) mm (proposed)	Qty	Remarks
1.	Side Bend Test	Transverse	SB1 & SB2	10 x 40 x 350	2	
2.	Corrosion Test at 5 mm from base metal top	Transverse	IC1 & IC3	25 x 2 x 80	2	From pure weld metal
3.	Corrosion Test at 7 mm from base metal top	Transverse	IC2 & IC4	25 x 2 x 80	2	From pure weld metal
4.	Impact Test	Transverse	IP1 to IP3	10 x 10 x 50	3	Notch in pure weld metal as per Figure 1
5.	Impact Test	Vertical	IP4 to IP6	10 x 10 x 50	3	Notch in middle of E309Nb-15 layer as per Figure 1
6.	Round tensile test at Room Temperature	Longitudinal	TR1	φ10 x 100	1	From pure weld metal
7.	Round tensile test at 350 °C	Longitudinal	TH1	φ10 x 100	1	From pure weld metal
8.	Round tensile test at Room Temperature	Vertical	TR2 & TR3	φ10 x 100	2	From transition. Gauge length center at base metal top
9.	Round tensile test at 350 °C	Vertical	TH2 & TH3	φ10 x 100	2	From transition. Gauge length center at base metal top
10.	Chemical Test	-	CH1	50 x 50	1	At every 1 mm depth
11.	Micro, Macro, Hardness & Delta Ferrite Examination	Transverse	M	400 x 15	1	Delta ferrite to be measured in each layer in as welded and PWHT conditions
12.	Hot Crack test	-	H	100 x 100	1	PT at every 0.5 mm up to 2 mm deep into the base metal
13.	Chemistry of electrode E309Nb-15	-	C	As per ASME Sec IIC SFA5.4	1	Test coupon to be prepared on a separate 20MnMoNi55 plate
14.	Test pieces for purchaser	Transverse	-	100 x 400 70 x 120 110 x 210	1 1 1	Refer Figure 1 Refer Figure 1 Refer Figure 2

Table 2: MSTP for Electrode E347-15 Butt Joint (Refer Figure 3 for specimen layout)

S. No.	Type of test	Orientation	Legend	Specimen size (width x thickness x length) mm (proposed)	Qty Nos.	Remarks
1.	Face Bend Test	Transverse	FB1 & FB2	40 x 10 x 350	2	
2.	Side Bend Test	Transverse	SB1 & SB2	10 x 40 x 350	2	
3.	Impact Test at +20 °C	Transverse	IP1 to IP3	10 x 10 x 50	3	Notch in pure weld metal as per Figure 3
4.	Round tensile test at Room Temperature	Longitudinal	TR1	φ10 x 100	1	In pure weld metal
5.	Round tensile at 350 °C	Longitudinal	TH1	φ10 x 100	1	In pure weld metal
6.	Flat tensile test at Room Temperature	Transverse	TR2	35 x 20 x 250	1	
7.	Round tensile at 350 °C	Transverse	TH2	φ10 x 100	1	
8.	Corrosion Test	Transverse	IC1 & IC2	25 x 6 x 80	2	In pure weld metal
9.	Chemical Test	-	CH	50 x 50	1	In pure weld metal
10.	Macro Examination	Transverse	M1	50 x 50	1	
11.	Micro, Hardness, Delta Ferrite Examination	Transverse	M2	50 x 50	1	
12.	Hot crack test	-	H	As per DIN 50129 Type 2	1	Test coupon to be prepared separately
13.	Fillet weld test as per ASME Sec IIC SFA5.4	-	F	As per ASME Sec IIC SFA5.4	1	Test coupon to be prepared separately
14.	Test piece for purchaser	Transverse	-	150 x 500	1	Refer Figure 3

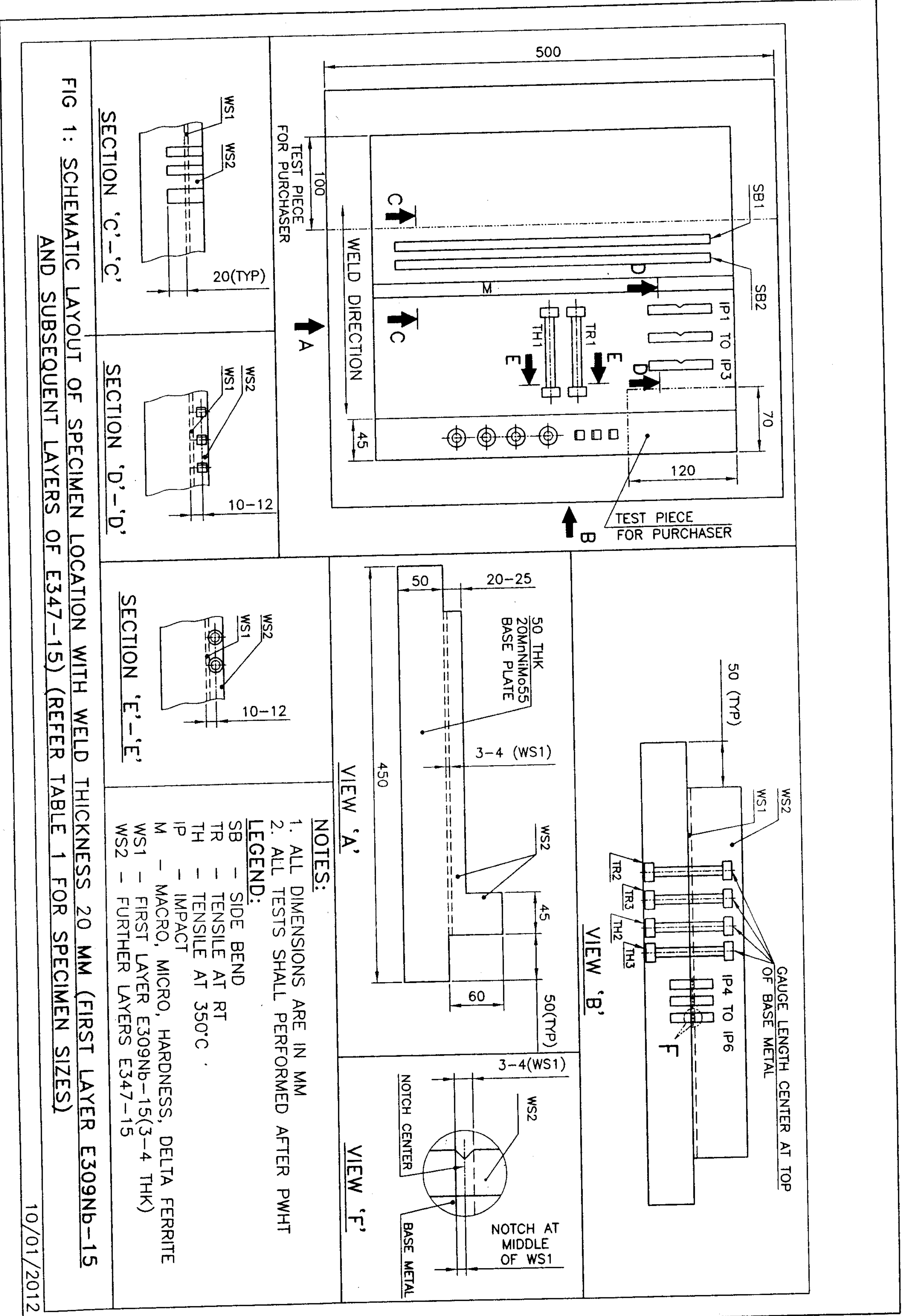
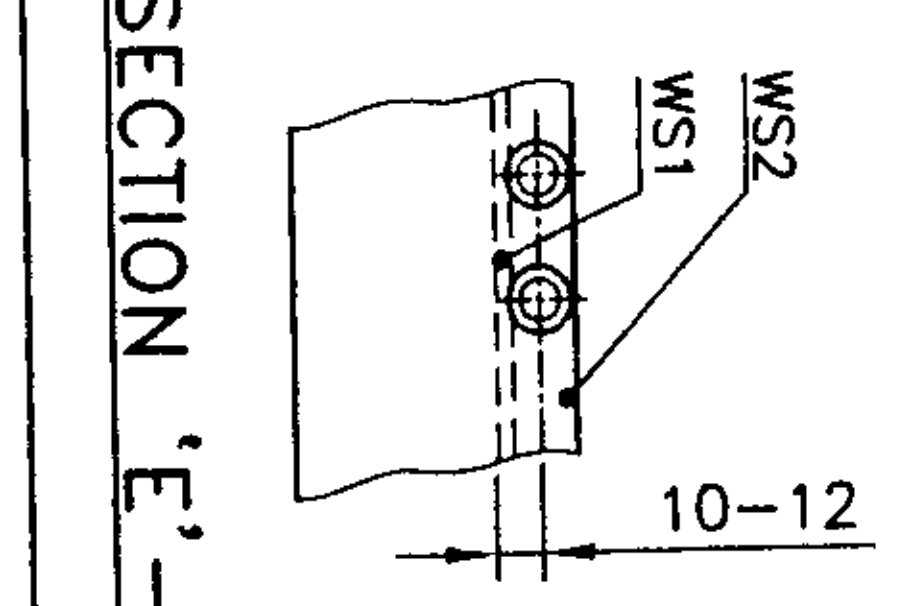
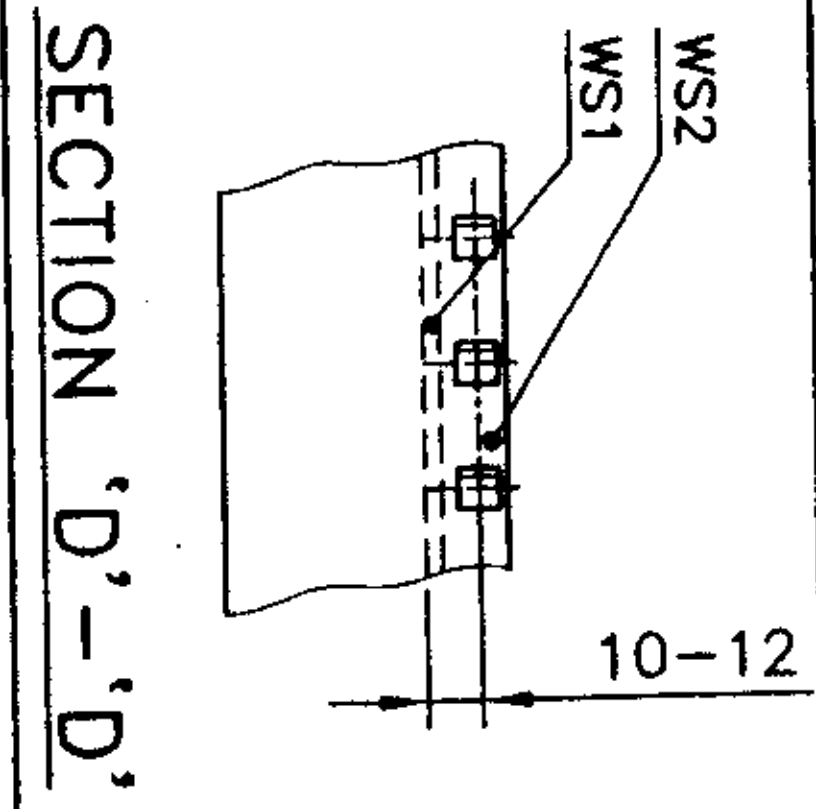
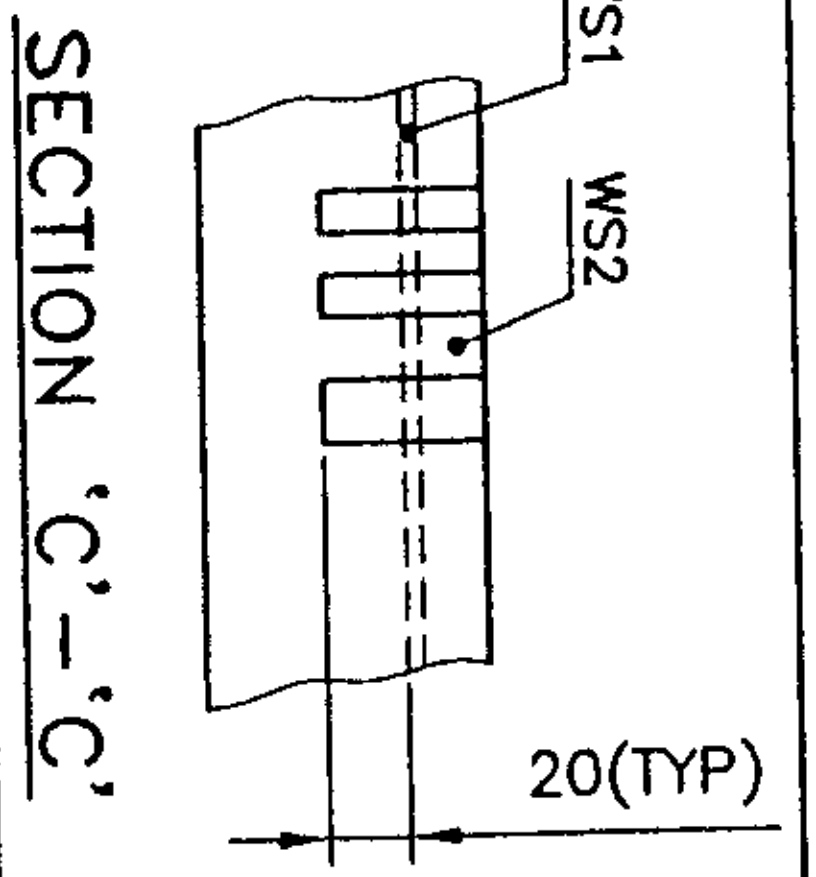


FIG 1: SCHEMATIC LAYOUT OF SPECIMEN LOCATION WITH WELD THICKNESS 20 MM (FIRST LAYER E309Nb-15 AND SUBSEQUENT LAYERS OF E347-15) (REFER TABLE 1 FOR SPECIMEN SIZES)



TEST PIECE FOR PURCHASER

TEST PIECE FOR PURCHASER

VIEW 'A'

VIEW 'B'

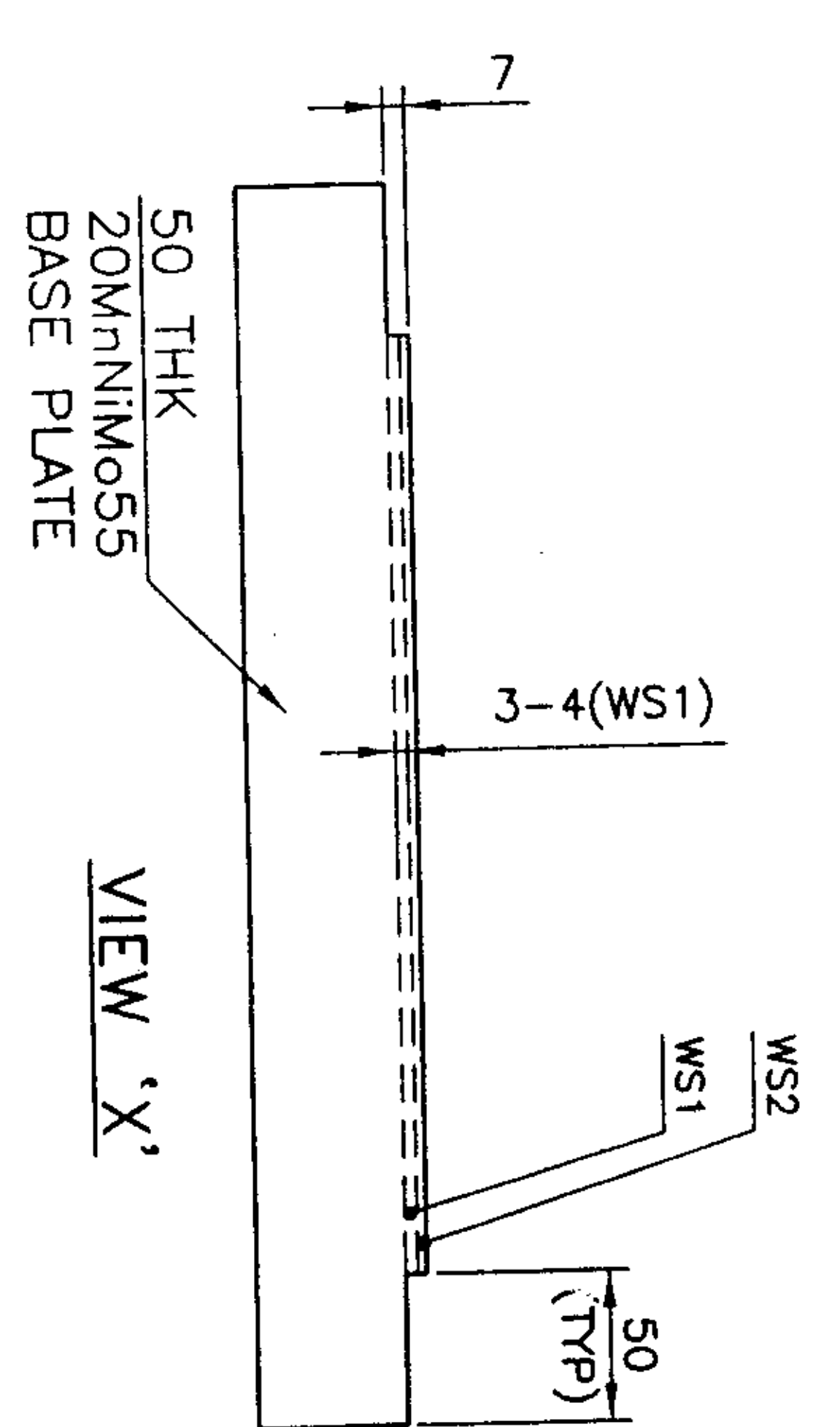
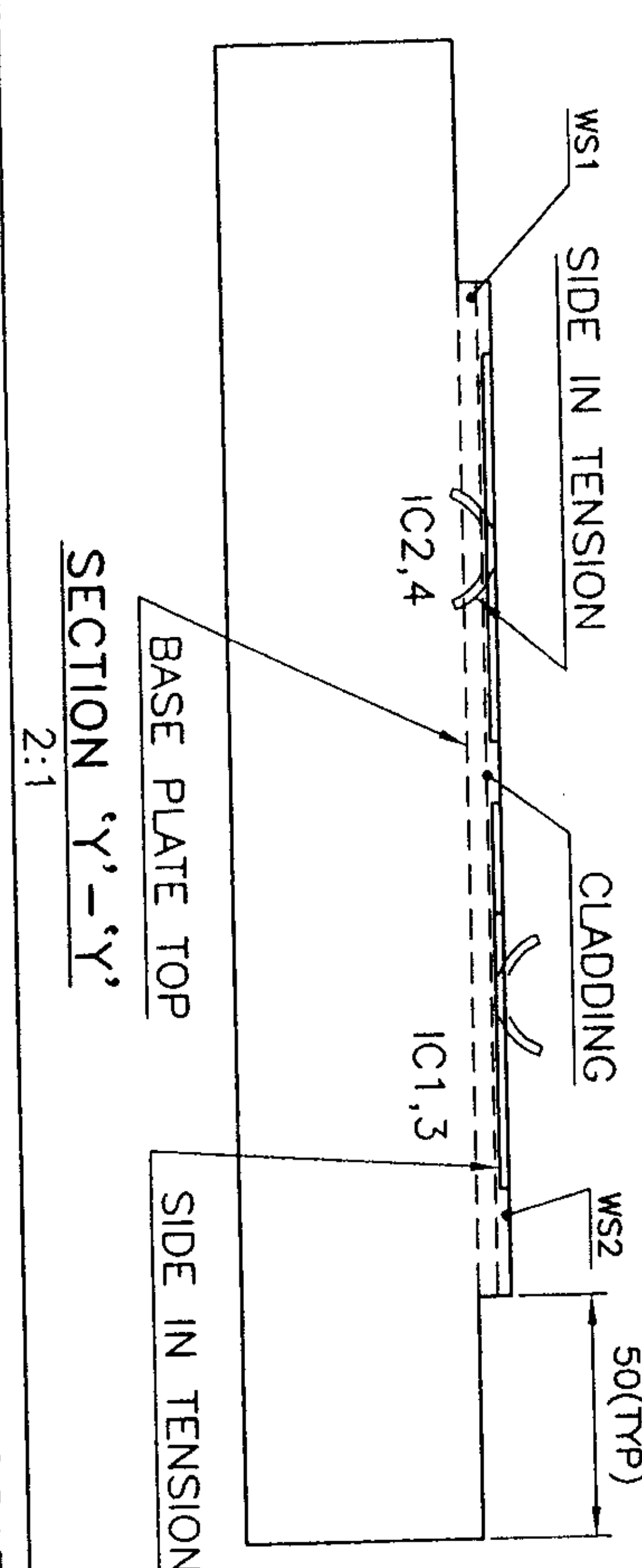
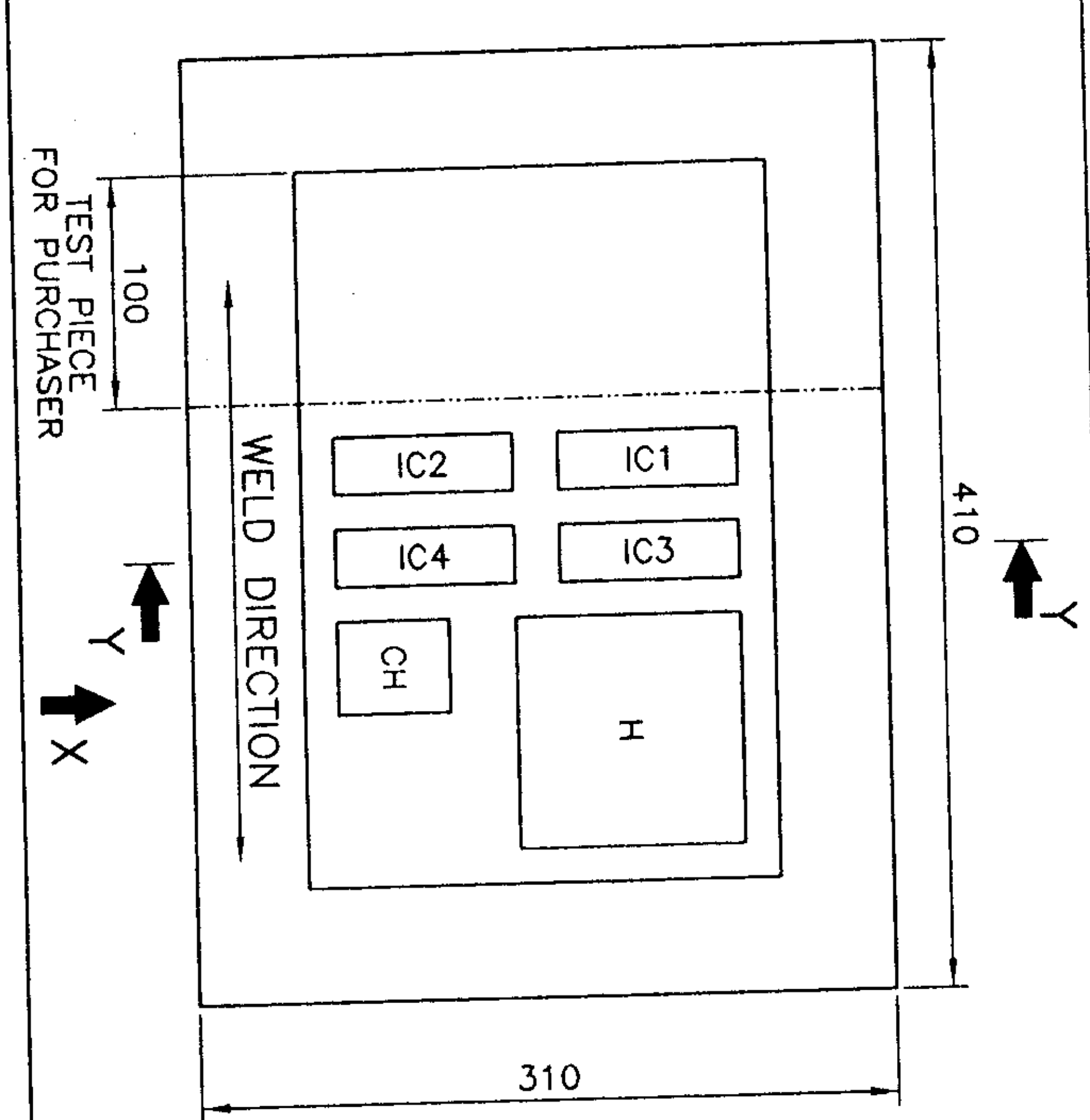
VIEW 'F'

NOTES:

1. ALL DIMENSIONS ARE IN MM
2. ALL TESTS SHALL PERFORMED AFTER PWHT

LEGEND:

- SB - SIDE BEND
- TR - TENSILE AT RT
- TH - TENSILE AT 350°C
- IP - IMPACT
- M - MACRO, MICRO, HARDNESS, DELTA FERRITE
- WS1 - FIRST LAYER E309Nb-15(3-4 THK)
- WS2 - FURTHER LAYERS E347-15



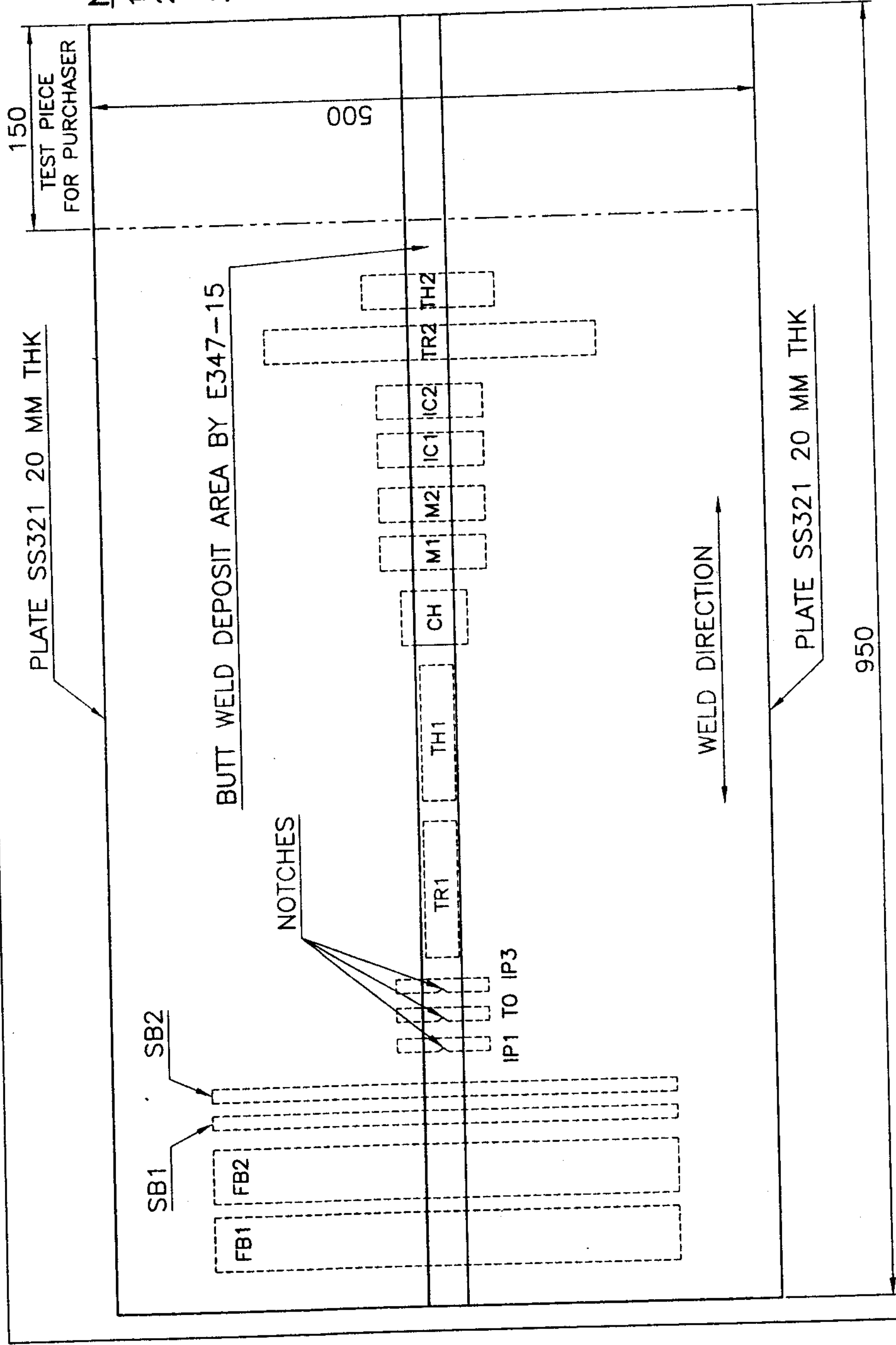
NOTES:

1. ALL DIMENSIONS ARE IN MM
2. ALL TESTS SHALL BE PERFORMED AFTER PWHT
3. CHEMICAL COMPOSITION OF E309Cb-15 SHALL BE DONE ON A SEPARATE TEST COUPON AS PER ASME SEC II C SFA5.4

LEGEND:

- IC - CORROSION TEST
- CH - CHEMICAL
- H - HOT CRACK TEST
- WS1 - FIRST LAYER E309Nb-15 (3-4 THK)
- WS2 - FURTHER LAYERS E347-15

FIG 2: SCHEMATIC LAYOUT OF SPECIMEN LOCATION WITH WELD THICKNESS 7 MM (FIRST LAYER OF E309Nb-15 AND SUBSEQUENT TWO LAYERS OF E347-15) (REFER TABLE 1 FOR SPECIMEN SIZES)



NOTES:

1. ALL DIMENSIONS ARE IN MM
2. ALL TEST SHALL BE PERFORMED IN AS WELDED CONDITION
3. FILLET WELD TEST SHALL BE DONE ON A SEPARATE TEST COUPON AS PER ASME SEC IIC SFA 5.4
4. HOT CRACK TEST SHALL BE DONE AS PER DIN 50129 TYPE 2 ON SEPARATE TEST COUPON.

LEGEND:

- FB - FACE BEND
- SB - SIDE BEND
- TR - TENSILE AT ROOM TEMP.
- TH - TENSILE AT 350°C TEMP.
- IP - IMPACT
- CH - CHEMICAL
- M1 - MACRO
- M2 - MICRO, HARDNESS, DELTA FERRITE
- IC - IGCT

FIG 3: SCHEMATIC LAYOUT OF SPECIMEN LOCATION FOR CONSUMABLE QUALIFICATION TEST FOR E347-15 SMAW ELECTRODE (BUTT JOINT)
 (REFER TABLE 2 FOR SPECIMEN SIZES)

INSPECTING AUTHORITIES (As on 31/3/2011)

<u>NAME OF THE AUTHORITY</u>	<u>AREA OF OPERATION</u>
1. Director of Boilers, Andhra Pradesh	Andhra Pradesh
2. Chief Inspector of Boilers, Arunachal Pradesh	Arunachal Pradesh
3. Chief Inspector of Boilers Assam	Assam
4. Chief Inspector of Boilers Bihar.	Bihar
5. Chief Inspector of Boilers Chattisgarh	Chattisgarh
6. Chief Inspector of Boilers, Delhi.	N.C.T.D.
7. Chief Inspector of Boilers, Goa.	Goa
8. Director of Boilers, Gujarat.	Gujarat, Daman & Diu and Dadra & Nagar Haveli
9. Chief Inspector of Boilers, Haryana.	Haryana & Chandigarh
10. Chief Inspector of Boilers, Himachal Pradesh.	Himachal Pradesh
11. Chief Inspector of Boilers,, Jharkhand.	Jharkhand
12. Director of Boilers, Karnataka.	Karnataka
13. Director of Boilers, Kerala.	Kerala
14. Director of Boilers, Madhya Pradesh.	Madhya Pradesh
15. Director of Boilers, Maharashtra.	Maharashtra
16. Chief Inspector of Boilers, Meghalaya	Meghalaya
17. Chief Inspector of Boilers, Manipur	Manipur

- | | |
|--|----------------------------|
| 18. Chief Inspector of Boilers,
Mizoram | Mizoram |
| 19. Chief Inspector of Boilers,
Nagaland | Nagaland |
| 20. Director of Boilers,
Orissa | Orissa |
| 21. Director of Boilers,
Punjab | Punjab |
| 22. Chief Inspector of Boilers,
Labour Department,
Government of Puducherry,
Puducherry | Puducherry |
| 23. Chief Inspector of Boilers,
Rajasthan. | Rajasthan |
| 24. Director of Boilers
Tamil Nadu | Tamil Nadu |
| 25. Chief Inspector of Boilers,
Tripura | Tripura |
| 26. Director of Boilers,
Uttar Pradesh | Uttar Pradesh |
| 27. Deputy Director of Factories & Boilers
Uttarakhand | Uttarakhand |
| 28. Chief Inspector of Boilers,
West Bengal | West Bengal |
| 29. M/s. TUV Nord Systems GmbH Co.KG.
Langemarckstr 20
451141 Essen
GERMANY. | All countries except India |
| 30. M/s. Royal & Sunalliance Engineering,
17, York Street, Manchester,
M2 3RS, ENGLAND | All countries except India |
| 31. M/s. Japan Inspection Company Limited,
No.10-7, 1-Chome, hatchobori, Chou-ku,
Tokyo, 104-0032, Japan | All countries except India |
| 32. M/s. S.G.S. Korea Company Limited,
Industrial Division,
16 th FL, KT Pusan IT Center,
830-29, Beomil 2-Dong, Jung-Gu,
Pusan, KOREA (601-706). | Korea & Japan |

- | | | |
|-----|---|--|
| 33. | M/s Bureau Veritas,
67-71, Boulevard du Chateau,
92200 Neuilly-sur-Seine,
FRANCE | All countries except India. |
| 34. | M/s. Lloyds Register of Verification Ltd.,
71, Fenchurch Street,
London EC 3M, U.K. | All countries except India. |
| 35. | M/s. Velosi Certificat ion Bureau Ltd.,
318a Kings Road, Clifton House,
Reading Berkshire, RG1 4JG,
United Kingdom | All countries except India |
| 36. | M/s TUV Rheinland Brandenburg P falz e.V.,
Am Grauen stein, D-51105 Klon,
Germany | Europe, Japan, China &
Korea |
| 37. | M/s Moody Interna tional Ltd.,
Cuckfield House, High Street,
Cuckfield, West Sussex,
RH 17 5EL, U.K. | All countries except India |
| 38. | Technischer Uberwachungs-Verein Saarland e.V.,
Am Tuev 1,
66280 Sulzbach,
Germany | Europe |
| 39. | M/s OOO "TekhnoLogicheskieEnergositime"
I. Kalinia St. Belgorod,308001
Russia | Russia, China, Ukraine & USA |
| 40. | M/s. Det Norske Veritas,
Veritasveien 1, P.O. Box 300,
N-1322, Hovik,
NORWAY | Argentina, Australia, Austria, Belgium,
Brazil, Denmark, Finland, France,
Germany, Italy, Japan, Netherlands,
Norway, South Korea, Spain, Sweden,
Switzerland, U.K. and U.S.A. |
| 41. | M/s. Engi neering Bureau Franke
International,
55, Amurskaya St.,
Ukraine 49108 | Ukraine, Russia, Belarus, China ,
Uzbekistan, Poland, Belgium, Romania,
& Czech Republic |
| 42. | M/ s. ARISE Boiler Inspection &
Insurance Company Risk Retention Group,
Grand Bay 1, 7000 South Edgerton Road,
Suite 100, Brecksville,
OH 44141 USA | Argentina, Austria, Canada, Brazil, France,
Germany, Italy, Malaysia, Netherlands,
Singapore, U.K. and USA |
| 43. | Tata Projects Limited,
"Mithona Towers-I",1-7-80 to 87,
Opp. Wesley Co-Ed. Jr. College,
Prenderghast Road,
Secunderabad- 500 003, (India) | All countries except India |

44. M/s TUV SUD Industrie Service GmbH, All countries except India
Wstendstr. 199,
80686 Munich,
Germany
45. M/s Germanischer Lloyd Industrial Services GmbH, All countries except India
Steinhoeft 9,
20459 Hamburg,
Germany
- 46 M/s. TUV Thuringen e.V., Europe
Business Division Steam and Pressure Technology,
Melchendorfer Str. 64,
99096 Erfurt,
Germany

Bharat Heavy Electricals Limited, Tiruchirapalli – 620 014

Capital Purchase & Spare Parts / MFG

(To be filled and submitted along with offer)

<p align="center">BHEL Commercial Terms and Conditions for IMPORT SUPPLIES</p>	<p>Vendor's Confirmation / Comments (To be furnished along with offer copy (or) Technical Bid Copy (Part No -1)</p>
<p>Technical confirmation to BHEL's Specification as called for in BHEL format shall be furnished. If needed additional sheets shall be used.</p>	
<p>Prices shall be quoted item wise only as per the model format enclosed.</p>	
<p>Prices shall be quoted on " FIRM PRICE " basis only. The prices should be only on FOB / FCA basis inclusive of Packing & Forwarding charges if any</p>	
<p>Validity of offer shall be for a minimum period of 120 days from the date of Tender opening.</p>	
<p>Delivery period from the date of Letter of Intent shall be clearly mentioned in the offer.</p>	
<p>Liquidated damages @ ½ % per week subject to a maximum of 15% of the order value shall be applicable for delay in deliveries.</p>	
<p>Following Risk Purchase Clause shall be applicable: The Purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated or if the same were not available, the best and the nearest available substitute therefore. The supplier shall be liable for any loss, which the Purchaser may sustain by reason of such risk purchases.</p>	
<p>Payment terms for Foreign vendor (Principal) : 90% value of the goods will be paid through an irrevocable Letter of credit established by our bankers. Balance 10% will be paid against acceptance of goods for which supplementary invoice 10% of total Purchase Order value shall be submitted. All bank charges outside India are to vendor's account only.</p>	

P.T.O

<p>Payment terms for Indian Agent :</p> <p>Indian Agency Commission, if any, shall be clearly specified in the offer and the same will be paid in Indian Rupees against acceptance of the materials.</p>	
<p>Part Shipment or Transshipment is not permissible.</p>	
<p>Any warranty replacement during warranty period shall be supplied free of charge on FOR BHEL, Trichy basis.</p>	
<p>Materials will be inspected and proved at vendor's works prior to dispatch. However final inspection and acceptance of equipment will be after installation at BHEL, Trichy.</p>	
<p>Offers should be submitted only in Sealed Cover super-scribing clearly the Enquiry reference and Due date.</p>	

NOTE :

- a) It is confirmed that all the terms and conditions stipulated in the Enquiry have been fully understood by us and all clarifications & details have been obtained.
- b) The prices are to be offered only on FOB / FCA basis, inclusive of Packing & Forwarding charges if any.
- c) Your specific acceptance to our Payment terms, LD, Risk Purchase Clause are essential for consideration of your offer. Otherwise your offer is liable for rejection.

Signature & Office Seal of the vendor

Bharat Heavy Electricals Limited, Tiruchirapalli – 620 014

Capital Purchase & Spare Parts / MFG

MODEL PRICE BID FORMAT FOR FOREIGN VENDORS

BHEL Enquiry No. & Date:

Bidder 's Offer No. & Date :

Sl No	Description of item	Unit	Quantity	Rate .	Value
	Ex-Works value				
	Packing & Forwarding charges (if any)				
	FOB / FCA Charges, if any				
	FOB Value				
	Approximate Freight Charges				
	Approximate Transit Insurance Charges				
	Approximate Gross Weight, Net Weight & Diemensions of the Consignment				

Signature & Seal of the Vendor

NOTE : The Price bid should submitted strictly in line with the above FORMAT

CAPITAL PURCHASE AND SPARE PARTS

COMMERCIAL TERMS AND CONDITIONS

1.0 QUOTATIONS

The Bidders shall submit the offer in TWO INNER ENVELOPES as indicated below which shall be sealed in one outer envelope.

Envelope I: This sealed envelope should contain all the copies of technical bid together with un-priced commercial bid. This envelope should be clearly marked "Part I - Technical and commercial bid", indicating Enquiry No., Due Date and Address & Reference of the Bidder.

Envelope II: This sealed envelope should contain price details. This envelope should be clearly marked "Part II - Price bid", indicating Enquiry No., Due Date and Address & Reference of the Bidder.

Both the envelopes (Part I & II) shall be put in one cover, duly sealed, superscribing as Part I and Part II of Enquiry No., due date of opening and the address and reference of the Bidder.

The above offer should reach this office on or before the due date by 14.00 Hrs (IST). Late offers will not be considered.

Tender should not be addressed to any Individual's name but only by designation to:

MANAGER / CAPITAL PURCHASE / MM / FB
BHARAT HEAVY ELECTRICALS LIMITED
HIGH PRESSURE BOILER PLANT
TIRUCHIRAPALLI - 620 014
TAMIL NADU, INDIA

Tenders should be free from CORRECTION AND ERASURES, Corrections if any, must be attested. All amount shall be indicated both in words as well as in figures. Where there is difference between amount quoted in words and figures, amount quoted in words shall prevail.

Offers should be in ENGLISH and accompanied by detailed technical literature, catalogue and detailed dimensional drawings in ENGLISH or otherwise, the offers will not be considered.

2.0 OPENING OF TENDERS

The Part I - Technical & commercial bid alone would be opened on the Tender opening date.

The Part II - Price bid of technically suitable Bidders alone would be opened. The Technically suitable Bidders would be informed about the tender opening date.

Clarifications if any required by BHEL for Technical evaluation would be sought from Bidders before opening of Part II - price bid.

For any queries / clarifications the bidders may contact us through our FAX NO. +91 431 2520719 or through e-mail psivasub@bheltry.co.in, srchandran@bheltry.co.in

Bharat Heavy Electricals Limited, Tiruchirapalli – 620 014

Capital Purchase & Spare Parts / MFG

(To be filled and submitted along with offer)

BHEL Commercial Terms and Conditions for INDIGENOUS SUPPLIES	Vendor's Confirmation / Comments (To be furnished along with offer copy (or) Technical Bid Copy (Part No -1)
Technical confirmation to BHEL's Specification as called for in BHEL format shall be furnished. If needed additional sheets shall be used.	
Prices shall be quoted item wise only as per the model format enclosed.	
Prices shall be quoted on " FIRM PRICE " basis only. The prices should be only on FOR /Despatching station basis inclusive of Packing & Forwarding charges if any. Applicable % of ED & Sales Tax, Freight & Insurance, Installation & Commissioning Charges should be clearly indicated.	
Validity of offer shall be for a minimum period of 120 days from the date of Tender opening	
Delivery period from the date of Letter of Intent / Purchase order shall be clearly mentioned in the offer.	
Liquidated damages @ ½% per week subject to maximum of 15% of the order value shall be applicable for delay in deliveries.	
Following Risk Purchase clause shall be applicable: The purchaser at his option will be entitled to terminate the contract and to purchase elsewhere at the risk and cost of the seller either the whole of the goods or any part which the supplier has failed to deliver or dispatch within the time stipulated or if the same were not available, the best and the nearest available substitute therefore. The supplier shall be liable for any loss which the Purchaser may sustain by reason of such risk purchases.	
Submission of Performance Bank Guarantee (PBG): Vendor shall provide a performance bank guarantee (PBG) for 10% of the total Purchase Order value valid for a period of 12 months from the date of commissioning (or) 18 months from the date of dispatch whichever is later with an additional claim period of 2 months. This PBG shall form one of the documents for effecting payment. The PBG shall be submitted in non-judicial stamp paper value of not less than Rs.80/- issued by any one of the following banks who is a member bank in our consortium of banks. 1) State Bank of India 2) State Bank of Hyderabad 3) State Bank of Travancore 4) State Bank of Mysore 5) Canara Bank 6) Bank of Baroda 7) Punjab National Bank 8) Deutsche Bank 9) HDFC Bank 10) Standard Chartered Bank 11) Citi Bank 12) Standard Chartered Grindlays Bank 13) Bank of America and 14) Any one of the Nationalised banks.	
Payment terms for supply portion : • 100% payment will be made within 45 to 90 days after receipt and acceptance / commissioning of goods at BHEL against submission of PBG for 10% of Order value with required validity (or) * 80% value of the goods will be paid within 45 to 90 days against dispatch documents negotiated through bank. Balance 20% will be paid within 45 to 90 days from the date of acceptance / commissioning of goods against submission of supplementary invoice and also against submission of PBG for 10% of Order value with required validity. All bank charges are to vendor's account only.	
Erection / Commissioning Erection / Commissioning shall be done at free of cost	
The equipment shall be guaranteed for a period of 12 months from the	

date of commissioning.	
Equipment will be inspected and proved at vendor's works prior to dispatch. However, final inspection and acceptance of equipment will be after installation at BHEL, Trichy.	
The vendor shall provide necessary drawings, Test Certificates and Operating Maintenance Manuals etc., as called for in the Technical Specification, in the required number of copies at no extra cost.	
Any warranty replacement during warranty period shall be supplied free of charge on FOR BHEL TRICHY basis.	
Offers should be submitted only in sealed cover super-scribing clearly the Enquiry reference and due date.	
DETAILS REQUIRED FOR CONDUCTING REVERSE AUCTION	
% of Excise Duty with cess	
% of TAX (CST/VAT)(TNGST with FORM-17 or CST with C-form)	
Packing & Forwarding Charges (in % only)	
Percentage of Freight & Transit insurance charges (if any lumpsum) Freight Charges from Dispatching station to BHEL, Tiruchirapalli (Note. If the delivery terms is Ex Works, the materials has to be sent through BHEL Approved Carrier only, in this case freight will be borne by BHEL.)	
As per Clause 5.17 of Commercial terms and conditions (Annexure-II) Acceptance of participation in Reverse Auction (RA) Yes / No to be indicated.	
Name of the person for participating reverse auction	
Land Line Number	
Fax Number	
Mobile Number	
E-mail ID	

NOTE :-

- a) It is confirmed that all the terms and conditions stipulated in the Enquiry have been fully understood by us and all clarifications & details have been obtained.
- b) Your specific acceptance to the BHEL Payment terms, LD, Risk Purchase Clause & Submission of PBG for 10 % of the order value are essential for consideration of your offer. Other wise your offer is liable for rejection.
- c) Your offer should be indicating applicable if any P&F Charges, % of ED, Sales Tax, CST or VAT, Service Tax, Freight, Insurance and Installation and Commissioning charges etc., as per our Price Format.
- d) No row shall be left blank. Please indicate NA, in case the item is "not applicable"

Signature & Office Seal of the vendor

MODEL PRICE BID FORMAT FOR INDIAN BIDDERS

Enquiry No & Date:

Bidder's Offer No & Date:

Sl.No	Description of item	Unit	Quantity	Rate in Rs.	Value in Rs.
*FOR Trichy (BHEL – STORES) OR Ex Works value in Rs.					
Packing & Forwarding charges (indicate in %)					
Excise Duty (Indicate in %)					
A) TNGST – VAT (%)					
B) CST with C – FORM (%)					
C) CST without C – FORM (%)					
Approximate Net weight of the total consignment					
Approximate Gross weight of the total consignment					
Approximate Dimensions of the Consignment					
The price indicated shall be inclusive of all accessories, spares etc. as given in the scope of supply. Individual item – wise break – up price shall be attached as an annexure to this price bid format.					

Signature & Seal of Vendor

NOTE:

1. The price bid should be submitted only as per the above format. No row shall be left blank. Please indicate NA, in case the item is "not applicable"
2. Price shall be quoted item – wise only as per the above format.
3. If price quoted is Inclusive of ED, the included ED Value and Base Value shall be indicated item – wise.

GENERAL TERMS AND CONDITIONS OF RA

Against this enquiry for the subject item/system with detailed scope of supply as per enquiry specifications, BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING ON INTERNET.

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
3. BHEL will inform the vendor in writing in case of reverse auction, the details of Service Provider to enable them to contact & get trained.
4. Business rules like event date, time, Start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
5. Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse auction. Without this, the vendor will not be eligible to Participate in the event.
6. BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the vendor to enable them to fill-in the price and keep it ready for keying in during the Auction.
7. Reverse auction will be conducted on scheduled date & time.
8. At the end of Reverse Auction event, the lowest bidder value will be known on the network.
9. The lowest bidder has to Fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHEL through Service provider within 24 hours of Auction without fail.
10. Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHEL as per prevailing procedure.
11. In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.