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ENGLISH

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FORMULA 4-L

Thermbond Refractories use the patented Stellar Binder System™ for easy and accurate mixing, controlled setting, fast dry-out and heat up, thermal shock resistance and other unique properties. Thermbond chemically bonds to existing fired refractories. CHARACTERISTICS: - High Purity - High Alumina - Very Dense - Abrasion Resistant - Non-Wetting - Fast Setting - Fast Curing - Longer Working Time -

PACKAGING		
Unit Equivalent	Bags: 1	Jugs: 1
Bag Weight*	71 lbs	32.2 kg
Jug Weight*	8 lbs	3.6 kg
Drum Weight*	400 lbs	181.4 kg
Unit Weight*	79 lbs	35.7 kg
Yield / Unit*	0.44 ft ³	0.012 m ³
Units / Ton*	25.45 short	28.05 metric
Board Feet / Unit*	5.2 bd ft	
Wet to Dry Ratio*	10.7% - 11.8%	
Liquid Activator	FORMULA	
Bags Per Pallet	48	
Drums Per Dry Pallet	1	

APPLICATION	
Data based on	Casting

BULK DENSITY**		
As Placed	180 lbs/ft ³	2883 kg/m ³
After 1500F (816C)	170 lbs/ft ³	2723 kg/m ³

MAXIMUM RECOMMENDED SERVICE TEMP**		
Hot Face	3100 F	1704 C

ABRASION RESISTANCE** (ASTM C-704)	
After 1500F (816C)	<6 cc loss

MOLTEN METAL CONTACT	
- Aluminum - Zinc - Iron - Steel -	

COMPRESSIVE STRENGTH**			
1500F (816C)	6000 psi	422 kg/cm ²	41 N/mm ²
2000F (1093C)	7000 psi	492 kg/cm ²	48 N/mm ²
2500F (1371C)	6000 psi	422 kg/cm ²	41 N/mm ²

PERMANENT LINEAR CHANGE**	
1500F (816C)	-0.10%
2000F (1093C)	-0.20%
2500F (1371C)	-1.10%

TYPICAL CHEMICAL ANALYSIS (After 1500F (816C))**	
Al ₂ O ₃	87.54%
SiO ₂	2.30%
Fe ₂ O ₃	0.84%
P ₂ O ₅	4.59%
Other	4.72%
Total	100.00%

THERMAL CONDUCTIVITY**		
600F (316C)	16.9 Btu-in/hr-ft ² -F	2.43 W/m K
1200F (649C)	14.3 Btu-in/hr-ft ² -F	2.06 W/m K
1800F (982C)	13.5 Btu-in/hr-ft ² -F	1.95 W/m K
2400F (1316C)	13.9 Btu-in/hr-ft ² -F	2.00 W/m K

COLD MODULUS OF RUPTURE**			
1500F (816C)	1450 psi	102 kg/cm ²	10 N/mm ²
2000F (1093C)	1550 psi	109 kg/cm ²	11 N/mm ²
2500F (1371C)	1425 psi	100 kg/cm ²	10 N/mm ²

HOT MODULUS OF RUPTURE**			
1500F (816C)	1500 psi	105 kg/cm ²	10 N/mm ²

*Measures are approximate and may vary. For mixing partial units, contact Stellar Materials for specific wet-to-dry ratios. See Installation Guide for more detailed information.

**Test data shown are based on averages subject to normal variation on individual tests, and therefore should not be assumed to be maximum or minimum specifications.

Due to the unique nature of the Stellar binder system, test procedures vary slightly from ASTM. Documentation of these variations is available upon request.