TÜV Rheinland India Pvt Ltd	VENDOR INSPECTION REPORT	TÜVRheinland® Precisely Right.
Report No.:	TR/ MUM/2123/RS/IR/08	Date: Sep 21, 2023.
Inspector:	Mr. Vaibhav Sawant	Page: 1 of 13

Project name:	**Executing Country:**
N/A	India
End Client:	**PO No.:**
Client: M/s. ROOPAM STEEL	**Ref / Order No.:** -
	TÜV order number: -
Vendor/Manufacturer: M/S ROOPAM STEEL	**Vendor's Ref:** -
Contact: Mr Hamza Khan	**Place of Inspection:** M/s ROOPAM STEEL Plot 2-KV, Vadodara - 391775, Gujarat, India.
Attendees: Mr. Vaibhav Sawant,Sr. Inspection Engineer Mr. Hamza Khan representing Roopam Steel	**Date of Inspection:** 21st September, 2023

Equipment/goods inspected: Pipes and fittings

Inspection according to:	
ITP / QCP No.: SSGLA/STD/ITP/06	Specification: ASME SA-312, SA-999, SB-366, SB-444, SB-899, SB-829
Codes / standards:ASME Sec II Part A Edn 2021, ASME B16.19, ASME B36.10, ASME B16.9	Drawing No.: RS-114

Scope of work:

Following inspections were performed according to contract and above referred documents during the stage of:

☐ Pre-Inspection Meeting	☐ In-process inspection	☒ Final inspection
☒ Quantity inspection	☒ Test witness	☒ Documents review
☒ Visual inspection	☐ Coating inspection	☐ Process monitoring
☒ Dimension inspection	☒ Marking inspection	☐ Others

☒ full inspection ☐ partial inspection ☒ random inspection - 20%

Inspection result:

☒ satisfactory ☐ partial non conforming ☐ rejected ☐ aborted

Documentation:

☒ complete and in order ☐ not complete

Deviations found:

☒ none ☐ to contract ☐ to drawings ☐ to ITP / QCP / PO

Conclusion: All items are satisfactory and acceptable

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INSPECTION DETAILS

Material / Products / Components inspected:

Item/Tag No.	Brief Description	Total Ordered Quantity(M)	Presented Quantity this Visit(M)
1	SB444 N06625 smls.pipe	8M	14.71M
10	SB444 N06625 smls.pipe	6M	
6	SB444 N06625 smls.pipe	2M	3.6M
17	SB444 N06625 smls.pipe	1M	6.93M
27	SB444 N06625 smls.pipe	2M	6.89M
34	SB444 N06625 smls.pipe	5M	
29	SA312 Gr.TP316 smls.pipe	6M	151.24M
36	SA312 Gr.TP316 smls.pipe	10M	
45	SA312 Gr.TP316 smls.pipe	27M	
52	SA312 Gr.TP316 smls.pipe	8M	
53	SA312 Gr.TP316 smls.pipe	8M	
72	SA312 Gr.TP316 smls.pipe	55M	
80	SA312 Gr.TP316 smls.pipe	5M	
82	SA312 Gr.TP316 smls.pipe	10M	
106	SA312 Gr.TP316 smls.pipe	3M	
108	SA312 Gr.TP316 smls.pipe	8M	
110	SA312 Gr.TP316 smls.pipe	5M	
94	SB444 N06625 smls.pipe	10M	11.72M
100	SB444 N06625 smls.pipe	10M	11.76M
117	SB444 N06625 smls.pipe	1M	4M
2	ELBOW（45E）	4	4
4	REDUCER(CR)	2	2

5	TEE	2	2
12	REDUCER(CR)	1	1
28	ELBOW（90E）	3	3
35	ELBOW（90E）	4	4
76	ELBOW（90E）	6	6
77	TEE	2	2
95	ELBOW（90E）	5	5
101	ELBOW（90E）	5	5
102	ELBOW（45E）	17	17
103	TEE	8	8
119	TEE	1	1
16	REDUCER(ER)	1	1
26	REDUCER(ER)	1	1
104	REDUCER(CR)	1	1

Detailed Scope of Inspection:

From Sep 19 to Sep 21, 2023, TUV Rheinland inspector performed the Final inspection for pipes and fittings at Roopam Steel was inspected as per QAP / drawing / Specification related.

1. 100% Full Visual Dimensions Witness Test (OD, Thickness, and Length) for all line items
2. 100% Ovality Check for fittings and 100% Straightness Verification for pipes
3. 100% Positive Material Identification (PMI) Witness Test
4. 100% Precise Quantity Verification
5. 100% Rigorous Bevelling Angle Check
6. 100% Meticulous Examination for Dust, Corrosion, Manufacturing Defects, Cracks, etc., ensuring material integrity
7. 100% Capture of Heat Number Images of all line items
8. 100% Accurate Back & Knuckle Thickness Measurement for both fittings and pipes
9. 100% Thorough Surface Verification: Sandblasted, defect-free, and uniform surface finish
10. 100% Definitive Documentation of Plastic Cap Placement on each fitting and pipe side (including accompanying pictures)
11. 100% Stringent Marking Verification to align with specified PDF guidelines

Standards and Documentation:

SR No	DOCUMENT TITLE	DOC. No.	DOC. REV.	App. Status/code	Approved By
1	PO	P23007-R1	/	Approved	Client
2	Drawing and packing	RS-114	/	Approved	Client
3	Factory-made wrought butt welding fittings	ASME B16.9	2018	/	/
4	SPECIFICATION FOR NICKEL-CHROMIUM-MOLYBDENUM-COLUMBIUM ALLOYS (UNS N06625 AND UNS N06852) AND NICKEL-CHROMIUM-MOLYBDENUM-SILICON ALLOY (UNS N06219) PIPE AND TUBE	ASME SB444	2021	/	/
5	QAP	SSGLA/STD/ITP/06	/	Approved	Client
6	Shipment 2 marking	ROOPAM MARKING RSE746	/	Approved	Client

Witnessed Tests:

After discuss with client, the inspector carried out 100% ratio for above listed fittings and pipes at 100%ratio, details as follows:
QAP Step 1 100% Full Visual Dimensions Witness Test (OD, Thickness, and Length)
QAP Step 2 100% Ovality Check for fittings and 100% Straightness Verification for pipes
QAP Step 3 100% Positive Material Identification (PMI) Witness Test
QAP Step 4 100% Precise Quantity Verification
QAP Step 5 100% Rigorous Bevelling Angle Check
QAP Step 6 100% Meticulous Examination for Dust, Corrosion, Manufacturing Defects, Cracks, etc., ensuring material integrity
QAP Step 7 100% Capture of Heat Number Images of all line items
QAP Step 8 100% Accurate Back & Knuckle Thickness Measurement for both fittings and pipes
QAP Step 9 100% Thorough Surface Verification: Sandblasted, defect-free, and uniform surface finish
QAP Step 10 100% Definitive Documentation of Plastic Cap Placement on each fitting and pipe side (including accompanying pictures)
QAP Step 11 100% Stringent Marking Verification to align with specified PDF guidelines

Documents review

Used Test Equipment:

Equipment name	Type /Model	Identification No./ Calibration No.	Valid range /Accuracy	Calibration valid to
Vernier Calliper	Digital / Insize	JCS/0288/23	0-200 mm / ± 0.01 mm	31.01.2024
Measuring Tape	Analog / Freemans	JCS/0582/23	0-7500 mm / ± 1 mm	19.02.2024
PMI Machine	Digital / Titan	500N11179	-	17.12.2023

INSPECTION ACIVITIES

Activity/ITP/ QCP No.	Description of Activity with Inputs and Outputs	Results
1	QAP Step 1 100% Full Visual Dimensions Witness Test (OD, Thickness, and Length)	Satisfactory
2	QAP Step 2 100% Ovality Check for fittings and 100% Straightness Verification for pipes	Satisfactory
3	QAP Step 3 100% Positive Material Identification (PMI) Witness Test	Satisfactory
4	QAP Step 4 100% Precise Quantity Verification	Satisfactory
5	QAP Step 5 100% Rigorous Bevelling Angle Check	Satisfactory
6	QAP Step 6 100% Meticulous Examination for Dust, Corrosion, Manufacturing Defects, Cracks, etc., ensuring material integrity	Satisfactory
7	QAP Step 7 100% Capture of Heat Number Images of all line items	Satisfactory
8	QAP Step 8 100% Accurate Back & Knuckle Thickness Measurement for both fittings and pipes	Satisfactory
9	QAP Step 9 100% Thorough Surface Verification: Sandblasted, defect-free, and uniform surface finish	Satisfactory
10	QAP Step 10 100% Definitive Documentation of Plastic Cap Placement on each fitting and pipe side (including accompanying pictures)	Satisfactory
11	QAP Step 11 100% Stringent Marking Verification to align with specified PDF guidelines	Satisfactory

QAP Step 1 100% Full Visual Dimensions Witness Test (OD, Thickness, and Length)

When inspector arrived at the site, all items were found packed already. Packages were re-opened as per client's request. Inspector performed visual inspection for the above listed pipes and fittings as per 100% ratio. The visual appearance of the surface was acceptable according to ASTM B444 and ASME B16.9.Details as below:

- The surface was clean, with no dirt or rust.
- The bevel and root face were smooth and uniform. The bevel was free from loose or thick scale, rust, paint, slag, grease or other foreign matters. There was no lamination on the bevel.
- The inside surface of the pipes was free from flaw, crack or inclusion.
- No burr was found on the pipes' end during the visual inspection.
- All surfaces were free from scale, dirt, grease, paint, and other foreign, no deep scratches were found on the surface.

Inspector performed dimensional inspection for the above listed pipes. The dimensional inspection (including outside diameter, wall thickness, length and perpendicularity for pipe end and straightness). The results were acceptable to ASME SB444.

QAP Step 2 100 % Ovality Check for fittings and 100% Straightness Verification for pipes

Ovality check for fittings were carried out during dimension check process and it was acceptable. The inspector checked the straightness by visual, the result was acceptable.

QAP Step 3 100% Positive Material Identification (PMI) Witness Test

Inspector witnessed PMI (positive materials identification) test on all the pipes . The test process and result was acceptable according with ASTM A312 TP316/316L and ASME SB444 UNS 06625. Details as below:

- PMI instrument: X-ray fluorescence emission spectrometer
- Calibration of the PMI instrument was performed by using standard reference samples (316) prior to commencing the actual testing.
- The surface subjected to the test was free from grease, oil, paint and oxide.
- The main alloy element (such as "Cr", "Ni" and "Mo")contents were detected and found acceptable as per ASTM A312 TP316/316L and ASME SB444 UNS 06625.

QAP Step 4 100% Precise Quantity Verification

The inspector checked the quantity of pipes and fittings, acceptable as per client requirements.

QAP Step 5 100% Rigorous Bevelling Angle Check

The inspector checked the bevel angles during dimension check process and the angle was met drawing requirements, acceptable.

QAP Step 6 100% Meticulous Examination for Dust, Corrosion, Manufacturing Defects, Cracks, etc., ensuring material integrity

The inspector checked the surface during visual inspection process and free from cracks, defects etc. Acceptable.

QAP Step 7 100% Capture of Heat Number Images of all line items

The inspector has taken photos for the marking verification and the images are mentioned in the report.

QAP Step 8 100% Accurate Back & Knuckle Thickness Measurement for both fittings and pipes

The inspector checked the back thickness for each item by ultrasonic thickness gauge and the results were acceptable.

QAP Step 9 100% Thorough Surface Verification: Sandblasted, defect-free, and uniform surface finish

During visual inspection, the inspector found the whole surface was sandblasted and no obvious defects were found.

QAP Step 10 100% Definitive Documentation of Plastic Cap Placement on each fitting and pipe side.

All the pipes and fittings were thoroughly packed and the packagings were opened again for inspection.

QAP Step 11 100% Stringent Marking Verification to align with specified PDF guidelines

The inspector clicked pictures and verified the marking as per the pdf shared by ROOPAM STEEL.

Documentation Control:

Document name	Version	Approved by client

PO	P23007 - R1	APPROVED
Drawing and packing	RS-114	APPROVED
QAP	SSGLA/STD/ITP/06	APPROVED
Shipment 2 marking	ROOPAM MARKING RSE746	APPROVED

Non Conformities:

Report No.	Description	Date Raised	Status
/	/	/	/

☐ A punch list is available. Any punch list should be provided by the manufacturer but signed by the inspector and manufacturer's representative

☐ Manufacturer informed about non conformities by inspector

Issued by: Vaibhav Sawant

Witnessed
Reviewed
TÜVRheinland Date 21/09/23
IN - 169

Name Signature

Reviewed by:

Witnessed
Reviewed
IN - 165

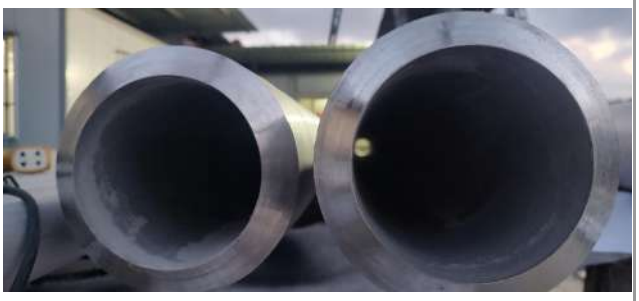
Pradeep Salunkhe

Name Signature

Disclaimer:

This report reflects our findings during inspection in time and place according to the agreed scope of our performance or deliverables and does not release buyer and/or seller from their contractual responsibilities. This report does not construe any guarantee or warranty that the purchase contract between buyer and seller is fulfilled correctly and all performances have been delivered without any defect. Furthermore, the report and its results does not affect any potential buyer's right to claim for compensation or remedy towards the seller/supplier of apparent or hidden defects not detected during our inspection or occurred afterwards.

PICTURES:



1. Visual check

2. Visual check

3. Visual and marking inspection

4. Visual inspection

5. Visual check

6. Visual check

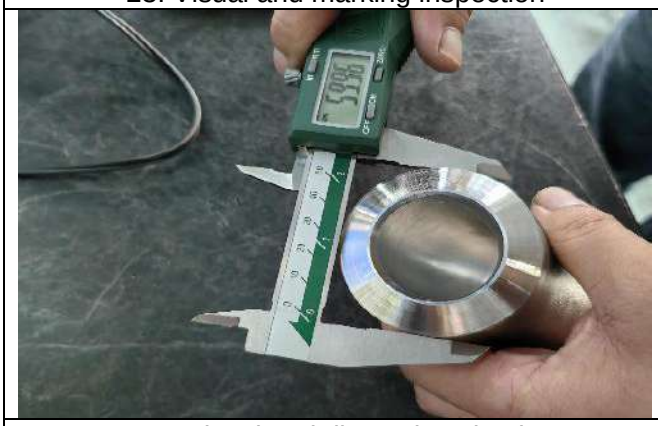
7. Visual check

8. Visual check

9. Visual and dimensions check

10. Visual and dimensions check

11. Heat Number Verification	12. Bevel check
13. Bevel Check	14. Bevel Check
15. Angle check	16. Bevel groove check

23. Visual and marking inspection	24. Visual inspection
	
25. Visual and dimension check	26. Visual and dimension check
27. Visual and dimension check	28. Visual and dimension check

29. Visual and dimension check	30. Visual and dimension check
31. Item status arrival at site	32. Item status arrival at site

- End of Report -