Technical Insulation

Kooltherm® Pipe Insulation and Air Quality

Technical Bulletin

Summary

The impact of volatile organic chemicals (VOCs) on indoor air quality is an area of growing concern for the building services industry. VOCs can be emitted by a variety of materials within a building and have been linked with health issues. Clearly, specifiers have a crucial role in safeguarding indoor air quality, but regulatory guidance is often unclear. The Eurofins Indoor Air Comfort certification programme offers a simple, rigorous standard for assessing VOC emissions from building products and displaying compliance with the relevant requirements within standards such as BREEAM, LEEDv4 and EMICODE.

VOCs

On average, we spend around 90% of our time indoors[1]. A growing body of evidence has suggested that air quality within indoor environments can have a serious impact on the health of occupants. Assessments have shown that, even in some major cities, outdoor air may be cleaner than indoor air[2]. Whilst steps have been taken to deal with the most obvious pollutants - such as smoking - homes and workplaces are still being filled with other pollutants such as VOCs.

VOCs are found in a wide range of everyday materials including cleaning and building products, carpets and paints. Under the Volatile Organic Compounds in Paints, Varnishes and Vehicle Refinishing Products Regulations 2012 (VOC Regulations 2012), they are defined as compounds with a boiling point of 250°C or lower at a standard atmospheric pressure of 101.3 kPa. The low boiling point of these compounds causes large numbers of their molecules to enter the surrounding air at standard room temperatures.

VOCs have been linked with a variety of health issues including shortness of breath, dizziness, headaches and damage to internal organs and the central nervous system depending on the length and concentration of exposure.

Whilst the legal limits for the VOC contents of materials are set within the VOC Regulations 2012, these cover only solvent and water-based products. Given the increasingly airtight designs of modern buildings, it is vital that all products which can emit VOCs are properly assessed. One of the most rigorous standard currently available is the Eurofins Indoor Air Comfort Gold certification.

Eurofins Indoor Air Comfort (IAC) Certification

The Eurofins Indoor Air Comfort (IAC) certification programme was created to harmonise the criteria of mandatory and voluntary product regulations from across Europe which govern VOC emissions. The voluntary certification tool is split into two levels.

Standard Certification - This shows that a product's emissions are compliant with the minimal legal specifications issued by authorities and governments within the European Union.

Gold Certification - This recognises the product is compliant with many of the most demanding voluntary performance standards and can be recognised as being an outstanding material according to the VOC Indoor Air Quality emissions regulations. Products with this certification achieve an A+ under the French VOC Regulations, a pass under AgBB, and compliance for both BREEAM and LEEDv4 on European projects including the UK.

1 https://www.worldgbc.org/news-media/worldgbc-launches-air-quality-built-environment-campaign

2 https://www.eea.europa.eu/publications/environment-and-human-health

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In order to achieve IAC Gold certification, production facilities are first assessed by an independent assessor who has been approved by Eurofins. The assessor looks at all factors which may affect emissions from the product, including archival changes in a product's formulation which may impact its performance. During the inspection, samples of products are taken for emissions testing.

Once emissions testing is completed, the results are then sent to the manufacturer along with a detailed report from the inspection, allowing corrective action to be taken where necessary. If the test results suggest compliance and no issues are raised in the inspection report then the product is issued with certification.

Critically, Eurofins certification requires manufacturers to engage in a process of continuous testing and auditing. Recently certified products are subjected to emission testing and production site inspections every year to ensure low emissions. As a result, installers and specifiers can have confidence that the performance and quality of certified products will be maintained over time.

Work is under way to add emissions to indoor air into the harmonised European Standards for the CE Marking of products including building services insulation, and a growing number of products have now achieved the Gold Level of certification, including pipework insulation. In addition to reducing VOCs within a building, these products can contribute towards the award of credits within the Hea 02 Indoor air quality section of BREEAM, so it is important that specifiers carefully consider these options when identifying suitable products for a project.

Kingspan Kooltherm® Pipe Insulation

Kingspan Kooltherm® Pipe Insulation has been awarded a best-in-class Eurofins Indoor Air Comfort Gold certificate, recognising it as outstanding material according to the VOC Indoor Air Quality emissions standards.

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