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ENGLISH

Revision 07/22/2008 (Check www.thermbond.com for updates)

# FORMULA 12-L

*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 - Abrasion Resistant - Non-Wetting - Fast Setting - Fast Curing - Longer Working Time*

## PRELIMINARY DATA

| PACKAGING            |             |              |
|----------------------|-------------|--------------|
| Unit Equivalent      | Bags: 2     | Jugs: 1      |
| Bag Weight*          | 54 lbs      | 24.6 kg      |
| Jug Weight*          | 8 lbs       | 3.6 kg       |
| Drum Weight*         | 400 lbs     | 181.4 kg     |
| Unit Weight*         | 116 lbs     | 52.7 kg      |
| Yield / Unit*        | 0.61 ft3    | 0.017 m3     |
| Units / Ton*         | 17.22 short | 18.98 metric |
| Board Feet / Unit*   | 7.3 bd ft   |              |
| Wet to Dry Ratio*    | 7% - 7.7%   |              |
| Liquid Activator     | FORMULA     |              |
| Bags Per Pallet      | 48          |              |
| Drums Per Dry Pallet | 1           |              |

| APPLICATION***        |              |
|-----------------------|--------------|
| Data based on         | Ramming      |
| Alternative Method*** | Hand Packing |

| BULK DENSITY**     |             |            |
|--------------------|-------------|------------|
| As Placed          | 190 lbs/ft3 | 3044 kg/m3 |
| After 1500F (816C) | 180 lbs/ft3 | 2883 kg/m3 |

| MAXIMUM RECOMMENDED SERVICE TEMP** |        |        |
|------------------------------------|--------|--------|
| Hot Face                           | 2300 F | 1260 C |

| ABRASION RESISTANCE** (ASTM C-704) |            |
|------------------------------------|------------|
| After 1500F (816C)                 | <3 cc loss |

| MOLTEN METAL CONTACT |  |
|----------------------|--|
| - Aluminum - Zinc    |  |

| COMPRESSIVE STRENGTH** |           |             |           |
|------------------------|-----------|-------------|-----------|
| 1200F (649C)           | 18000 psi | 1266 kg/cm2 | 124 N/mm2 |
| 1500F (816C)           | 18000 psi | 1266 kg/cm2 | 124 N/mm2 |

| PERMANENT LINEAR CHANGE** |        |
|---------------------------|--------|
| 1200F (649C)              | -0.10% |
| 1500F (816C)              | -0.20% |

| TYPICAL CHEMICAL ANALYSIS (After 1500F (816C))** |         |
|--|---------|
| Al2O3  | 78.74%  |
| SiO2   | 8.30%   |
| Fe2O3  | 0.73%   |
| P2O5   | 3.95%   |
| Other  | 8.28%   |
| Total  | 100.00% |

| THERMAL CONDUCTIVITY** |                      |            |
|------------------------|----------------------|------------|
| 600F (316C)            | 14.0 Btu-in/hr-ft2-F | 2.02 W/m K |
| 1200F (649C)           | 15.0 Btu-in/hr-ft2-F | 2.16 W/m K |
| 1800F (982C)           | 15.5 Btu-in/hr-ft2-F | 2.24 W/m K |
| 2400F (1316C)          | 16.0 Btu-in/hr-ft2-F | 2.31 W/m K |

| HOT MODULUS OF RUPTURE** |          |            |          |
|--------------------------|----------|------------|----------|
| 1500F (816C)             | 2500 psi | 176 kg/cm2 | 17 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.

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

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