

INSURAL*

Insulating refractory for Aluminium and Zinc melts



Foseco GmbH

Gelsenkirchener Straße 10
46325 Borken

Telefon +49 (0)2861/83-0
Telefax +49 (0)2861/83338
www.foseco.de

Properties

- low wettability
- low thermal conductivity giving good insulation
- good thermal shock resistance
- maintains dimensional accuracy at working temperatures
- controlled density
- low heat capacity

Mastics & backing material

- INSURAL 700**
- good strength
 - very high insulation
 - for filling gaps
- INSURAL 800**
- higher strength than INSURAL 700
 - used as an adhesive
- INSURAL 7480**
- mastic specifically for the lining of ladles & launders with INSURAL bricks
- INSURAL 10**
- high-insulating backing material
 - 3-component powder
 - water-free
 - exothermic reaction

Characteristic properties

Properties	Insural 50	Insural 140	Insural 170	Insural 180	
Density	g/cm ³	~ 1.1	~ 1.4	~ 1.7	~ 1.8
Strength	Bf, Cold MPa	3	4.5	11	34
	Bf, 750° MPa	1	5	19	12
Expansion coefficient	K ⁻¹	4.5 x 10 ⁻⁶	3.9 x 10 ⁻⁶	0.9 x 10 ⁻⁶	1.25 x 10 ⁻⁶
Open porosity	%	70	42	20	21
Hygroscopicity	% (20°, 65 %rF)	0.8	0.6	0.1	0.1
	% (20°, 90%rF)	2.5	2.0	0.6	0.6
Heat conductivity	W/mK	(600°C)	(745°C)	(745°C)	(745°C)
Heat capacity	J/kgK	950	1001	1050	1100

Properties	Sealant / Adhesive		Backing material		
	INSURAL 700	INSURAL 800	INSURAL 7480	INSURAL 10	
Density (wet)	g/cm ³	1.1	1.1	1.4	-
Density (dry)	g/cm ³	0.6	0.8	0.9	1
Transverse strength	N/mm ²	1.5	3	-	0.6
Heat conductivity	W/mK	0.08	0.1	0.1	0.3
Shrinkage	%	0.05	0.05	-	-
Max. appl. temperature	°C	1100	1100	1100	-

typical values

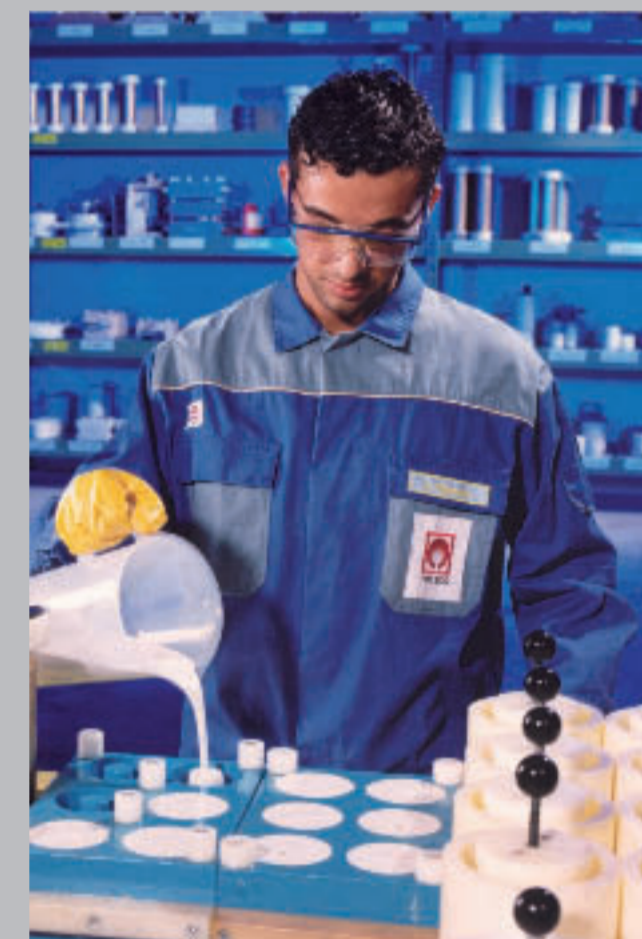
Formulations

- INSURAL 50**
- small shapes
 - machined shapes
 - high insulation
 - typical applications: feeders, bushes and LPDC shapes
- INSURAL 140**
- good strength
 - machinable
 - good insulation
 - for small and big shapes
 - typical applications: ATL-ladles, launders, filling cones
- INSURAL 170**
- high density
 - fair insulation
 - smooth surface
 - difficult to machine
 - small pieces, where high strength is needed
- INSURAL 180**
- big shapes only
 - high density
 - fair insulation
 - difficult to machine
 - typical applications: FDU baffle plates, big ATL-ladles, furnace linings

Advantages

- energy saving
- easily cleaned
- production techniques mean a wide variety of shapes can be produced
- surface strength and stability lead to clean melts and improved quality
- easily machinable to produce accurate shapes
- free from hazardous materials

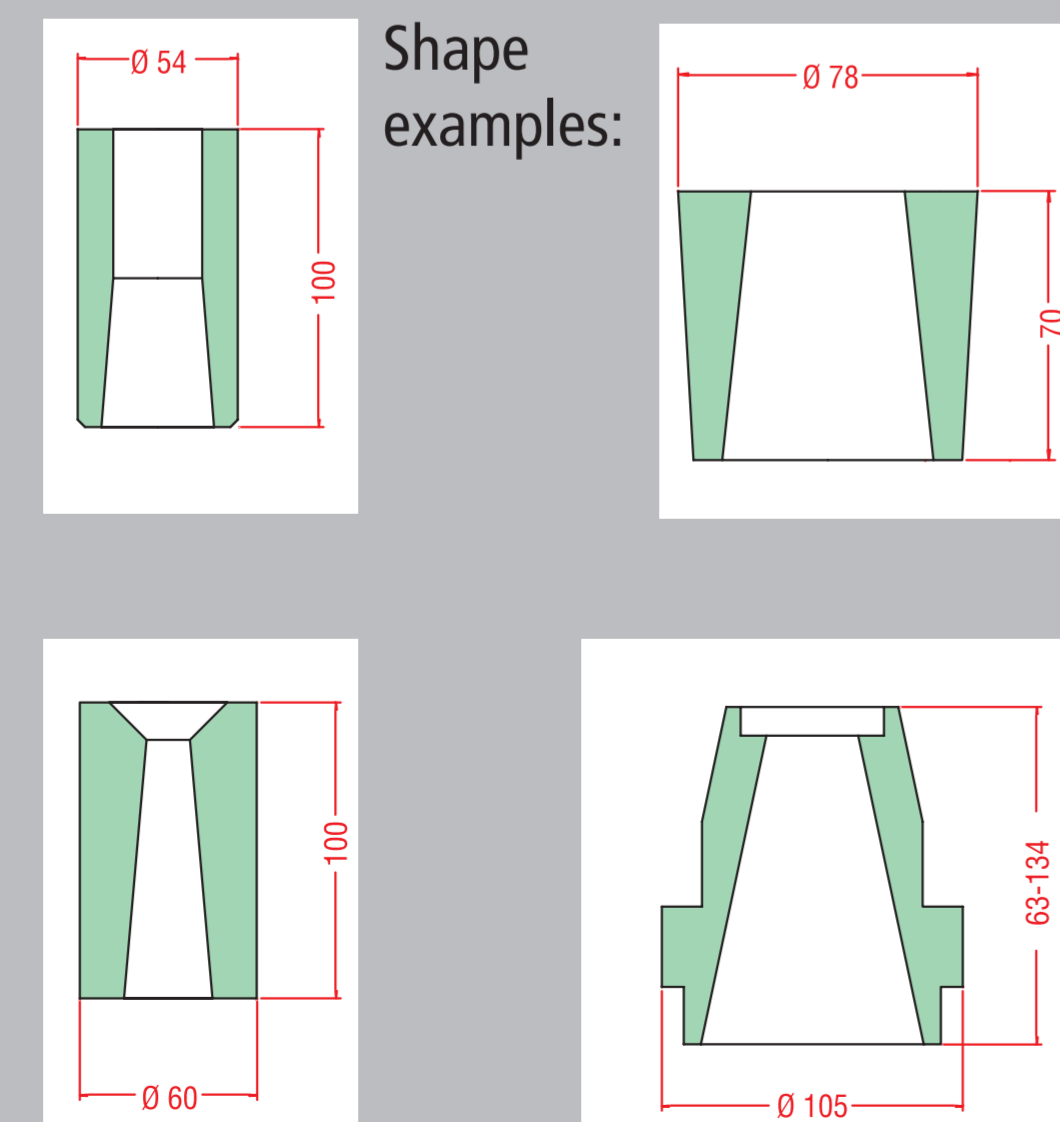
Service



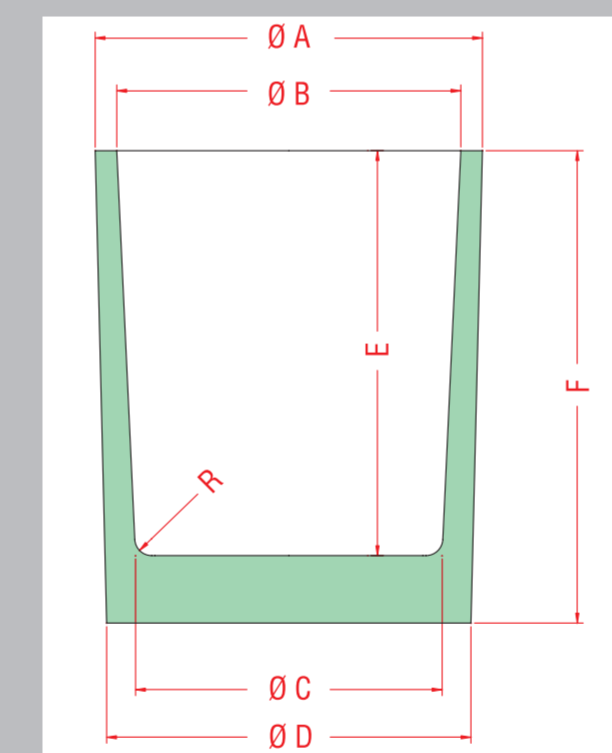
Preformed shapes are available in nearly all dimensions.

For further information and specific recommendations on the full range of Foseco INSURAL insulating refractories please refer to the local Foseco representative.

Low Pressure Die Casting-shapes



Ladles

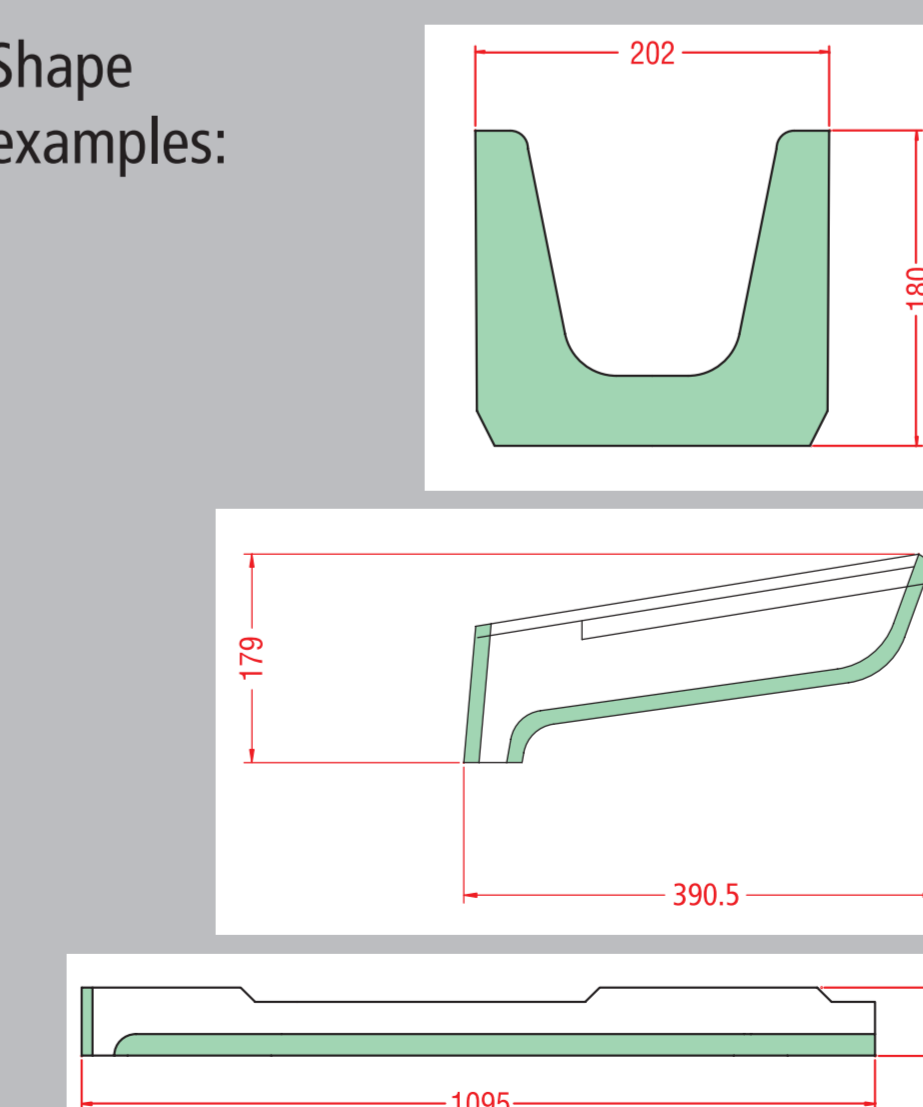


Description	INSURAL No	A	B	C	D	E	F	R	Vol (dm ³)	kg Al
ATL 15	I 611.2	250	210	150	185	245	265	0	5	10
ATL 30	I 547.2	293	235	195	250	335	363	25	12	27
ATL 40	I 582.2	300	250	210	250	418	450	40	17	39
ATL 48	I 552.2	375	305	220	260	330	350	40	18	40
ATL 65	I 615.2	400	365	255	285	350	390	0	26	60
ATL 100 IB	I 550.1	470	394	335	405	394	462	0	41	93
ATL 110 IB	I 616.1	469	399	260	345	430	510	20	37	83
ATL 140 IB	I 496.1	485	420	360	420	470	560	0	56	126
ATL 201 IB	I 617.1	545	480	445	515	440	530	0	73	165
ATL 200 IB	I 543.1	565	490	440	535	460	545	0	78	176
ATL 300 IB	I 490.1	574	510	445	540	585	700	0	105	236
ATL 400 IB	I 491.1	732	634	535	680	605	725	0	162	365
ATL 401 IB	I 619.1	680	580	485	630	730	850	0	163	366
ATL 500 IB	I 618.1	895	785	695	840	570	690	0	245	500
ATL 600 IB	I 492.1	750	670	535	680	855	975	0	244	548
ATL 800 IB	I 493.1	908	808	695	840	730	850	0	324	729
ATL 1000 IB	I 494.1	920	830	695	840	880	1000	0	402	904
ATL 1300 IB	I 873.1	930	830	710	860	1150	1275	0	535	1205
ATL 1400 IB	I 1131.1	990	890	810	950	1010	1135	20	573	1289

Launders



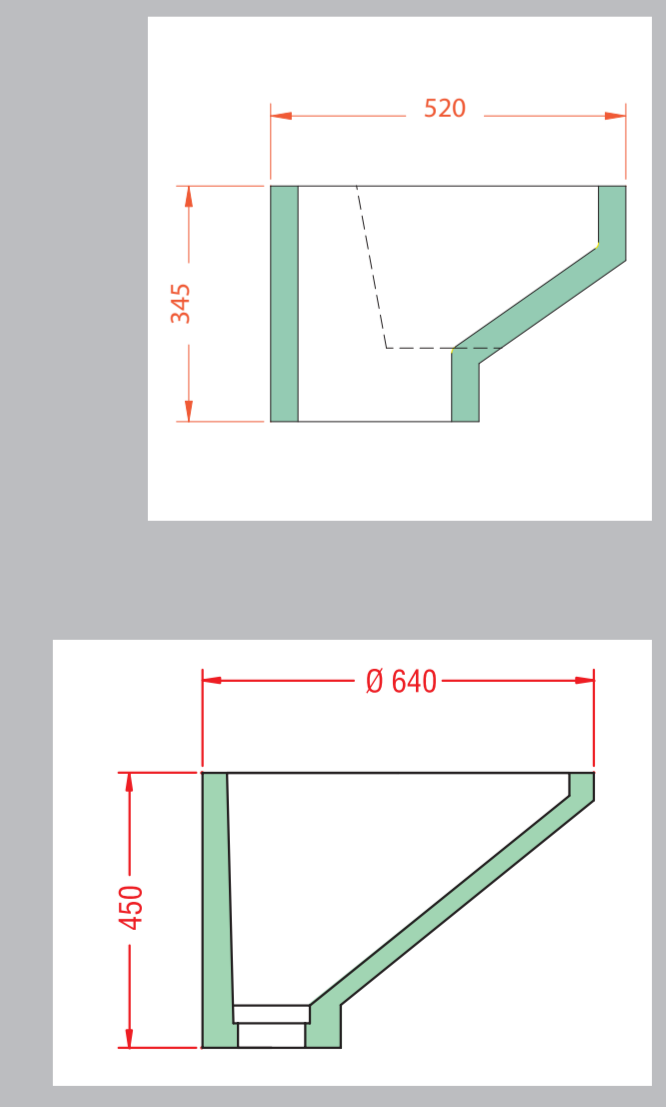
Shape examples:



Dosing furnace consumables



Shape examples:



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