



USA: (561) 330-9300

www.thermbond.com
STELLAR MATERIALS INCORPORATED

EU: +31 (10) 2460264

ENGLISH

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FORMULA 4-P

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 Alumina - Very Dense - Fine Grain - Abrasion Resistant - Non-Wetting - Fast Setting - Fast Curing

PACKAGING		
Unit Equivalent	Bags: 1	Jugs: 1
Bag Weight*	58 lbs	26.3 kg
Jug Weight*	8 lbs	3.6 kg
Drum Weight*	400 lbs	181.4 kg
Unit Weight*	66 lbs	29.8 kg
Yield / Unit*	0.39 ft ³	0.011 m ³
Units / Ton*	30.49 short	33.61 metric
Board Feet / Unit*	4.6 bd ft	
Wet to Dry Ratio*	13.1% - 14.4%	
Liquid Activator	FORMULA	
Bags Per Pallet	48	
Drums Per Dry Pallet	1	

APPLICATION***	
Data based on	Casting
Alternative Method***	Hand Packing Troweling

BULK DENSITY**		
As Placed	170 lbs/ft ³	2723 kg/m ³
After 1500F (816C)	160 lbs/ft ³	2563 kg/m ³

MAXIMUM RECOMMENDED SERVICE TEMP**		
Hot Face	3000 F	1649 C

MOLTEN METAL CONTACT	
- Aluminum - Zinc - Iron	

COMPRESSIVE STRENGTH**			
1500F (816C)	7500 psi	527 kg/cm ²	52 N/mm ²
2000F (1093C)	8500 psi	598 kg/cm ²	59 N/mm ²
2500F (1371C)	15000 psi	1055 kg/cm ²	103 N/mm ²

PERMANENT LINEAR CHANGE**	
1500F (816C)	-0.10%
2000F (1093C)	-0.45%
2500F (1371C)	-0.80%

TYPICAL CHEMICAL ANALYSIS (After 1500F (816C))**	
Al ₂ O ₃	77.44%
SiO ₂	10.03%
Fe ₂ O ₃	1.00%
P ₂ O ₅	5.45%
Other	6.09%
Total	100.00%

THERMAL CONDUCTIVITY**		
600F (316C)	17.0 Btu-in/hr-ft ² -F	2.45 W/m K
1200F (649C)	15.0 Btu-in/hr-ft ² -F	2.16 W/m K
1800F (982C)	14.0 Btu-in/hr-ft ² -F	2.02 W/m K
2400F (1316C)	14.5 Btu-in/hr-ft ² -F	2.09 W/m K

COLD MODULUS OF RUPTURE**			
1500F (816C)	1400 psi	98 kg/cm ²	10 N/mm ²
2000F (1093C)	1600 psi	112 kg/cm ²	11 N/mm ²
2500F (1371C)	2300 psi	162 kg/cm ²	16 N/mm ²

HOT MODULUS OF RUPTURE**			
1500F (816C)	2000 psi	141 kg/cm ²	14 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.

***Application by alternative method may produce somewhat different results.

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