



Product Information



The two charts below summarize Thermal Ceramics range of light weight insulating concretes.

The aim is to aid a quick selection of the appropriate concrete.

The chart in the back page provides full details of the product physical properties as determined by our laboratory test results.

Characteristics	Type of Firelite								
	LOD 607	20 X	20 X-G	20 XL	20 XL-G	20	124	124-G	124L
Low thermal conductivity	XX	X	X	XX	XX	X	X	X	X
Classification temperature °C	1100	1230	1230	1230	1230	1230	1100	1100	1100
High mechanical resistance	X	X	XX	X	XX	XX	XX	XX	X
Thermal shock resistance	XX								
Trowel installation	X								
Cast installation	X	X		X		X	X		X
Gun installation			X		X	X		X	

Note: In the Firelite products we use aluminous cement only; the high CaO content comes from the anorthite mineral in the insulating aggregate.

Applications	LOD 607	20 X	20 X-G	20 XL	20 XL-G	20	124	124-G	124L
Radiant and convection zones in petrochemical heaters		X	X	X	X	X	X	X	X
Floors, doors in petrochemical heaters		X	X	X	X	X	○	○	○
Special shapes linings	X								
Kiln car tops for rapid firing	X								
Lining of launders in primary aluminium industry	X								
Lining of ladles in secondary aluminium industry	X								
Application described by UOP-2-18-0							X		X
Application described by UOP-2-19-0								X	X

- = Back up insulation
- X = Good
- XX = Very good

Light Weight Insulating Concretes Firelite™

Product Information

MAIN PROPERTIES

Product	LOD 607		20 X	20 X-G	20 XL	20 XL-G	20		124	124-G	124-L
Method of application	Cast Trowel		Cast	Gun	Cast	Gun	Cast	Gun	Cast	Gun	Cast
Temperature limit °C	1100		1230	1230	1230	1230	1230		1100	1100	1100
ASTM-C-401-84 Class	-		N, O, P	N, O, P	N, O, P	O, P	O, P, Q		O, P	O, P	O, P
Basic raw material	Soluble Glass Fibre		Insulating Aggregate	Insulating Aggregate	Insulating Aggregate	Insulating Aggregate	Insulating Aggregate		Insulating Aggregate	Insulating Aggregate	Insulating Aggregate
Maximum grain size (mm)	10	10	8	8	8	8	8		8	8	8

Properties

• Density (kg/m ³)											
As placed		1480 1470	1460	1510	1310	1390	1570 1670	1400	1450	1350	
Oven dried at 105°C		860 900	880	950	850	930	1040 1130	1020	1060	960	
After 5hr firing at 815°C		770 850	820	870	770	860	960 1050	900	920	860	
• Cold crushing strength (MPa)***											
Oven dried at 105°C		0.8 0.9	2.0	2.8	2.9	3.9	4.0 5.4	5.9	5.9	4.5	
After 5hr firing at 815°C		0.8 0.9	1.5	2.3	2.1	3.0	3.3 3.9	4.2	4.2	3.1	
1000°C		-	1.2	1.8	-	-	2.9 3.4	2.5	2.5	1.7	
1100°C		-	1.0	1.5	2.0	2.7	- 3.3	-	-	-	
1200°C		-	-	-	-	-	2.8 3.4	-	-	-	

High Temperature Performance

• Permanent linear change (%)											
After 5hr firing at 815°C		-0.2 -0.2	-0.3	-0.3	-0.2	-0.2	-0.2 -0.2	-0.2	-0.2	-0.2	
1000°C		-	-0.3	-0.3	-0.3	-0.3	-0.2 -0.2	-0.3	-0.3	-0.4	
1100°C		-1.5 -1.5	-0.4	-0.4	-0.5	-0.5	-0.3 -0.3	-0.6	-0.6	-0.6	
1200°C			-0.6	-0.7	-0.6	-0.6	-0.4 -0.4	-	-	-	
• Thermal Conductivity (W/m.K)**											
ASTM-C-417-84											
At mean temperature of 200°C		0.12 0.13	0.15	0.17	0.15	0.17	0.20 0.22	0.17	0.20	0.16	
400°C		0.15 0.16	0.17	0.20	0.17	0.20	0.21 0.24	0.20	0.21	0.19	
600°C		0.17 0.20	0.20	0.22	0.20	0.22	0.23 0.27	0.22	0.24	0.21	
800°C		0.21 0.23	-	-	0.22	0.24	- -	-	-	-	

Estimated weight (kg) of dry material required per m ³ of construction (no allowance for waste)	780	840	820	890	780	870	970 1060	900	920	860
Estimated weight (kg) of water required per 100kg dry material	90	75	78	70	68	60	62 58	55	50	53

Chemical composition

Al ₂ O ₃			37.0	35.9	37.1	34.6	39.0	32.0	31.5	30.6
SiO ₂			33.6	32.0	31.0	34.4	28.9	29.0	30.0	34.7
Fe ₂ O ₃	On request		4.5	5.3	6.7	6.4	5.4	8.9	9.6	9.5
TiO ₂			1.2	1.3	1.2	1.1	1.4	1.4	1.4	1.2
CaO			22.0	22.5	21.3	19.6	23.2	21.8	22.0	18.8
MgO + K ₂ O + Na ₂ O			1.2	1.5	1.7	2.1	1.0	4.9	3.3	5.0
Ig. Loss			0.3	0.7	1.0	1.7	1.1	0.2	0.7	0.2

Packaging

• In bags	kg	30	40	40	35	35	40	40	40	40
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** To convert W/m.K to Btu in/ft²/h/°F, multiply by 6.93 to kcal/m.h. °C, multiply by 0.86 *** To convert MPa to kg/cm², multiply by 10.2

Your local contact:

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The values given herein are typical average values obtained in accordance with accepted internal test methods and are subject to normal manufacturing variations. The "G" gunning version data are obtained by ramming. They are supplied as a technical service and are subject to change without notice. Therefore, the data contained herein should not be used for specification purposes. Check with your Thermal Ceramics office to obtain current information. Before using these materials, it is strongly recommended that the installer consults Thermal Ceramics manual "storage and installation manual" copies of which are obtainable from Thermal Ceramics offices or distributors.

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