



13/10/2026 | EN

Press Release

EU tests put thermal insulating materials under the spotlight

Efficient and reliable insulation products are essential for improving the energy performance of Europe's buildings, while reducing greenhouse gas emissions and energy bills. Laboratory testing of 6 types of insulation materials sampled in 14 countries revealed that one third did not meet their declared performance.



The results of this EU-funded campaign underline the value of market surveillance and the need for end users to verify performance information before selecting insulation products.

The project was carried out with the participation of market surveillance authorities (MSAs) from 14 countries.

A total of 106 samples from 6 commonly used insulation materials were selected: expanded (EPS) and extruded polystyrene (XPS), mineral wool, cellular glass, wood wool and wood fibre. The samples were purchased in Austria, Belgium, Denmark, Finland, Germany, Greece, Ireland, Italy, Latvia, Malta, Norway, Poland, Portugal and Sweden, either from physical shops, online or directly from manufacturers.

What were the findings?

The tests checked how well the materials slow down heat loss, whether their thickness matched the declared specification and how they react to fire.

For thermal resistance, 31 of 97 samples tested (32%) did not meet the requirements.

For reaction to fire, 11 of the 81 samples tested (14%) did not meet the declared class.

Markings and documentation were also checked. A total of 68 samples (64%) failed to meet the requirements, mainly due to an incomplete or missing Declaration of Performance (DoP) or CE marking.

Thermal resistance tests

Thermal resistance tests assessed whether insulation products deliver the level of heat retention their manufacturers claim. These tests measured the products' thermal conductivity and thickness, both of which influence how effectively a building stays warm in winter and cool in summer.

In most cases, the measured thermal performance differed from the values declared by the manufacturer, meaning some products may not provide the level of insulation that buyers expect. A smaller number of products also failed the thickness requirements.

While many products performed as advertised, the findings highlight the importance of accurate performance declarations, as end users rely on this information when selecting materials to improve a building's energy efficiency.

Fire performance tests

Another cause for concern was the unexpectedly high number of failures among products declared as Class E for reaction to fire: 8 of 52 products (15%) in this group did not meet the declared fire classification.

No failures were found among the 6 products declared as classes B–D. Both products declared as class A2 failed the applicable reaction-to-fire assessment. Only 1 of 21 A1-class products did not meet requirements.

In the EU fire-performance system, Class A1 products are considered non-combustible and do not significantly contribute to a fire. Class A2 products are also classed as non-combustible, but may make a very limited contribution to fire under certain conditions. Classes B–D cover combustible products with increasing levels of contribution to fire: Class B has very limited contribution, Class C limited contribution and Class D medium contribution.

Class E means that a product is combustible, but should still pass a basic test showing that a small flame does not spread too far across it within a set time. The failures indicate that some products could ignite or allow flames to spread more quickly than their declared classification suggests. The level of risk depends on where and how the insulation is installed. An inaccurate fire rating could lead consumers to select a product that does not provide the expected level of protection.



Actions taken

MSAs classified 2 samples as high risk and 4 as serious risk. These findings were mainly related to fire performance not corresponding to the declared class.

MSAs imposed a sales ban on 1 product and withdrew 7 from the market. Many economic operators agreed to resolve conformity defects. Participating MSAs shared the results with other Member States.

What can consumers do?

The testing campaign found that many insulation products did not meet one or more technical or documentation requirements. Consumers should look for products that carry the CE marking and are accompanied by a DoP, which provides information about key characteristics such as thermal resistance and fire performance.

Before purchasing, they should check that the product is suitable for its intended use and complies with national building requirements. Following the manufacturer's installation instructions is equally important, as even a compliant product may fail to deliver the expected energy-saving and safety benefits if installed incorrectly.

The European Commission’s [Safety Gate](#), a rapid alert system where MSAs publish details of dangerous non-food products, is a good place to check.

What should economic operators do?

Economic operators must pay closer attention to both product performance and compliance obligations. Declared thermal resistance values must accurately reflect product performance, and all technical documentation, CE markings and DoPs need to be complete and up to date.

Robust factory production controls, regular testing and effective traceability systems are essential, particularly when changes are made to raw materials, suppliers or production processes.

Economic operators should also provide clear installation instructions and make all required information available in the language(s) of the country of sale, so that end users can use insulation safely and effectively.

EU-wide testing

The testing was carried out under the 2025 Joint Actions on Compliance of Products campaign in the EU and EFTA countries. The campaign helps MSAs coordinate testing, share findings and protect consumers and reputable businesses across the Single Market.

“Market surveillance campaigns help protect consumers and ensure that reputable businesses are not undercut by competitors whose products do not meet their declared performance levels,” said Vanessa Capurso, Policy Officer at the European Commission’s Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW).

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https://single-market-economy.ec.europa.eu/single-market/goods/building-blocks/market-surveillance_en

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