

T-Cast® SAF Products

T-Cast® SAF Material Overview

T-Cast® SAF is Refractory Specialties Inc's all-alumina insulation material, specially designed for fuel cell applications. It uses high-purity alumina in a special process that minimizes silica content and ensures superb mechanical and chemical properties that allow it to survive reducing atmospheres which a majority of Solid Oxide Fuel Cell units employ. It is also useful wherever a robust high-temperature insulation is required. **T-Cast® SAF** has superb strength and mechanical properties, and the density is tightly controlled in three ranges. RSI's vast forming and machining capabilities allow **T-Cast® SAF** to be made in a variety of shapes, besides standard boards and blocks, and can be tailor made to customer required shapes and specifications. To answer any questions, or if you have special requirements that aren't covered by this product, call for our expert assistance at (330) 938-2101.

T-Cast® SAF Technical Information

<u>Property</u>	<u>AA-15 SAF</u>	<u>AA-30 SAF</u>	<u>AA-45 SAF</u>
Density	15 lb/ft ³	30 lb/ft ³	45 lb/ft ³
Modulus of Rupture (MOR)			
Supplied	100 lbs/in ²	250 lbs/in ²	750 lbs/in ²
After First Use	75 lbs/in ²	200 lbs/in ²	650 lbs/in ²
Compressive Strength (10% Compression)	5000 lbs/in ²	5000 lbs/in ²	5000 lbs/in ²
Maximum Continuous Use Temperature	2900° F	2900° F	2900° F
Maximum Intermittent Use Temperature	3000° F	3000° F	3000° F
Melting Point	> 3350° F	>3350° F	> 3350° F
Linear Shrinkage			
2900° F	5% Maximum	5% Maximum	5% Maximum
Thermal Conductivity			
500° F	0.41 Btu-in/hr/ft ² /°F	0.66 Btu-in/hr/ft ² /°F	1.12 Btu-in/hr/ft ² /°F
1000° F	0.61 Btu-in/hr/ft ² /°F	0.86 Btu-in/hr/ft ² /°F	1.43 Btu-in/hr/ft ² /°F
1500° F	0.92 Btu-in/hr/ft ² /°F	1.11 Btu-in/hr/ft ² /°F	1.61 Btu-in/hr/ft ² /°F
2000° F	1.31 Btu-in/hr/ft ² /°F	1.31 Btu-in/hr/ft ² /°F	2.04 Btu-in/hr/ft ² /°F
2500° F	1.81 Btu-in/hr/ft ² /°F	1.62 Btu-in/hr/ft ² /°F	2.53 Btu-in/hr/ft ² /°F
3000° F	2.04 Btu-in/hr/ft ² /°F	1.85 Btu-in/hr/ft ² /°F	3.05 Btu-in/hr/ft ² /°F
Typical Chemical Analysis (After Use)			
SiO ₂	3% (By Weight)	2% (By Weight)	Less Than 2%
Al ₂ O ₃	97% (By Weight)	98% (By Weight)	Greater than 98%

Other Information

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