

# LIFETIME AND REFERENCES

40 years of energy saving

**Thermal-Acoustic Insulation**



# A good product can be recognised by the long-term preservation of its quality

## THE PROJECT AND THE DURATION REQUIREMENT

In all projects of the insulation and construction sectors, a guarantee of the product used is requested, and this presupposes a measure/technical evaluation of its characteristics over time.

Legal regulations attempt to approach reality by describing this behavior through laboratory measurements by mathematic extrapolations of the measured value, or through simulations by submitting the material to accelerated ageing, in extreme conditions of temperature, and/or pressure.

They are necessary to support provisional calculations, especially in the absence of real data, when, in terms of application, product and legal regulations they are only in the initial stage.

However we should consider that they are based on conventional and mediated choices, and the real situation could be, case by case, slightly different.

Furthermore, they do not take into account installation, which significantly influence the performances of the final application, both after installation and long-term.

As we all know, on-site verifications are becoming more and more frequent, also spurred by modern laws and regulations.

This is an important step ahead toward the **verification of the application's real performance, and also makes it possible to obtain information about its life and that of its components** (by conveniently separating the contribution of the components: materials, type of structure and installation quality).

We, as producers, feel involved in this activity, with the intention of supplying the best technical support to our customers and designers, also because we are convinced that a **good product can be seen in the preservation of its qualities through time.**

Like a good wine, for instance.



An example for all:

### 1985 – Heating station insulated with Trocellen.

Twenty-three years ago Italkalor insulated the heating station of the hothouses of cooperative company "L'Ortofrutticola" of Albenga (Savona) by a plumber of Borghetto S. Spirito.

The zone's agent and technical assistance supervised all the stages, starting from the choice of the most suitable product through to installation. After performing its duty for 20 years, the activity of the heating station was stopped.

We had learned that it was possible to verify the quality of the insulation, still present in the system before complete putting out of service. We therefore went there to make an on-site inspection.

# Trocellen VINTAGE

We are involved in many projects on an international scale too and this enables us to know many applications and make best use our experience in support of experimental measures.

In the insulation and building sectors, these activities have developed in over 30 years, especially thanks to companies better known with the name Italkalor, Weiss Industriale, HT and Polifoam.

We can therefore affirm that some types of **TROCELLEN** products have exceeded 10 years of life in different situations: underground as an acoustic anti-vibration element for city tram lines; or in the extreme conditions of the desert or of Siberia, as a water shield in car doors.

But how can we demonstrate that it has been used for more than 30 years to insulate air duct and pipes to help the energy saving?

Information on the life of our products is almost always obtained from the feedback of our custom.

**Here an example:**

**THE PRODUCT USED WAS TROCELLEN AL CL1 UP TO 50 mm THICKNESS**

**1985**

The metal finish, to make the surface scratch resistant, enhances the overall look and the brightness of the room. What the eyes see is also important!



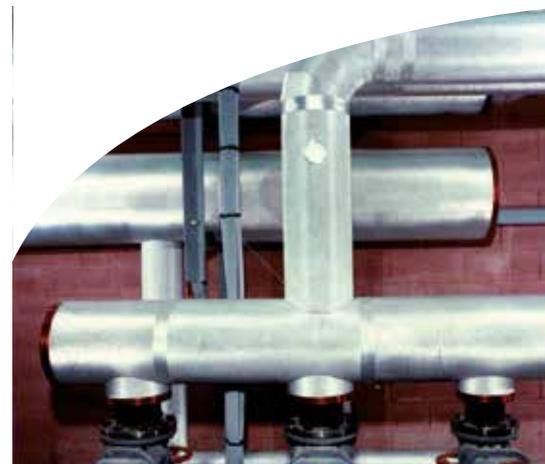
The general view shows clean, well-organized work performed by professionals, respecting the system insulation rules.

Even though today more attention would be given to valve insulation.

**23 YEARS LATER**

The insulation and finishes are still in place and able to perform their function.

A surface in good condition without any cracks despite time and dust.



The current condition of the system shows that the insulation was able to significantly exceed 23 years of effective use. However the appearance could deceive.

We therefore wanted to verify, in the laboratory, the thermal conductivity of the 23-years old product, comparing the data with those measured with the internal method and with instrumentation already in use in 1983.

The value has not changed: **this measurement is the effective proof of the long life of our product.**

PROPERTY	UNIT	1983	2008
Thermal Conductivity	W/mk	0,0394	0,0394

**Here's another example:**

We're talking about another laboratory analysis performed at FIW in Munich in 2003, on a three-years-old foam of our German plant, which had obtained the same lambda value as that when it was produced.

**EXTRACT OF THE CERTIFICATE HT TROPLAST AG - 20.5.03**

"Based on the request of the market we investigate the change of the heat conductance additional by an independent Laboratory the FIW (München, Germany). The measurements were made in accordante to DIN 52 616.

We have tested a TROCELLEN RD 30 W3C F4 B1 in grey, 26mm. The first set of tests were done in september 1999. After the test the sample was stored indoor for 3,5 years. Then the same sample was tested twice at both laboratories again.

The thikness has been changed about 2% or 0,5mm. The mass has been changed by 1% or 2g. So here no relevant changes of the product can be found.

The scattering within the measuring of the different labs and the precision of the measuring is smaller than 5%.

So the effect of ageing within 3,5 years is clearly smaller than the precision of the determination of the heat conductance. So pratically no ageing or change of the heat conductance can be found."

## CONCLUSION

The above mentioned data supports the technical motives of the durability of **TROCELLEN** products, and enhances their application, ensuring the energy saving is in line with the project's goals.



# Trocellen application references

## HOTELLERIE/LEISURE

Albergo Vittoria - Sorrento (Italy)  
Hotel Italia / NH Hotels - Timisoara (Romania)  
Health Spa - Podhájská (Slovakia)  
Tartálypark - Orosháza (Hungary)

## THEATRES

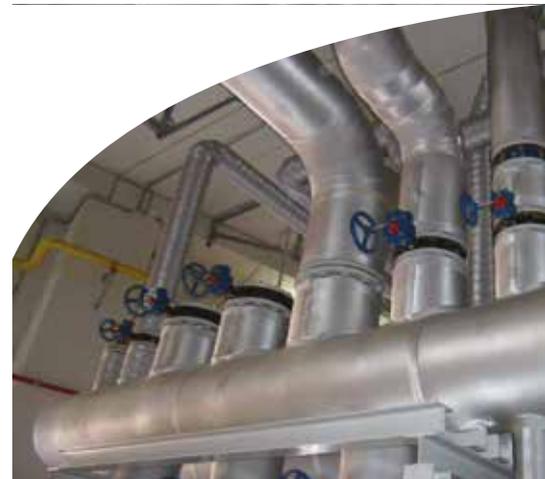
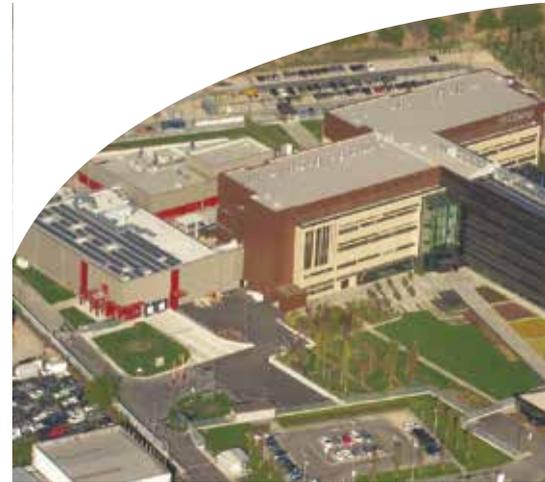
National Theatre of Bucarest (Romania)

## COMMERCIAL

Mall "Il Castello" - Ferrara (Italy)  
Agrobusiness Center - Bologna (Italy)  
Ipermarket "Lando" Warehouses, stores of Mira and Rosolina (Italy)  
Mall "La Fattoria" - Rovigo (Italy)  
Mall "Smart" - Galliera Veneta (Italy)  
Shoes Center "Pittarello" - Vienna (Austria)  
Tacconi Sport (Sport Store) - Marcon (Italy)  
Supermarket "Do-Gal" - Scorze' (Italy)  
Stores "Coop" of Cascina, Lastra a Signa and Perugia (Italy)  
Mall "Le Vele" - Soverato (Italy)  
Mall "A.Z." - Catanzaro (Italy)  
Plodine Mega-Market - many stores in Croatia  
Mall - Bratislava (Slovakia)  
Mall "Polus Constanta" - Constanta (Romania)  
Mall "Polus Brasov" - Brasov (Romania)  
Mall "Esplanada" - Bucarest (Romania)  
Shopping Complex - Poznan (Poland)  
Mall "Bonarka" - Krakow (Poland)  
Mall "Luxus Áruház" - Budapest (Hungary)

## HOSPITAL

Hospital "Bel Colle" - Viterbo (Italy)  
Oncological Hospital "S. Raffaele" - Rome (Italy)  
New "Polo Ospedaliero" - S. Bonifacio (Italy)  
Hospital "S. Camillo" - Rome (Italy)  
Hospital "Madonna Delle Grazie" - Matera (Italy)  
Hospital "Di S. Giovanni Rotondo" - Foggia (Italy)  
Civilian Hospital of Cassino - Frosinone (Italy)  
Civilian Hospital of Caserta, Heart Surgery Dept. (Italy)  
Clinic "Villa Serena" - Catanzaro (Italy)  
Ext. Civilian Hospital of Avellino (Italy)  
Hospital of Varese "Opera Macchi" (Italy)  
F.I.R.C. Institut, Italian Federation of Cancer Research - Milan (Italy)  
Hospital "Careggi" - Firenze (Italy)  
Hospital "Unico" of Todi - Marsciano (Italy)  
Hospital of Pisa (Italy)  
Hospital of Deva (Romania)  
Hospital of Pécs (Hungary)



Chiesi Project, Italy

## INDUSTRIAL

Pharmaceutical Industry (Ex Ciba Geigy) "Novartis" - Torre Annunziata (Italy)

"Benetton" Industry, Plant of Castrette di Ponzano (Italy)

Food Industry "Rovagnati" - Villasanta (Italy)

Pharmaceutical Industry "Astra Zeneca" - Caponago (Italy)

Industry "Bosch", Plant of Bari (Italy)

D.S.M. - Capua (Italy)

"Chiesi Farmaceutica" Research Center - Parma (Italy)

"Hangkok" Plant - Dunaújváros (Hungary)

"Sote II" Plant - Budapest (Hungary)

"Ge Electric" Plant - Budapest (Hungary)

## MILITARY

"Base Aereonavale Nato" - Sigonella (Italy)

"Base Aerea Nato" - Aviano (Italy)

"Pratica di Mare" Airport - Rome (Italy)

"Amendola" Military Airport - Foggia (Italy)

## OFFICES

New "Monte Dei Paschi" Bank Offices - Siena (Italy)

Financial Offices 2000 - Cosenza (Italy)

Department of Motor Vehicles Offices - Rome (Italy)

Origo Film Studio - Budapest (Hungary)

Offices "Bonarka 4 Business" - Krakow (Poland)

## SCHOLASTIC

University of Parma, "Facoltà di Economia E Commercio" (Italy)

University of Napoli, "Facoltà di Ingegneria" (Italy)

University of Palermo, "Facoltà di Architettura" (Italy)

Biomedical Campus of Trigatoria - Rome (Italy)

## RESIDENTIAL

Burj Khalifa - Dubai (Uae)

Condominium "Daimler Mercedes" - Kecskemét (Hungary)

Condominium "Villa Nova" - Spišská Nová Ves (Slovakia)



### Burj Khalifa

Burj Khalifa is a skyscraper in Dubai, United Arab Emirates, and is one of the tallest man-made structure in the world having 829.8 m height and 163 floors.

Trocellen was providing the construction with advanced and long lasting HVAC solutions.

# INTERNATIONAL LOCATIONS

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## TROCELLEN\*

Trocellen is a multinational company owned by Furukawa Electric Co. Ltd, internationally renowned for the design and manufacture of cross-linked polyolefin foam.

Through its different Business Units, the company is able to meet the specific needs of the market with a wide range of products and solutions.

It manufactures both semi-finished and finished products. The Trocellen products stand out for their manufacturing processes and the many industrial sectors in which they can be used: Insulation, automotive, footwear, sport and leisure, adhesive tapes and packaging. Trocellen makes safety a lifestyle and turns safety into a lifestyle.

### Insulation Business Unit

The Insulation Business Unit mainly specialises in Sound and Thermal insulation for the building industry. The goal is to create comfortable environments for people or rather to "help people live better!".

\*Trocellen is the member of Furukawa Group.



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