

Superwool® HT™ Z-Blok™ Modules

06/2016



Type

Convoluted anchored modules made from high temperature insulation wool.

Classification Temperature

1300°C (EN 1094-1)

The maximum continuous use temperature depends on the application. Please contact Morgan Thermal Ceramics for advice.

Features

The Superwool® HT™ Z-Blok™ module offers several advantages to both the furnace constructor and the enduser.

- The Superwool® HT™ Z-Blok™ module maintains the light weight, thermal efficiency and resistance to thermal shock characteristics of ceramic fibre linings.
- The decompression of the blanket folds gives tightly sealed inter-modular joints.

Description

Superwool® HT™ Z-Blok™ are convoluted blanket modules which combine the excellent thermal characteristics and proven service performance of Morgan Thermal Ceramics' Z-Bloks™ with the ease of installation and versatility of the T-Bar anchoring system.

They are made from spun-fibre blanket, folded and recompressed to a specified density, and held in position with 2 stainless steel tubes (standard tubes are ASTM 316 stainless steel, higher grade of steel - ASTM 310 is available for more arduous services conditions), mounted transversely within the module.

The modules are supplied encapsulated in plastic film, which ensures dust levels are kept to a minimum during installation.

During installation, the modules are further compressed, the resilience of the fibre and recovery after the restraining bands are removed ensuring tightly compressed inter-modular joints.

- The resilience of the blanket can accommodate some flexing of the furnace casing without opening gaps between modules.
- The unique T-Bar fixing system is exceptionally simple and quick to install.
- Where damage occurs, individual modules can be easily replaced.

SUPERWOOL® is a patented technology for high temperature insulation wools which have been developed to have a low bio persistence (information upon request). This product may be covered by one or more of the following patents, or their foreign equivalents:- SUPERWOOL® PLUS™ products are covered by patent numbers:- US5714421, US5994247, US6180546, US7259118, and EP0621858. SUPERWOOL® 607HT™ products are covered by patent numbers:- US5955389, US6180546, US7259118, US7470641, US7651965, US7875566, EP0710628, EP1544177, and EP1725503. A list of foreign patent numbers is available upon request to The Morgan Crucible Company plc.

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Superwool® HT™ Z-Blok™ Modules

06/2016

- The anchor system is buried inside the module and close to the casing. The metal components are therefore maintained at low temperature.
- The ASTM 316 stainless steel has a high corrosion resistance and maintains its creep strength to a relatively high temperature.
- The system ensures that the fibre is pulled back into intimate contact with the furnace casing or any substrate with no bridging of irregularities, thus eliminating convective heat transfer behind the lining.
- The system readily adapts to include vapour barriers and backing blankets.
- Exonerated from any carcinogenic classification under nota Q of directive 97/69 EC.

Main properties

Classification temperature	°C	1300
Typical Properties Measured at Ambient Conditions (23°C/50% RH)		
Colour		white
Density	kg/m3	160, 192
High Temperature Performance		
Specific heat capacity at 1090°C	%	< 0.25

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06/2016

Thermal conductivity (ASTM-C201) at mean temperature of:

	160kg/m ³
400°C W/m.K	0.06
600°C W/m.K	0.12
800°C W/m.K	0.22
1000°C W/m.K	0.36
1200°C W/m.K	0.56

Fixing Components

The studs and nuts are M6 threaded in ASTM 304 stainless steel, unless otherwise specified by the customer. The standard T-Bar yokes are in ASTM 316 stainless steel, but higher grade of steel (ASTM 310 - upon request subject to quantity) is available for more arduous service conditions.

Dimensions and Availability

The modules as normally supplied are 305mm square and of thicknesses of 200 and 250mm. T-Bar yokes, studs and nuts are supplied as separate items, to be included in an order. It is recommended that the order includes sufficient spare studs to cater for setting-up the welding conditions and allow for any mis-fires.

Packaging

Superwool® HT™ Z-Blok™ are packed in cartons or on pallets which are shrink wrapped.

Installation

Full details of the recommended technique for installing Thermal Ceramics modules are included in our Module Installation Manual.

The values given herein are typical values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Therefore, the data contained herein should not be used for specification purposes. Check with your Thermal Ceramics office to obtain current information.

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