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ENGLISH

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FORMULA 2104-G

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 - High Alumina - Very Dense - Abrasion Resistant - Non-Wetting - Fast Setting - Fast Curing -

PRELIMINARY DATA

PACKAGING		
Bag Weight*	68 lbs	30.8 kg
Jug Weight*	8 lbs	3.6 kg
Drum Weight*	400 lbs	181.4 kg
Unit Weight*	76 lbs	34.3 kg
Yield / Unit*	0.47 ft3	0.013 m3
Units / Ton*	26.46 short	29.16 metric
Board Feet / Unit*	5.7 bd ft	
Wet to Dry Ratio*	11.2% - 12.3%	
Liquid Activator	FORMULA	
Bags Per Pallet	48	
Drums Per Dry Pallet	1 (plus predampening jugs)*	

APPLICATION	
Data based on	Gunning

BULK DENSITY**		
As Placed	160 lbs/ft3	2563 kg/m3
After 1500F (816C)	150 lbs/ft3	2403 kg/m3

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

ABRASION RESISTANCE** (ASTM C-704)	
After 1500F (816C)	<10 cc loss

MOLTEN METAL CONTACT	
- Aluminum - Zinc - Iron - Steel -	

COMPRESSIVE STRENGTH**			
1500F (816C)	5500 psi	387 kg/cm2	38 N/mm2
2000F (1093C)	5000 psi	352 kg/cm2	34 N/mm2
2500F (1371C)	6300 psi	443 kg/cm2	43 N/mm2

PERMANENT LINEAR CHANGE**	
1500F (816C)	-0.15%
2000F (1093C)	-0.20%
2500F (1371C)	-1.40%

TYPICAL CHEMICAL ANALYSIS (After 1500F (816C))**	
Al2O3	86.69%
SiO2	2.19%
Fe2O3	0.80%
P2O5	4.68%
Other	5.64%
Total	100.00%

THERMAL CONDUCTIVITY**		
600F (316C)	10.1 Btu-in/hr-ft2-F	1.46 W/m K
1200F (649C)	10.3 Btu-in/hr-ft2-F	1.49 W/m K
1800F (982C)	11.2 Btu-in/hr-ft2-F	1.62 W/m K
2400F (1316C)	11.8 Btu-in/hr-ft2-F	1.70 W/m K

COLD MODULUS OF RUPTURE**			
1500F (816C)	1400 psi	98 kg/cm2	10 N/mm2
2000F (1093C)	1200 psi	84 kg/cm2	8 N/mm2
2500F (1371C)	1850 psi	130 kg/cm2	13 N/mm2

HOT MODULUS OF RUPTURE**			
1500F (816C)	1850 psi	130 kg/cm2	13 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.