THERMBOND® REFRACTORIES
TECHNICAL DATA SHEET
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FORMULA 18-W

Formerly Formula XP951

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 - Tabular Alumina - Very Dense - Non-Wetting - Fast Setting - Fast Curing

PACKAGING		
Unit Equivalent	Bags: 1	Jugs: 1
Bag Weight*	43 lbs	19.5 kg
Jug Weight*	8 lbs	3.6 kg
Drum Weight*	400 lbs	181.4 kg
Unit Weight*	51 lbs	23.0 kg
Yield / Unit*	0.29 ft3	0.008 m3
Units / Ton*	39.53 short	43.57 metric
Board Feet / Unit*	3.5 bd ft	
Wet to Dry Ratio*	17.7% - 19.4%	
Liquid Activator	FORMULA	
Bags Per Pallet	48	
Drums Per Dry Pallet	1	

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

BULK DENSITY**		
As Placed	172 lbs/ft3	2755 kg/m3
After 1500F (816C)	168 lbs/ft3	2691 kg/m3

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

MOLTEN METAL CONTACT
- Aluminum - Zinc - Iron - Steel

COMPRESSIVE STRENGTH**			
1500F (816C)	4000 psi	281 kg/cm2	28 N/mm2
2000F (1093C)	8000 psi	562 kg/cm2	55 N/mm2
2500F (1371C)	12950 psi	910 kg/cm2	89 N/mm2

PERMANENT LINEAR CHANGE**	
1500F (816C)	0.03%
2000F (1093C)	0.06%
2500F (1371C)	0.07%

TYPICAL CHEMICAL ANALYSIS (After 1500F (816C))**	
Al2O3	88.85%
SiO2	0.31%
Fe2O3	0.26%
P2O5	6.70%
Other	3.89%
Total	100.00%

THERMAL CONDUCTIVITY**		
600F (316C)	12.2 Btu-in/hr-ft2-F	1.76 W/m K
1200F (649C)	11.0 Btu-in/hr-ft2-F	1.59 W/m K
1800F (982C)	10.8 Btu-in/hr-ft2-F	1.56 W/m K
2400F (1316C)	11.3 Btu-in/hr-ft2-F	1.63 W/m K

COLD MODULUS OF RUPTURE**			
1500F (816C)	900 psi	63 kg/cm2	6 N/mm2
2000F (1093C)	1700 psi	120 kg/cm2	12 N/mm2
2500F (1371C)	2900 psi	204 kg/cm2	20 N/mm2

HOT MODULUS OF RUPTURE**			
1500F (816C)	2100 psi	148 kg/cm2	14 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.