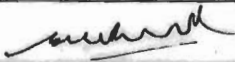

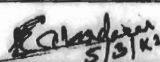


**GOVERNMENT OF INDIA
(Ministry of Railways)**

**SPECIFICATION FOR
CERAMIC (NON ASBESTOS) GASKET**

Issued by

**MECHANICAL DRAWING OFFICE
WHEEL & AXLE PLANT
YELAHANKA, BANGALORE-560 064
I N D I A**

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SPECIFICATION FOR CERAMIC (NON ASBESTOS) GASKET**1.0 Scope:**

1.1 This specification covers the requirements for Ceramic (non asbestos) Gasket used in Mould shop /Wheel and Axle Plant, Yelahanka, Bangalore -64, Karnataka State, India, as per the instructions and conditions of contract and tender papers.

2.0 Job Requirement:

2.1 Ceramic (non asbestos) Gasket is used as a sealant between drag and pouring tube in casting of railway steel wheels to bleeding of liquid steel one Ceramic gasket is used for casting each wheel.

3.0 Restrictive Requirements:

3.1 Gasket shall be supplied as per DRG. No.C/MO-12/28

3.2 Hardness (Shore) : 60 Min.

3.3 Bulk density (Kg/m³) : 700 +/-10%

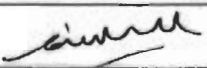

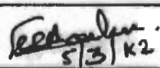
3.4 Compression as measured while under load of 70 kgs on the flat portion of the Ceramic gasket. :10% Min.

3.5 Loss of ignition :10% Max.

3.6 The thickness shall be uniform and the variation shall be within 0.2 mm .

3.7 Classification temperature :1260°C

3.8 Linear shrinkage for 24 hrs. at 1200°C :4% Max.

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4.0 Inspection Norm:

- 4.1 GIL II Double Sample Norm. The sampling norm for Dimensional check is in accordance to IS 2500/Part I to its latest revision.
- 4.2 Acceptance criteria as per IS 2500/Part I to its latest revision. The required AQL is 4

5.0 General Appearance and Finish:

The finished Ceramic gasket when delivered shall be free from visible defects that impairs appearance and serviceability. The surface of the Ceramic gasket shall be of uniform texture and shall have atleast one smooth surface. The Ceramic Gasket shall be flat, circular and neatly trimmed, shall have no loose ceramic fibre on the inner edges.

6.0 Antiburning property:

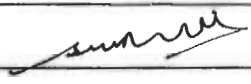
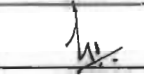
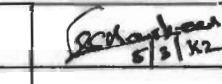
The inner edges of the Ceramic Gasket should have the property of resisting burning and disintegrate when it comes in contact with hot metal at 1600°C. during casting for approximately 45 seconds.

7.0 Application Test:

The Ceramic Gasket shall be subjected to real-time application test to assess the performance in meeting the functional requirements. On receipt of the supply, WAP will arrange to draw 300 Nos. of Ceramic Gaskets from the lot and subject them to field test continuously in all the 3 shifts. The material shall meet WAP's application requirement in effecting proper sealing and antiburning property. The supplier may also associate himself or his authorised representative in conducting the application test.

8.0 Test Certificate:

The supplier shall submit the test certificate pertaining to the lot intended to supply to Wheel and Axle Plant/Bangalore fully conforming to the requirements.

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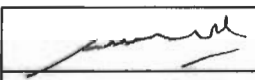
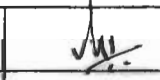

9.0 **Warranty:**

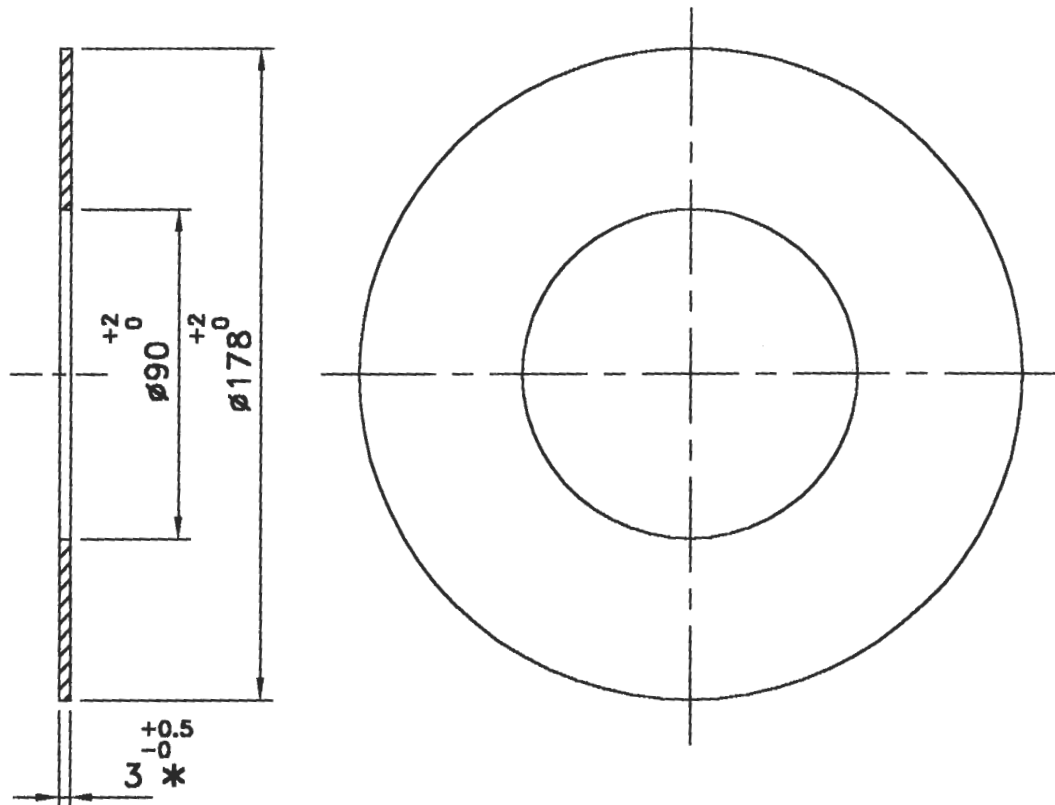
The supplier shall submit a guarantee certificate for that their product conforms to the specification and to the effect, that in case their products fail to meet the requirement given in the specification, they shall replace the whole supply free of cost. In case the supplier fails to replace the material within 21 days after receipt of the complaint, Wheel and Axle Plant, Bangalore shall have the right to dispose off the material in which ever way deem fit but the supplier shall not be paid for the quantity rejected.

10.0 **Packing:**

The material shall be supplied in Bio degradable or reusable boxes of suitable size. Each box shall be marked with Supplier's name and name and grade of material.

If the ceramic Gaskets are supplied in reusable bio degradable boxes the same shall be returned to supplier for recirculation for which suitable reduction in price shall be given to WAP.

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NOTE:-

1. ALL DIMENSIONS ARE IN 'mm'
2. MATL:-REF.WAP/M/SPECN/1/088-2002
- * 3. THE THICKNESS SHOULD BE UNIFORM & VARIATION SHOULD BE WITHIN 0.2 mm

| | | | | | | | | | | | | | | | | | | | |
|---|--|--|-------------------|--------------|-----------|--------------|-----------|--------------|-----------|--------------|-------------------|-----------|---------|-------------|---|--|--------|--|--|
| SURFACE ROUGHNESS VALUE | Gr. NUMBER | N12 | N11 | N10 | N9 | N8 | N7 | N6 | N5 | N4 | N3 | N2 | N1 | Ra. μ m | INDIAN RAILWAYS CERAMIC GASKET (NON-ASBESTOS) FOR POURING STATION WHEEL AND AXLE PLANT BANGALORE | REF. SUPERSEDED BY SUPERSEDES SCALE SD <i>Sob</i> + 5/8/82 1:2 CHD <i>OB</i> DS-03-02 DRN SHAM 08.02.02 | | | |
| | ASSEMBLY | 50 | 25 | 12.5 | 6.3 | 3.2 | 1.6 | 0.8 | 0.4 | 0.2 | 0.1 | 0.05 | 0.025 | | | | | | |
| | IS:2102 (PART-1)-1993 OR ISO 2768-1: 1989 | | | | | | | | | | | | | | | | | | |
| | PERMISSIBLE DEVIATION FOR BASIC SIZE RANGE | | | | | | | | | | | | | | | | | | |
| | PERMISSIBLE DEVIATION FOR BROKEN EDGES (EXTERNAL RADIUS AND CHAMFER HEIGHTS) | | | | | | | | | | | | | | | | | | |
| | TOLERANCE CLASS | | 0.5 ¹⁾ | OVER 3 | OVER 6 | OVER 30 | OVER 120 | OVER 400 | OVER 1000 | OVER 2000 | 0.5 ¹⁾ | OVER 3 | OVER 6 | | | | OVER 6 | | |
| | DESIG. DESCRIPTION | | UPTO 3 | UPTO 6 | UPTO 30 | UPTO 120 | UPTO 400 | UPTO 1000 | UPTO 2000 | UPTO 4000 | UPTO 3 | UPTO 6 | UPTO 6 | | | | | | |
| | f | FINE | ± 0.05 | ± 0.05 | ± 0.1 | ± 0.15 | ± 0.2 | ± 0.3 | ± 0.5 | - | ± 0.2 | ± 0.5 | ± 1 | | | | | | |
| | m | MEDIUM | ± 0.1 | ± 0.1 | ± 0.2 | ± 0.3 | ± 0.5 | ± 0.8 | ± 1.2 | ± 2 | ± 0.4 | ± 1 | ± 2 | | | | | | |
| | c | COARSE | ± 0.2 | ± 0.3 | ± 0.5 | ± 0.8 | ± 1.2 | ± 2 | ± 3 | ± 4 | ± 0.4 | ± 1 | ± 2 | | | | | | |
| v | VERY COARSE | - | ± 0.5 | ± 1 | ± 1.5 | ± 2.5 | ± 4 | ± 6 | ± 8 | ± 0.4 | ± 1 | ± 2 | | | | | | | |
| 1) FOR NOMINAL SIZES BELOW 0.5 mm, THE DEVIATIONS SHALL BE INDICATED ADJACENT TO THE RELEVANT NOMINAL SIZE(S) | | | | | | | | | | | | | | | | | | | |
| PERMISSIBLE DEVIATION FOR ANGULAR DIMENSIONS (mm) | | | | | | | | | | | | | | | | | | | |
| TOLERANCE CLASS | | PERMISSIBLE DEVIATIONS FOR RANGES OF LENGTHS, IN mm OF THE SHORTER SIDE OF ANGLE CONCERNED | | | | | | | | | | | | | | | | | |
| DESIG. DESCRIPTION | | UPTO 10 | OVER 10 | UPTO 50 | OVER 50 | UPTO 120 | OVER 120 | UPTO 400 | OVER 400 | | | | | | | | | | |
| f | FINE | $\pm 1'$ | | $\pm 0' 30'$ | | $\pm 0' 20'$ | | $\pm 0' 10'$ | | $\pm 0' 5'$ | | | | | | | | | |
| m | MEDIUM | | | | | | | | | | | | | | | | | | |
| c | COARSE | $\pm 1' 30'$ | | $\pm 1'$ | | $\pm 0' 30'$ | | $\pm 0' 15'$ | | $\pm 0' 10'$ | | | | | | | | | |
| v | VERY COARSE | $\pm 3'$ | | $\pm 2'$ | | $\pm 1'$ | | $\pm 0' 30'$ | | $\pm 0' 20'$ | | | | | | | | | |

ISS No. 4649

AMENDMENT SHEET

| ALT. | DATE | DESCRIPTION | JOB No | APPROVED BY | |
|------|----------|-------------------|--------|-------------|--------------------|
| | | | | DESI. | SIGN. |
| nil | 05.03.02 | New specification | 4099 | Dy CME/WI | <i>[Signature]</i> |

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| <i>[Signature]</i> | <i>[Signature]</i> | <i>[Signature]</i> |
| Dy. CME/W-I | WM/MR | SSE/DES. |
| APPD. BY | CHD. BY | PREPD. BY |