

PRODUCT DESCRIPTION

As a multi-component system, the coating refractory mass (CRM™) is a pre-prepared, powdery, and shapeless mixture comprised of high-alumina refractory materials (ranging from 92% to 50%) and heat-resistant binder materials which effectively functions as a thermal insulator. Depending on the raw materials used, the bonding mechanism in this type of refractory material can either be hydraulic or chemical. Additionally, the refractory mass and its particle size distribution are specifically formulated for application using troweling and spraying methods. With its high setting and hardening rates, the CRM™ is capable of creating a smooth, uniform, and durable coating that is resistant to both abrasion and shock. Generally, coating refractory materials are formulated with a water content of approximately 12 to 14% by weight, making them suitable for immediate use. The CRM™ is applied as a heat-resistant coating to safeguard the winding coils of induction furnaces, the delta areas of electric arc furnaces, as well as the linings and side walls of aluminum melting furnaces, copper, and iron. Notably, it does not interfere with their thermal expansion and contraction. The refractory material described here is appropriate for troweling and can attain initial setting within 1 to 4 hours, with final setting taking 2 to 6 hours, depending on the alumina content. It is capable of meeting the demands of applications that operate at temperatures between 1500 to 1700 degrees Celsius. This type of refractory coating can be applied with a thickness ranging from 3 mm to 20 mm.



Coating refractory mass-CRM™

such as a wire brush. The importance of this surface preparation step cannot be overstated, as it directly impacts the effectiveness and longevity of the refractory coating.

MIXING

To prepare the coating refractory mass (CRM™), it is essential to mix the dry contents of the bag thoroughly using an appropriate tool such as a mixer or kneader. Afterward, water should be added in a quantity of approximately 12 to 14 percent, as indicated in the product datasheet, to achieve a well-blended and consistent paste-like mixture with the appropriate consistency for application by troweling. It is crucial to ensure that the mixture is adequately combined and has a uniform texture, as this will directly impact the effectiveness and durability of the refractory coating.

APPLICATION

To apply a coating refractory mass (CRM™), tools such as trowels & spray guns can be used. The thickness of the applied layer can vary between 3 and 20 millimeters, depending on the intended purpose. During the application of the refractory coating, ensure uniform application on a smooth or sloped surface. The CRM™ coat will set and reach its final grip within 12 hours at normal temperature. Therefore, wait until the final grip is achieved before utilizing the surface's heat resistance.

STORAGE

The coating refractory mass (CRM™) can be stored and preserved for up to 8 months under ideal conditions. The CRM™ must be stored in the bags provided by the manufacturer in a covered warehouse, away from direct sunlight and moisture. During transportation and handling, avoid throwing the bags to prevent disturbing the granulation distribution of the dry and powdery CRM™ mixture. Additionally, avoid stacking more than 3 pallets of CRM™ bags on top of each other as the dry mixture inside the bags may harden due to pressure.

PRODUCT FEATURES

- Exceptional heat resistance
- Unparalleled ability to withstand thermal shocks
- Effortless implementation
- Unrivaled resistance to abrasion
- Remarkable corrosion resistance
- Extraordinary long-term stability and durability
- Minimal thermal conductivity
- Negligible heat loss
- Outstanding resistance to temperature changes

PRODUCT USES

Coating refractory mass (CRM™) are widely used in the following industries:

- Protection of induction furnace coil windings
- Delta regions of electric arc furnaces
- Side walls of various melting furnaces
- Aluminum industry
- Lead industry
- Copper industry

HOW TO USE

SURFACE PREPARATION

Before applying coating refractory masses (CRM™) on a surface, it is essential to ensure that the surface is free from any impurities and contaminants that could potentially jeopardize the performance of the coating. To achieve this, the surface can be cleaned using tools

TECHNICAL DATA

	CRM™50	CRM™75	CRM™80	CRM™85	CRM™90	CRM™92
Main Components	Refractory clay	Tabular alumina, bauxite	Tabular alumina, bauxite	Tabular alumina, bauxite	Tabular alumina, bauxite	Tabular alumina, bauxite
Maximum Service Temperature (°C)	1500	1580	1600	1640	1640	1680
Installation Method	Casting, gunning	Casting, gunning	Casting, gunning	Casting, gunning	Casting, gunning	Casting, gunning
Grain Size (mm)	0 - 1					
Required Water Content (%)	13.5 - 14.2	14.1 - 15.1	11.8 - 12.4	10.2 - 11.1	11.2-12.1	12.2 - 13.3
Al₂O₃ (%)	≥46	≥71	≥75	≥84.6	≥91.9	≥92.1
SiO₂ (%)	≤42.2	≤20	≤16.7	≤8.7	≤1.9	≤1.9
Fe₂O₃ (%)	≤2.1	≤1.7	≤1.7	≤1.1	≤0.9	≤0.9
TiO₂ (%)	≤1.9	≤2	≤1.8	≤1.2	≤1.3	≤1.3
CaO (%)	≤6.2	≤4.3	≤3.9	≤3.8	≤3.8	≤3.8
Alkalis (%)	≤1	≤0.7	≤0.7	≤0.5	≤0.5	≤0.5
Apparent Density After Drying at 110°C	2.05 g/cm ³	2.3 g/cm ³	2.4 g/cm ³	2.6 g/cm ³	2.7 g/cm ³	2.65 g/cm ³
Ultimate Strength After Drying at 110°C	150-250	250-350	250-350	280-380	380-480	280-380
Ultimate Strength After Heating at 1260°C	---	---	---	---	---	250 - 350
Ultimate Strength After Heating at 1430°C	---	150 - 250	220 - 350	220 - 350	250 - 380	350 - 450

CAUTION

Users should observe good industrial and personal hygiene. The use of hardhats, proper footwear, and ear protection should be evaluated on a site-by-site basis. In situations where installation is occurring in water, flotation devices should be utilized. In general, installers of products should wear long-sleeve shirts and pants and use safety glasses/goggles and gloves to minimize skin contact. Measures such as washing after handling the material and before eating, drinking, and/or smoking, as well as routinely washing work clothing and protective equipment to remove contaminants, should be employed.

CLEANUP

Dispose of material in accordance with local disposal regulations. Uncured material can be removed with approved solvents. Cured materials can only be removed mechanically. In fact, the thinner can not completely clean the equipment, Therefore, acetone or ketone solution can be used to clean equipment.

FIRST AID

- In case of contact with skin, wash thoroughly with soap and water
- In case of contact with eyes, rinse immediately with plenty of water.
- Get out of space or use oxygen capsules if you have trouble breathing.
- Wash clothing before reuse

DISCLAIMER OF LIABILITY

AFZIR, LLC warrants its products to be free from manufacturing defects. Buyer determines suitability of product for use and assumes all risks. Buyer's sole remedy shall be limited to replacement of product. Any claim for breach of this warranty must be brought within six months of the date of purchase.

AFZIR shall not be liable for any consequential or special damages of any kind, resulting from any claim or breach of warranty, breach of contract, negligence or any legal theory.

The Buyer, by accepting the products described herein, agrees to be responsible for thoroughly testing any application to determine its suitability before committing to production.