

|                         |                               |                        |                         |                   |
|-------------------------|-------------------------------|------------------------|-------------------------|-------------------|
| Sample Result Name      | Type                          | Measure Date Time      | Recalculation Date Time | Origin            |
| 9482(1686/D-25/2014)    | Unknown                       | Saturday, May 24, 2014 | 11:35:41 AM             | Measured          |
| Method Name             | Method Version                | Operator Name          | Check Type              | Check Status      |
| Fe-30-MO                |                               | SARA SAE               | None                    | Not Used          |
| Grade Verification Name | Grade Verification Similarity | Correction Type        | Type Corr Sample Name   | Grade Search Name |
|                         | 0                             | None                   |                         |                   |
| Grade Search Similarity | Type                          | Status                 | Outlier Removal         |                   |
| 0                       | None                          | Not Used               |                         |                   |
| Sample Name             | Grade                         |                        |                         |                   |
| 9482(1686/D-25/2014)    |                               |                        |                         |                   |

|         | C       | Si     | Mn    | P     | S     | Cr    | Mo    | Ni    | Al    | Co    | Cu    | Nb    | Ti     | V     | W      | Pb    | Sn    | As    | Zr     |
|---------|---------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|-------|-------|--------|
|         | Conc    | Conc   | Conc  | Conc  | Conc  | Conc  | Conc  | Conc  | Conc  | Conc  | Conc  | Conc  | Conc   | Conc  | Conc   | Conc  | Conc  | Conc  | Conc   |
|         | %       | %      | %     | %     | %     | %     | %     | %     | %     | %     | %     | %     | %      | %     | %      | %     | %     | %     | %      |
| 1       | 0.048   | 0.48   | 0.76  | 0.063 | 0.026 | 20.66 | 2.69  | 39.59 | 0.061 | 0.13  | 1.60  | 0.049 | 0.67   | 0.065 | <0.040 | 0.013 | 0.018 | 0.011 | <0.003 |
| 2       | 0.046   | 0.49   | 0.77  | 0.063 | 0.026 | 20.83 | 2.61  | 39.47 | 0.059 | 0.13  | 1.63  | 0.045 | 0.66   | 0.063 | <0.040 | 0.013 | 0.020 | 0.012 | <0.003 |
| 3       | 0.042   | 0.50   | 0.77  | 0.060 | 0.024 | 20.84 | 2.53  | 39.58 | 0.058 | 0.13  | 1.63  | 0.045 | 0.65   | 0.061 | <0.040 | 0.014 | 0.020 | 0.011 | <0.003 |
| Rep     | 0.045   | 0.49   | 0.77  | 0.062 | 0.026 | 20.78 | 2.61  | 39.55 | 0.059 | 0.13  | 1.62  | 0.046 | 0.66   | 0.063 | <0.040 | 0.014 | 0.019 | 0.011 | 0.003  |
| Min Cal | 0.006   | 0.005  | 0.004 | 0.003 | 0.002 | 0.005 | 0.003 | 0.005 | 0.003 | 0.005 | 0.002 | 0.005 | 0.0010 | 0.002 | 0.040  | 0.010 | 0.002 | 0.005 | 0.003  |
| Mean    | 0.045   | 0.49   | 0.77  | 0.062 | 0.026 | 20.78 | 2.61  | 39.55 | 0.059 | 0.13  | 1.62  | 0.046 | 0.66   | 0.063 | <0.013 | 0.014 | 0.019 | 0.011 | <0.003 |
| Max Cal | 3.00    | 5.04   | 18.12 | 0.18  | 0.30  | 36.00 | 10.20 | 55.2  | 6.24  | 21.60 | 7.44  | 3.60  | 3.60   | 12.00 | 7.32   | 0.13  | 0.27  | 0.13  | 0.19   |
|         | Ca      | B      | Fe    |       |       |       |       |       |       |       |       |       |        |       |        |       |       |       |        |
|         | Conc    | Conc   | Conc  |       |       |       |       |       |       |       |       |       |        |       |        |       |       |       |        |
|         | %       | %      | %     |       |       |       |       |       |       |       |       |       |        |       |        |       |       |       |        |
| 1       | 0.0010  | 0.003  | 33.02 |       |       |       |       |       |       |       |       |       |        |       |        |       |       |       |        |
| 2       | 0.0006  | 0.003  | 33.03 |       |       |       |       |       |       |       |       |       |        |       |        |       |       |       |        |
| 3       | <0.0005 | 0.003  | 33.00 |       |       |       |       |       |       |       |       |       |        |       |        |       |       |       |        |
| Rep     | 0.0007  | 0.003  | 33.01 |       |       |       |       |       |       |       |       |       |        |       |        |       |       |       |        |
| Min Cal | 0.0005  | 0.0005 |       |       |       |       |       |       |       |       |       |       |        |       |        |       |       |       |        |
| Mean    | 0.0007  | 0.003  | 33.07 |       |       |       |       |       |       |       |       |       |        |       |        |       |       |       |        |
| Max Cal | 0.016   | 0.025  |       |       |       |       |       |       |       |       |       |       |        |       |        |       |       |       |        |

OK per 26-724  
Raja Gullab  
24/1/14



# M.D. Steels Pvt. Ltd.

Plot No. F- 669 , Phase - II

RIICO Industrial Area , Bhiwadi, Distt.- Alwar (Rajasthan) 301019

Phone +91 1493 512079/225495 Fax +91 01493 222483

Email: mdsteels@ gmail.com Website : www mdsteels.com

|                                                                                                                                                           |          |                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------|
| Customer : M/s Sara Sae Pvt. Ltd. Division - II<br>A-2, Sara Industrial Estate Ltd.<br>Chakrata Road, Rampur - SELAQUI<br>Dehradun - 248197 - Uttarakhand | T.C. No. | : M- 1586           |
|                                                                                                                                                           | Dated    | : 17.05.2014        |
|                                                                                                                                                           | Heat No. | : 1686/D- 25 / 2014 |
|                                                                                                                                                           | Date     | : 25.04.2014        |

Order No. PO- 6157 Dated 19.04.2014

Specification : INC 825

Foundry identification : MD

Surface : Proof Machine

Casting Processed by Induction melting

Heat Treatment : Solution Annealed at 1060 °C, 1.30 Hours Soaking and Water Quenched

## CHEMICAL COMPOSITION %

| Element | C     | Si    | Mn    | Cr    | Ni     | Mo    | S     | Al    | Cu    | Ti   | P     |
|---------|-------|-------|-------|-------|--------|-------|-------|-------|-------|------|-------|
| Minimum | -     | -     | -     | 19.50 | 38.000 | 2.500 | -     | -     | 1.500 | 0.60 | -     |
| Maximum | 0.050 | 0.500 | 1.000 | 23.50 | 46.000 | 3.500 | 0.030 | 0.200 | 3.000 | 1.20 | 0.030 |
| Actual  | 0.044 | 0.450 | 0.172 | 21.00 | 41.000 | 2.950 | 0.019 | 0.016 | 1.700 | 1.10 | 0.003 |

## MECHANICAL PROPERTIES

|        | Y.S | UTS | EL%      | Reductio | Charpy At ambtent | Bend Tes | Hardness |  |  |  |  |
|--------|-----|-----|----------|----------|-------------------|----------|----------|--|--|--|--|
|        | Mpa | Mpa | GI= 50mm | Area %   | Ambtent temp.     |          | HRB      |  |  |  |  |
| Min    |     |     |          |          |                   |          |          |  |  |  |  |
| Max.   |     |     |          |          |                   |          |          |  |  |  |  |
| Actual |     |     |          |          |                   |          |          |  |  |  |  |

| S. No. | Description                       | Item Code | Qty.       |
|--------|-----------------------------------|-----------|------------|
| 1      | Centrifugally Casted Rings        | II052-R   | 150 Nos.   |
|        | OD 151 mm X ID 115 mm X H - 20 mm |           | (301- 450) |

Remarks : Visual Inspection Carried out and dimension checked and found Ok.

specification and was found to meet the requirements and also compliance to the purchase order.

*Gopal Das*  
Checked by

*[Signature]*  
Approved by.



**M. D. STEELS (P) LTD.**  
F-669, Phase-II, Indl. Area  
BHIWADI - 301 019.  
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