

|                         |                               |                               |         |                   |                           |                         |             |                   |          |
|-------------------------|-------------------------------|-------------------------------|---------|-------------------|---------------------------|-------------------------|-------------|-------------------|----------|
| Sample Result Name      | 9323(1616/c-05/2014)          | Type                          | Unknown | Measure Date Time | Wednesday, March 19, 2014 | Recalculation Date Time | 10:59:33 AM | Origin            | Measured |
| Method Name             | Fe-30-MO                      | Method Version                |         | Operator Name     | SARA SAE                  | Check Type              | None        | Check Status      | Not Used |
| Grade Verification Name | Grade Verification Similarity | Grade Verification Similarity | 0       | Correction Type   |                           | Type Corr Sample Name   |             | Grade Search Name |          |
| Grade Search Similarity | 0                             | Type                          | None    | Status            | Not Used                  | Outlier Removal         |             |                   |          |

Sample Name  
9323(1616/c-05/2014)

|         | 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   | Conc   |
| %       | %     | %     | %     | %      | %      | %     | %     | %     | %     | %     | %     | %     | %      | %     | %      | %     | %     | %      | %      |
| 2       | 0.043 | 0.39  | 0.22  | <0.003 | <0.002 | 21.11 | 2.81  | 41.93 | 0.068 | 0.065 | 1.92  | 0.058 | 0.96   | 0.100 | <0.040 | 0.013 | 0.024 | <0.005 | <0.003 |
| 3       | 0.032 | 0.39  | 0.22  | <0.003 | <0.002 | 21.05 | 2.76  | 42.23 | 0.067 | 0.063 | 1.86  | 0.057 | 0.94   | 0.097 | <0.040 | 0.012 | 0.024 | 0.008  | <0.003 |
| 5       | 0.048 | 0.41  | 0.22  | <0.003 | <0.002 | 21.13 | 2.89  | 41.88 | 0.068 | 0.065 | 1.88  | 0.059 | 0.98   | 0.098 | <0.040 | 0.013 | 0.025 | <0.005 | <0.003 |
| Rep     | 0.041 | 0.40  | 0.22  | 0.003  | <0.002 | 21.10 | 2.82  | 42.02 | 0.068 | 0.064 | 1.89  | 0.058 | 0.96   | 0.098 | <0.040 | 0.013 | 0.024 | 0.006  | 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    | 0.041 | 0.40  | 0.22  | <0.001 | <0.003 | 21.10 | 2.82  | 42.02 | 0.068 | 0.064 | 1.89  | 0.058 | 0.96   | 0.098 | <0.11  | 0.013 | 0.024 | 0.006  | <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  |
|         | %       | %       | %     |
| 2       | 0.0008  | <0.0005 | 30.22 |
| 3       | <0.0005 | <0.0005 | 30.13 |
| 5       | 0.0008  | <0.0005 | 30.18 |
| Rep     | 0.0007  | <0.0005 | 30.18 |
| Min Cal | 0.0005  | 0.0005  |       |
| Mean    | 0.0006  | <0.0003 | 30.34 |
| Max Cal | 0.016   | 0.025   |       |

3/19/2014

Sample Results

See As per 76-724  
Labeled  
19/03/14





# 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. UNIT - II | T.C. No. : M-1516              |
| A-2, Sara Industrial Estate Ltd.            | Dated : 11.03.2014             |
| Chakrata Road, Rampur                       |                                |
| Dehradun - 248197 - Uttarakhand             | Heat No. : 1616/ C - 05 / 2014 |
|                                             | Date : 05.03.2014              |

Order dated 17.02.2014

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  | 0.034 | 0.450 | 0.239 | 20.40 | 41.600 | 2.910 | 0.018 | 0.063 | 1.750 | 1.05 | 0.014 |

## MECHANICAL PROPERTIES

|        | Y.S | UTS | EL%      | Reduction of Area | Charpy At ambient | Bend Test | Hardness |  |  |  |  |
|--------|-----|-----|----------|-------------------|-------------------|-----------|----------|--|--|--|--|
|        | Mpa | Mpa | GI= 50mm | Area %            | Ambient temp.     |           | HRB      |  |  |  |  |
| Min    |     |     |          |                   |                   |           |          |  |  |  |  |
| Max    |     |     |          |                   |                   |           |          |  |  |  |  |
| Actual |     |     |          |                   |                   |           |          |  |  |  |  |

| S. No. | Description                                                                           | Item & Code      | Qty.                   |
|--------|---------------------------------------------------------------------------------------|------------------|------------------------|
| 1      | Centrifugally Casted Rings<br>Proof Machined Size<br>OD 213 mm X ID 163 mm X H- 31 mm | Bonnet & IX880-R | 23 Nos.<br>( 25 - 47 ) |

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.

*Checked by*

Checked by

Approved by

for M. D. Steels Pvt. Ltd.



M. D. STEELS (P) LTD.

F-669, Phase-II, Indl Area

BHIWADI - 301 019.

☎ : 01493 - 222483, 512078



*OK in  
Bhiwadi  
Raj.*