

11-001-1004548

QCF-42



**MAHARASHTRA SEAMLESS LIMITED**  
**"WELL KNOWN PIPE & TUBE MAKER"**  
**FORM-III A [ CERTIFICATE OF MANUFACTURE AND TEST FOR PIPES ]**  
**REGULATION 4(e)**  
**EN 10204 :3.1**

P.O. No. 800550D44411

Customer Name & Address :		SHAH METAL & TUBES PLOT NO. 1118, ROAD NO. 12, STEEL WAREHOUSE COMPLEX, TAL. PANVEL, DIST: RAIGAD, KALAMBOLI, NAVI-MUMBAI, 410218, Maharashtra, India		Name of Part Makers Name & Address:		PIPS MAHARASHTRA SEAMLESS LIMITED PIPE NAGAR (SUKELI), NAGOTHANE ROHA, RAIGAD, MAHARASHTRA -402126											
Customer Order no: Test Certificate No: Date: Works Order No: Process of manufacture: Main Dimension: Plain / Bevel End :		SHAH/2425/PO/0118 Dt. 11-DEC-24 MSL-7/IBR/2981 /85/ 2024 28-FEB-25 98458 Hot Finish Seamless 33.4 mm O.D. 4.55 mm THK SQUARE CUT		RAW MATERIAL Process Of Manufacture : BF/EAF/EOF/LRF/ VD/CCM/Rolling Fully Killed/Rimmed/ Semi-Killed: Fully Killed & Fine Grained.													
Specifications & Grade :		ASME SA 106 GR.B (2023) Section II PT-A		Tolerance: Design Pressure: Design Temperature. Drawing No		As per Specification NA Kg/cm <sup>2</sup> NA °C NA											
Sr No	Length Range (Mtrs)	Makers T.C. No & Date	Heat No	RM Dia (mm)	No. of Pipes	Total Meters	Hydrostatic Test (PSI)	Date Of Hydro	Date of Manufacture	Ben d test	Flatting Test	Flaring Test	Drift Test	Crush ing Test	Flan ge Test	Heat Treatment	Non-Destructive Test
85	6 - 6 2	58136/17.01.25	M250032A AA14522	162	5	30.75	2500	28.02.25	FEB-25	OK	OK	N.A.	N.A.	N.A.	NA	NA	

Mechanical Properties (At Room temperature) G.L = 50 MM G.W= 12.7 MM (L)						Chemical Composition (%) (Ladle/Product 1/Product 2)													
TEST	YST (MPA)	UTS (MPA)	EI %	Hardne ss (HRB)	Name of the Steel Maker & Inspecting Authority	Heat No.	C	Mn	P	S	Si	Cr	Mo	Ni	V	Al	Cu	Ti	CE
Max				-			0.300	1.060	0.035	0.035		0.400	0.150	0.400	0.080		0.400		
Min	240	415	30	-			0.290			0.100									
85	368.16	469.25	35.00	70-72	JSW Ispat Special Products Ltd. Monnet, Village & Post Naharpali, Tehsil Kharsa, Raigarh.Chattisgarh India approved by IBR	AA14522	0.130 0.118 0.117	0.690 0.668 0.667	0.012 0.011 0.013	0.002 0.002 0.002	0.240 0.235 0.234	0.017 0.016 0.018	0.001 0.001 0.001	0.004 0.004 0.004	0.002 0.002 0.002	0.033 0.032 0.034	0.003 0.003 0.003	0.001 0.001 0.001	0.249 0.234 0.233
372.18	472.86	36.60	70-72																

## Properties at Elevated Temperature (Et = 0.2% proof stress at temperature)

METAL TEMP. (°C)	250	275	300	325	350	375	400	425	450	475	500	525	550	575	600
Et (N/mm <sup>2</sup> )															
Sc (N/mm <sup>2</sup> )															
Sr (N/mm <sup>2</sup> )															
MAWP															

Certified that particulars entered herein are correct. The PIPES has been designed and constructed to comply with the Indian Boiler Regulations for a maximum working pressure, maximum temperature. & satisfactorily withstood hydro test pressure mention above in the presence of our responsible representative whose signature is appended here under.

The PIPES have been Manufactured & Tested at our works as per specification ASME SA 106 GR.B .

Remarks : Mat confirms to API SLB (2018), A53 B(EDN.2024),A106 B(EDN.2019),SA106 B(EDN.2023),NACE MR0175(EDN.2021)/0103-EDN.2015(R2023) . Hot rolling temp. 880-940 Deg C.

Identification marks  MSL API 5L GR.B PSL-1, ASME / ASTM- SA/A 106 GR.B, ASTM A 53 GR.B, NACE MR-0175/MR-0103 (S & HARDNESS CONTROLLED) 33.40 X 4.55 HFS HEAT NO.. 2500 PSI + LENGTH.. + B. NO..

Place : NAGOTHANE  
Date : 28-FEB-25



Makers &  
Representative  
(Name & Signature)

Shyam Sunder - Sr. Supervisor

Anil Tyagi - Dy. Manager

(Maker Name & Signature)



Anil Tyagi - Dy. Manager  
Name & Signature of-

Inspecting Authority/ Well known PIPES Maker

Rev. No. 9 Date: 29-05-2017

W & R O.. Pipe Nagar, Village Sukeli, N.H. 17, B.K.G. Road. Dist. Raigad, Maharashtra - 402126 Phone : 02194-238511, 238512, 238567, Fax : 02194-238513,

WE CERTIFY HAVING SOLD 05 NOS.  
TO M/S. Samix Metal & Tubes Pvt. Ltd.  
VIDE OUR BILL NO. 60214 DT.....  
FOR SAMIX METAL & TUBES

WE CERTIFY HAVING SOLD 05 NOS.  
TO M/S. Samix Metal & Tubes Pvt. Ltd.  
VIDE OUR BILL NO. 35055 DATED.....  
P.O. NO. ....

# Mahalakshmee Castings Pvt. Ltd.

Gat No. 323., Plot No. 2, Pirangut, Taluka Mulshi,  
District Pune - 412115.  
Email : mahalakshmee.india@gmail.com



## FORM III-F

(See regulations 73 to 80)

### CERTIFICATE OF MANUFACTURE AND TEST OF CASTINGS

Certificate No.	MCPL/IBR/24-25/A/04			Date:	25-Jan-2025
Makers name and address	MAHALAKSHMEE CASTINGS PVT LTD Gat No. 323, Plot No. 2, Post Pirangut Taluka Mulshi, District Pune, Maharashtra, India.		Material Specification	A395 Gr. 60-40-18 SG Iron	
Customers name and address	FORBES MARSHALL PVT. LTD. B-85, PHASE-II, CHAKAN INDUSTRIAL AREA, SAWARDARI, CHAKAN -410501 PUNE		Foundry Identification	M	
Maker & DOB					
Approved Drawing No	A3-1189939 (REV-1), A3-1191798 (REV-1), A3-1191887 (REV-1)		Inspection Authority Identification		
Melting Process	Induction				
Heat No.	32A25	Date of Pouring	18-Jan-2025	Quantity	
Item Description	EVALV, BODY, CASTING (SAND), 80NB (3"), SA395, IBR+BSEN 10204 TYPE 3.1, DRG.NO.- 1189939 (REV-1) EVALV, BONNET, CASTING (SAND), 40-50NB, SA395, IBR+BSEN 10204 TYPE 3.1, DRG.NO.- 1191798 (REV-1) EVALV, BONNET, CASTING (SAND), 15NB (1/2")-25NB (1"), SA395, IBR+BSEN 10204 TYPE 3.1, DRG.NO.- 1191887 (REV-1)			30 200 100	

### Heat Treatment - NA

Heat treatment Batch No.- NA

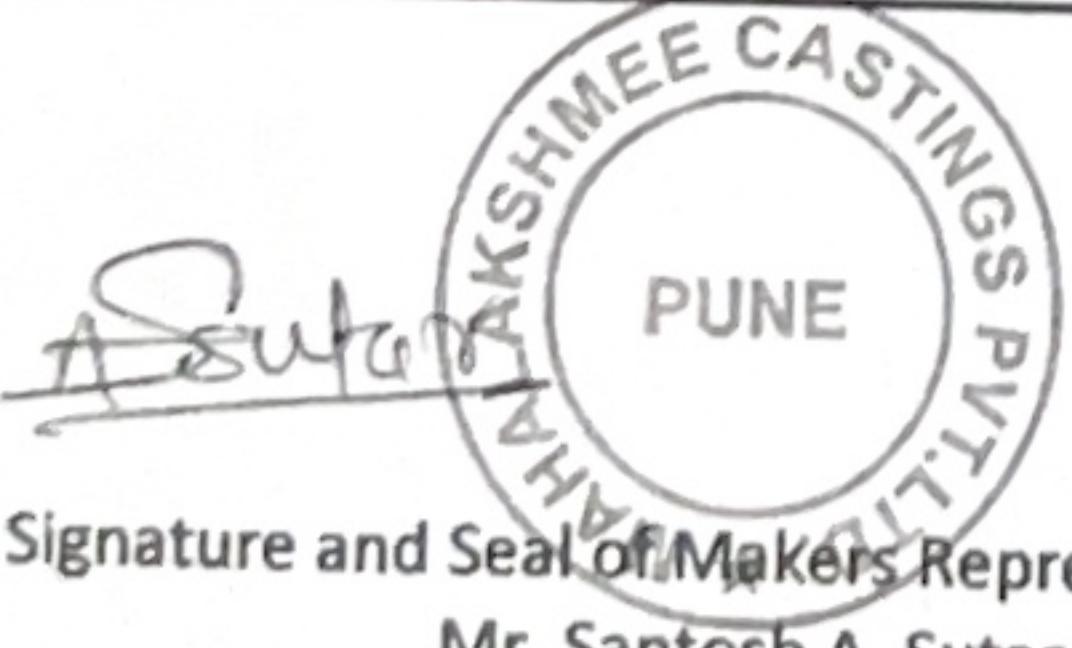
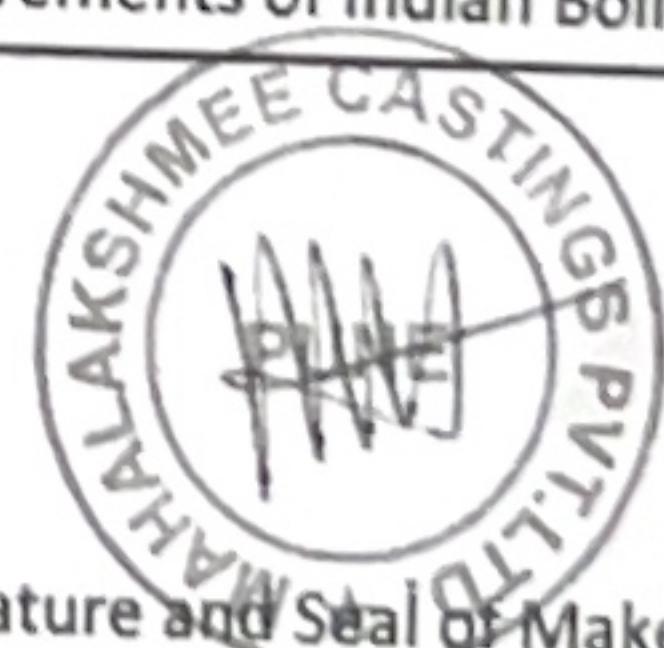
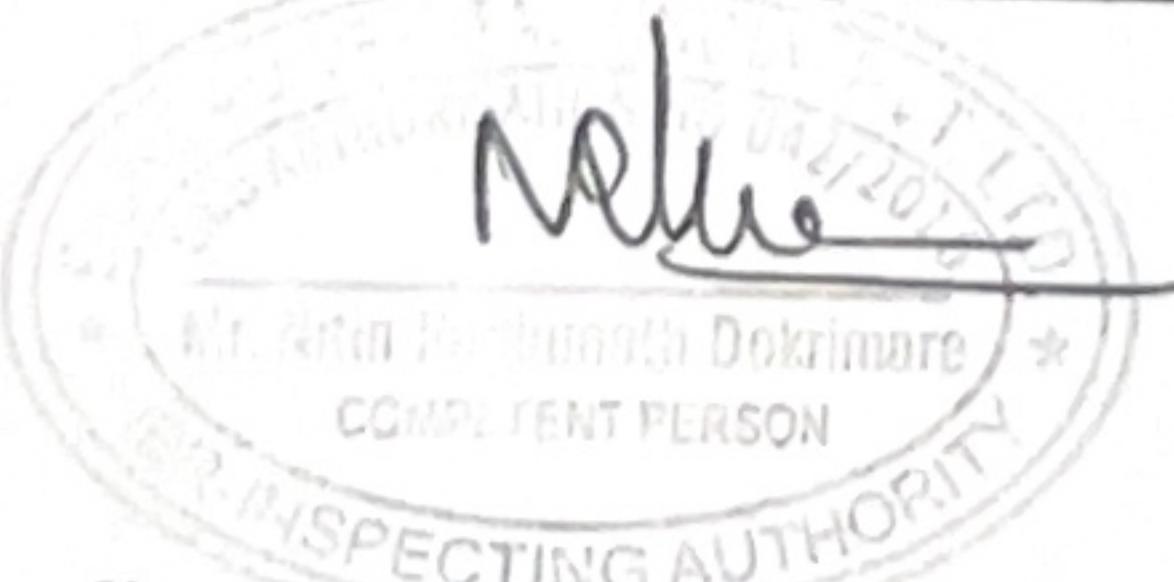
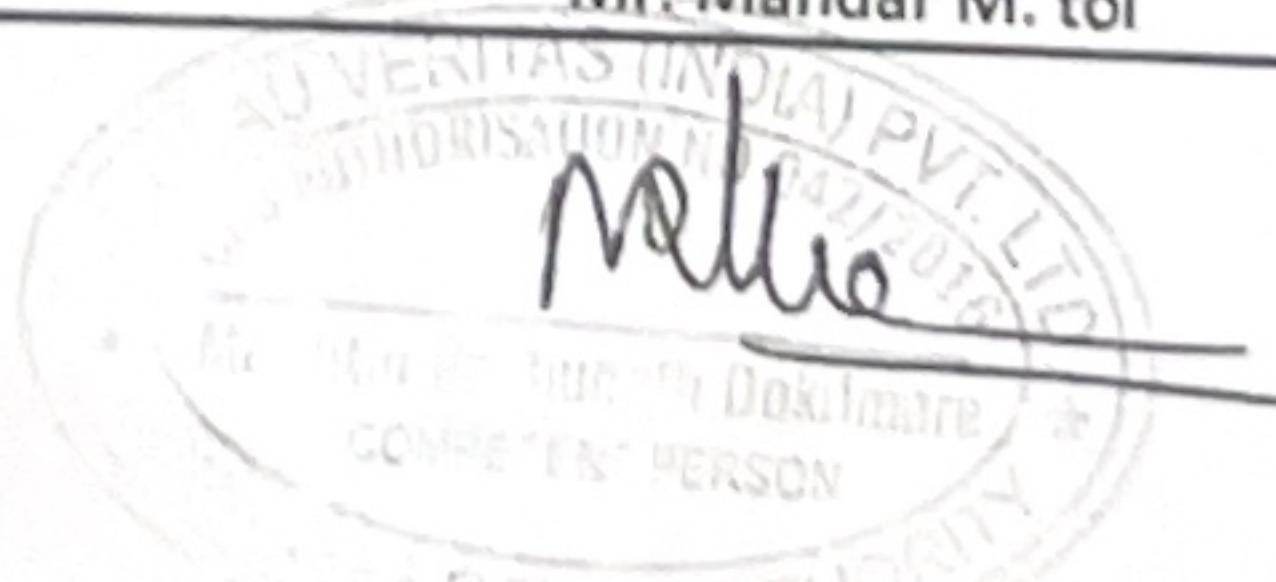
Soaking Time:- NA

### Chemical Composition

Chemical Composition		C%	Si%	Mn%	P%	S%	Mg%	-
Spec. Requirement	Min	3.00	1.80	0.10	0.00	0.00	0.01	-
	Max	3.80	2.50	0.50	0.08	0.08	0.08	-
Obtained Values	Actual	3.49	2.17	0.266	0.015	0.017	0.049	-

Requirements	Yield Strength (Mpa)	TENSILE STRENGTH Rm N/mm <sup>2</sup> (Mpa)	ELONGATIO N (%)	Reduction in Area (%)	HARDNESS (BHN)	Bend Test	Impact Test
Spec							
Min	275	415	18	NA	143	NA	NA
Max	-	-	-	NA	187	NA	NA
Actual Value	305.739	446.116	19	NA	158		NA

Certified that the particulars entered herein by us are correct. This satisfies the requirements of Indian Boiler Regulations, 1950

 <p>Signature and Seal of Makers Representative Mr. Santosh A. Sutar</p>	 <p>Signature and Seal of Maker Mr. Mandar M. tol</p>
 <p>Signature of Competent Person Mr. Nitin R. Dokrimare (Bureau Veritas (India) Pvt. Ltd.)</p>	 <p>Name and signature of Inspecting Authority Mr. Nitin R. Dokrimare (Bureau Veritas (India) Pvt. Ltd.)</p>
<p>Date:- 25/01/2025 Place:- Pune</p>	

MFG.OF FLANGES & FITTINGS  
 REGISTERED OFF: 166.SHREE SADAN .6<sup>TH</sup> KUMBHARWADA LANE. MUMBAI 400 004.  
 E-mail-micosteel55@yahoo.in , web-www.micosico.com

## TEST CERTIFICATE

EN-10204 / 3.1

CERTIFICATE NO &amp; DATE : MSE004/ 24-25/ DATE- 31.03.2025

PARTY M/S FORBES MARSHALL PVT. LTD.

Purchase Order No. 50055027552

Specification SA 105N

Dimensions ANSI B16.5

Identification Mark : SIZE,CLASS,MATERIAL SPEC. DIMENSIONS SPEC. ,LOT NO.

## CHEMICAL ANALYSIS

Size	C%	Si%	Mn %	P%	S%	Ni%	Cr%	Mo%	CE %
31-020- 1001826=FLANGE,SWRF,FORGE15NB (1/2"),ANSI #150	0.13	0.20	0.67	0.019	0.013	0.038	0.042	0.0032	0.32

## PHYSICAL ANALYSIS

Description	LOT No.	Tensile Strength (Mpa)	Yield Strength 0.2% proof (Mpa)	Reduction In Area %	Hardness (BHN)	Elongation %
31-020- 1001826=FLANGE,SWRF,FORGE15NB (1/2"),ANSI #150	15	568.14	339.13	43.15	170	31.64

## OTHER DETAILS: NORMALISED

## SUPPLY DETAILS

Item No.	Description	LOT No.	Qty
1	31-020-1001826=FLANGE,SWRF,FORGE15NB (1/2"),ANSI #150	15	200 NOS

We hereby certify that the material described herein has been manufactured in accordance with the above specification.

SERRATED FINISH 125-250 AARH

For Mico Steel &amp; Engg. Co.



QC.Production/Manager



11-001-1004812

JINDAL SAW LTD.

P.O. No. 80055004441

F. QLY - 03 Rev.01

## FORM III A

## CERTIFICATE OF MANUFACTURE AND TEST FOR PIPE [REGULATION 4 (e)]

CUSTOMER NAME & ADDRESS: SAMIR METAL AND TUBES SHED NO 1, COPPER ESTATE, NR, AMC STORE, OPP CHAKUDIYA MAHADEV, RAKHIAL, Gujarat 380023	TC NO. : JSAW/Q/B25/TX2402014014/A-1 INV NO. : TX2402014014 SO. NO : 4011060560-100 PO. NO : 18	DATE : 19-Feb-2025 DATE : 19-Feb-2025 DATE : 31-Dec-2024 DATE : 16-Dec-2024
	QTY. NO. 5 MTRS : 30.428	

1 Name of the Part : PIPE	9. Main Dimensions OD x WT x LENGTH	: 168.3 MM X 10.97 MM X 5 - 7 MTR
2a Makers Name JINDAL SAW LTD.,	10. Tolerances	: As per IBR & ASTM A 106 GR. B**
2b Address Works A / 59-60, Malegaon MIDC, Sinnar Dist. Nashik, 422 113, Maharashtra, (INDIA)	11. Mode of manufacture	: Hot Finished Seamless Pipes
3a Code of manufacture/Specification : ASTM A 106 GR. B**	12. Ends	: Bevel Ends
3b Drawing no. : ---	13. Bend Test	: N.A.
3c Design Pressure : --- Kg/cm <sup>2</sup>	14. Bend test on weld	: N.A.
3d Design Temperature : --- °C	15. Flaring test	: N.A.
<u>Raw Material:</u>	16. Flattening test	: Satisfactory
4 Heat No. : 3422076	17. Tensile Strength	: Satisfactory
5 Process of manufacture : EAF - LF - VD - CC	18. Elongation percentage	: Satisfactory
6 Fully Killed/rimmred/semiKilled : Fully Killed	19. Crushing Test	: N.A.
7 Chemical composition : Satisfactory	20. Heat Treatment	: N.A.
8 Name of the Steel Maker : Jindal Steel & Power Limited, Raigarh	21. Flange test	: N.A.
8a Size of billet (Diameter) : 200 MM	22. Bulging test and drifting test (for copper and brass) : N.A.	
8b Test certificate No. & Date : JS3/000043846 Dated 23.12.2024	23. Hydraulic test	: Satisfactory
8c Name of Inspecting Authority : Well known Steel Maker	24. Non-destructive examination	: N.A.

Identification mark of Inspecting-Authority / Well known pipe maker : JSAW

ELEMENT	MILL	CHEMICAL COMPOSITION (%)		STD	MECHANICAL PROPERTIES												
		Product 1	Product 2		MIN.		MAX.		Sr. No. Reqd-->	Y. S. (MPa)		U. T. S. (MPa)		% E 26.5 Min.	Hardness 200 BHN Max.		
					245 Min.	415 Min.	26.5 Min.	26.5 Min.		Longitudinal Tensile Specimen Width 25.4 mm GL : 50.0 mm							
C	0.1500	0.1480	0.1540			0.2800			1	320.31	471.86	40.40	139 - 141				
Si	0.1800	0.1840	0.1770	0.1000			0.0100		2	327.16	476.61	39.00	139 - 141				
S	0.0070	0.0065	0.0072														
P	0.0140	0.0150	0.0140				0.0350										
Mn	0.7300	0.7270	0.7340	0.2900			1.0600										
Ni	0.0070	0.0072	0.0085				0.4000										
Cr	0.0190	0.0170	0.0200				0.4000										
Mo	0.0004	0.0009	0.0001				0.1500										
Cu	0.0040	0.0039	0.0043				0.4000										
Sn	0.0074	0.0079	0.0070														
Al	0.0380	0.0370	0.0410														
Ti	0.0012	0.0013	0.0007														
V	0.0002	0.0001	0.0006			0.0800											
CE	0.2763	0.2735	0.2812														
Nb	0.0015	0.002	0.0012														
Critical Temp. °C	250	-	300	325	350	375	400	425	450	475	500	525	550	575	600		
Reqd. (N/mm <sup>2</sup> )																	
Et :																	
Sc :																	
Sr :																	
MAWP :	134.82		134.82	134.82	133.67	119.96	101.57	86.03	71.64	51.98	36.1	25.02	14.51				

Where Et = Yield at temperature t (0.2% proof stress)

Sc : Average stress to produce an elongation of 1% (creep) in 100,000 hours at various working metal temperatures.

Sr : Average and lowest stress to produce rupture in 100,000 hours at the various working metal temperatures.

MAWP = Maximum Allowable Working Pressure in Kg./cm<sup>2</sup>

Tensile strength at 20 °C (Room temperature) as per given above 26

Certified that the particulars entered herein are correct. The particulars of fabricated component are shown in drawing No. : N.A. The Pipes has been designed and constructed to comply with the Indian Boiler Regulations for a maximum working pressure of \_\_\_\_\_ Kg/cm<sup>2</sup> and maximum temperature of \_\_\_\_\_ °C and satisfactorily withstood a water test of 19.31 MPa on the 19-Feb-25 in the presence of our responsible representative whose signature is appended hereunder.

Remark : Certificate according to DIN 50049 : 3.1 / EN 10204 3.1

\*\*Material conforms to EACH SPECIFICATION &amp; GRADE INDIVIDUALLY AS PER ASTM A 106 GR B-19a / A 53 GR B-22 / ASME SA 106 / SA 53 GR B (ASME SEC II PART A EDN. 2023) / API 5L GR.B or L245 PSL1 46TH EDITION / NACE MR 0175 Edn. 2021 / NACE MR 0103 Edn. 2015

Marking on Pipes : JSAW API SPEC 5L GR B PSL 1/ASTM A 106 GR B/ASME SA 106 GR B/ASTM A 53 GR B/ASME SA 53 GR B/NACE MR 0175/NACE MR 0103 SMLS HFS MM OD X MM WT(SCH SIZE) MTR LENGTH Kg/MTR HYDRO Mpa HEAT NO.

Maker's Representative  
(Name & Signature)

KIRAN KUMAR

Declaration :-

We have satisfied ourselves that the pipes have been constructed in accordance with Indian Boiler Regulations, 1950.

The tests conducted on the samples taken from the finished pipes have been witnessed by us and the particulars entered herein are correct.

Maker  
(Name & Signature)  
S. S. TILE

S. S. TILE

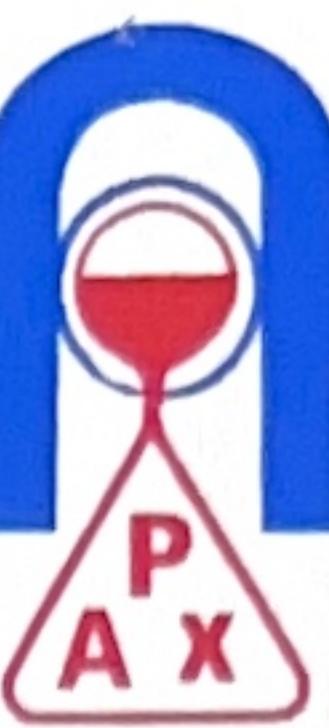
Place / Date : Nashik / 19 Feb 2025

Inspecting-Authority/Well Known Pipe Maker

(Name &amp; Signature)

S. S. TILE

60169000902  
 413/2, Phase - IV, G.I.D.C.,  
 Naroda, Ahmedabad - 382 330.  
 Ph. : 2282 0598, 2282 0721  
 Email : marketing@apexalloy.com,  
 accounts@apexalloy.com  
 Web : www.apexalloy.com  
 CIN No. U27101GJ1990PTC013792



MTC25/4612

**APEX  
ALLOY STEEL  
PVT. LTD.**

**FORM - III F**

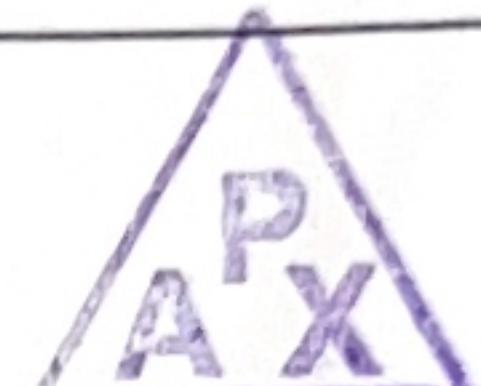
LAB/02, REV.00 , 01/01/2018

CERTIFICATE OF MANUFACTURER AND TEST OF CASTINGS(REGULATION 73 TO 80 AS APPLICABLE)

RECOGNISED AS WELL KNOWN FOUNDRY BY THE CENTRAL BOILERS BOARD REGULATION 4C(2) OF INDIAN BOILER REGULATION 1950

FORBES MARSHALL PVT.LTD.  
 B-85, PHASE-II, CHAKAN  
 INDL. AREA, SAWARDAR, CHAKAN, TALKHED.  
 PUNE - 410501

Certificate No. : 2026/0050  
 Date : 07/04/2025  
 Melting Process : Induction Furnace  
 Foundry Identification :



Specification : ASTM A216/A216M-21 Gr. WCB

Maker's Name & Address : Apex Alloy Steel Pvt. Ltd.  
 413/2, Phase - IV, G.I.D.C. Naroda,  
 Ahmedabad - 382 330 (Gujarat, India)

**CHEMICAL COMPOSITION**

Heat No.	Pouring Date	C %	Mn %	Si %	S %	P %	Cr %	Ni %	Mo %	Cu %	V %	Resi. Ele	CE	
Min.		--	--	--	--	--	--	--	--	--	--	--	--	
Max.		0.300	1.000	0.600	0.035	0.035	0.500	0.500	0.200	0.300	0.030	1.000	0.500	
L1641	23/03/2025	0.208	0.840	0.343	0.023	0.028	0.074	0.030	0.011	0.024	0.006	0.145	0.370	

Heat Treatment : Normalized at 900 °C, hold for 1hr/thickness. Air Cool.

**PHYSICAL TEST RESULTS**

Heat No.	TS MPa	YS MPa 0.2 %	Elong. % GL = 50 mm	R.A. %	Hardness BHN	Bend Test @ 90°	-					
							1	2	3	Avg		
Temp.							-	-	-	-	-	-
Min.	485.00	250.00		22.00	35.00	--	-	-	-	-	-	-
Max.	655.00	--		--	--	237	-	-	-	-	-	-
L1641	520.67	335.70		31.72	49.53	146	90	-	-	-	-	-

**DISPATCH DETAIL**

Heat No.	Pattern No.	Description	Drg. No.	PO No.	Disp. Qty.	Mark
L1641	FBS-514	8"X150# PSVAL BODY (FBS-514) - Cust. Part ID : 10-007-1006252	A3-17930	50045026184-146	5	

Grade Remark : Castings are Visually inspected as per MSS-SP-55 Type II-XIIa and Found Satisfactory.  
 For each reduction of 0.01% below specified maximum carbon content, an increase of 0.04% Mn above the specified maximum will be permitted up to a maximum of 1.28 %

We certify that the castings mentioned above confirms to specifications ASTM A216/A216M-21 Gr. WCB certifies that the particulars entered herein by us are correct. This satisfies the requirements of India Boiler Regulations, 1950.  
 for casting of size more than 100mm Heat number must be as Cast

For, Apex Alloy Steel Pvt. Ltd.

( VINOD NAIR )

Maker's Representative

( PANKAJ RATHOD )

Maker



Name & Signature of  
 Inspecting Authority /  
 Well Known Foundry

11-001-1004742

**Heavy Metal & Tubes (India) Pvt.Ltd.**138, Bileshwarpura, Ta-Kalol, Dist:- Gandhinagar.  
Phone:- (02764) 234207/208

Certificate No:- HMT/IBR/CS/QC/927HG

W.O.No.:CS-X

P.O. No. 80055004441

**"FORM III-A"**

[See regulation 4(e)]

**CERTIFICATE OF MANUFACTURE AND TEST FOR PIPES**

Name of Part	: Carbon Steel Seamless Pipes	Date.	: 23.09.2024
Customer Name and Address.	<b>M/S SAMIR METAL &amp; TUBES</b> : 608/609, 6 <sup>th</sup> FLOOR PHOENIX BUILDING. 457-PRATHNA SAMAJ, MUMBAI - 400004	Quantity	: 5 Nos
P.O. No.	: ---	Total Meters	: 26.28
Specification.	: ASTM A-106-19a	Grade	: B
Design Pressure	: ---	WE CERTIFY HAVING SOLD... TO M/S. <u>Forbes Syncle Pvt Ltd</u> VIDE OUR BILL NO. <u>6024 DT</u> <u>FOR SAMIR METAL &amp; TUBES</u>	
Design Temperature	: ---	<u>Shrikant</u> AUTHORIZED SIGNATORY	
RAW MATERIAL			
Process of Manufacture	: BOF-LF/IRUT-CCM		
Fully Killed / Rimmed	: AI Killed.		
Heat Number	: 23E00591		
Size	: 50.80mm OD X 4.30mm THK X RL 15.9 To 16 Mtrs Long		
Name of Steel Maker	: M/s Heavy Metal & Tubes (India) Pvt. Ltd, Mandali		
Inspecting Authority	: M/s Heavy Metal & Tubes (India) Pvt. Ltd (Well-Known Tube/Pipe Maker)		
%Chemical Composition.:			

Analysis	Heat No.	Elements	Chemical Composition (%)											
			C	Mn	P	S	Si	Cr	Mo	Ni	Cu	V	CE	
		Min	---	0.29	---	---	0.10	---	---	--	---	--	--	--
		Max	0.25	1.06	0.035	0.035	--	0.40	0.15	0.40	0.40	0.40	0.080	---
		H	0.17	0.65	0.022	0.009	0.12	0.012	---	---	---	---	---	---
	23E00591	P	0.18	0.68	0.018	0.007	0.15	0.014	0.002	0.005	0.006	0.001	---	---
		P	0.17	0.69	0.019	0.006	0.14	0.012	0.004	0.006	0.005	0.002	---	---

**PIPES**

Process of Manufacturers : Cold Drawn -Carbon Steel Seamless Pipes

Main Dimension : (1) 21.3mmOD x 2.77mmTHK x RL (PE)

Tolerance : OD +0.40mm , -0.40mm &amp; Thk. +20%, -12.5%.

**Tensile Strength & Elongation Percentage.**

Heat No.	Yield Strength [Mpa]			Tensile Strength [Mpa]			Elongation % (GL.50..mm)			Hardness [HRB]
	240 Min		415 Min	30%Min						
23E00591	288	292	284	438	440	445	40%	38%	41%	Not Applicable
	283	279	280	444	449	450	38%	40%	40%	
	284	282	285	450	450	438	40%	38%	40%	
	290	277	288	448	452	447	42%	38%	42%	
	285	290	278	442	446	451	40%	40%	42%	
	287	289	281	455	451	448	42%	39%	43%	
	282	281	282	452	450	441	39%	38%	37%	

Visual Inspection	: Satisfactory	Dimension Control	: Satisfactory
Flattening Test	: Not Applicable	Bend Test on Pipe	: Satisfactory
Eddy Current Test	: Not Applicable	Flange Test	: Not Applicable
Ultrasonic Test	: Not Applicable		
Heat Treatment	: Normalised at 904°C To 918°C Temperature.		
Hydraulic Test	: Satisfactory at 176 Kg/sq.cm(g). [Holding time 10 second min.]		
Marking on Tubes	: HMT 21.30mmOD x 2.77mmTHK x RL ASTM A-106 GR.B (IBR) Heat No. 23E00591		
Identification Marks	: Hydro Test At 176 Kg/sq.cm(g)		
	: Well Known Pipe Maker Each Pipe Bears Hard Stamped As "		



10169000586

MTC25/4029


**SANKALP ENGINEERS - AN ISO 9001 : 2015 APPROVED COMPANY.**
**IBR APPROVED COMPANY IN PIPE FABRICATION, FLOW METERS, FITTINGS, FLANGES & VALVES.**
**UNIT- I : Gat No-65, Plot No-2, Talawade, Pune - 411062. Email-ID :- sankalp.engineers@rediffmail.com**
**UNIT- II : Plot No-Pap-B-56, MIDC, Chakan Industrial Area, Phase-II, Tal-Khed, Pune-410501.**
**FORM III-C**
**[See Regulation 4(g)]**
**CERTIFICATE OF MANUFACTURE AND TEST OF BOILER MOUNTINGS & FITTINGS.**

Certificate No. : SE/V/IBR/2024/7520-3

Date : 21.03.2025.

Name of Part : Hex Plug 1/2" - 3000# BSPT.

Quantity : 500 Nos.

Sl. No. : 1 TO 500

Drawing No. : SE-DRG-PLUG-02 R 0

Maker's Name &amp; Address : Sankalp Engineers, Talawade, Pune -62.

Customer's Name &amp; Address : Forbes Marshall Pvt. Ltd. Pune.

Design Pressure : As per B16.11.

Design Temperature : As per B16.11. Heat Treatment : Normalized

Metal temperature ° C	275	300	325	350	375	400	425
MAWP Kg/cm²	----	----	----	----	----	----	----

MAWP : Maximum Allowable Working Pressure in Kg/cm².

Hydraulic Test Pressure : \*

Main Dimensions : 1/2" - 3000#. (As per B16.11)

Specification : ASTM A105.

Inspecting Authority's Identification Marks :

Chemical Composition :

Heat No.	Material	C%	Mn%	P%	S%	Si%	Ni%	Cr%	Mo%	V%	Cu%
B1202	ASTM A 105	0.220	1.02	0.020	0.008	0.197	0.005	0.009	0.001	0.001	0.005

Physical Properties :

Heat No.	YS (N/mm²)	UTS (N/mm²)	% Elongation	Bend Test	HardnessBHN	Other test
B1202	338.00	523.00	50.00	Ok	153,137	—

**RAW MATERIAL**

Process of Manufacturer	Fully killed/Rimmed	Specification	Heat Number	Size	Test Certificate No. & Date	Name of the Maker	Name of the Inspecting Authority
Forging	---	ASTM A105	B1202	Round Bar Φ 60	DI/QA/IBR/2021/003. Dt. 06.06.2020.	D.I.N Maharastra	D.O.B Maharastra

Certified that the particulars entered herein by us are correct.

The Part has been designed &amp; constructed to comply with the Indian Boiler Regulations, 1950 for a maximum working pressure of 120 Kg/cm² and maximum temperature of 425°C and has satisfactorily withstood a hydraulic test using water to a pressure of \* kg/cm² on the

\* th day of \* 20-- in presence of our responsible representative whose signature is appended hereunder.

\* To be Hydraulically Tested at Site. Final inspection at works 21.03.2025.

*RS*

 R. K. Singh  
 Maker Representative

 We have satisfied ourselves and The Part has been constructed and tested in accordance with the requirement of the Indian Boiler Regulations, 1950.  
 We further certify that the particulars entered herein are correct.

*SV*

 S. V. Kulkarni  
 Maker

*Gawali*

 SANTOSH G. GAWALI  
 Competent Person  
 Who witnessed the tests.  
 BUREAU VERITAS (INDIA) PVT LTD  
 Date :

*Gawali*

 SANTOSH G. GAWALI  
 Inspecting Authority  
 BUREAU VERITAS (INDIA) PVT LTD  
 JC NO. : SANKALP/BV/IBR/24-180  
 Place :- Pune.

60159044712

MTC25/4168

**FORM III-F**  
 (Regulations 73 to 80)  
**CERTIFICATE OF MANUFACTURE AND TEST OF CASTINGS**

Date : 16/01/2025

Certificate no. : 3F/24-25/0114

MATERIAL	POURING DATE	FINAL INSPECTION DATE	HEAT NO.		
ASTM A216/ A216M-21 Gr.WCB	30/12/2024	16/01/2025	420F	421F	422F

Maker's Name &amp; Address :

Iceburg Technocast Private Limited  
 G/520/521-B, Lodika GIDC.  
 (Metoda), Rajkot-360021. Gujarat.(India)

Customer Name &amp; Address :

M/s Forbes Marshall Private Limited.  
 B-85, Phase-II, Chakan Industrial Area,  
 Sawardari, Chakan, Chakan TAL-KHED-410501.

SR. NO.	HEAT NO.	PO No.	ITEM NAME DESCRIPTION	DRAWING NO.	QTY (Nos.)
1	420F	-	DN 32 CLASS 300 BODY CASTING - 10-007-1196791	A3-1196791	16-8
2	421F	-	DN 32 CLASS 300 BODY CASTING - 10-007-1196791	A3-1196791	16
3	422F	-	DN 32 CLASS 300 BODY CASTING - 10-007-1196791	A3-1196791	7

Foundry Identification:

Heat No. (As above)..... & "  "**Chemical Composition:**

HEAT NO.	C%	Si%	Mn%	S%	P%	Cr%	Ni%	Mo%	Cu%	V%
Sr.No.	MIN.	-	-	-	-	-	-	-	-	-
	MAX.	0.250	0.600	1.000	0.035	0.035	0.500	0.500	0.200	0.300
420F	Actual	0.190	0.390	0.850	0.011	0.018	0.140	0.037	0.012	0.034
421F	Actual	0.190	0.380	0.870	0.012	0.017	0.073	0.027	0.009	0.035
422F	Actual	0.200	0.420	0.860	0.010	0.017	0.078	0.033	0.007	0.010

**Heat Treatment:**

Size : As per IBR approved drawing  
 Cooling Media : Air Cool  
 Pouring Heat No.: As above

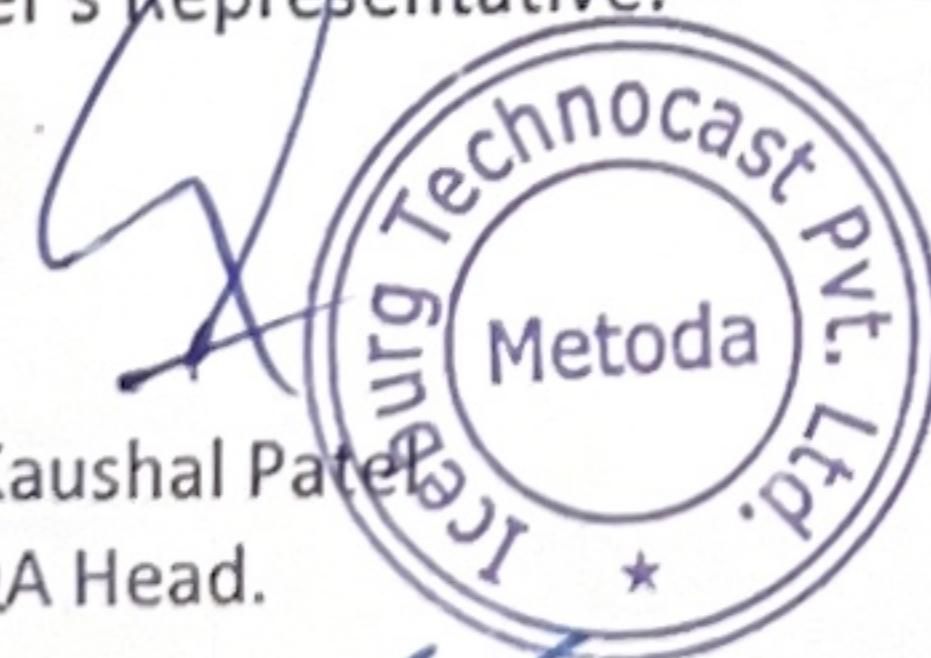
Heat Treatment : Normalizing  
 Temperature: 920 °C Soaking : 2 Hr.  
 Batch No: 1222/24-25 DATED: 31/12/2024

**Physical Test Results:**

HEAT NO.		Yield Stress @ 0.2% (N/mm²)	Tensile Strength (N/mm²)	Elongation %	Reduction of Area%	Hardness (BHN)	Bend test @ 120°	Other Test NDT	
Sr.No.	MIN.	250.000	485.000	22.00	35.00	-		M.P.T.	L.P.T.
	MAX.	-	655.000	-	-	-			
420F	Actual	377.820	544.569	28.80	61.35	153/153/150	OK	-	-
421F	Actual	349.900	535.015	32.98	61.42	150/147/150	OK	-	-
422F	Actual	362.870	543.793	33.80	63.21	153/150/153	OK	-	-

Certified that the particulars entered herein by us are correct. This satisfies the requirements of Indian boiler regulations, 1950.

Maker's Representative:



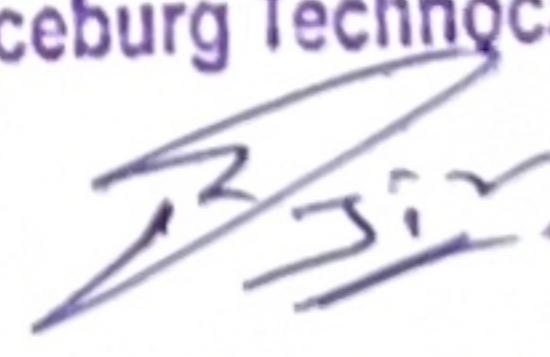
Mr. Kaushal Patel  
 QC-QA Head.

Mr. Sachin Tanna  
 Competent Person

Date :- 16/01/2025

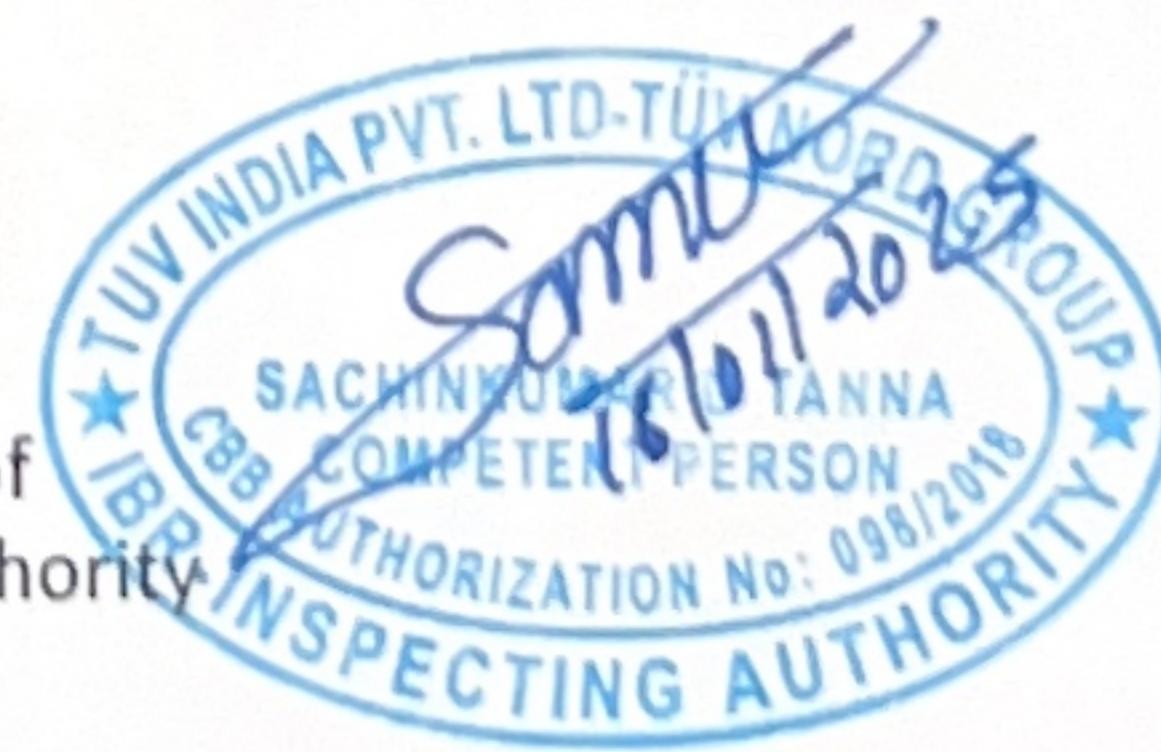
Place :- Rajkot

Maker:  
 For, Iceburg Technocast Pvt. Ltd.



Mr. Denish Jivani  
 Director.

Name & Sign of  
 Inspecting Authority





68169000374

**Art Fit Forge**  
**WELL KNOWN FORGE MAKER**  
**AN ISO 9001-2008 COMPANY**  
**Manufacturing of IBR Pipe Fittings & Flanges in Carbon Steel,**  
**Alloy Steel & Stainless Steel (IBR)**  
**Works: Gat No.191 Behind Jyotiba Mandir Near bhalekar Chawk Talwade Pune-411062**  
**Mo. No. : 7887865571 Email: artfitforge@gmail.com**

Certificate No: AFF/IIC/031

Date: -02.05.2022

[FORM III-C [See Regulation 4(g)]]

Certificate of manufacture and test of Boiler Mountings and Fittings

NAME OF PART: - SEE OVERLEAF  
SR. NO.: - SEE OVERLEAF

QUANTITY:- SEE OVERLEAF.  
DRAWING NO.-BW-90-CS-ELB,ECC RDC,  
EQ TEE . REV-0

MAKER'S NAME & ADD.: - **ART FIT FORCE**

CUSTOMER'S NAME & ADDRESS: - STOCK  
DESIGN TEMPERATURE °C: - 427 °

DESIGN PRESSURE kg/cm<sup>2</sup>: - SEE OVERLEAF

METAL TEMPURE °C	---	---	---	---	---	---	---
MAWP IN kg/cm <sup>2</sup>	---	---	---	---	---	---	---

MAWP = MAXIMUM ALLOWABLE WORKING PRESSURE IN kg/cm<sup>2</sup>

HYDRAULIC TEST PRESSURE: - N.A.

MAIN DIMENSIONS: - SEE OVERLEAF

SNC

SPECIFICATION: - SA234 WPB.

SPECTLING AUTHORITY'S IDENTIFICATION MARKS: - COMPETENT PERSON'S STAMP

PHYSICAL TEST RESULTS: - PLEASE REFER TABLE

CHEMICAL COMPOSITION: - PLEASE REFER TABLE

PART NAME	HEAT NO.	C %	Mn %	P %	S %	Si %	Cr %	Mo %	Ni %	YS IN (MPA)	UTS IN (MPA)	ELON GATIO N %	HARDNE SS IN BHN	TR. BEND TEST
MIN & MAX VALUE		(0.30- MAX)	(0.29- 1.06)	(0.035- MAX)	(0.035- MAX)	(0.10- MIN)	(0.40- MAX)	(0.15- MAX)	(0.40- MAX)	240 MIN	415 MIN	22% MIN	187 MAX	
ELBOW	BW518	0.19	0.68	0.022	0.015	0.25	0.018	0.020	0.017	288.89	511.11	30.60	147,147, 148	OK
ELBOW,ECC RDC, EQ TEE	BW520	0.17	0.65	0.020	0.005	0.20	0.014	0.002	0.009	279.41	500.00	31.40	150,150, 151	OK

OTHER TESTS:-HEAT TREATMENT-NORMALISED.

RAW MATERIAL

HEAT NO.	PROCESS OF MANUFACTURE	FULLY KILLED /RIMMED	SPECIFICATION	SIZE	NO. & DATE	NAME OF THE MAKER	NAME OF INSP.AUTHORITY
19E00626	ELECTRIC ARC FURNACE	FULLY KILLED	SA 106 GR.B	1-1/2" X SCH 40	HMT/IBR/HF/QC/289 DT.05.03.2021	Heavy Metal & Tubes	WELL KNOWN PIPE MAKER
3922664	ELECTRIC ARC FURNACE	FULLY KILLED	SA 106 GR.B	3" X SCH 40	JR363497/41 DT.18.01.2020	ISMT	WELL KNOWN PIPE MAKER

Certified that the particulars entered herein by us are correct.

The part has been designed & constructed to comply with the Indian boilers regulations 1950 for a maximum working pressure (see overleaf) and maximum temperature of 427 °C and satisfactorily withstood a hydraulic test using water / Kerosene to a pressure of NA on the DAY of, in the presence of our responsible representative whose signature is appended herunder. \* Final Inspection on 02.05.2022

Maker's Representative

Maker, Art Fit Forge.

A. P. LEKURWALE

We have satisfied ourselves that the fittings has been constructed and tested in accordance with the requirements of the Indian Boiler Regulation 1950. We further certify that the particulars entered herein are correct.



S. B. NIRGUDE

D.P.ANTAPURKAR  
Inspecting Authority  
Director of Steam Boilers,  
Maharashtra State, Mumbai.

S. N. CHIVATE  
Competent Person

Who witnessed the test

Jt.Director of Steam Boilers.  
Maharashtra State, Pune

Place & Date:- Mumbai.

10 JUN 2022