



Material Highlight : AK 85 MP

Aluminium Industry

Gouda Refractories delivers complete refractory solutions for anode baking furnaces, pot lines, transfer ladles, melting furnaces and holding furnaces used in the production of aluminium and aluminium alloys.

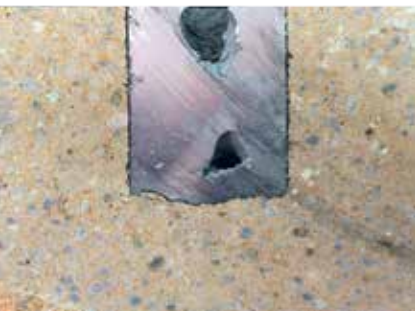
The AK 85 MP is a low porosity, high fired brick for heavy duty melting furnaces up to 1.500 °C. The combination of improved characteristics, depending on furnace design and operational maintenance, results in an increased refractory life in aluminium melting & holding furnaces by:

- Excellent non-wetting properties giving an outstanding liquid metal resistance for metal contact areas.
- Lower porosity, resulting in increased chemical resistance.
- Less free SiO₂, resulting in no/low corundum formation (growth), even at high temperatures.
- Higher mechanical strength, resulting in higher abrasion resistance.
- Extremely high HMOR values at 1.200 °C.
- Less abrasion during cleaning and mechanical abuse.
- Excellent thermal shock resistance.

The AK 85 MP brick has been developed to satisfy clients' needs better – now and in the future – and, like Gouda Refractories had done before with AK 85 P1, set a new standard in refractory materials for the aluminium industry. The AK 85 MP brick is a high density, low porosity, high strength 85% aluminium oxide brick.



Cup Test



Alloy 5083/1.200 °C/72 hours



Alloy 7075 (5% Mg)/1.200 °C/72 hours

Technical Background

Based on our knowledge of the production of low cement castables and by selecting higher quality raw materials as well as further improving the production process, Gouda Refractories has successfully developed the AK 85 MP brick, a phosphate bonded bauxite brick with outstanding strength at 1.200 °C (high HMOR values).

References(*)

Aluzinc / Tower, *Nigeria*
 Elval, *Greece*
 Garmco, *Bahrein*
 Hertwich Engineering, *Austria*
 Impol Seval, *Serbia*
 Meyer Aluminium, *Hong Kong*
 Meyer Aluminium, *Thailand*
 Otto Junker, *Germany*
 Phelps Dodge, *Thailand*
 Shinjin, *Korea*
 Stena Aluminium AB, *Sweden*
 Talum, *Slovenia*

(*) = Complete list of references is available upon request.

Materials

		AK 85 P1	AK 85 MP
Material Properties			
Maximum Service Temperature	°C	1.300	1.500
Bulk Density	kg/m ³	2.900	2.850
Apparent Porosity	%	14	14
Physical Properties			
Cold Crushing Strength	MPa	100	130
Thermal Shock Resistance	Cycles	20	20
HMOR 815 °C	MPa	20	25
HMOR 1.000 °C	MPa	11	25
HMOR 1.200 °C	MPa	2	20
Abrasion Resistance	cc		3,15
Thermal Conductivity (1.100 °C)	W/mK	2,1	2,5
Chemical Analysis			
Al ₂ O ₃	%	81	83
SiO ₂	%	8	8
Fe ₂ O ₃	%	1,4	< 1
P ₂ O ₅	%	4,5	3,5
BaO	%	2,5	1,5

Values are typical but not guaranteed, unless agreed otherwise.
 Datasheets are available upon request.