



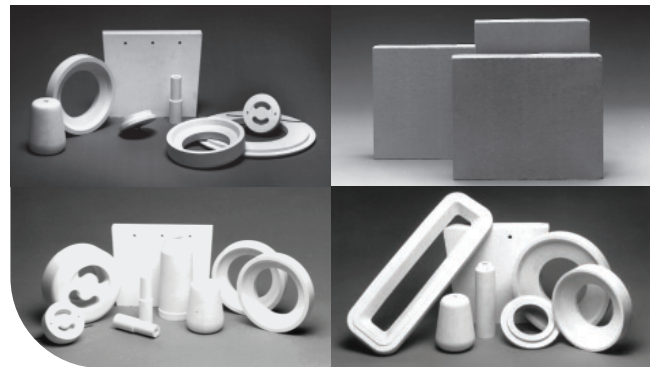
## REFRACTORY BOARD PRODUCTS (N-17, N-19, CS-1, N-600, N-14, B-3, B-3A)

### INSULATING BOARDS AND MACHINED COMPONENTS

Pyrotek offers several grades and types of technically advanced insulating refractory boards for molten metal applications. The carbon fibre reinforced calcium silicate boards available are N-17, N-19, CS-1 and N-600. The glass reinforced calcium silicate boards available are N-14, B-3 and B-3A. These refractory ceramic fibre free materials are available in sheets or as precision machined components. Pyrotek machine shops are equipped with CNC tooling equipment to produce components to customer specifications. Popular project application information for each type of board material can be provided by Pyrotek.

#### BENEFITS

- No refractory ceramic fibres (non-RCF)
- Low thermal conductivity
- Thermal shock resistant
- Non-wetting
- Excellent machining characteristics



#### APPLICATIONS

- Machined spouts (dip tubes)
- Billet / slab floats
- Continuous sheet caster tips
- Transition plates and headers
- Orifice plates for horizontal casters
- Trough liners
- Insulated riser inserts
- Continuous caster head boxes
- Molten metal dams
- Baffle plates
- Furnace linings





## REFRACTORY BOARD PRODUCTS

## PHYSICAL PROPERTIES

	N-17	N-19	CS-1	N-600	N-14	B-3	B-3A
Density—kg/m <sup>3</sup> (lb/ft <sup>3</sup> )	817 (51)	925 (58)	797 (50)	801 (50)	855 (53)	850 (53)	970 (61)
Loss On Ignition— (Maximum Percentage)	5.6%	6.8%	3.2%	3.8%	4.8%	5%	5%
Coefficient of Thermal Expansion— 10 <sup>-6</sup> /°C (10 <sup>-6</sup> /°F)	7 (3.9)	7 (3.9)	4.7 (2.72)	6.7 (3.72)	6.6 (3.67)	6.5 (3.61)	6.5 (3.61)
Maximum Service Temperature	850°C (1562°F)	850°C (1562°F)	850°C (1562°F)	850°C (1562°F)	850°C (1562°F)	850°C (1562°F)	1000°C (1832°F)
Continuous Service Temperature	850°C (1562°F)	850°C (1562°F)	850°C (1562°F)	850°C (1562°F)	850°C (1562°F)	850°C (1562°F)	1000°C (1832°F)
Compressive Strength— MPa (psi)	24 (3481)	24 (3481)	19 (2756)	19 (2756)	17 (2466)	18 (2611)	30 (4351)
Flexural Strength— MPa (psi)	8.8 (1276)	8.8 (1276)	7.3 (1059)	7.5 (1088)	8.8 (1276)	6 (870)	8 (1160)
Thermal Conductivity— W/m·K (BTU·in/ft <sup>2</sup> ·hr·°F)							
at 300°C (572°F)	0.18 (1.25)	0.22 (1.53)	0.19 (1.33)	0.19 (1.32)	0.20 (1.39)	0.25 (1.73)	0.26 (1.80)
at 500°C (932°F)	0.19 (1.32)	0.22 (1.53)	0.20 (1.39)	0.21 (1.46)	0.20 (1.39)	0.25 (1.73)	0.27 (1.87)
at 700°C (1292°F)	0.20 (1.39)	0.22 (1.53)	0.20 (1.39)	0.23 (1.59)	0.20 (1.39)	0.26 (1.80)	0.27 (1.87)
Board Dimensions— mm (in)	2550 x 1260 (100 x 49)	2550 x 1260 (100 x 49)	Machined shapes	2550 x 1260 (100 x 49)	2550 x 1260 (100 x 49)	2500 x 1200 (98.4 x 47.2)	2500 x 1200 (98.4 x 47.2)
Board Thickness— mm (in)	13, 19, 25, 29, 32, 38, 44, 51, 64, 76, 100 (0.5, 0.75, 1, 1.05, 1.25, 1.5, 1.75, 2, 2.5, 3, 4)	13, 19, 25, 29, 32, 38, 44, 51, 64, 76, 100 (0.5, 0.75, 1, 1.05, 1.25, 1.5, 1.75, 2, 2.5, 3, 4)	N/A	13, 19, 25, 29, 32, 38, 44, 51, 64, 76, 100 (0.5, 0.75, 1.0, 1.05, 1.25, 1.5, 1.75, 2, 2.5, 3, 4)	13, 19, 25, 29, 32, 38, 44, 51, 64, 76, 100 (0.5, 0.75, 1, 1.05, 1.25, 1.5, 1.75, 2, 2.5, 3, 4)	13, 19, 25, 38, 51, 76, 102 (0.5, 0.75, 1, 1.25, 1.5, 2, 3, 4)	13, 19, 25, 38, 51, 76, 102 (0.5, 0.75, 1, 1.25, 1.5, 2, 3, 4)
Thermal Shrinkage (Linear)—24 hours @ 750°C (1382°F)	0.38%	0.49%	0.05%	0.06%	0.40%	0.20%	0.10%

