

**BSL****SPECTRO LAB****METALLURGICAL TESTING CENTRE**

(A Unit of BSL Castings Pvt. Ltd.)

(NABL ACCREDITED LAB)

**WORKS & OFFICE :**

PLOT NO. 263, SECTOR-24

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CERTIFICATE NO.  
1452 & T- 1453**TEST REPORT**

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

Addressed to : M/s. Nov Sara India (P) Ltd. Report No. 130224 D.O.T. : 30.10.2009  
 7/1, Pritam Road, Unit - II Ref. No. 1358 D.O.R. : 30.10.2009  
 Dehra Dun - 248001 J.O. No. : 40239  
 Sample Description Sample No. - 3859, Heat No. - B-0220, Dia - 56.0mm

**RESULTS****Chemical Analysis**

Sample ID; J.O.No. - 40239/1

By Spectrometer (ASTM E1507;1998)

| <u>Element</u> | <u>%</u> |
|----------------|----------|
| Carbon         | 0.069    |
| Silicon        | 0.464    |
| Sulphur        | 0.013    |
| Phosphorus     | 0.028    |
| Manganese      | 1.207    |
| Nickel         | 10.12    |
| Chromium       | 16.04    |
| Molybdenum     | 2.013    |
| Vanadium       | 0.053    |
| Copper         | 0.483    |
| Tungsten       | 0.031    |
| Cobalt         | 0.066    |
| Aluminium      | 0.013    |
| Titanium       | <0.02    |
| Iron           | 69.39    |

Checked By

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

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.



# Kesri Steels Limited

## MATERIAL TEST CERTIFICATE

|                         |                             |                                                   |
|-------------------------|-----------------------------|---------------------------------------------------|
| TC NO. :- KSL-805/09-10 | Date : 22.10.2009           | Customer : M/S NOV SARA INDIA PVT LTD<br>DEHRADUN |
| Heat No. B 0220         |                             |                                                   |
| Specification :- SS 316 | P.O. NO. : B / KES0215 / 09 | Dtd. :- 06.10.2009                                |

| SL. NO. | ITEM DESCRIPTION & DRAWING NO. | QUANTITY NOS |
|---------|--------------------------------|--------------|
| 1       | SS 316 DIA 56 MM               | 34           |
|         |                                |              |
|         |                                |              |
|         |                                |              |

### CHEMICAL COMPOSITION

| PERCENT               | C     | Mn   | Si   | P     | S     | Cr    | Ni    | Mo   | Cu | Ti | Al | V |
|-----------------------|-------|------|------|-------|-------|-------|-------|------|----|----|----|---|
| AS PER SPEC. Min. (%) |       |      |      |       |       | 16.00 | 10.00 | 2.00 |    |    |    |   |
| Max. (%)              | 0.080 | 2.00 | 1.00 | 0.045 | 0.030 | 18.00 | 14.00 | 3.00 |    |    |    |   |
| Actual Value          | 0.069 | 1.41 | 0.67 | 0.030 | 0.019 | 16.97 | 10.14 | 2.13 |    |    |    |   |

### HEAT TREATMENT

| Condition | Temp. C | Soaking Time Hrs. | Cooling Medium |
|-----------|---------|-------------------|----------------|
|           |         |                   |                |

### PHYSICAL PROPERTIES

| MECHANICAL PROPERTIES | Y.S.<br>N/mm <sup>2</sup> | U.T.S.<br>N/mm <sup>2</sup> | ELONG %<br>GL mm | REDN IN<br>AREA % | BEND | HARDNESS | IMPACT<br>(Joules) |
|-----------------------|---------------------------|-----------------------------|------------------|-------------------|------|----------|--------------------|
| AS PER SPEC. Min.     |                           |                             |                  |                   |      |          |                    |
| Max.                  |                           |                             |                  |                   |      |          |                    |
| Actual Value          |                           |                             |                  |                   |      |          |                    |

We hereby certify that the items mentioned above have been tested and inspected in our presence and are found to be in accordance with the drawing, specifications, and purchase order.

### REMARK

The Steel has been made by Electric Furnace, and is fully killed / killing has been done by Al & Si it has fine grain structure.

Sign of the Inspecting Officer

Sign of the Chief of Quality Control