

BSL**SPECTRO LAB**CERTIFICATE NO.
T - 1452 & T - 1453**METALLURGICAL TESTING CENTRE**(A Unit of BSL Castings Pvt. Ltd.)
(NABL ACCREDITED LAB)**TEST REPORT****WORKS & OFFICE :**PLOT NO. 263, SECTOR-24,
FARIDABAD - 121 005 (INDIA)
Ph. No. : 0129-4189800
FAX No. : +91-129-4065535
E.mail : castings@bsltd.net

BSL/SPECTRO/5.10F-01/01/00

Issued to : M/s. Sara Sae (P) Ltd.
7/1, Pritam Road, Unit - II
Dehra Dun - 248001

Report No. 7710
Ref. No. 298

D.O.T. : 30.07.2013
D.O.R. : 29.07.2013
J.O. No. : 2034

Sample Description. : Sample No. - 8597, Heat No. - D-742, Dia - 40.0mm

RESULTS**Chemical Analysis** (Fe Base - SS)
Protocol : ASTM E 1086:2008 (By O.E.S)

Sample ID; J.O.No. - 2034

<u>Element</u>	<u>%</u>
Carbon	0.011
Silicon	0.372
Sulphur	0.025
Phosphorus	0.035
Manganese	1.553
Nickel	10.08
Chromium	16.45
Molybdenum	2.036
Copper	0.496
Tungsten	0.046
Cobalt	0.169
# Niobium	0.029
# Titanium	0.006


Checked By
Authorised Signatory
(Q.M. / T.M.)

- Note :**
1. The result listed refer only to the tested samples and applicable parameters, Endorsement of product is neither inferred nor implied.
 2. Total Liability of our Laboratory is limited to the invoiced amount. No liability will be accepted after the sample is taken back.
 3. *Not Covered under NABL Scope.
 4. This report can not be used as an evidence in a court of law.
 5. Samples will be destroyed after 15 days.
 6. Any Complaints about this report should be communicated within 7 days of issue of this report.
 7. This report shall not be reproduced except in full, without the written permission of the Laboratory.
 8. # Results found outside the range of NABL accredited scope.

INSPECTION CERTIFICATE

(En 10204 - 3.1)

AD 2000 – MERKBLATT W0 CERTI NO. 07 202 1423 WP-1414/13Q & PED 97/23/EC CERTI NO. 07 202 1423 WZ 1414/13Q

Customer Name & Destination : M/s. SARA SAE		T.C.NO.:L - 31436	Date : 05/07/2013	PURCHASE ORDER NO : 4161 DT-28.06.2013		
Material Specification	Manufacturing Route	Supply Condition	Size	Stamp of the Testing Engineer	Colour Code	Weight
SS 316/SS316L Round Bars	Electric Furnace with AOD Route, Ladle Refined, Fully Killed Quality Steel	As Rolled	40 MM	S.M	Blue & White	315

CHEMICAL ANALYSIS IN PERCENTAGE

ELEMENTS		C	Mn	Si	S	P	Cr	Ni	N	Mo	Size	Pcs.
Specification	Min.	-	-	-	-	-	16.00	10.00	-	2.00		
	Max.	0.030	2.00	1.00	0.030	0.045	18.00	14.00	0.1000	3.00		
Heat No.	Grade											
D-742	SS 316/SS316L	0.023	1.65	0.44	0.026	0.039	16.63	10.07	0.0590	2.03	40 MM	50

ULTRASONIC TESTING : OK

REMARKS : NA

RADIATION LEVEL : NIL

MECHANICAL PROPERTIES : TEST STD DIN EN 10272

Size	Test Condition	UTS (N/MM ²)	YS (N/MM ²)	% EL	% RA	Hardness (BHN)	
						Min.	Max.
SPEC	Solution Annealed	485 MIN	170 MIN	40 MIN	50 MIN	-	-
40 MM	Solution Annealed	572	270	58.13	73.13	160	165

METALLURGICAL TEST RESULT

Grain Size
E 112

IMPACT TESTING : DIN EN 10045

Test Temp :

Test Std :

INCLUSION RATING ASTM E - 45

	A	B	C	D	Grain Size E 112	Sr. No	Impact Energy (J)	Average
Thin	-	-	-	-		-	-	-
Thick	-	-	-	-		-	-	-

JOMINY HARDENABILITY : IS - 3848

MACROSTREAK FLAW TEST (IS - 4075)

DIST mm/Inch	J	J	J	J	J	J	Macro Test (ASTM E - 381)	1 st Step	2 nd Step	3 rd Step
ACTUAL HRC	-	-	-	-	-	-	-	-	-	-

Visual Inspection : Satisfactory

Remarks

1. Ultrasonic testing as per ASTM E-114/EN 583-1.
2. Microstructure (Grain Size) as per ASTM E - 112.
3. Inclusion Rating as per ASTM E - 45/DIN 50602.
4. The material is free from Radioactive contaminations
5. Lead has not added during manufacturing.
6. Steel is fully killed by Aluminum for fine grain structure.

For Laxcon Steels Ltd.

For Laxcon Steels Ltd.

WE CONFIRM THAT THE TEST
CERTIFICATE FINDINGS ARE
CORRECT & RESULTS ARE
AS PER STANDARD /
CUSTOMER'S REQUIREMENTS

(S V SINGH)
Lab Incharge

(SACHIN MOKHADKAR)
Authorized Signatory (Q.C.)