



# TECHNICAL DATA SHEET

For our detailed Installation Guide and more information, visit us at [www.thermbond.com](http://www.thermbond.com)

ENGLISH

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## FORMULA 12-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 Alumina - Very Dense - Abrasion Resistant - Non-Wetting - Fast Setting - Fast Curing - Longer Working Time*

PACKAGING		
Unit Equivalent	Bags: 2	Jugs: 1
Bag Weight*	54 lbs	24.6 kg
Jug Weight*	8 lbs	3.6 kg
Drum Weight*	400 lbs	181.4 kg
Unit Weight*	116 lbs	52.7 kg
Yield / Unit*	0.61 ft3	0.017 m3
Units / Ton*	17.22 short	18.98 metric
Board Feet / Unit*	7.3 bd ft	
Wet to Dry Ratio*	7% - 7.7%	
Liquid Activator	FORMULA	
Bags Per Pallet	48	
Drums Per Dry Pallet	1	

APPLICATION***	
Data based on	Ramming
Alternative Method***	Hand Packing

BULK DENSITY**		
As Placed	190 lbs/ft3	3044 kg/m3
After 1500F (816C)	180 lbs/ft3	2883 kg/m3

MAXIMUM RECOMMENDED SERVICE TEMP**		
Hot Face	2300 F	1260 C

ABRASION RESISTANCE** (ASTM C-704)	
After 1500F (816C)	<3 cc loss

MOLTEN METAL CONTACT	
- Aluminum - Zinc	

COMPRESSIVE STRENGTH**			
1200F (649C)	18000 psi	1266 kg/cm2	124 N/mm2
1500F (816C)	18000 psi	1266 kg/cm2	124 N/mm2

PERMANENT LINEAR CHANGE**	
1200F (649C)	-0.10%
1500F (816C)	-0.20%

TYPICAL CHEMICAL ANALYSIS (After 1500F (816C))**	
Al2O3	78.74%
SiO2	8.30%
Fe2O3	0.73%
P2O5	3.95%
Other	8.28%
Total	100.00%

THERMAL CONDUCTIVITY**		
600F (316C)	14.0 Btu-in/hr-ft2-F	2.02 W/m K
1000F (538C)	14.6 Btu-in/hr-ft2-F	2.11 W/m K
1200F (649C)	15.0 Btu-in/hr-ft2-F	2.16 W/m K
1800F (982C)	15.5 Btu-in/hr-ft2-F	2.24 W/m K

HOT MODULUS OF RUPTURE**			
1500F (816C)	2500 psi	176 kg/cm2	17 N/mm2

\*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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