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|-------------------------------|---|--------------------|-------------------|
| <b>Laboratory</b>             | <b>Testing and Calibration Laboratories, R&amp;D, BEML Ltd., Kolar Gold Fields, Karnataka</b> |                    |                   |
| <b>Accreditation Standard</b> | <b>ISO/IEC 17025: 2005</b>  |                    |                   |
| <b>Discipline</b>             | <b>Mechanical Testing</b>   | <b>Issue Date</b>  | <b>05.02.2015</b> |
| <b>Certificate Number</b>     | <b>T-1786</b>   | <b>Valid Until</b> | <b>04.02.2017</b> |
| <b>Last Amended on</b>        | <b>-</b>  | <b>Page</b>        | <b>1 of 1</b>     |

| <b>S.No.</b> | <b>Product / Material of Test</b>                        | <b>Specific Test Performed</b> | <b>Test Method Specification against which tests are performed</b> | <b>Range of Testing / Limits of Detection</b> |
|--------------|--|--------------------------------|--|---|
| <b>I.</b>    | <b>MECHANICAL PROPERTIES OF MATERIALS</b>                |                                |  |   |
| <b>1.</b>    | <b>Ferrous &amp; Non Ferrous Metals &amp; Its Alloys</b> | <b>Hardness Test</b>           |  |   |
|              |  | Rockwell C Scale               | IS 1586: 2000 (RA 2006)<br>ASTM E 18-08b (2009)                    | 20 HRC to 70 HRC                              |
|              |  | Rockwell B Scale               | IS 1586: 2000 (RA 2006)<br>ASTM E 18-08b (2009)                    | 40 HRBW to 100 HRBW                           |
|              |  | Brinell Hardness               | IS 1500 : 2005<br>ASTM E 10-08 (2009)                              | 100 HBW to 650 HBW<br>(10/3000)               |
|              |  | Micro Vickers Hardness         | IS 1501: 2002<br>ASTM E 384 -08a (2009)                            | Upto 1200 HV<br>(HV 0.1 to HV 1.0)            |

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