



Requirements of modern
furnace linings
up to 1800 °C

M.E. SCHUPP Industriekeramik GmbH

Neuhausstr. 4-10 | 52078 Aachen/Germany

+49 (0) 241-93677-0 | info@schupp-ceramics.com

www.schupp-ceramics.com

Requirements of modern furnace linings up to 1800 °C

Nowadays furnaces can be used up to 1800 °C thanks to modern insulation materials. The evaporations from the fired materials, the atmosphere and the frequency of use can stress the insulation. Cracks, spallings and discolorations are typical appearances. As a result, a

repair or a new furnace lining is necessary to prevent further damages to the furnace and to ensure an optimal function of the furnace. It also offers the opportunity to substitute refractory ceramic fibres (RCF) with polycrystalline mullite/alumina wool (PCW).

Foto: Robert Wieszorek

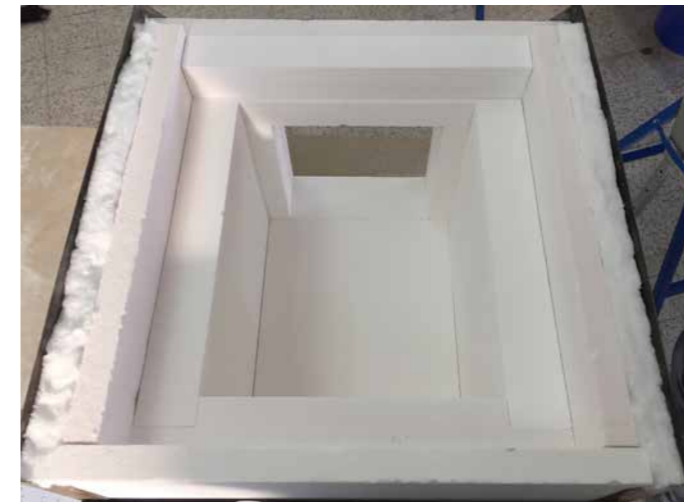
METHOD FOR BUILDING-UP A FURNACE INSULATION



For furnaces, like e.g. 16 liters or more and depending on the application, the insulation lining at SCHUPP® Ceramics takes place according to the so-called **stack-bond** method.

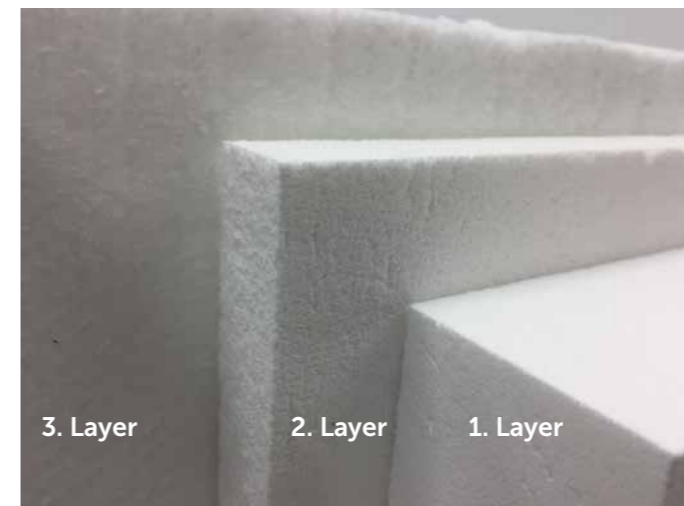
For this purpose, smaller stripes are simply stacked on top of each other to prevent cracking due to thermal strains in the insulation, increasing the service life of the furnace.

CONSTRUCTION OF A HIGH-TEMPERATURE INSULATION WITH 3 LAYERS



In addition to the suitable insulation material, the construction of the insulation is also important and decides on the lifetime of the furnace lining.

Depending on the application temperature, it makes sense to build the furnace lining from several successive layers. In general three layers are built of different materials.



1. Layer: Hot-face with high-temperature boards like e.g. UltraBoard 1850-400 or UltraBoard 1750-400P made of polycrystalline mullite/alumina wool (PCW)

2. Layer: Back-up insulation with UltraBoard 1600-400 or UltraBoard 1500-300 made of PCW

3. Layer: Back-up insulation e.g. with ITM-Fibermax® blanket 1600-130 made of PCW

Thanks to the several insulation layers the various material qualities can be used and the costs can be saved. We, at SCHUPP® Ceramics, pre-fire the insulation boards before processing. As a result, the shrinkage is lower and there is no unpleasant odour when first using the furnace with the new lining.

SERVICES THAT WE TAKE OVER FOR YOU.

We are happy to take over the following services for you at our premises in Aachen/Germany:

- ✓ Removal and disposal of the old insulation,
- ✓ Partial or full insulation lining of your furnace with or without new MolyCom® heating elements made of molybdenum disilicide (MoSi_2),
- ✓ In addition to standard cuttings we also realise complex geometries such as cylinders or insulation plugs.

Our services do not include electrical or metal work and the maintenance of a furnace on-site.

Please do not hesitate to contact us for further information.

We are looking forward to receiving your inquiry regarding the relining of your high-temperature furnace.

M.E. SCHUPP Industriekeramik GmbH

Neuhausstr. 4-10 | 52078 Aachen/Germany
+49 (0) 241-93677-0 | info@schupp-ceramics.com
www.schupp-ceramics.com

HEATING | INSULATION | MEASURING