



USA: (561) 330-9300

www.thermbond.com
STELLAR MATERIALS INCORPORATED

EU: +31 (10) 2460264

ENGLISH

Revision 07/16/2008 (Check www.thermbond.com for updates)

FORMULA 4-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 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 ft ³	0.008 m ³
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/ft ³	2755 kg/m ³
After 1500F (816C)	168 lbs/ft ³	2691 kg/m ³

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/cm ²	28 N/mm ²
2000F (1093C)	8000 psi	562 kg/cm ²	55 N/mm ²
2500F (1371C)	12950 psi	910 kg/cm ²	89 N/mm ²

PERMANENT LINEAR CHANGE**

1500F (816C)	0.03%
2000F (1093C)	0.06%
2500F (1371C)	0.07%

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

Al ₂ O ₃	88.85%
SiO ₂	0.31%
Fe ₂ O ₃	0.26%
P ₂ O ₅	6.70%
Other	3.89%
Total	100.00%

THERMAL CONDUCTIVITY**

600F (316C)	12.2 Btu-in/hr-ft ² -F	1.76 W/m K
1200F (649C)	11.0 Btu-in/hr-ft ² -F	1.59 W/m K
1800F (982C)	10.8 Btu-in/hr-ft ² -F	1.56 W/m K
2400F (1316C)	11.3 Btu-in/hr-ft ² -F	1.63 W/m K

COLD MODULUS OF RUPTURE**

1500F (816C)	900 psi	63 kg/cm ²	6 N/mm ²
2000F (1093C)	1700 psi	120 kg/cm ²	12 N/mm ²
2500F (1371C)	2900 psi	204 kg/cm ²	20 N/mm ²

HOT MODULUS OF RUPTURE**

1500F (816C)	2100 psi	148 kg/cm ²	14 N/mm ²
--------------	----------	------------------------	----------------------

*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.

Thermbond is a registered trademark of Stellar Materials Incorporated. All rights reserved.