

**BSL****SPECTRO LAB**

**&  
METALLURGICAL TESTING CENTRE**

(A Unit of BSL Castings Pvt. Ltd.)

( NABL ACCREDITED LAB )

**TEST REPORT**

**WORKS & OFFICE :**

PLOT NO. 263, SECTOR-24

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CERTIFICATE NO.  
T - 1452 & T- 1453

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

|                    |                                                    |            |        |            |            |
|--------------------|----------------------------------------------------|------------|--------|------------|------------|
| Issued to :        | M/s. Nov Sara India (P) Ltd.                       | Report No. | 161411 | D.O.T. :   | 24.01.2011 |
|                    | 7/1, Pritam Road, Unit - II,<br>Dehra Dun - 248001 | Ref. No.   | Nil    | D.O.R. :   | 22.01.2011 |
| Sample Description | Sample No. - 5570A, Heat No. - S-707               |            |        | J.O. No. : | 48925      |
|                    |                                                    |            |        |            |            |

**RESULTS**

**Chemical Analysis** (Fe Base - LAS)  
Protocol : ASTM E 1507 (By O.E.S)

Sample ID; J.O.No. - 48925/7

| <u>Element</u> | <u>%</u> |
|----------------|----------|
| Carbon         | 0.097    |
| Silicon        | 0.145    |
| Sulphur        | 0.026    |
| Phosphorus     | 0.035    |
| Manganese      | 0.439    |
| Nickel         | 0.059    |
| Chromium       | 0.128    |
| Molybdenum     | <0.05    |
| Vanadium       | <0.04    |
| Copper         | 0.071    |
| Tungsten       | <0.02    |
| Cobalt         | <0.03    |
| Aluminium      | 0.035    |
| Titanium       | <0.02    |
| Iron           | 98.94    |

*[Signature]*  
**Checked By**

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

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



# SHARU STEELS (P) LTD.

B-48 & D-251, Phase-VII, Focal Point, LUDHIANA - 141 010.  
E-mail : info@sharusteels.com & sharusteels@connect2.dsl.net

QUALITY ASSURANCE DEPARTMENT  
METALLURGICAL TEST REPORT

## TEST CERTIFICATE

F-QCD-03



M/S. NOV SARA INDIA PRIVATE LIMITED  
(UNIT NO. 11) 7/1, PRITAM ROAD,

DEHRADUN UTTARAKHAND

T.C. No. 3198

Date 07-02-2011

Invoice No.

Truck No.

PB/HJ. 8225

| GRADE     | SIZE  | HEAT NO. | MANUFACTURING ROUTE | COLOUR CODE | SUPPLY CONDN. | QNTY. M.T. | NO. OF PCS. |
|-----------|-------|----------|---------------------|-------------|---------------|------------|-------------|
| AISI 1008 | 48 mm | S-387    | L/H                 | YELLOW      | As ROLLED     | 7525       | 100SE       |

### CHEMICAL COMPOSITION IN PERCENTAGE

|        | C    | Mn   | S     | P     | Si   | Ni | Cr | Mo | V | Al    | Cu | Sn | Ti | B | Ca |
|--------|------|------|-------|-------|------|----|----|----|---|-------|----|----|----|---|----|
| Min.   | -    | -    | -     | -     | -    | -  | -  | -  | - | -     | -  | -  | -  | - | -  |
| Max.   | -    | -    | -     | -     | -    | -  | -  | -  | - | -     | -  | -  | -  | - | -  |
| Actual | 0.09 | 0.48 | 0.032 | 0.034 | 0.14 | -  | -  | -  | - | 0.021 | -  | -  | -  | - | -  |

### METALLURGICAL RESULTS

| INCLUSION RATING IS : 4163/JK CHART/ASTM E-45A |     |   |     |   |     |   |     | Aust. Grain Size ASTM No. (E-112) | 7               | Gas content (ppm) |                |
|------------------------------------------------|-----|---|-----|---|-----|---|-----|-----------------------------------|-----------------|-------------------|----------------|
| A                                              |     | B |     | C |     | D |     | Decarb. (MM)                      |                 | O <sub>2</sub>    |                |
| T                                              | H   | T | H   | T | H   | T | H   |                                   | Micro-Structure | 8X                | N <sub>2</sub> |
| STD                                            |     |   |     |   |     |   |     | H <sub>2</sub>                    |                 |                   |                |
| MAX                                            |     |   |     |   |     |   |     |                                   |                 |                   |                |
| ACTUAL                                         | 1.5 |   | 1.6 |   | 1.5 |   | 1.8 |                                   |                 |                   |                |

| MECHANICAL PROPERTIES |      |      |      |              |                      | MACRO | ULTRASONIC TEST | MIX UP TEST |
|-----------------------|------|------|------|--------------|----------------------|-------|-----------------|-------------|
| U.T.S.                | Y.S. | EL % | RA % | Impact Value | Hardness B.H.N. / Re |       |                 |             |
| Recd.                 |      |      |      |              |                      | OK    | OK              | OK          |
| Actual                |      |      |      |              |                      |       |                 |             |

### HARDENABILITY (HRC) AS PER IS : 3848

| Distance |  |  |  |  |  |  |  |  |
|----------|--|--|--|--|--|--|--|--|
| Recd.    |  |  |  |  |  |  |  |  |
| Actual   |  |  |  |  |  |  |  |  |

Remarks :

CERTIFIED THAT THE TEST FINDINGS ARE CORRECT & ARE BASED ON ACTUAL RESULTS CARRIED OUT ON SAMPLES DRAWN AS PER Q.A.P.

PREPARED BY

AUTHORISED SIGNATORY