



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 3-AG

*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: - Alumina - Silica - Mullite - Dense - Abrasion Resistant - Non-Wetting - Fast Setting - Fast Curing*

PACKAGING		
Bag Weight*	63 lbs	28.6 kg
Jug Weight*	8 lbs	3.6 kg
Drum Weight*	400 lbs	181.4 kg
Unit Weight*	71 lbs	32.0 kg
Yield / Unit*	0.50 ft <sup>3</sup>	0.014 m <sup>3</sup>
Units / Ton*	28.33 short	31.23 metric
Board Feet / Unit*	6.1 bd ft	
Wet to Dry Ratio*	12.1% - 13.3%	
Liquid Activator	FORMULA	
Bags Per Pallet	48	
Drums Per Dry Pallet	1 (plus predampening jugs)*	

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

BULK DENSITY**		
As Placed	140 lbs/ft <sup>3</sup>	2243 kg/m <sup>3</sup>
After 1500F (816C)	130 lbs/ft <sup>3</sup>	2082 kg/m <sup>3</sup>

MAXIMUM RECOMMENDED SERVICE TEMP**		
Hot Face	3000 F	1649 C

ABRASION RESISTANCE** (ASTM C-704)	
After 1500F (816C)	<20 cc loss

MOLTEN METAL CONTACT	
- Aluminum - Zinc - Iron	

COMPRESSIVE STRENGTH**			
1500F (816C)	3000 psi	211 kg/cm <sup>2</sup>	21 N/mm <sup>2</sup>
2000F (1093C)	4000 psi	281 kg/cm <sup>2</sup>	28 N/mm <sup>2</sup>
2500F (1371C)	8000 psi	562 kg/cm <sup>2</sup>	55 N/mm <sup>2</sup>

PERMANENT LINEAR CHANGE**	
1500F (816C)	-0.20%
2000F (1093C)	-0.50%
2500F (1371C)	-1.40%

TYPICAL CHEMICAL ANALYSIS (After 1500F (816C))**	
Al <sub>2</sub> O <sub>3</sub>	63.63%
SiO <sub>2</sub>	25.39%
Fe <sub>2</sub> O <sub>3</sub>	0.96%
P <sub>2</sub> O <sub>5</sub>	4.99%
Other	5.04%
Total	100.00%

THERMAL CONDUCTIVITY**		
600F (316C)	9.0 Btu-in/hr-ft <sup>2</sup> -F	1.30 W/m K
1200F (649C)	9.2 Btu-in/hr-ft <sup>2</sup> -F	1.33 W/m K
1800F (982C)	9.5 Btu-in/hr-ft <sup>2</sup> -F	1.37 W/m K
2400F (1316C)	10.0 Btu-in/hr-ft <sup>2</sup> -F	1.44 W/m K

COLD MODULUS OF RUPTURE**			
1500F (816C)	900 psi	63 kg/cm <sup>2</sup>	6 N/mm <sup>2</sup>
2000F (1093C)	800 psi	56 kg/cm <sup>2</sup>	6 N/mm <sup>2</sup>
2500F (1371C)	1800 psi	127 kg/cm <sup>2</sup>	12 N/mm <sup>2</sup>

HOT MODULUS OF RUPTURE**			
1500F (816C)	2000 psi	141 kg/cm <sup>2</sup>	14 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.

\*\*\*Application by alternative method may produce somewhat different results.

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