THERMBOND® REFRACTORIES

TECHNICAL DATA SHEET

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FORMULA 4-J

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 - Non-Wetting - Fast Setting - Fast Curing - Low Viscosity -

P R E L I M I N A R Y D A T A

PACKAGING

Unit Equivalent	Bags: 1	Jugs: 1
Bag Weight*	48 lbs	21.5 kg
Jug Weight*	8 lbs	3.6 kg
Drum Weight*	400 lbs	181.4 kg
Unit Weight*	55 lbs	25.0 kg
Yield / Unit*	0.33 ft3	0.009 m3
Units / Ton*	36.30 short	40.01 metric
Board Feet / Unit*	4.0 bd ft	
Wet to Dry Ratio*	16% - 17.6%	
Liquid Activator	FORMULA	
Bags Per Pallet	48	
Drums Per Dry Pallet	1	

APPLICATION

Data based on	Casting

BULK DENSITY**

As Placed	165 lbs/ft3	2643 kg/m3
After 1500F (816C)	160 lbs/ft3	2563 kg/m3

MAXIMUM RECOMMENDED SERVICE TEMP**

Hot Face	3000 F	1649 C

MOLTEN METAL CONTACT

- Aluminum - Zinc - Iron - Steel -

COMPRESSIVE STRENGTH**

1500F (816C)	4000 psi	281 kg/cm2	28 N/mm2
2000F (1093C)	4500 psi	316 kg/cm2	31 N/mm2
2500F (1371C)	7000 psi	492 kg/cm2	48 N/mm2

PERMANENT LINEAR CHANGE**

1500F (816C)	-0.40%
2000F (1093C)	-0.55%
2500F (1371C)	-1.90%

TYPICAL CHEMICAL ANALYSIS (After 1500F (816C))**

Al2O3	85.74%
SiO2	1.47%
Fe2O3	0.92%
P2O5	6.22%
Other	5.65%
Total	100.00%

THERMAL CONDUCTIVITY**

600F (316C)	16.9 Btu-in/hr-ft2-F	2.44 W/m K
1200F (649C)	14.3 Btu-in/hr-ft2-F	2.06 W/m K
1800F (982C)	13.5 Btu-in/hr-ft2-F	1.95 W/m K
2400F (1316C)	13.9 Btu-in/hr-ft2-F	2.00 W/m K

COLD MODULUS OF RUPTURE**

1500F (816C)	800 psi	56 kg/cm2	6 N/mm2
2000F (1093C)	850 psi	60 kg/cm2	6 N/mm2
2500F (1371C)	1100 psi	77 kg/cm2	8 N/mm2

HOT MODULUS OF RUPTURE**

1500F (816C)	1250 psi	88 kg/cm2	9 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.