

PRODUCT DESCRIPTION

conventional castable refractory (CCR™) is a mixture of aggregate and calcium aluminate refractory cements of various grades that can withstand temperatures ranging from 1300 to 1800 degrees Celsius, depending on the mixing design. conventional castable refractory (CCR™) is the most widely used type of refractory mass, which is often made of more than 15% calcium-aluminum refractory cement, along with alumino-silicate aggregates with predetermined and specific granulations. The bonding agent in this category is cement and their bonding is hydraulic. Therefore, normal castable masses need 8-20% water by weight to harden and set. This type of castable mass shows stable rheological properties that guarantee the successful casting of the mass and then good mechanical properties. conventional refractory castable mass can be lightweight or heavy weight depending on the type of aggregates used. In any case, ordinary refractory castable mass has been effectively used for applications that require heat resistance, such as the steel industry, cement, aluminum, lime kilns, oil and gas industry, petrochemical industry, copper industry, as well as general applications.

PRODUCT FEATURES

- High resistance to heat
- Ease of implementation
- Contains lime above 2.5%
- High bending strength
- High compressive strength
- Abrasion resistant
- Corrosion resistant
- Can be designed for a variety of uses
- High stability and durability in the long term

PRODUCT USES

conventional castables refractory (CCR™) are widely used in the following industries:

- steel industry
- cement industry
- Aluminum industry
- Lime kilns
- Oil and gas and petrochemical industry

HOW TO USE

SURFACE PREPARATION

Before pouring the conventional casting refractory, the surface or wall of the mold should be cleaned and prepared from any contamination using a tool such as a wire brush.

MIXING

conventional castable refractory (CCR™) is a pre-formulated, pre-packaged product. To use it, just mix the dry powder inside the package with the amount of water specified in the table of mechanical specifications. Because the amount of water is different according to the product mixing plan, so pay attention to the amount of water consumption. To properly prepare the conventional castable refractory



conventional castable refractory-CCR™

(CCR™) , go through the following steps step by step:

- empty the contents of the bag in the mixer and mix the dry powders for 1 minute.
- Water should be added to the mixture little by little with the amount specified in the mechanical data table of the product and mixed for 2 to 3 minutes.
- The masses stuck to the mixer body and paddle should be stirred again with a clean trowel for a maximum of 2 minutes.

Note: To ensure the water added to the mixture, after mass mixing and the homogenization process, take a large handful of the mass and throw it up to 30 cm and catch it again with the same hand, but this time with an open wrist. The right mass should not pour or crack from your palm.

APPLICATION

To implement ordinary conventional castable refractory (CCR™) , it is enough to transfer the prepared mixture to the desired form or surface and vibrate it. In general, pouring ordinary conventional refractory mass should not take more than 30 minutes. This period of time is 15 minutes in quick-setting mass.

LIMITATIONS

- Drinking water with a temperature between 15 and 25 degrees Celsius, pH between 6-8 and without impurities should be used to prepare the conventional castable refractory (CCR™) .
- Use paddle mixers to mix the components of the conventional casting refractory so that the particles do not mix during mixing, distribution and granulation. In addition, the mixer must be cleaned as much as possible from any pollution, impurities and particles left before use.
- The best temperature for the implementation of conventional castable refractory is the ambient temperature between 10 and 30 degrees Celsius.
- e amount of water used should not exceed the amount specified in the product data sheet.
- The mold used for pouring conventional castable refractory should be smooth and without rust or corrosion. In addition, it should be easy to open and close. The wall of the mold should be lubricated before use so that the hardened mass does not stick to the wall of the mold.

- Avoid mixing a large amount of pouring mass, which leads to the mixture remaining in the mixer for a long time.
- The duration of mixing the pouring mass should not be less than 3 minutes and more than 6 minutes. This mixing time depends on the type of mass (heavy or light mass) and its volume.

STORAGE

CCR™ should be stored in a covered warehouse away from moisture. In addition, stacking a large number of pallets on top of each other should be avoided as this can lead to mass hardening in the dry state. Avoid throwing bags or envelopes containing conventional castable refractory during transportation. Because the particle size distribution may be disturbed.

TECHNICAL DATA

	CCR™ 94	CCR™ 85	CCR™ 70	CCR™ 60	CCR™ 50	CCR™ 48	CCR™ 45	CCR™ 35
Materials base	Tubular alumina	Tubular alumina, bauxite	Bauxite	Fireclay, bauxite	Fireclay	Fireclay	Fireclay	Chromite
Maximum service temperature	1800	1650	1600	1580	1520	1480	1280	1650
Installation Method	Casting	Casting vibration	Casting vibration	Casting vibration	Casting vibration	Casting vibration	Casting vibration	Casting vibration
Grain dimensions (mm)	0-5							
Amount of water required (%)	7.5-8.5	8.9-9.7	8.5-9.5	10.2-10.8	8.6-9.8	10-10.5		
Al2O3	≥ 95.5	≥ 84.9	≥ 69.1	≥ 61.1	≥ 50.5	≥ 48.3	≥ 43.7	≥ 34.1
SiO2	≤ 0.1	≤ 8	≤ 22.1	≤ 30.9	≤ 41.3	≤ 41.4	≤ 35	≤ 4.8
Fe2O3	≤ 0.1	≤ 1.1	≤ 1.8	≤ 1.6	≤ 1.9	≤ 2.1	≤ 6.3	≤ 9.6
Cr2O3	---	---	---	---	---	---	---	≤ 35.3
TiO2	≤ 0.1	≤ 1.5	≤ 2.3	≤ 1.7	≤ 1.8	≤ 1.9	≤ 3.7	---
CaO	≤ 3.6	≤ 3.7	≤ 3.8	≤ 3.7	≤ 4.1	≤ 5.6	≤ 10.9	---
Alkalis	≤ 0.5	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	≤ 1	---
apparent specific-gravity (After drying at 110 °C)	2.85 g/cm³	2.75 g/cm³	2.5 g/cm³	2.35 g/cm³	2.35 g/cm³	2.2 g/cm³	2.15 g/cm³	2.6 g/cm³
Ultimate resistance at room temperature	450-650 kg/cm²) after drying at 110°C)	400-600 kg/cm²) after drying at 110°C)	400-600 kg/cm²) after drying at 110°C)	350-500 kg/cm²) after drying at 110°C)	400-600 kg/cm²) after drying at 110°C)	400-600 kg/cm²) after drying at 110°C)	300-400 kg/cm²) after drying at 110°C)	600-700 kg/cm²) after drying at 110°C)
	500-700 kg/cm² (after heating at a temperature of 1550°C)	400-600 kg/cm² (after heating at a temperature of 1430°C)	400-600 kg/cm² (after heating at a temperature of 1430°C)	350-450 kg/cm² (after heating at a temperature of 1430°C)	400-600 kg/cm² (after heating at a temperature of 1260°C)	400-600 kg/cm² (after heating at a temperature of 1260°C)	200-300 kg/cm² (after heating at a temperature of 1260°C)	500-700 kg/cm² (after heating at a temperature of 1430°C)

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.