

## UNIFRAX APPLICATION STORY



**Product Solutions:** Saffil M-Fil Modules  
**Industry:** Gas producer  
**Applications:** Test furnace  
**Scope:** Lining for roofs, walls and floor

NOVEMBER 2018

### Business Challenge

The end user are part of a group that manufactures and supply a range of industrial gases. These gases include oxygen, nitrogen, argon, carbon dioxide, hydrogen, helium, inert welding gases, special gases, gases for medicinal use and a wide variety of gas mixtures.

They are also involved in the development of high efficiency, energy saving burner systems. At this production facility they required a replacement lining for their test furnace to be used for the testing of a variety of burner types. This offers a range of operating conditions within the furnace, such as temperature, atmosphere and gas velocity.

Unifrax were asked to design a high temperature, low thermal mass lining for this furnace. The lining was required to insulate the roof, walls, door and the floor sections.

### Application

The lining was designed and engineered based on the use of Saffil grade M-Fil Modules (130 kg/m<sup>3</sup> density). The modules were fixed to the casing using M8 threaded stainless steel (grade 304) studs welded to the casing on a predetermined pattern. The internal anchor system employed for these modules was the RX2 system (in grade 310 stainless steel). This is a side fixing based system, one of the standards for Unifrax. Upon completion of the installation the side plates where removed allowing the modules to expand, forming a lining of uniform construction and finished density.

**“Unifrax provided on-site practical support during the installation of the lining.”**



*Furnace side and end wall lining during installation of 200mm thick modules.*

### **Solution**

Lining configuration was uni-directional with single blanket battens of Fibermax Blanket installed between rows of modules. Blanket was supplied at 25 and 13mm thick and compressed down to 18 or 9mm respectively, during installation.

In addition to the lining design and engineering, including stud layout and lining installation drawings, Unifrax provided on-site practical support during the installation of the lining.

The furnace dimensions are 2706mm long, 1662mm wide and 1662mm high.

### **Customer Advantages**

A summary of the advantages and benefits that were obtained by this engineered furnace lining solution can be summarised as follows.

- High Temperature Stability
- Low thermal conductivity
- Ease of installation
- Low heat storage
- Energy saving
- Engineered solution
- Lightweight



### **About Unifrax**

Unifrax is a global leader in high-performance specialty products used by many industries in a diverse group of industrial applications. Our products provide substantial improvement in thermal performance, save thousands of dollars in energy costs and can help reduce your operations environmental footprint.

### **Contact Us**

To learn more about Unifrax Thermal Management Solutions, contact your Unifrax sales representative or the Unifrax Application Engineering Group in your region:

North America: +1 716 768 6460  
Brazil: +55 19 3322-8000  
Europe: +44 (0) 1744 88 76 00  
India: +91 22 2921 2200  
Asia: +86 533 3288764



*Furnace door lining during installation.*

Form OT- 002 EN  
© 2018 Unifrax I LLC  
All Rights Reserved