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# THERM BRAKE 402

Formerly Thermbrake 2X

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:** - Silica - Light Weight - Fast Setting - Fast Curing - Insulating -

PACKAGING		
Unit Equivalent	Bags: 1	Jugs: 2
Bag Weight*	36 lbs	16.2 kg
Jug Weight*	8 lbs	3.6 kg
Drum Weight*	500 lbs	226.8 kg
Unit Weight*	51 lbs	23.0 kg
Yield / Unit*	0.72 ft <sup>3</sup>	0.021 m <sup>3</sup>
Units / Ton*	39.44 short	43.47 metric
Board Feet / Unit*	8.7 bd ft	
Wet to Dry Ratio*	42% - 46.2%	
Liquid Activator	THERM BRAKE	
Bags Per Pallet	64	
Drums Per Dry Pallet	2	

APPLICATION	
Data based on	Casting

BULK DENSITY**		
As Placed	70 lbs/ft <sup>3</sup>	1121 kg/m <sup>3</sup>
After 1500F (816C)	50 lbs/ft <sup>3</sup>	801 kg/m <sup>3</sup>

MAXIMUM RECOMMENDED SERVICE TEMP**		
Hot Face	1800 F	982 C

COMPRESSIVE STRENGTH**			
2600F (1427C)	800 psi	56 kg/cm <sup>2</sup>	6 N/mm <sup>2</sup>

PERMANENT LINEAR CHANGE**	
2500F (1371C)	-0.92%
2600F (1427C)	-0.36%
2800F (1538C)	-0.55%

TYPICAL CHEMICAL ANALYSIS (After 1500F (816C))**	
Al <sub>2</sub> O <sub>3</sub>	10.71%
SiO <sub>2</sub>	55.41%
Fe <sub>2</sub> O <sub>3</sub>	0.51%
P <sub>2</sub> O <sub>5</sub>	21.88%
Other	11.48%
Total	100.00%

THERMAL CONDUCTIVITY**		
600F (316C)	1.5 Btu-in/hr-ft <sup>2</sup> -F	0.22 W/m K
1200F (649C)	2.2 Btu-in/hr-ft <sup>2</sup> -F	0.32 W/m K
1800F (982C)	3.0 Btu-in/hr-ft <sup>2</sup> -F	0.43 W/m K
2400F (1316C)	3.9 Btu-in/hr-ft <sup>2</sup> -F	0.56 W/m K

COLD MODULUS OF RUPTURE**			
2600F (1427C)	180 psi	13 kg/cm <sup>2</sup>	1 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.