

High Temperature Saffil® Rigiform™

Description

High temperature Saffil® Rigiform™ shapes and boards are manufactured from high alumina polycrystalline fibres blended with specially selected inorganic and organic binders to give rigid insulating shapes with exceptional characteristics. The vacuum forming manufacturing method permits considerable freedom to vary shape, thickness, density and hardness. High temperature Rigiform shapes and boards often provide the most economical answer to producing large quantities of parts in simple or complex configurations for a wide range of applications up to 1800°C.

General Characteristics

High temperature Rigiform shapes and boards have the following outstanding characteristics:

- High-temperature stability
- Low thermal conductivity
- Resistance to thermal shock
- Lightweight
- Complex shape capability

Typical Applications

- Laboratory furnaces
- Chamber furnaces
- Combustion chambers
- Burner blocks
- Dental furnaces
- Semiconductor process furnaces
- Ceramic sinter furnaces

Information on other applications available upon request. Any new and/or special use of these products, whether or not in an application listed in our literature, must be submitted to our technical department for their prior written approval.



High Temperature Saffil Rigiform Shapes and Boards

High temperature Saffil Rigiform shapes and boards contain a small percentage of organic binder plus inorganic hardening agents, resulting in products that display uniform hardness and density as well as exceptional handling strength. Our in-house machining facilities allow for precise finishing of shapes to customer requirements. Various formulations are available to cover a range of application temperatures and requirements. Further treatment is possible to increase hardness and remove organics prior to use. Pre-firing can be carried out between 800°C and 1100°C.

The following table summarises the special grades that are available.

Code	Special Grade
SH	Surface Hardening
DH	Deep Hardening
F	Pre-fired
CO	Coating

High Temperature Saffil® Rigiform™



Typical Product Parameters

High Temperature Saffil Rigiform	Saffil 160	Saffil 160 HD	Saffil 170 HD	Saffil 175	Saffil 175 HD	Saffil 180 HD
<i>Typical Chemical Analysis (wt. %) +/-10%</i>						
SiO ₂	10.0	10.0	21.0	20.0	15.0	15.0
Al ₂ O ₃	90.0	90.0	79.0	80.0	85.0	85.0
<i>Physical Properties</i>						
Colour	White	White	White	White	White	White
Product Density (kg/m ³)*	<350	350-500	350-500	<350	350-500	350-500
Use Limit (°C)*	1600	1600	1700	1750	1750	1800
Loss on ignition (wt.%)	<6.0	<6.0	<6.0	<6.0	<6.0	<6.0
<i>Thermal Conductivity (W/mK)</i>						
Mean Temp.						
600°C	0.13	0.13	—	—	—	—
800°C	0.16	0.16	0.21	0.18	0.22	0.22
1000°C	0.19	0.20	0.24	0.22	0.24	0.25
1200°C	0.23	0.24	0.28	0.26	0.28	0.29
1400°C	0.27	0.29	0.35	0.33	0.35	0.35
<i>Permanent Linear Shrinkage (%) 24 Hour Soak</i>						
1300°C	—	—	—	—	—	—
1400°C	—	—	—	—	—	—
1500°C	—	—	0.2	0.1	—	—
1600°C	<1.5	<1.5	0.2	0.15	0.15	0.1
1700°C	—	—	0.5	0.25	0.25	0.15

*Use limit refers to the maximum short-term temperature limit. The maximum continuous use limit for these products depends upon application conditions. For certain applications, continuous use temperature limits may be significantly reduced. For assistance or clarification, please contact your nearest Unifrax Engineering office.

Availability

High temperature Saffil Rigiform shapes and boards are engineered to specific customer requirements and are therefore made to order. Please contact your local Unifrax sales office to discuss your particular requirements.

Handling Information

A Safety Data Sheet has been issued describing the health, safety and environmental properties of this product, identifying the potential hazards and giving advice on handling precautions and emergency procedures. This must be consulted and fully understood before handling, storage or use.

The following are registered trademarks of Unifrax I LLC: Saffil and Rigiform.

Information contained in this publication is for illustrative purposes only and is not intended to create any contractual obligation. Further information and advice on specific details of the products described should be obtained in writing from a Unifrax Corporation company (Unifrax España, Unifrax France, Unifrax GmbH, Unifrax Italia, Unifrax Limited, Unifrax s.r.o.). Unifrax maintains a continuous programme of product development and reserves the right to change product specifications without prior notice. Therefore, it maintains at all times the responsibility of the customer to ensure that Unifrax materials are suitable for the particular purpose intended. Similarly, insofar as materials not manufactured nor supplied by Unifrax are used in conjunction with or instead of Unifrax materials, the customer should ensure that all technical data and other information relating to such materials has been obtained from the manufacturer or supplier. Unifrax accepts no liability arising from the use of such materials. All sales made by a Unifrax Corporation company are subject to that company's Terms and Conditions of Sale, copies of which are available on request.

Unifrax I LLC

European Sales & Marketing Headquarters
Unifrax Limited
Mill Lane, Rainford,
St. Helens, Merseyside
England, WA11 8LP
Telephone: +44 (0)1744 887600
Internet: www.unifrax.com
Email: info@unifrax.com

