

# Techno Refractory Mass™ MCC

medium cement refractory castable

## PRODUCT DESCRIPTION

Techno Refractory Mass™ MCC is a medium cement refractory castable material designed for high-temperature industrial applications. Formulated with premium refractory aggregates such as high alumina, silica, and magnesium, and a medium-grade cement binder, it creates a durable and resilient structure after hydration. Withstanding temperatures ranging from 1,500°C to 1,800°C, Techno Refractory Mass™ MCC provides outstanding mechanical strength and chemical corrosion resistance, making it ideal for industries like steel, cement, aluminum, oil & gas, and petrochemicals. This versatile product is specifically designed for castable into molds, offering excellent performance for creating heat-resistant linings and other high-temperature components in industrial equipment.



Buildings  
Structures



Transportation  
Infrastructure



Water &  
Wastewater



Oil, Gas &  
Industrial



Waterfront  
Structures



Industrial  
Facilities

## TECHNICAL DATA

	MCC™60	MCC™85	MCC™90
<b>Main Materials</b>	Refractory clay, Bauxite	Tabular Alumina, Bauxite	Tabular Alumina
<b>Max Service Temperature (°C)</b>	1620	1680	1680
<b>Required Water Content (%)</b>	7.5-8.5	5.8-6.8	6.6-7.6
<b>Al2O3 (%)</b>	≥60.3	≥84.9	≥90.8
<b>SiO2 (%)</b>	≤32	≤8	≤4.8
<b>Fe2O3 (%)</b>	≤1.8	≤1.1	≤0.6
<b>TiO2 (%)</b>	≤2.2	≤1.5	≤1.2
<b>CaO (%)</b>	≤2.7	≤3.7	≤1.9
<b>Alkalis (%)</b>	≤1	≤1	≤0.5
<b>Apparent Density After Drying at 110°C (g/cm³)</b>	2.42	2.75	2.8
<b>Room Temperature Ultimate Strength (kg/cm²)</b>	550 – 700 (at 110°C)	500 – 700 (at 110°C)	650 – 800 (at 110°C)
<b>Ultimate Strength at 1430°C (kg/cm²)</b>	600 – 800 (at 1430°C)	800 – 1000 (at 1430°C)	750 – 900 (at 1430°C)

## PHYSICAL PROPERTIES

Property	MCC™60	MCC™85	MCC™90
<b>Appearance</b>	Dry powder mixture		
<b>Maximum Storage Time</b>	8 months		
<b>Storage Conditions</b>	Store in a covered area, away from moisture and direct sunlight		

## ADVANTAGES

- Adapts to installation methods
- Ease of application
- Thermal insulation
- High mechanical, chemical resistance
- Resistant to thermal shock
- Long durability
- Cost-effective
- Stable at high temperatures
- Low thermal conductivity
- Improved abrasion and wear resistance
- Versatile for industrial applications
- Withstands up to 1650°C

## TYPICAL USES

- Steel and aluminum industries
- Glass and ceramic industries
- Refractory block and brick production
- Petrochemical industries
- Electricity production in boilers and furnaces

## PACKAGING

Moisture-resistant bags, 25 KG.

## DESIGN

The number of layers, thickness, and application method of Techno Refractory Mass™ MCC should be adjusted based on project needs. For best results, contact our company to evaluate design factors, considering thermal, mechanical, and chemical resistance (TMC analysis).



## INSTALLATION PROCEDURE

### PREPARATION OF MOLD

Ensure that the mold is free of rust, corrosion, and any surface irregularities. The mold surface should be smooth and even to allow easy opening and closing. Prior to pouring the castable, apply an appropriate release agent to the mold walls to prevent adhesion of the hardened castable. This preparation ensures proper removal of the hardened material from the mold.

### PREPARATION OF CASTABLE

Medium Cement Refractory Castable (Techno Refractory Mass™ MCC) is a pre-prepared product available in 25 kg packaging. To prepare this mixture, first remove the dry blend from the bag and add it to the mixer. Then, mix the material dry for 1 minute. Finally, according to the datasheet or product instructions, gradually add the specified amount of water to the dry mixture and mix for 3 to 5 minutes. Now, take a handful of the medium cement refractory castable and throw it upwards to a height of 30 cm, then catch it again with the same hand and open fingers. The material should not crumble or crack in the palm. In this case, the medium cement refractory castable is ready for use.

### APPLICATION

Once the castable is properly prepared, the mixture should be carefully transferred to the mold. Ensure the transfer is done slowly and evenly to avoid air pockets. It is recommended to use a vibrator to remove air bubbles and ensure proper compaction. After pouring, allow the castable to cure at ambient temperature for 5 to 7 hours until it becomes firm enough for mold removal.

### EXTRACTION FROM MOLD

After the set time, carefully open the mold and extract the castable piece. Handle with care to avoid damaging the newly cast piece. The castable should be fully cured and set before being moved.

## LIMITATIONS

- Avoid using rotary mixers, as they may cause improper mixing of the castable's grain structure. Paddle mixers are recommended.
- Ensure the mixer is cleaned thoroughly before use to prevent contamination.
- Use clean, potable water with a temperature range between 15°C and 25°C, and a pH level between 6 and 8.
- The mold should be stable and capable of withstanding vibrations and the weight of the castable.
- The mixture should be applied within 15 minutes of preparation to maintain optimal performance.
- Avoid using trowels on the final surface to preserve the surface integrity.
- Protect the castable from freezing, as freezing can compromise the structure.
- Minimize the use of vibrators to prevent segregation of the material.

## CAUTION

The use of safety glasses and chemically resistant gloves is recommended. Use appropriate clothing to minimize skin contact. The use of NIOSH-approved respirator is required to protect respiratory tract when ventilation is not adequate to limit exposure below the PEL. Refer to Safety Data Sheets (SDS) for detailed information.

## FAIRST AID

### Skin:

Wash affected skin with water and soap. If any material is embedded, gently remove with tweezers. Discard contaminated clothing. Seek medical attention if irritation or adverse reactions occur.

### Eyes:

Immediately flush with a continuous stream of water for at least 20 minutes. Prompt washing helps prevent eye damage. Seek medical attention if irritation persists.

## DISCLAIMER OF LIABILITY

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