



ARMORTECH The Next Generation of Aluminum Resistant Castables

ARMORTECH products are a family of low-cement, high strength, 65% alumina castables designed specifically to outperform all other aluminum resistant products. ARMORTECH products have repeatedly recorded zero penetration, zero reaction, and the best metal adherence rating achievable in a variety of industry standard aluminum contact tests. Even at elevated temperatures, the enhanced matrix and state-of-the-art technology in these products give them aluminum resistance and unmatched physical properties.

ARMORTECH 65AL

Advanced, non-wetting castable with high hot strength

ARMORTECH 65AL C

Enhanced thermal cycling and impact resistance

ARMORTECH 65AL ON-LINE®

Fast curing and accelerated dryout

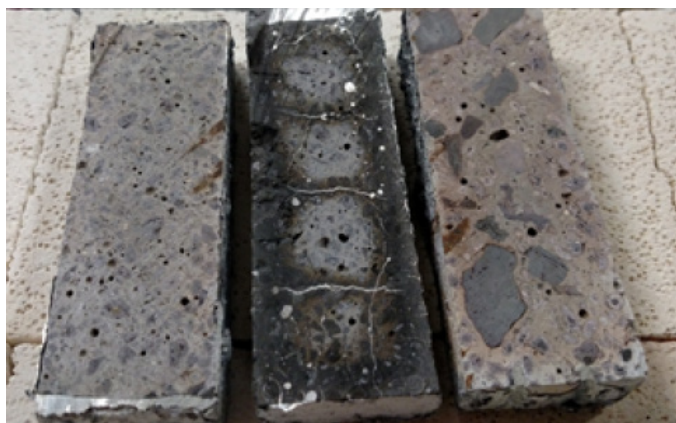
ARMORTECH 65AL SHOT-TECH®

Rapid installation and accelerated dryout shotcrete

ARMORTECH MW 65AL

Semi-insulating middleweight castable

7-day Total Immersion Test



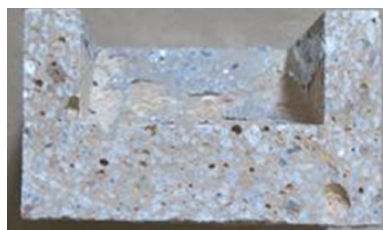
ARMORTECH 65AL (left) and ARMORTECH 65AL C (right) samples show no metal adherence, reaction, or penetration after a grueling 7-day total immersion test at 1700°F (927°C). Compared to more traditional products (center), ARMORTECH 65AL achieves the highest rating possible in this grueling test.

72-hour Aluminum Contact Cup Test



1500°F (816°C)

Fe pick up, %	0.00
Si pick up, %	0.00
Reaction (in)	0
Adhesion	1



2500°F (1371°C)

Fe pick up, %	0.01
Si pick up, %	0.00
Reaction (in)	0
Adhesion	2

*qualitative metal adhesion scale:
1 - none, 2 - weak*

CHEMICAL ANALYSIS

(Approx.) % Calcined Basis		ARMORTECH 65 AL	ARMORTECH 65AL C	ARMORTECH 65 AL ON-LINE®	ARMORTECH 65AL SHOT-TECH	ARMORTECH MW 65AL
Alumina	(Al ₂ O ₃)	63.4	69.4	63.4	63.4	62.5
Silica	(SiO ₂)	27.6	21.0	27.6	27.6	26.2
Lime	(CaO)	1.6	2.2	1.6	1.6	2.2
Titania	(TiO ₂)	1.7	1.5	1.7	1.7	1.2
Iron Oxide	(Fe ₂ O ₃)	0.8	0.8	0.8	0.8	0.7
Alkalies	(Na ₂ O + K ₂ O)	0.1	0.2	0.1	0.1	0.4
Other	--	4.8	4.8	4.8	4.8	6.7

PHYSICAL PROPERTIES

	ARMORTECH 65 AL	ARMORTECH 65AL C	ARMORTECH 65 AL ON-LINE®	ARMORTECH 65AL SHOT-TECH	ARMORTECH MW 65AL
Maximum Service Temperature, in aluminum contact	2500°F (1371°C)	2500°F (1371°C)	2500°F (1371°C)	2500°F (1371°C)	2500°F (1371°C)
Bulk Density, lb/ft ³ (g/cm ³) after 230°F (110°C) after 1500°F (816°C)	170 (2.72) 166 (2.66)	171 (2.74) 168 (2.69)	165 (2.64) 162 (2.59)	156 (2.50) 151 (2.42)	128 (2.05) 123 (1.97)
Modulus of Rupture, lb/in ² (MPa) after 230°F (110°C) after 1500°F (816°C)	2900 (19.3) 3100 (21.4)	1900 (13.1) 1000 (7.0)	2500 (17.2) 2600 (17.9)	1650 (11.4) 1800 (12.4)	1300 (9.0) 1050 (7.2)
Hot Modulus of Rupture, lb/in ² (MPa) at 1500°F (816°C)	4600 (31.7)	3000 (20.7)	4100 (28.3)	2700 (18.6)	1400 (9.7)
Cold Crushing Strength, lb/in ² (MPa) after 1500°F (816°C)	12,700 (87.6)	10,700 (73.8)	10,700 (73.8)	6400 (44.1)	4200 (29.0)
Abrasion Loss, cc after 1500°F (816°C)	5.5	6.0	5.5	9.0	14.5
Permanent Linear Change after 1500°F (816°C)	-0.1%	-0.1%	-0.2%	-0.2%	-0.1%
72-Hour Aluminum Cup Test Adherence Penetration Si Pick up (%) Fe Pick up (%)	none 0 0.0 0.0	none 0 0.0 0.0	none 0 0.0 0.0	weak* 0 0.01 0.02	none 0 0.0 0.03

*saw cut, shotcrete sample