



Long-term measurement after 13 years

Fixit 222 Aerogel High-performance insulating plaster



**EVEN AFTER 13 YEARS
THE FACADE IS STILL IN VERY GOOD CONDITION
AND SHOWS NO SIGNS OF DAMAGE**

EXPERIMENTAL SETUP FOR LONG-TERM MEASUREMENT

In 2012, at the start of the development of aerogel insulating plaster, a terraced house in Winterthur subject to special building regulations underwent energy-efficiency refurbishment. Fixit 222 aerogel, with a thickness of 5 cm, was used for this project. Temperature and humidity sensors were installed on the original wall surface in order to document the long-term performance of the Fixit 222 Aerogel.

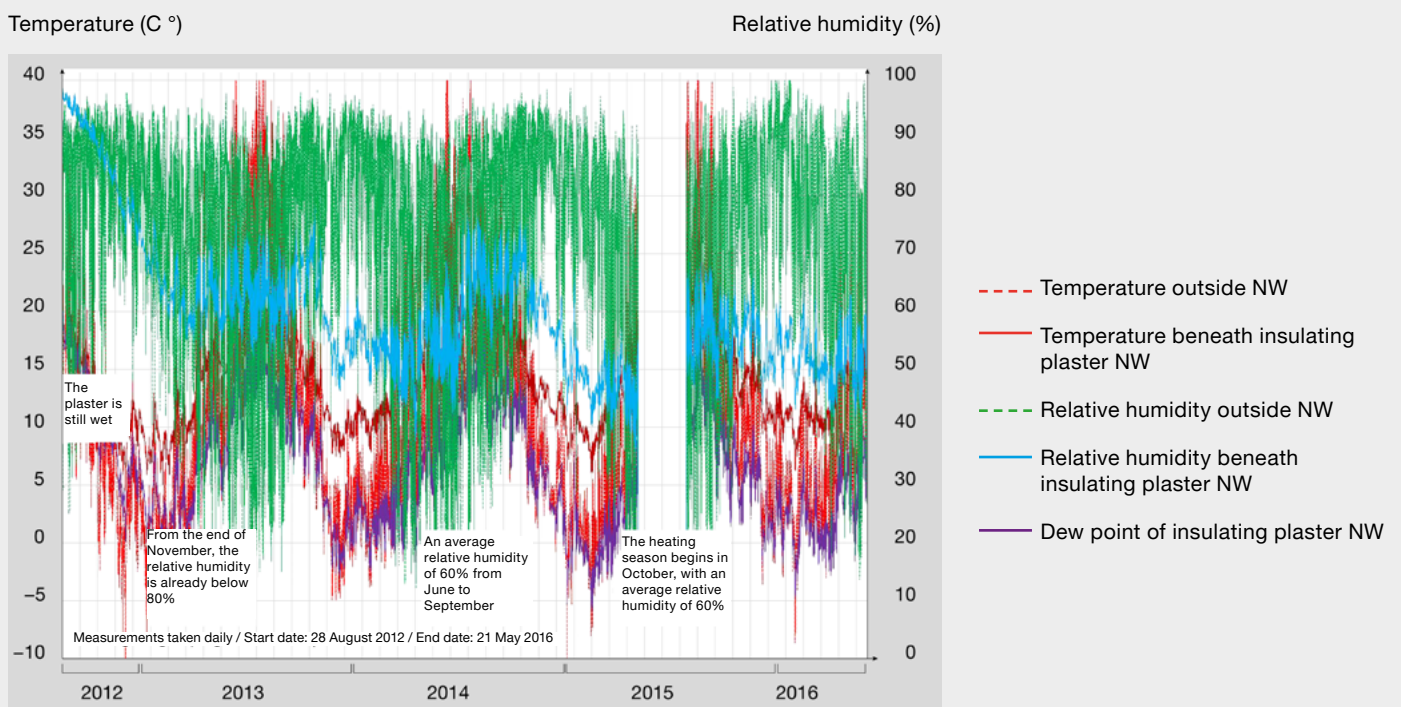
Sensors were installed on the sunny south-east façade and the shaded north-west side of the terraced house, and measurements were taken over a period of four years. As the product was a new innovation, its hygro-thermal behaviour in practical use was not yet known. Long-term monitoring was employed to obtain reliable data.

The temperatures of the outside air and beneath the insulating plaster on the masonry, as well as the corresponding relative humidity, were measured.

Following application at the end of August 2012, the

insulating plaster dried rapidly, so that the relative humidity beneath the insulating plaster was already below 80 % by the end of November 2012. By the second winter, the system had reached a steady state and the relative humidity was between 50 and 60%. The temperature difference between the outside air and the masonry averages between 6 and 8 °C during the winter months. The dew point temperature beneath the insulating plaster was never exceeded once the system had reached a steady state.

In simple terms: it remains warm and dry beneath the insulating render.



CONDITION AFTER 13 YEARS

NO VOIDS OR FLAKING

After 13 years, the façade was inspected once again. In March 2023, both façades were examined for any defects or damage. On the south-west side, the render was found to be in very good condition. The trowel finish and the mineral coating showed no signs of damage, such as hollow spots or flaking.



NORTH-WEST SIDE

The north-west side, too, was in very good condition after more than 10 years, with no damage. This was the side of the façade that was almost always completely in the shade and was exposed to precipitation (splash water). Even this heavily weathered area showed no visible damage.



FROM 25 MARCH TO 27 APRIL 2023

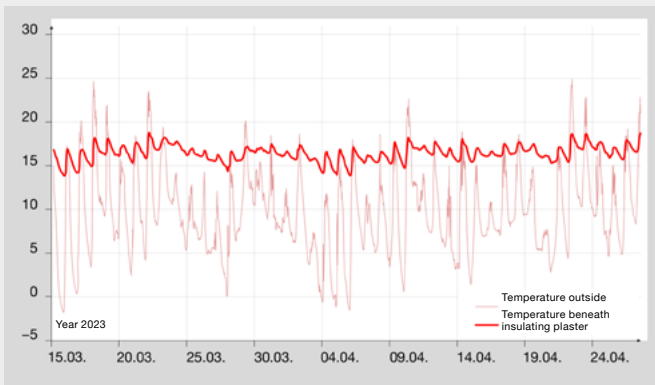
MEASUREMENT REPEATED AFTER 10 YEARS

From 25 March to 27 April 2023, the sensors installed in the south-east façade were reactivated. Beneath the Fixit 222 aerogel, the average temperature is 16 °C, which is approximately 8 to 10 °C warmer than the outside air temperature.

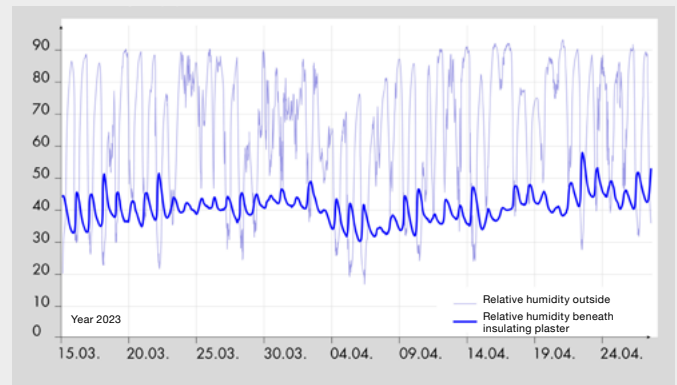
The relative humidity beneath the insulating plaster averaged 40%. This confirmed the measurements taken between 2012 and 2016.

From a building physics perspective, the situation is entirely unproblematic, as it remains warm and dry beneath the Fixit 222 Aerogel!

Temperature (C °)



Relative humidity (%)



SOUTH-EAST FACADE



Thermographic images were also taken of the south-east façade. These clearly show the insulating properties of Fixit 222 Aerogel.

The two neighbouring houses to the left and right have significantly higher heat loss, which is evident from their higher surface temperatures. (red areas)

INTERVIEW WITH THE CLIENT

WHY CHOOSE FIXIT 222 AEROGEL HIGH-PERFORMANCE INSULATING PLASTER OF ALL THINGS?

What do the property owners have to say? On 30 April 2023, an interview was conducted with Mr and Mrs Bretscher about their experiences with the high-performance aerogel insulating plaster. The key points are summarised below.

Why choose Fixit 222 Aerogel high-performance insulating plaster of all things, and not some other insulation material?

We were not permitted to apply more than 6 cm of insulating on the side facing the two neighbouring terraced houses. Using Fixit 222 Aerogel high-performance insulating plaster, we achieved better insulation than with conventional insulating plasters. We accepted the additional costs of approximately CHF 10,000 predicted by the architect. In the final invoice, the additional costs turned out to be far lower.

After more than 10 years, are you still convinced and satisfied with the façade?

Yes, the indoor climate is very good. The façade is also in good condition, despite the heavy trowel-applied finish coat and exposure to the elements.

Would you recommend the Fixit 222 Aerogel product?

Yes, of course – we've already done so.

FAQ TO FIXIT 222 AEROGEL

Isn't the effort involved in an energy-efficient refurbishment too great?

The regulatory hurdles have now been significantly reduced, so it's certainly worth the effort. Even if you have to put up scaffolding for a short while, you'll be delighted with the excellent and comfortable living environment afterwards. Working with a local planner ensures a quick and efficient construction phase.

Does Fixit 222 Aerogel meet fire safety requirements?

Fixit 222 Aerogel high-performance insulating plaster is non-combustible and can be used in or around densely built-up areas such as historic town centres or high-rise buildings. It meets fire safety requirements in the same way as standard lime plaster.

What is the service life of Fixit 222 Aerogel?

Fixit 222 Aerogel high-performance insulating plaster has a calculated service life of 40 years. This has been confirmed by the experts at Carbotech AG, who

calculate and issue the environmental declaration on our behalf.

As a client, how can I be sure that the plastering work will be carried out correctly?

Fixit AG only works with local contractors who have experience in renovation projects and, specifically, with our product, Fixit 222 Aerogel Insulating Plaster. We do not supply to any others. Furthermore, the project is always supervised by our regional technical advisor.

Will the façade ornamentation be obscured by the Fixit 222 Aerogel high-performance insulating plaster?

Many houses in Switzerland have cornices, corner pilasters and ornaments that are important to the local area and tell a story. These can be left in place without any problems, as only the existing plaster is replaced. Calculations have shown that these thermal bridges are so small that they can be disregarded, and the house is still very well insulated.

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[fixit.ch/en/trends-solutions/fixit-222-aerogel](https://www.fixit.ch/en/trends-solutions/fixit-222-aerogel)