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ENGLISH

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# FORMULA 12-W

*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 - Non-Wetting - Fast Setting - Fast Curing*

## PRELIMINARY DATA

PACKAGING		
Unit Equivalent	Bags: 2	Jugs: 1
Bag Weight*	38 lbs	17.2 kg
Jug Weight*	8 lbs	3.6 kg
Drum Weight*	400 lbs	181.4 kg
Unit Weight*	84 lbs	37.9 kg
Yield / Unit*	0.47 ft <sup>3</sup>	0.013 m <sup>3</sup>
Units / Ton*	23.92 short	26.37 metric
Board Feet / Unit*	5.6 bd ft	
Wet to Dry Ratio*	10% - 11%	
Liquid Activator	FORMULA	
Bags Per Pallet	48	
Drums Per Dry Pallet	1	

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

BULK DENSITY**		
As Placed	178 lbs/ft <sup>3</sup>	2851 kg/m <sup>3</sup>
After 1500F (816C)	168 lbs/ft <sup>3</sup>	2691 kg/m <sup>3</sup>

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

ABRASION RESISTANCE** (ASTM C-704)	
After 1500F (816C)	<5 cc loss

MOLTEN METAL CONTACT	
- Aluminum - Zinc	

COMPRESSIVE STRENGTH**			
1200F (649C)	12000 psi	844 kg/cm <sup>2</sup>	83 N/mm <sup>2</sup>
1500F (816C)	12000 psi	844 kg/cm <sup>2</sup>	83 N/mm <sup>2</sup>

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

TYPICAL CHEMICAL ANALYSIS (After 1500F (816C))**	
Al <sub>2</sub> O <sub>3</sub>	77.60%
SiO <sub>2</sub>	8.18%
Fe <sub>2</sub> O <sub>3</sub>	0.74%
P <sub>2</sub> O <sub>5</sub>	4.91%
Other	8.57%
Total	100.00%

THERMAL CONDUCTIVITY**		
600F (316C)	12.0 Btu-in/hr-ft <sup>2</sup> -F	1.73 W/m K
1200F (649C)	12.5 Btu-in/hr-ft <sup>2</sup> -F	1.80 W/m K
1800F (982C)	13.2 Btu-in/hr-ft <sup>2</sup> -F	1.90 W/m K
2400F (1316C)	14.0 Btu-in/hr-ft <sup>2</sup> -F	2.02 W/m K

HOT MODULUS OF RUPTURE**			
1500F (816C)	2000 psi	141 kg/cm <sup>2</sup>	14 N/mm <sup>2</sup>

\*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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