

 A JOULON COMPANY	Welding	SARA SAE
	Validation Record	Date: 20/06/2020

DOC NO. SARA/QA/DOC/0611-3

Equipment:

SMAW Technique – Arc Welding Machines & Instruments

- A. Power Source
- B. Baking System
- C. Protective Equipment
- D. Material based consumables etc.

Qualification of Personnel: As per ASME Sec. IX attached

Method: SMAW

Material: IS 2062 GR A to IS 2062 GR A

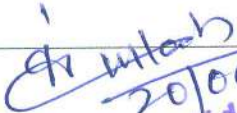
Qualified Parameter: As per Procedure Qualification Record – SARA/PQR/001/13 Dated-23.02.2013

Operating Parameter: AS per Approved Welding Procedure Specification WPS/25-011 Rev 01 Dtd.-23.02.2013

Process Acceptance Criteria: Mechanical Testing attached

Record: for Validation

- A. Welding procedure specification (as per ASME IX)- WPS/25-011 Rev 01 Dtd.-23.02.2013
- B. Procedure Qualification Record (as per ASME IX) – SARA/PQR/001/13 Dtd.-23.02.2013
- C. Welder Performance Qualification (as per ASME IX) – Attached
- D. Welder Continuity Record – Record available
- E. Calibration of Welding equipment – Record available

 20/06/2020 Hidayat Ullah QA/QC Deptt. Sara Sae Pvt.Ltd.	 Arun Sharma CWI 15031721 QC1 EXP. 3/1/2021
Reviewed by	Approved by

QW -482

WELDING PROCEDURE SPECIFICATION (WPS)

(Section IX, ASME Boiler and Pressure Vessel Code)

Company Name : SARA SAE PVT. LTD.

Welding Procedure Specification No WPS/25-011 Rev.1

Supporting PQR No. SARA/PQR/001/013

Dated: 23.02.2013

Rev 1

Welding Process (es), SMAW

Type(s) MANUAL.

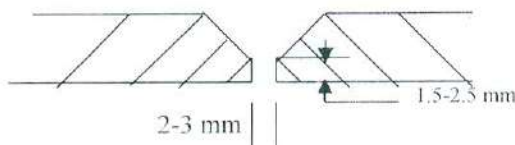
JOINTS (QW -402)

Joints Design: Groove

Backing : NA

Groove Angle: 60-70 deg

Details:



BASE METALS (QW -403)

P. No. - 1

Group No- 1

To P. NO. - 1

Group No. - 1

OR

Specification type and grade; IS-2062 Gr A

To Specification type and grade IS-2062 Gr A

Chem. Analysis and Mech. Prop. IS2062 - C-0.25%MAX, MN-1.5%,P-0.05MAX,S-0.05MAX,Si-0.4%.Y.S.-240MPa,T.S.-410MPa, Elongation.-22%min.,Reduction of area-35%.

To Chem. Analysis and Mech. Prop.

Thickness Range:

Base Metal :	Groove	1.5-16 mm	Fillet	All
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FILLER METALS (QW-404)

SMAW

Spec. No. (SFA)	5.1
AWS No. (Class)	E-7018
F. No	4
A. No.	1
of Filler Metals	3.15, 4.00 mm

Weld Metal

Thickness Range :

Groove (Max.)	16 mm
Fillet	N/A
Electrode - Flux (Class)	N/A
Flux Trade Name	N/A
Consumable insert	N/A
Other	



POSITION (QW - 405)

Position(s) of Groove : All
Welding Progression : Up-hill for 3G
Position(s) of Fillet : All

POST WELD HEAT TREATMENT (QW-407)

Temperature Range : -Nil
Time Range : Nil

GAS (QW-408)

Percent Composition

PREHEAT (QW- 406)

Preheat Temp. Min. 20deg C
Interpass Temp. Max 150 deg C
Preheat Maintenance N.A
Post Heating Time

	Gas (es)	(Mixture)	Flow Rate
Shielding	N.A		
GTAW	N.A		

ELECTRICAL CHARACTERISTICS (QW-409)s

Current AC or DC DC
Amps (Range) 130-230
Tungsten Electrode Size and Type -N/A
Mode of Metal Transfer for GMAW -N/A
Electrode Wire feed speed range -N/A

Polarity Reverse
Volts (Range) 18-24 Volt

TECHNIQUE (QW-410)

String or Weave Bead WEAVE BEAD (Max. 2 x Electrode Dia)
Orifice or Gas Cup Size
Initial and interpass cleaning (Brushing, Grinding, etc.,) WIRE BRUSHING & GRINDING if required.
Method of Back Gouging N/A
Oscillation N/A
Contact Tube to Work Distance N/A
Multiple or single Pass (per side) - Multiple
Multiple Or Single electrodes - Single
Travel speed (Range) -130mm to 220 mm per minute.
Peening - N.A
Other -N/A

Weld Layer(s)	Process	Filler metal		Current		Volts Range	Travel Speed Range (mm/min.)	Maximum Heat Input Joules/mm
		Class	Dia(mm)	Type Polarity	Amp Range			
Ist	SMAW	AWS-7018	3.15	DCEP	130-140	20-22	200-220mm/minute	
Balance	SMAW	AWS-7018	4.00	DCEP	160--170	22-24	160-180mm/minute	

Note: Electrodes shall be dried at 300 deg c for 2 hrs and there after held at 150 deg C till use.

Reviewed By



M/s



QW483

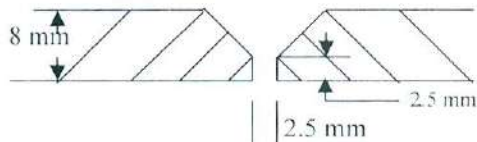
PROCEDURE QUALIFICATION RECORD (PQR)
(SECTION IX, ASME BOILER AND PRESSURE VESSEL CODE)

COMPANY NAME : SARA SAE PVT.LTD.Dehra Dun.
PROCEDURE QUALIFICATION RECORD (PQR) NO. : SARA/PQR/001/13 Date 23.02.2013
WELDING PROCEDURE SPECIFICATION (WPS) NO : WPS-25-011 Rev 01
WELDING PROCESS (ES) : SMAW
TYPE : MANUAL

JOINTS (QW - 402)

JOINT DESIGN : Groove
Groove Angle: 60Deg
BACKING: NO
BACKING MATERIAL (TYPE) : N.A.

DETAILS :



BACKING GAS: NIL

BASE METALS (QW 403)

MATERIAL SPEC.:
IS2062Gr A TO IS2062Gr A

P. NO. : 1 GROUP NO. -- 1
TO P. NO. : 1 GROUP NO. -- 1
THICKNESS OF TEST COUPON : 8 mm
DIAMETER OF TEST COUPON : Plate
OTHER : -

POST WELD HEAT TREATMENT (QW -407)

TEMPERATURE : NIL
OTHER : NIL

GAS (QW - 408)

TYPE OF GAS OR GASES : N.A.
COMPOSITIONS OF GAS MIX. : N.A.
FLOW RATE : N.A.
BACKING : Nil

FILLER METALS (QW- 404)

SFA SPECIFICATION. : 5.1
AWS CLASSIFICATION: E-7018
FILLER METAL F- NO. : 4
A. NO. : 1
SIZE OF FILLER METAL: 3.15mm, 4.0mm
OTHER :
WELD METAL THK. : 8 mm

ELECTRICAL CHARACTERISTICS (QW-409)

CURRENT : DC
POLARITY: REVERSE
AMPS: 130 to 280 Amps.
TUNGSTUN ELECTRODE SIZE : -
OTHER : -

POSITION (QW- 405)

POSITION OF GROOVE : 3G
WELD PROGRESSION : UPHILL
OTHER : --

TECHNIQUE (QW - 410)

TRAVEL SPEED : 4-10 inch per minute
STRING OR WEAVE BEAD : String and Weave
OSCILLATION : NIL
MULTIPASS OR SINGLE PASS (PER SIDE) : Multi-pass
SINGLE OF MULTIPLE ELECTRODES : Single
BACK CHIPPING METHOD : Grinding
OTHER :

PREHEAT (QW - 406)

PREHEAT TEMP : 20°C (MIN.)
INTERPASS TEMP: 150°C (MAX.)
OTHER : NIL



4

TENSILE TEST (QW – 150) AS PER QW 462.1 (a)					
SAMPLE NO.	SPECIMAN SIZE WxT (mm)	AREA (mm ²)	ULTIMATE LOAD (KN)	UTS N/MM ²	REMARK
T1	18.50 X7.70 t	142.45	65.4	459	BROKEN AT PARENT METAL/DUCTILE FRACTURE
T2	18.97 X8.05 t	152.71	69.6	456	BROKEN AT PARENT METAL/DUCTILE FRACTURE

GUIDED BEND TESTS (COLD)OVER MANDREL $\phi = 4t$ 180°(FIGURE QW 466.1 (a) , QW-463.1(a) OF ASME SEX IX

TYPE AND FIGURE NO.	RESULT
RB1 ROOT BEND	Satisfactory
RB2 ROOT BEND	Satisfactory
FB1 FACE BEND	Satisfactory
FB2 FACE BEND	Satisfactory

IDENTIFICATION NO: W-14 WELDER NAME; VIJAY RAWAT

VISUAL INSPECTION : SATISFACTORY Test Supervised by; Mr. Ravi Raj Thapa

TEST BY: R K INSPECTION & TESTING SERVICES Report No. 0213/70887 Dated 23.02.2013

WE CERTIFY THAT THE STATEMENT IN THIS RECORD ARE CORRECT AND THE TEST WELD WERE PREPARED, WELDED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION IX OF THE ASME CODE.

DATE :23.02.2013



FOR: SARA SAE PVT.LTD.
DEHRADUN



TEST WITNESSED BY

FOR DET NORSKE VERITAS

For. Sman



STEEL AUTHORITY OF INDIA LIMITED
BOKARO STEEL PLANT
BOKARO STEEL CITY - 827001, JHARKHAND, INDIA
Test Certificate
HOT ROLLED LOW, MEDIUM AND HIGH
TENSILE STRUCTURAL STEEL

B32-12
HR32
2024



TC
BM BSO, CHAZIABAD
BM BSO, CHAZIABAD
MEERUT RD, NEAR GULDHAR RAILWAY STN
CHAZIABAD

DATE : 04.01.2012
DATE : 04.01.2012

TEST CERTIFICATE NO. : 114149
SHIPPING ADVICE NO. : 60176423
WAGON NO. : ECR75821

We certify that the material described below fully conforms to 2062:2006. Chemical composition and Mechanical / Physical Properties of the product as tested in accordance with the scheme of testing and inspection contained in BIS Certification Marks License No. CM/L-0484856 are as indicated against each Coil / Cast No or Order No. The Material supplied conforms to the standard rolling dimensional and weight tolerances.

(Please refer to 2062:2006 for details of specification requirements)

Chemical Analysis, Mechanical Properties, Specifications & Other Information																
ITEM NO.	CAST NO.	COIL NO.	SALES ORDER & SIZE (MM)	TONNAGE	C%	Mn%	P%	S %	Si%	CE%	YS MPa	UTS MPa	EL %	RND	EDGE	GRADE
					(0.23 max)	(1.50 max)	(0.045 max)	(0.045 max)	(0.40 max)	(0.32 max)	(250 min)	(410 min)	(23 min)	(30.0 max)	(1)	
1	2104926	E112102B	1200117115 8.00X1.25X6.356	14.550	9.15	0.80	0.016	0.038	0.044	0.294	118.0	460.0	30.0	OK	UnTrim	2024-2025
2	2104976	E112475A	1200117115 8.00X1.25X6.356	10.020	9.15	1.02	0.024	0.032	0.010	0.125	124.0	465.0	31.0	OK	UnTrim	2024-2025
3	2105962	E114007B	1200117115 8.00X1.25X6.356	9.450	9.18	1.05	0.015	0.032	0.009	0.155	119.0	458.0	31.0	OK	UnTrim	2024-2025
TOTAL TONNAGE :				40.07												

Change No. : 528
Date : 31/08/2020
Quantity : 0.570

LEGEND (where applicable):				THIRD PARTY / DUCA		APPROVED SIGNATURE	
Grp Vp - 2	Sup. pm	0.100 kg/m	OK - Galvanized through	Hard - Hardness (BHN)	IMP - Impact (Joules)		
Fl - Flange	ion	0.00	Galvanized Plain Deep Drawing ST RL-Stratched SP 603Mm 1mm				
YS - Yield stress		120X 1.2	Thickness 2.00mm	CR - CR-Conditioned Ordinary			
UTS - Ultimate Tensile strength		0.00	Deep Drawing	R - Impact Ratio			
SAIL Logo				SAIL Logo			

Signature

QW- 484A
WELDER PERFORMANCE QUALIFICATIONS RECORD (WPQ)

Welder's name Mr. DHEERAJ PAL

Identification No. W-04



Test Description

Identification of WPS followed WPS/25/011 Rev 01 Test coupon ☒ Production weld ☐
Specification of base metal(s): IS2062 Gr. A TO IS2062 Gr. A Thickness 12 mm
Welding Machine No.: IAW-01

Testing Variables and Qualification Limits

Welding Variables (QW-350)

	Actual Values	Range Qualified
Welding Process (es)	<u>SMAW</u>	<u>SMAW</u>
Type (i.e. manual, semi-automatic)	<u>Manual</u>	<u>Manual</u>
Backing (with/without)	<u>without</u>	<u>with & without</u>
Plate/Pipe (enter diameter if pipe or tube)	<u>Plate 12mm</u>	
Base metal P-Number to P-Number.	<u>P1</u>	<u>P1 to P15F, P34 & P41 TO P49</u>
Filler metal or electrode specification(s) (SFA) (info. Only)	<u>5.1</u>	<u>5.1</u>
Filler metal or electrode classification(s) (info. Only)	<u>E7018</u>	<u>E7018</u>
Filler metal F-Number(s)	<u>F -4 without backing</u>	<u>F1 with, F2 with, F3 with & F4 with & without</u>
Consumable insert (GTAW or PAW)	<u>N.A</u>	<u>N.A</u>
Filler metal product form	<u>N.A</u>	<u>N.A</u>
(solid/metal or flux cored/powder) (GTAW or PAW)		
Deposit thickness for each process	<u>12MM</u>	<u>T2</u>
Position qualified (2G,6G,3F etc.)	<u>3G</u>	<u>1G, 3G (For plate) & (for pipe over 610 mm OD)</u> <u>1G (For 73mm O.D pipe and over but less than 610mm OD)</u> <u>1F, 2F & 3F (For plate and pipe)</u>
Vertical progression (uphill or downhill)	<u>UPHILL</u>	<u>UPHILL</u>
Type of fuel gas (OFW)	<u>N.A</u>	<u>N.A</u>
Inert gas backing (GTAW, PAW, GMAW)	<u>N.A</u>	<u>N.A</u>
Transfer mode (spray/globular or pulse to short circuit-GMAW)	<u>N.A</u>	<u>N.A</u>
GTAW current type/polarity (AC, DCEP, DCEN)	<u>DCEP</u>	<u>DCEP</u>

RESULTS

Visual Examination of Competed Weld (QW-302.4) No defect was observed- Satisfactory

Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] Side bend [QW-462.2] ☐

Pipe bend specimen, corrosion-resistant overlay [QW-462.5(c)] ☐

Plate bend specimen, corrosion-resistant overlay [QW-462.5(d)] ☐

Pipe specimen Macro test for fusion [QW-462.5 (B)] ☐ Plate specimen Macro test for fusion [QW-462.5 (E)] ☐

Type of Test	Figure No.	Result
RB ROOT BEND	<u>QW-466.1/466.2</u>	<u>SATISFACTORY</u>
FB FACE BEND	<u>QW-466.1/466.2</u>	<u>SATISFACTORY</u>

Alternative Volumetric Examination results (QW-191) RT ☐ OR UT (Check one) ☐

Fillet weld- fracture test (QW-181.2) N/A Length and percent of defects

Fillet welds in plate QW-462.4 (b) Fillet welds in plate QW-462.4 (c) ☐

Macro examination (QW-184) N/A Fillet size (in.) Concavity/convexity (in.)

Other tests N/A

Film or specimens evaluated by _____ Company _____

Tested by M/s. R.K. INSPECTION & TESTING SERVICES Laboratory test no. 0415/82053 Date – 07.04.2015

Welding supervised by Mr. RAVI RAJ THAPA

We certify that the statements in this record are correct and that the coupons were prepared, welded and tested in accordance with the requirements of section IX of the ASME Boiler and Pressure Vessel Code.

Certified by



Date: _____

Manufacturer or Contractor

M/s. SARA SAE PVT LTD





NABL CERTIFICATES
NOS.: T-1246 & 1247

R.K. INSPECTION & TESTING SERVICES

Office : C-42, Manak Vihar Extn. (Tihar), Subhash Nagar, New Delhi-110018 Ph. : 011-25121201, 28122201 Fax : 011-25122517

Works : C-196/2, Mayapuri Phase-II, New Delhi-110064 Ph.: 011-28114161

WORK TEST REPORT (F/MCT/05/00)

Central Boiler Board (Govt. India) Approved

REPORT NO : 0415 / 82053

WORK ORDER NO.:56558-1/9

CUSTOMER : M/s SARA SAE PVT. LTD.; DIVISION - 1, SUBHASH NAGAR, MOHABEWALA INDL. AREA, DEHRADUN

REF.: HQ / QA / 907 / 061 ; DT. 01.04.2015

DESC.: 12MM THICK WELDED COUPON PLATE SAMPLE BEARING "N" MARK, FOR WELDER QUALIFICATION TEST AS PER ASME SEC IX

SAMPLE ID.: WELDER NAME: DHEERAJ PAL, WELDER NO. W-4, ELECTRODE:E7018, POSITION: 3G MATERIAL OF CONSTRUCTION: IS:2062 TO IS:2062 GR. 'A'

INSPECTION AUTHORITY : M/s DNV.

MECHANICAL TEST REPORT

DATE OF TESTING : 07.04.2015

Id. Mark	Gauge Size in MM	Area MM ²	Yield Load KN	Yield Stress N / MM ²	Ultimate Load KN	Ultimate Tensile Stress N / MM ²	Gauge Length on MM	Elongated Length MM	Elongation %	Reduced Dia MM	Reduction In Area %	HARDNESS SCALE : BHN LOAD : 29.4KN BALL DIA : 10MM TEST STANDARD : ASTM E-10			
				N.A.											
GUIDED BEND TEST (COLD) OVER MANDREL $\phi = 4t \times 180^\circ$ (FIGURE QW 466.1/466.2) OF ASME SEC IX.												N.A.			
RB	ROOT BEND - SATISFACTORY														
FB	FACE BEND - SATISFACTORY														
MACRO / MICRO EXAMINATION REPORT												ETCHANT : MAGNIFICATION :			
N.A.															
CHARPY V NOTCH IMPACT TEST													SIZE : X 10 X 55MM ; CVN 2MM DEEP	TEST AT ROOM TEMP.: °C	TEST STD: ASTM -A 370
CODE	SAMPLE ID.												VALUES IN JOULES(J)		
	(I) (II) (III) AV														
	N.A.														

CHEMICAL ANALYSIS

Id. Mark	C%	Si%	Mn%	P %	S%	Ni%	Cr%	Mo%	Al%	Co%	Cu%	Ti%	V%	N%	B%	
					N.A.											

WITNESSED BY

Conformity to Required Specn. : YES / NO / NOT EVALUATED
Equipment Used : UTK-100, S.NO. 2010/1432 | UTK-60, S. NO.96/1092

Tested by

Remarks : 1. Report relates only to the samples submitted.
2. Selection of samples not done by M/s.RKITS
3. *Not In Nabl Scope

FOR DNV
S.N.DUTTA
1864
NEW DELHI

R.K. Inspection & Testing Services
(QUALITY MANAGER)

QW- 484A
WELDER PERFORMANCE QUALIFICATIONS RECORD (WPQ)



Welder's name Mr. RAKESH RAWAT

Identification No. W-29

Test Description

Identification of WPS followed WPS/25/011 Rev 01 Test coupon ☒
Specification of base metal(s): IS2062 Gr. A TO IS2062 Gr. A
Welding Machine No.: IAW-01

Production weld ☐
Thickness 12 mm

Testing Variables and Qualification Limits

Welding Variables (QW-350)

Welding Process (es) _____
Type (i.e. manual, semi-automatic) _____
Backing (with/without) _____
Plate/Pipe (enter diameter if pipe or tube) _____
Base metal P-Number to P-Number. _____
Filler metal or electrode specification(s) (SFA) (info. Only) _____
Filler metal or electrode classification(s) (info. Only) _____
Filler metal F-Number(s) _____
Consumable insert (GTAW or PAW) _____
Filler metal product form _____
(solid/metal or flux cored/powder) (GTAW or PAW) _____
Deposit thickness for each process _____
Position qualified (2G,6G,3F etc.) _____

Actual Values

SMAW
Manual
without
Plate 12mm
P1
5.1
E7018
F -4 without backing
N.A
N.A
12MM
3G

Range Qualified

SMAW
Manual
with & without
P1 to P15F, P34 & P41 TO P49
5.1
E7018
F1 with, F2 with, F3 with & F4 with & without
N.A
N.A
T2
1G, 3G (For plate) & (for pipe over 610 mm OD)
1G (For 73mm O.D pipe and over but less than 610mm OD)
1F, 2F & 3F (For plate and pipe)
UPHILL
N.A
N.A
N.A
N.A
DCEP

Vertical progression (uphill or downhill) _____
Type of fuel gas (OFW) _____
Inert gas backing (GTAW, PAW, GMAW) _____
Transfer mode (spray/globular or pulse to short circuit-GMAW) _____
GTAW current type/polarity (AC, DCEP, DCEN) _____

RESULTS

Visual Examination of Completed Weld (QW-302.4) No defect was observed- Satisfactory

Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] ☐ Side bend [QW-462.2] ☐
Pipe bend specimen, corrosion-resistant overlay [QW-462.5(c)] ☐

Plate bend specimen, corrosion-resistant overlay [QW-462.5(d)] ☐

Pipe specimen Macro test for fusion [QW-462.5 (B)] ☐ Plate specimen Macro test for fusion [QW-462.5 (E)] ☐

Type of Test	Figure No.	Result
RB ROOT BEND	QW-466.1/466.2	SATISFACTORY
FB FACE BEND	QW-466.1/466.2	SATISFACTORY

Alternative Volumetric Examination results (QW-191) RT ☐ OR UT (Check one) ☐

Fillet weld- fracture test (QW-181.2) N/A Length and percent of defects _____

Fillet welds in plate QW-462.4 (b) Fillet welds in plate QW-462.4 (c) ☐

Macro examination (QW-184) N/A Fillet size (in.) _____ Concavity/convexity (in.) _____

Other tests N/A

Film or specimens evaluated by _____ Company _____

Tested by M/s. R.K. INSPECTION & TESTING SERVICES Laboratory test no. 0415/82057 Date - 07.04.2015

Welding supervised by Mr. RAVI RAJ THAPA

We certify that the statements in this record are correct and that the coupons were prepared, welded and tested in accordance with the requirements of Section IX of the ASME Boiler and Pressure Vessel Code.

Certified by _____

Date: _____

Manufacturer or Contractor _____

M/s. SARA SAE PVT.LTD.





NABL CERTIFICATES
NOS.: T-1246 & 1247

R.K. INSPECTION & TESTING SERVICES

Office : C-42, Manak Vihar Extn. (Tihar), Subhash Nagar, New Delhi-110018 Ph. : 011-25121201, 28122201 Fax : 011-25122517

Works : C-196/2, Mayapuri Phase-II, New Delhi-110064 Ph.: 011-28114161

WORK TEST REPORT (F/MCT/05/00)

Central Boiler Board (Govt. India) Approved

REPORT NO : 0415 / 82057

WORK ORDER NO.:56558-5/9

CUSTOMER : M/s SARA SAE PVT. LTD.; DIVISION – 1, SUBHASH NAGAR, MOHABEWALA INDL. AREA, DEHRADUN

REF.: HQ / QA / 907 / 061 ; DT. 01.04.2015

DESC.: 12MM THICK WELDED COUPON PLATE SAMPLE BEARING "N" MARK, FOR WELDER QUALIFICATION TEST AS PER ASME SEC IX

SAMPLE ID.: WELDER NAME: RAKESH RAWAT, WELDER NO. W-29, ELECTRODE:E7018, POSITION: 3G MATERIAL OF CONSTRUCTION: IS:2062 TO IS:2062 GR. 'A'

INSPECTION AUTHORITY : M/s DNV.

MECHANICAL TEST REPORT

DATE OF TESTING : 07.04.2015

Id. Mark	Gauge Size in MM	Area MM ²	Yield Load KN	Yield Stress N / MM ²	Ultimate Load KN	Ultimate Tensile Stress N / MM ²	Gauge Length on MM	Elongated Length MM	Elongation %	Reduced Dia MM	Reduction In Area %	HARDNESS SCALE : BHN LOAD : 29.4KN BALL DIA : 10MM TEST STANDARD : ASTM E-10
—	—	—	—	N.A.	—	—	—	—	—	—	—	N.A.
GUIDED BEND TEST (COLD) OVER MANDREL $\phi = 4t \times 180^\circ$ (FIGURE QW 466.1/466.2) OF ASME SEC IX.												
RB	ROOT BEND - SATISFACTORY											
FB	FACE BEND - SATISFACTORY											
MACRO / MICRO EXAMINATION REPORT												
ETCHANT : N.A. MAGNIFICATION :												
CHARPY V NOTCH IMPACT TEST SIZE : X 10 X 55MM ; CVN 2MM DEEP TEST AT ROOM TEMP.: °C TEST STD: ASTM -A 370												
CODE	SAMPLE ID.		VALUES IN JOULES(J)									
			(I)	(II)	(III)	AV						
—	—		N.A.									

CHEMICAL ANALYSIS

Id. Mark	C%	Si%	Mn%	P %	S%	Ni%	Cr%	Mo%	Al%	Co%	Cu%	Ti%	V%	N%	B%	—
					N.A.											

WITNESSED BY

Conformity to Required Specn. : YES / NO / NOT EVALUATED ✓

Equipment Used : UTK-100, S.NO. 2010/1432 | UTK-60, S. NO.96/1092

Tested by

Remarks 1. Report relates only to the samples submitted.

2. Selection of samples not done by M/s.RKITS

3. *Not In Nabl Scope

FOR DNV
S.N.DUTTA
NEW DELHI

R.K. Inspection & Testing Services
(QUALITY MANAGER)

QW- 484A
WELDER PERFORMANCE QUALIFICATIONS RECORD (WPQ)

Welder's name Mr. Om Pal

Identification No. W-3



Test Description

Identification of WPS followed WPS/25/011 Rev 01 Test coupon ☒ Production weld ☐
Specification of base metal(s): IS 2062 Gr- A to IS 2062 Gr-A Thickness 12 mm

Testing Variables and Qualification Limits

Welding Variables (QW-350)

	Actual Values	Range Qualified
Welding Process (es)	<u>SMAW</u>	<u>SMAW</u>
Type (i.e. manual, semi-automatic)	<u>Manual</u>	<u>Manual</u>
Backing (with/without)	<u>without</u>	<u>with & without</u>
Plate/Pipe (enter diameter if pipe or tube)	<u>Plate 12mm</u>	
Base metal P-Number to P-Number.	<u>P1</u>	<u>P1 to 15F, P34 & P41 to P49</u>
Filler metal or electrode specification(s) (SFA) (info. Only)	<u>5.1</u>	<u>5.1</u>
Filler metal or electrode classification(s) (info. Only)	<u>E-7018</u>	<u>E7018</u>
Filler metal F-Number(s)	<u>F 4 (without backing)</u>	<u>F1 (with), F 2 (with), F 3 (with) F 4 (with & without)</u>
Consumable insert (GTAW or PAW)	<u>N.A</u>	<u>N.A</u>
Filler metal product form	<u>N.A</u>	<u>N.A</u>
(solid/metal or flux cored/powder) (GTAW or PAW)		
Deposit thickness for each process	<u>12MM welded in three layers</u>	<u>Maximum to be welded</u>
Position qualified (2G,6G,3F etc.)	<u>3G</u>	<u>1G, 3G (For plate) & 1G,3G (for pipe over 610 mm O.D.) 1G (For 73mm O.D pipe and over but less than 610mm O.D.) 1F, 2F & 3F (For plate and pipe)</u>
Vertical progression (uphill or downhill)	<u>UPHILL</u>	<u>UPHILL</u>
Type of fuel gas (OFW)	<u>N.A</u>	<u>N.A</u>
Inert gas backing (GTAW, PAW, GMAW)	<u>N.A</u>	<u>N.A</u>
Transfer mode (spray/globular or pulse to short circuit-GMAW)	<u>N.A</u>	<u>N.A</u>
GTAW current type/polarity (AC, DCEP, DCEN)	<u>DCEP</u>	<u>DCEP</u>

RESULTS

Visual Examination of Competed Weld (QW-302.4) No defect was observed- Satisfactory

Transverse face and root bends [QW-462.3(a)] ☐ Longitudinal bends [QW-462.3(b)] Side bend [QW-462.2] ☐

Pipe bend specimen, corrosion-resistant overlay [QW-462.5(c)] ☐

Plate bend specimen, corrosion-resistant overlay [QW-462.5(d)] ☐

Pipe specimen Macro test for fusion [QW-462.5 (B)] ☐ Plate specimen Macro test for fusion [QW-462.5 (E)] ☐

Type of Test	Figure No.	Result
RB 1 ROOT BEND	<u>QW-466.1/466.2</u>	<u>SATISFACTORY</u>
FB 1 FACE BEND	<u>QW-466.1/466.2</u>	<u>SATISFACTORY</u>

Alternative Volumetric Examination results (QW-191) RT ☐ OR UT (Check one) ☐

Fillet weld- fracture test (QW-181.2) N/A Length and percent of defects

☐ Fillet welds in plate QW-462.4 (b) Fillet welds in plate QW-462.4 (c) ☐

Macro examination (QW-184) N/A Fillet size (in.) Concavity/convexity (in.)

Other tests N/A

Film or specimens evaluated by _____ Company _____

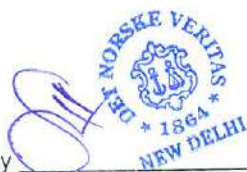
Tested by M/s. R.K. INSPECTION & TESTING SERVICES Laboratory test no. 0415/82061 Date – 07.04.2015

Welding supervised by Mr. RAVI RAJ THAPA

We certify that the statements in this record are correct and that the coupons were prepared, welded and tested in accordance with there requirements of Section IX of the ASME Boiler and Pressure Vessel Code.

Manufacturer or Contractor:-

Date: 07-04-2015 Certified by



M/s. SARASAE PVT. LTD.





NABL CERTIFICATES
NOS.: T-1246 & 1247

R.K. INSPECTION & TESTING SERVICES

Office : C-42, Manak Vihar Extn. (Tihar), Subhash Nagar, New Delhi-110018 Ph. : 011-25121201, 28122201 Fax : 011-25122517

Works : C-196/2, Mayapuri Phase-II, New Delhi-110064 Ph.: 011-28114161

WORK TEST REPORT (F/MCT/05/00)

Central Boiler Board (Govt. India) Approved

REPORT NO : 0415/82061

WORK ORDER NO.:56558-9/9

CUSTOMER : M/s SARA SAE PVT. LTD.; DIVISION - 1, SUBHASH NAGAR, MOHABEWALA INDL. AREA, DEHRADUN

REF.: HQ / QA / 907 / 061 ; DT. 01.04.2015

DESC.: 12MM THICK WELDED COUPON PLATE SAMPLE BEARING "N" MARK, FOR WELDER QUALIFICATION TEST AS PER ASME SEC IX

SAMPLE ID.: WELDER NAME: OM PAL, WELDER NO. W-3, ELECTRODE:E7018, POSITION: 3G MATERIAL OF CONSTRUCTION: IS:2062 TO IS:2062 GR. 'A'

INSPECTION AUTHORITY : M/s DNV.

MECHANICAL TEST REPORT

DATE OF TESTING : 07.04.2015

TEST REPORT												HARDNESS	
TEST RESULTS												TEST STANDARD : ASTM E-10	
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CHEMICAL ANALYSIS

Id. Mark	C%	Si%	Mn%	P %	S%	Ni%	Cr%	Mo%	Al%	Co%	Cu%	Ti%	V%	N%	B%	—
—	—	—	—	—	N.A.	—	—	—	—	—	—	—	—	—	—	—

WITNESSED BY

FOR DNV

(S.N.DUTTA) 64
NEW DELHI

Conformity to Required Specn. : YES / NO / NOT EVALUATED
Equipment Used : UTK-100, S.NO. 2010/1432 | UTK-60, S. NO.96/1092

Tested by

Remarks : 1. Report relates only to the samples submitted.
2. Selection of samples not done by M/s.RKITS
3. *Not In Nabl Scope

R.K. Inspection & Testing Services
(QUALITY MANAGER)



WELDER / WELDING OPERATOR

Cert. No : 20-J-192

QUALIFICATION TEST RECORD

Test Date : 11/03/2020

Company Name: SARA SAE PVT. LTD. DEHRA DUN

Name : SULTAN Identification No : W-26

Date of Birth : N.A Joint Type : Single 'V'

Identification of WPS Followed.: WPS/25/011 REV.1 Weld Type: GROOVE

Identification of PQR Followed.: SARA/PQR/001/013

Specification of Base Metal(s): IS2062 Gr. A Thickness: 10MM



Testing Variables and Qualification Limits

Welding Variables	Actual Values	Range Qualified
Welding Process(es) (QW-401)	SMAW	SMAW
Type (ie: manual, semi-auto, auto) used (QW-410.25)	Manual	Manual
Backing(with/without) (QW-402)	Without	With or Without
Test Specimen (Plate or Pipe)	Plate	Plate
Base metal P-number to P-number (QW-403)	IS 2062 Gr. A	IS 2062 Gr. A
Filler metal or electrode classification (info only) (QW-404)	E - 7018	P.No 1 through P.No. 15F
Filler metal or electrode specification(s) (SFA) (info only) (QW-404)	5.1	'No.34, P.No 41 through P 4
Filler metal F-Number(s) (QW-404.15)	4	With and w/o Backing
Consumable Inert(GTAW or PAW) (QW-404.22)	Nil	Nil
Filler Type (Solid, Flux cored etc.)(GTAW or PAW) (QW-404.23)	Flux Coated	Flux Coated
Deposit thickness for FCAW Process	N.A	N.A
Deposit thickness for SMAW Process	10 mm	20 mm
Position Qualified (QW-405)	3G	
Groove : Plate & Pipe > 24 in.(610mm) Dia.		1G, 3G
Pipe ≤ 24 in.(610mm) Dia.		1G
Fillet : Plate & Pipe		1G, 2G, 3G
Vertical Progression (Uphill or Downhill)	Uphill	Uphill
Inert Gas Backing(GTAW, PAW, GMAW) (QW-408)	N.A	N.A
Mode of metal transfer (spray/globular or pulse or short) (GMAW) (QW-409.2)	N.A	N.A
Current / Polarity (AC, DCEP, DCEN) (QW-409.4)	DCEP	DCEP
Others		

RESULTS

Test Conducted	Test Detail (Type, Report No, etc.)	Results
Visual Inspection (QW-302.4)	[X] By Inspector	Accepted
Tensile Test	[]	
Bend	[]	
Radiography Testing	[X] 2020/RT/0101	Accepted
Macro examination (QW-462.5(b))	[]	
Macro examination (QW-462.5(b))	[]	

Test witnessed by: Varun Sharma

We certify that the statements in this record are correct and that the coupons were prepared, welded, and tested in accordance with the requirements of Section IX of the ASME Code 2019 Edition.

For : Co.

JIECO Quality Testing Services (P) Ltd.

Name: Varun Sharma
 Signature: Varun Sharma
 Date: 12/03/2020

Contractor: SARA SAE PVT. LTD. DEHRA DUN

Name: Ravi Raj Sharma
 Signature: Ravi Raj Sharma
 Date: 18-03-2020





INSTITUTE FOR AUTO PARTS & HAND TOOLS TECHNOLOGY

(UNDP/UNIDO ASSISTED PUNJAB GOVT. PROJECT)

A-9, PHASE-V, FOCAL POINT, LUDHIANA- 141010. (INDIA)

Tel. : +91-161-2674597, 5022597 Cell : 98728-74597 Cell : +91-98728-74597

E-mail : iatldh@iapht.org, Website : www.iapht.org



Sr. No.:

85050

Testing & Evaluation Laboratory

TEST REPORT

FM 51/01/22/ 06/ 19

ULR - TC562820000010764F

Report No. :

2020/RT/0101

Date of Receipt :

11/03/2020

Customer: M/s Quality Testing Services Pvt. Ltd.

V/84, Chhoti Line, Model Town,

Yamunanagar.

Date of Test :

11/03/2020

Work Order No.:

73578

Type of Sample :

Welding Plate, W-26, Sultan, Qty: 01

Ref. (if any)

Challan no. 79, dated 11/03/2020,

Date of issue of Test report : 11/03/2020

Condition of Items :

Visually ok

Test Method :

Radiographic Testing

ASME Section V, Article-2/ ASTM E 94

Instrument Used :

225 kV, X-RAY M/C Make YXLON, DENMARK, Sr. No. 552346, Model Y.XPO 225

Environmental condition :

Acceptance Standard:-

Reference Radiograph: - ASTM E 390

Focal Size: 3 mm

Intensifying Screen: Lead Screen (0.13 & 0.25mm)

IQI: ASTM 17 Th

Focus to film distance: 90 Cm

Film: Agfa D -7

Material: Steel

Thickness: - 10 mm

Technique: SWSI

Sensitivity: 2-2T

OBSERVATION

S.No.	Test No.	Segment	Film Size	Density	Observation	Category	Remarks
1.	B - 5141	A - B	15" X 3"	2.25	Gas Porosity	Level 1	---

ANALYSED BY

Page 1/1

APPROVED BY

TERMS :

- The result apply to the sample as received.
- Sample shall be retained only for 90 days.
- The results listed refer only to the tested sample and indicated parameters, Endorsement of product is neither inferred nor implied.
- This test report can not be reproduced wholly or in parts and cannot be used as an evidence in the court of law and shall not be used in advertising media without the written approval of Gernal Manager, Institute for Auto Parts & Hand Tools Technology, Ludhiana.
- The Parameter marked with * are not accredited by NABL.
- Total Liability of our laboratory is limited to the invoiced amount. No liability shall be accepted after the sample is taken back by the customer.

