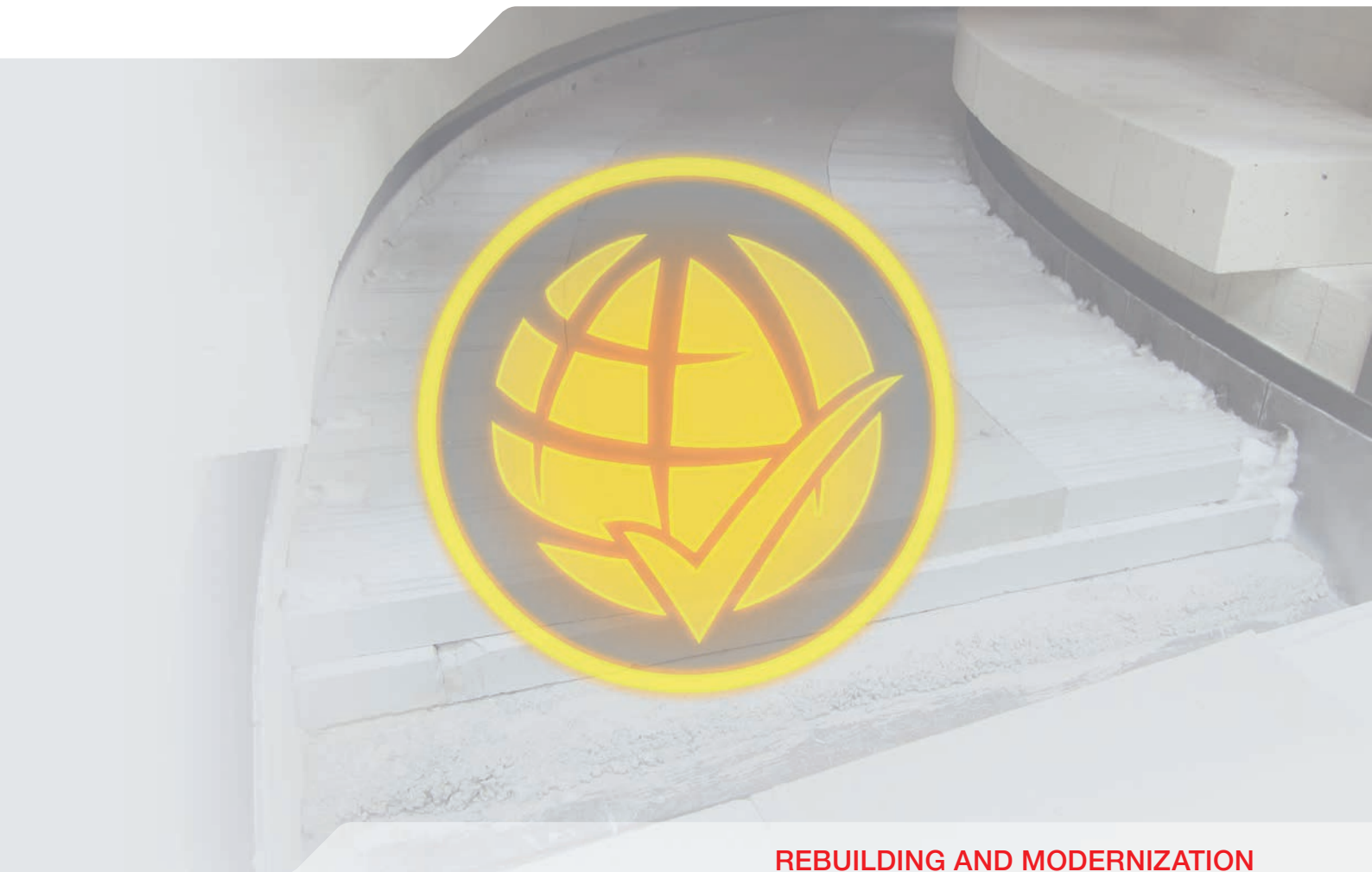


Optimized Insulation of the Furnace Plants

All furnace types for thermochemical heat treatment can optionally be equipped with fire-proofing insulation



REBUILDING AND MODERNIZATION

Performance optimization + process reliability + energy efficiency

EXISTING INSULATION OF A FURNACE PLANT

- Over the years, the furnace insulation becomes **worn** due to
 - **Thermochemical** stress (temperature and furnace atmosphere)
 - **Mechanical** stress (wear due to motion)
- The biggest stress: **Cooling and reheating** the plants due to maintenance and repairs
- Maximum extension of the insulation service life to 10 to 15 years through targeted temporary repairs, after which the entire insulation must be replaced.
- What is affected: All plants and types of applications with fireproof insulation

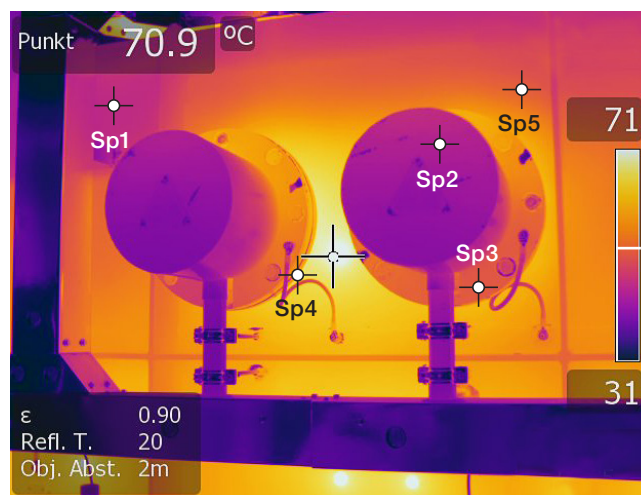
THE AICHELIN PROCEDURE: THE PATH TO YOUR INDIVIDUALLY OPTIMIZED INSULATION

Decades of **expertise** with respect to insulating thermochemical heat treatment plants allows us to offer **all related services**. To optimize your insulation, we would suggest the following approach:

- **Test** the **existing design** of the insulation
- Test the **materials used** for the insulation

Check design
and material

- **Document**
the actual temperatures using
thermal imaging cameras before
optimizing



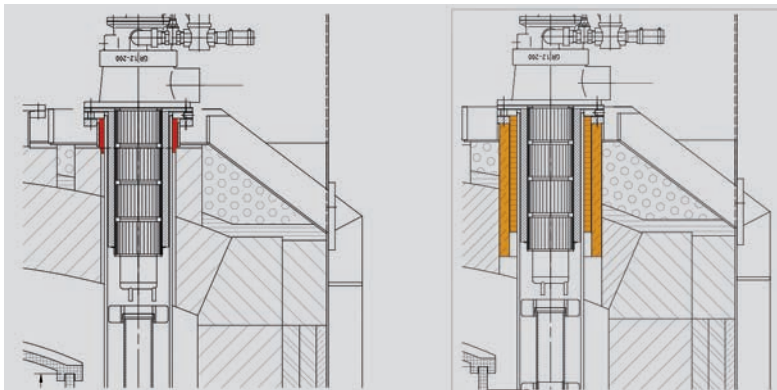
	Temperature difference in °C old/new insulation	Energy savings
Measuring location Sp 1	18.3	21 %
Measuring location Sp 2	5.2	7 %
Measuring location Sp 3	7	9 %
Measuring location Sp 4	40	26 %
Measuring location Sp 5	2.7	3 %

Plant
analysis

- Test and calculate various **materials** and **material combinations** for an **optimized insulation design**

Material
selection

- Discussion with the customer about the **various optimization options**
- Creation of an **individual offer** that is tailored to your needs and ready to order



Example of a flange optimization of burner feed-throughs

Optimization
suggestions

- Design of the improved insulation by your competent engineering partner AICHELIN

Engineering

- **Demolition** of worn insulation, core removal of the furnace plant according to your requirements



Removal of the
existing
insulation

- **Installation of the new insulation** based on the drawings that have been drafted by our experts during the engineering phase – **precisely according to your requirements**

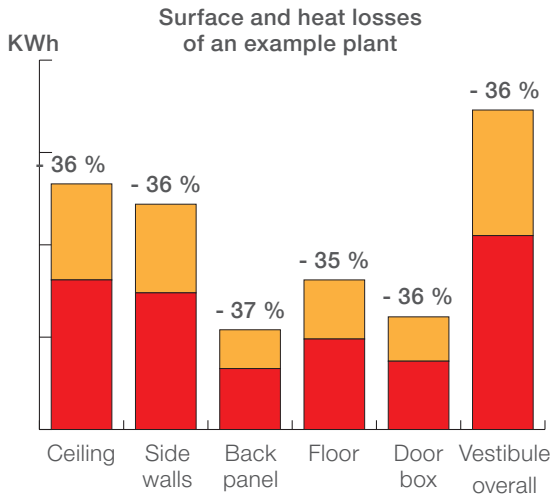


Installation
of new
insulation

YOUR ADVANTAGES

You can select any of the individual services or the AICHELIN total package - everything from a single source! Thanks to our expertise, we can offer you tailor-made solutions and would be glad to advise you in all matters. This results in the following advantages for you:

- **Customized solutions from a single source**
- Use of **high-quality materials**
- Up to **40% decrease in heat loss**, significant energy savings in your plant
- **Improved plant availability**
- **Higher process reliability**
- **Predictable** time and duration of **furnace downtime** thanks to clearly scheduled work
- **Predictable costs** and a **single point of contact**, because all services are provided by a single source



The illustration shows the savings potential of an example plant with respect to the different areas. **Reduction of wall losses up to 37%** are possible with this plant, for example.

YOUR RELIABLE PARTNER

- **Competent engineering partner**
- **Reliable supplier of components**
- **High level of expertise** in plant modernization
- **Experienced market leader** both for AICHELIN plants and third party plants
- **Decades of expertise** in insulating furnaces for thermochemical heat treatment