

RAMMING MASS (CALCINED BAUXITE & FUSED ALUMINA BASED)



CUMIRAM

| CHARACTERISTICS | UNIT | CUMIRAM RA 65 | CUMIRAM RA 83 | CUMIRAM RA20M | CUMIRAM RA20M (E) | CUMIRAM RMZM 6 |
|--------------------------------------|---------------------|-------------------|---------------|---------------|-------------------|-------------------|
| Maximum Service Temperature | °C | 1600 | 1700 | 1750 | 1750 | 1650 |
| Maximum Grain Size | mm | 6 | 6 | 6 | 6 | 1 |
| Bulk Density Dried at 110°C/ 24 hrs | gm/ cc,min | 2.50 | 2.90 | 2.70 | 2.80 | 3.10 |
| Cold Crushing Strength | Kg/ cm ² | | | | | |
| Dried at 110°C/ 24 hrs | min. | 200 | 100 | 200 | 75 | 100 |
| Fired at 1000°C/ 3 hrs | min. | 250 | 175 | 300 | 100 | 150 |
| Fired at 1550°C/ 3 hrs | min. | 300at1450°C/3hrs | 500 | 600 | 150 | 200at450°C/3hrs |
| Permanent Linear Change | % | | | | | |
| Fired at 1000°C/ 3 hrs | max. | ± 0.2 | ± 0.5 | ± 0.2 | ± 0.2 | ± 0.3 |
| Fired at 1550°C/ 3 hrs | max. | ±1.0at1450°C/3hrs | ± 0.5 | ± 0.8 | ± 1.2 | ±1.0at1450°C/3hrs |
| Recommended Binder Addition (By wt.) | % | 8 | - | 9 | 3.5 | - |
| Recommended Water Addition (By wt.) | % | 1.5 - 4.5 | 4 - 7 | 1.5 - 4.0 | 2.5 - 5.0 | 3 - 6 |
| Chemical Analysis* | % | | | | | |
| Al ₂ O ₃ | min. | 63.0 | 87.0 | 85.0 | 82.0 | 20.0 |
| SiO ₂ | max. | 34.0 | 9.00 | 9.00 | 9.00 | 30.0 |
| Fe ₂ O ₃ | max. | 1.00 | 0.50 | 1.00 | 1.50 | 0.50 |
| ZrO ₂ | min. | - | - | - | - | 45.0 |

* Dry basis

Shelf Life : 9 months from the date of manufacture

Packing : In 50 Kg LDPE lined HDPE bags

Note : Binder / Water requirements indicated are based on laboratory test conditions.

Actual binder / water requirement may vary subject to site conditions.

The properties shown are for vibratory cast material only unless specified otherwise.



CARBORUNDUM UNIVERSAL LIMITED
SUPER REFRACTORIES



Works

Plot No. 102 & 103, Sipcot Industrial Complex,
Phase II, Ranipet 632 403, TN, India.
Phone : +91 4172 244582, 244197
Fax: +91 4172 244982.

Plot No. 35, 37, 48-51, Adhartal Industrial Estate,
PO Jabalpur - 482004, Madhya Pradesh
Phone: +91 761 2680759 / 2680725,
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Mungileri Village, Vinnampalli Post,
Katpadi Taluk, Vellore District - 632516
Phone: +91 4172 646030
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Marketing Office : 105, Sreela Terrace, III Floor, Western Side, Gandhi Nagar Ist Main Road,
Adyar, Chennai – 600 020, Phone: +91 44 42187812/ 13 / 14 / 15
E-mail : cumiref@cumi.murugappa.com
www.cumi-murugappa.com/refractories/



RAMMING MASS (FUSED & TABULAR ALUMINA BASED)

CUMIRAM

| CHARACTERISTICS | UNIT | CUMIRAM RA 558 | CUMIRAM RA 727M | CUMIRAM RA 98 |
|--------------------------------------|---------------------|-------------------|-----------------------|------------------|
| Maximum Service Temperature | °C | 1750 | 1800 | 1800 |
| Maximum Grain Size | mm | 6 | 6 | 6 |
| Bulk Density Dried at 110°C/ 24 hrs. | gm/ cc; min | 2.70 | 2.90 | 2.90 |
| Cold Crushing Strength | Kg/ cm ² | | | |
| Dried at 110°C/ 24 hrs | min. | 200 | 500 | 100 |
| Fired at 1000°C/ 3 hrs | min. | 300 | 300 | 150 |
| Fired at 1550°C/ 3 hrs | min. | 400 | 300 at 1450°C/ 3hrs | 750 |
| Permanent Linear Change | % | | | |
| Fired at 1000°C/ 3 hrs | max. | ± 0.2 | +/-0.5 | ± 0.2 |
| Fired at 1550°C/ 3 hrs | max. | ± 1.0 | ± 0.8 at 1450°C/ 3hrs | ± 0.8 |
| Recommended Binder Addition (By wt.) | % | 7 | 8 | 0 |
| Recommended Water Addition (By wt.) | % | 1.5 - 4.5 | 4 - 6 | 3.5 - 4.5 |
| Chemical Analysis* | % | | | |
| Al ₂ O ₃ | min. | 90.0 | 93.0 | 98.0 |
| SiO ₂ | max. | 9.00 | 1.00 | - |
| Fe ₂ O ₃ | max. | 0.30 | 0.50 | 0.20 |

* Dry basis

shelf Life : 9 months from the date of manufacture

Packing : In 50 Kg LDPE lined HDPE bags

Note : Binder / Water requirements indicated are based on laboratory test conditions.

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RAMMING MASS (SILICON CARBIDE & CARBON BASED)



CUMIRAM

| CHARACTERISTICS | UNIT | CUMIRAM RS 5 | CUMIRAM RS 5 M | CUMIRAM EL2 SR | CUMIRAM EL2 SRM | CUMIRAM GR 93 |
|-------------------------------------|---------------------|--------------|----------------|----------------|------------------------|---------------|
| Maximum Service Temperature | °C | 1600 | 1450 | 1600 | 1700 | 1600 |
| Maximum Grain Size | mm | 5 | 5 | 6 | 6 | 6 |
| Bulk Density Dried at 110°C/ 24 hrs | gm/ cc/min | 2.30 | 2.20 | 2.60 | 2.90 | 2.60 |
| Cold Crushing Strength | Kg/ cm ² | | | | | |
| Dried at 110°C/ 24 hrs | min. | 100 | 150 | 100 | 275 | 100 |
| Fired at 1000°C/ 3 hrs | min. | 100 | 200 | 150 | - | 150 |
| Fired at 1450°C/ 3 hrs | min. | 300 | - | 200 | 400 at 1400°C/ 3 hrs | 200 |
| Permanent Linear Change | % | | | | | |
| Fired at 1000°C/ 3 hrs | max. | ± 0.5 | ± 0.5 | ± 0.3 | - | ± 0.2 |
| Fired at 1450°C/ 3 hrs | max. | ± 0.6 | - | ± 0.8 | ± 0.2 at 1400°C/ 3 hrs | ± 0.9 |
| Recommended Water Addition (By wt) | % | 2.5 - 5.5 | 2.5 - 5.5 | 4.0 - 4.5 | 7 - 9 | 4.0 - 5.5 |
| Chemical Analysis | % | | | | | |
| Al ₂ O ₃ | min. | - | 12.0 | 62.0 | 70.0 | 73.0 |
| SiC | min. | 90.0 | 55.0 | - | - | - |
| SiC + C | min. | - | - | 17.0 | 18.0 | - |
| Free Carbon | min. | - | - | - | - | 3.50 |
| SiO ₂ | max. | 9.00 | - | - | - | - |
| Fe ₂ O ₃ | max. | 0.30 | 1.00 | - | - | - |

Shelf Life : 9 months from the date of manufacture

Packing : In 50 Kg LDPE lined HDPE bags

Note : Binder / Water requirements indicated are based on laboratory test conditions.

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