PRODUCT BULLETIN

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MATRIX REFRACTORIES
A Division of
ALLIED MINERAL PRODUCTS, INC.

QUICK CAST® 52AC

General Information

QUICK CAST 52AC is part of a complete family of products that offers a wide range of installation methods: pumping, pouring, shotcreting or vibrating. QUICK CAST 52AC is an alumina-silicate based, low cement castable designed for molten aluminum applications including furnace sidewalls, hearth, sills, jambs, ramps, troughs, ladles, and degas/demag boxes. For more severe applications, the QUICK CAST family includes QUICK CAST 62AC, QUICK CAST 72AC, and QUICK CAST 82AC. QUICK CAST 52AC offers the following benefits and features:

- Ideally suited for aluminum contact applications
- Abrasion resistant
- Tolerates a wide water range without sacrificing physical properties
- Excellent hot strengths

Technical Data

Chemical Analysis*
(Major Components)

Al_2O_3	51.3%
SiO_2	42.6%
CaO	2.3%
TiO_2	1.9%
Fe_2O_3	0.8%

*Proprietary ingredient not included in chemistry.

Material Required	2.56 g/cm^3 (160 lb./ft.^{3})
Grain Size	6.7 mm (3 mesh) and finer
Maximum Use Temperature	1650°C (3000°F)
Installation Method	Self flow or Vibrated

Packaged in 25 kg (55-lb.) multi-wall paper bags. Palletized 64 bags (1600 kg or 3520 lb.) per 42” x 42” pallet, protected with stretch wrap. Also available in bulk packaging. Storage beyond 6 months is not recommended. Store in a dry location to avoid moisture pickup.

Hydraulic Set and Water Requirements

QUICK CAST 52AC has a unique design, enabling the installer to adjust water levels for optimum casting behavior. This product can be installed at a water level between 4.5% and 6.7%.

	Vibrated	Pouring and Pumping	Self-flow
Water Required:	4.5%	5.7%	6.7%
Working Time:	40 minutes	50 minutes	>60 minutes
Initial Set:	2-6 hours.	2-6 hours	2-6 hours
Final Set:	8-24 hours	12-24 hours.	16-24 hours

MATRIX REFRACTORIES DIVISION supplies a complete line of monolithic refractories for the metals industry. For more information or a complete evaluation of your refractory requirements, please contact your local MATRIX representative.

Warning: Contains aluminum oxide, calcium aluminate cement, aluminosilicates, and silica. The International Agency for Research on Cancer (IARC) has classified crystalline silica inhaled in the form of quartz or cristobalite carcinogenic to humans. Refer to Material Safety Data Sheet for additional information and disposal instructions. Avoid breathing dust. Wear NIOSH approved respirator during installation, removal, and disposal of product to prevent inhalation of dust. Avoid contact with skin and eyes. Cement powder or freshly mixed castable may cause eye and skin irritation. Steam spalling, which can lead to personal injury, may result from improper drying and firing procedures. In case of eye contact, flush immediately and repeatedly with water and consult a physician. Hydrogen gas may be generated when product is exposed to water. Ignition of hydrogen gas in an enclosed area can lead to personal injury. Proper ventilation should be supplied to avoid gas buildup. For safest use and optimum performance, proper practices must be followed.

(MXQC52AC)
Issue 2/22/08

LABORATORY TEST BAR DATA

QUICK CAST® 52AC

Casting Consistency	Self-flow			Vibrated		
Casting Water	6.75%			4.5%		
Density	**g/cm³**	**kg/m³**	**pcf**	**g/cm³**	**kg/m³**	**pcf**
After firing to:						
110°C (230°F)	2.47	2470	154	2.55	2550	159
815°C (1500°F)	2.43	2430	152	2.53	2530	158
1090°C (2000°F)	2.43	2430	152	2.53	2530	158
1370°C (2500°F)	2.29	2290	143	2.39	2390	149
Modulus Of Rupture	**MPa**	**kg/cm²**	**psi**	**MPa**	**kg/cm²**	**psi**
After firing to:						
110°C (230°F)	13.4	136.4	1940	18.3	158.9	2660
815°C (1500°F)	11.9	121.3	1725	20.7	210.6	2995
1090°C (2000°F)	14.1	143.5	2040	20.1	205.3	2920
1370°C (2500°F)	16.2	165.3	2350	18.2	185.3	2635
Hot Modulus Of Rupture	**MPa**	**kg/cm²**	**psi**	**MPa**	**kg/cm²**	**psi**
At: 815°C (1500°F)	21.0	214.1	3045	29.8	304.1	4325
Cold Crushing Strength	**MPa**	**kg/cm²**	**psi**	**MPa**	**kg/cm²**	**psi**
After firing to:						
110°C (230°F)	72.6	740.5	10530	113.3	1155.8	16435
815°C (1500°F)	71.9	732.8	10420	121.1	1234.9	17560
1090°C (2000°F)	63.6	648.4	9220	87.4	890.0	12670
1370°C (2500°F)	68.4	697.6	9920	105.6	1076.7	15310
Permanent Linear Change	**%**			**%**		
After firing to:						
815°C (1500°F)	-0.43			0.27		
1090°C (2000°F)	-0.51			0.01		
1370°C (2500°F)	1.00			1.08		
Apparent Porosity	**%**			**%**		
After firing to:						
110°C (230°F)	11.9			6.4		
815°C (1500°F)	17.2			13.5		
1090°C (2000°F)	16.9			13.1		
1370°C (2500°F)	19.0			13.7		
Abrasion Loss	**cm³**			**cm³**		
After firing to:						
110°C (230°F)	5.1			4.9		
815°C (1500°F)	3.6			--		
1090°C (2000°F)	3.7			--		

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