

Product Information Sheet

Anchor-Loc® LT and LT Z Ceramic Fiber Modules

Description

The Anchor-Loc® module system is an established family of ceramic fiber module products designed to meet a wide range of application requirements in a variety of heat processing vessels.

Anchor-Loc LT and Anchor-Loc LT Z grade modules combine the performance features of the proven Anchor-Loc Module attachment systems with the utilization of new Fiberfrax® Durablanket® LT and Fiberfrax® Durablanket® LT Z ceramic fiber thermal insulation from Unifrax. Durablanket LT and Durablanket LT Z are the latest generation of proven Fiberfrax ceramic fiber technology. Durablanket LT and LT Z Blanket are manufactured using enhanced fiberization techniques combined with new proprietary processing technology. Durablanket LT is a 2400 °F grade thermal insulation. The temperature grade for Durablanket LT Z blanket is 2600 °F. The needed blankets are completely inorganic and retain their strength, flexibility and thermal properties in many working environments, without the generation of smoke or fumes.

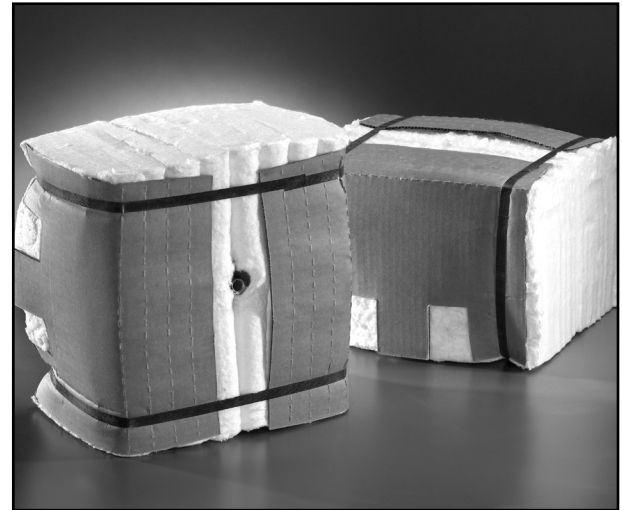
Each type of Anchor-Loc ceramic fiber module can be easily fastened to interior steel shells of all types of heat processing equipment with several different attachment systems. The ceramic fiber blanket is secured by two alloy tubes to a metallic module anchor. Flanges on the end of the tubes effectively lock the position of the tubes relative to the anchor at the time of installation.

Anchor-Loc ceramic fiber modules are manufactured in several configurations. A choice of attachment systems is provided to meet a wide range of application needs.

Weld-Loc® Ceramic Fiber Modules

A special weld assembly is installed in each Weld-Loc ceramic fiber module. This stud assembly permits fusion of the stud base to the furnace casing and allows a threaded fastener to be torqued on the stud, drawing the module to the casing plate. Advantages which are offered by the Weld-Loc module include:

- High installation speed
- Ease and simplicity of installation
- Permits random placement of modules on the casing
- Multiple welds per module are possible
- System provides a positive torque test of the welds



Thread-Loc® Ceramic Fiber Modules

Provided with an all-thread weld stud and flanged nut, the Thread Loc ceramic fiber module is designed for installation on a prepositioned stud pattern. The Thread Loc attachment system has several advantages:

- Compatibility with mastic coatings, backup insulation, and foil vapor barriers
- Module design compensates for variations in stud placement
- Access to the welded fastener for full testing before the module is installed

Anchor-Loc Module Applications

- Stress relieving furnaces
- Annealing furnaces
- Carbottom heat treating furnaces
- Process heaters
- Reheat furnaces
- Furnace, kiln and boiler linings
- Incineration equipment and stack linings
- Soaking pit covers
- Ladle covers
- Ladle preheaters
- Forge 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.

Anchor-Loc Modules are protected under U.S. patents #4,803,822 and 4,850,171.

Typical Product Properties

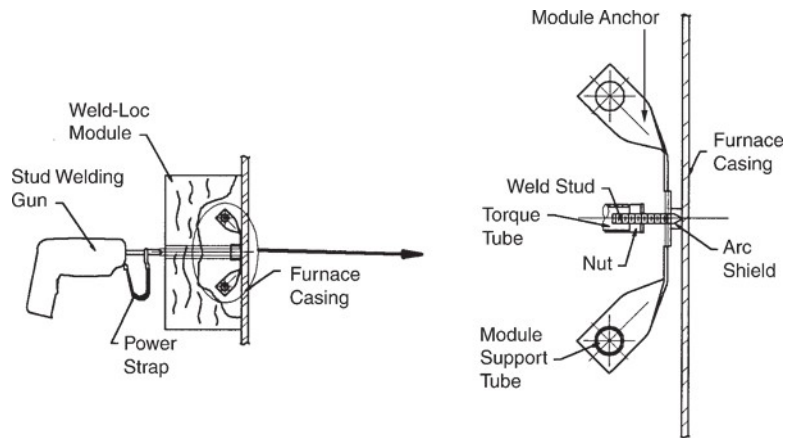
Module Type	Temperature Grade	Recommended Operating Temperature*
Anchor-Loc LT	2400 °F (1316°C)	2200 °F (1204 °C)
Anchor-Loc LT Z	2600 °F (1430 °C)	2450 °F (1343 °C)

Typical Product Parameters

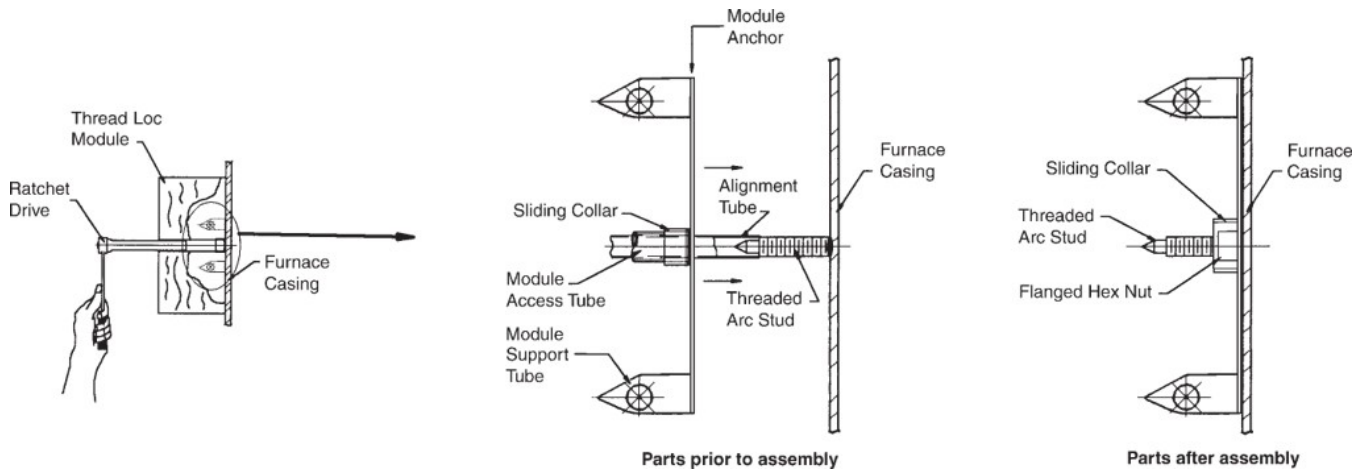
Available Anchor-Loc Ceramic Fiber Modules
 12" x 12" (305 x 305mm)
 12" x 6" (305 x 152.4mm)

Module Grade	Construction	Module Density
Anchor-Loc LT	Folded Durablanket LT	9.3 lb/ft ³ (149 kg/m ³) 12 lb/ft ³ (192 kg/m ³)
Anchor-Loc LT Z	Folded Durablanket LT Z	9.3 lb/ft ³ (149 kg/m ³) 12 lb/ft ³ (192 kg/m ³)

A. Weld-Loc® Attachment System



B. Thread-Loc® Attachment System



Typical Product Parameters

Fiberfrax		Anchor-Loc LT	Anchor-Loc LT Z
<i>Typical Chemical Analysis (wt. %)</i>			
Al ₂ O ₃		43.0 - 47.0	29.0 - 31.0
SiO ₂		53.0 - 57.0	53.0 - 55.0
ZrO ₂		----	15.0- 17.0
Na ₂ O ₃		<0.5	----
Leachable Chlorides		<10ppm	<10ppm
<i>Physical Properties</i>			
Color		White	White
Temperature Grade*		2400 °F (1316 °C)	2600 °F (1430 °C)
Recommended Operating Temperature		2200 °F (1204 °C)	2450 °F (1343 °C)
Melting Point		3200 °F(1760 °C)	3200 °F (1760 °C)
Specific Heat @1093 °C (2000 °F)		1130 J/kg °C	1130 J/kg °C
Speciifc Gravity		2.73 g/cm ²	2.73 g/cm ²
<i>Thermal Conductivity ASTM C-201</i>		Btu in/hr ft ² °F(W/mK)	
Mean Temperature		9.3 PCF (149 kg/m ³)	12 PCF (192 kg/m ³)
752 °F	400 °C	0.75 (0.109)	0.68 (0.098)
1112 °F	600 °C	0.94 (0.136)	0.84 (0.120)
1472 °F	800 °C	1.16 (0.167)	0.97 (0.139)
1832 °F	1000 °C	1.48 (0.213)	1.21 (0.174)
2192 °F	1200 °C	1.88 (0.271)	1.48 (0.213)

*The maximum continuous use limit temperature for these products depends upon operating and application conditions, and also the engineered design of the insulation lining. For additional information and support regarding product performance or to identify the recommended product for your application, please contact your nearest Unifrax Application Engineering office.

Thermal conductivity data is the same for both Anchor-Loc LT and Anchor-Loc LT Z grades.

Data are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes.



Handling Information

A Safety Data Sheet (SDS) 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.

Information contained in this publication is for illustrative purposes only and is not intended to create any contractual obligation. The following are registered trademarks of Unifrax: Fiberfrax® and Durablanket®

The test data shown are average results of tests conducted under standard procedures and are subject to variation. Results should not be used for specification purposes.

Product Information Sheets are periodically updated by Unifrax. Before relying on any data or other information in this Product Information Sheet, you should confirm that it is still current and has not been superseded. A Product Information Sheet that has been superseded may contain incorrect, obsolete and/or irrelevant data and other information.

Unifrax I LLC
Corporate Headquarters
600 Riverwalk Parkway
Suite 120
Tonawanda, NY 14150 USA
Telephone: 716-768-6500
Internet: www.unifrax.com
Email: info@unifrax.com

The logo for Fiberfrax, featuring the word "Fiberfrax" in a bold, blue, sans-serif font with a registered trademark symbol (®) to the upper right.

Unifrax I LLC
European Sales &
Marketing Headquarters
Unifrax Limited
Mill Lane, Rainford,
St. Helens, Merseyside
England, WA11 8LP
Telephone: +44 (0)1744 887600