

## PU Europe FIRE SAFETY HANDBOOK

# THE ROLE OF INSURANCE STANDARDS

While the primary objective of national legislation is to reduce risk to life, insurers have a secondary objective, which is the protection of property. Consequently, there are a number of insurer-led fire standards which look at different aspects of fire performance. Three widely recognised examples are the UK-based Loss Prevention Certification Board (LPCB), the American FM Global (formally known as Factory Mutual), and the German Insurance Association (GDV).

### LPCB (LOSS PREVENTION CERTIFICATION BOARD)

LPC insurance tests assess various levels of fire performance based on the reaction to fire and resistance to fire principles. The LPC's LPS1181 involves large-scale insurer approved 'end use application' tests that combine assessments of reaction and resistance to fire. It is useful in assessing the performance of elements such as roofs and walls in the developing stages of a fire. However, as it is a system test, it cannot be used to assess the performance of generic products.

### FM GLOBAL (FACTORY MUTUAL)

FM Global is a major insurance company with its own test procedures for building systems including insulated panel systems and constructions incorporating insulation boards.

FM approval encompasses a range of tests specified in Approval Standards. Namely FM Approvals Standards 4880/4881/4771 and 4450. FMRC 4880 assesses the fire performance of insulated panel systems for internal and external wall, roof and ceiling systems whilst FM approvals Standard 4881 looks specifically at the impact of fire and natural hazards on wall panel systems, FMRC 4471 and 4450 include the testing of specific characteristics such as wind uplift and foot traffic, in addition to fire characteristics. For example, a Class 1 insulated steel roof deck is one which meets the criteria of FM 4450 for internal fire, wind uplift, live load resistances, corrosion of metal parts and fatigue of plastic parts. The standard applies to all components assembled in the system below the roof, whilst the roof cover itself is tested in accordance with FM Approval Standard 4470.

### GDV AND VDS (GESAMTVERBAND DER DEUTSCHEN VERSICHERUNGSWIRTSCHAFT AND VERBAND DER SACHVERSICHERER)

The Berlin-based German Insurance Association (GDV) is the federation of private insurers in Germany. It's about 460 member companies offer comprehensive coverage and retirement provisions to private house-holds, trade, industry and public institutions, through 435 million insurance contracts.



VdS, a GDV subsidiary, offers fire protection concepts for industry, planners and contractors. The organisation owns a technical laboratory for type and system tests. The services include certification and recognition schemes for products (fire extinction systems, smoke detectors) and specialised installers. At an international level, VdS closely co-operates with the certification and test laboratories in Europe and the US. The testing and certification of insulation products and insulated building elements is currently not included in the range of activities of VdS.

With strict standards and regulations for fire safety of buildings in place in Germany, the German insurance industry does not see a need, at the time of writing, to introduce additional tests and classifications. The requirements set for insurance purposes are mainly based on existing regulations and the insurance industry is actively taking part in the further development of standards (e. g. DIN 18234 "Fire safety of large roofs for buildings - Fire exposure from below"), guidelines and regulations for the assessment of the fire safety of products and constructions. Special focus is on the further development of the "Industriebaurichtlinie" (Code for industrial buildings).

Several guidelines (Richtlinien) have been published, providing complementary guidance and recommendations, based on official tests results and classifications for products and constructions. Special recommendations are given in particular for the use of combustible insulation products (i.e. installation and type of joints for sandwich panels).

The following VdS publications are noteworthy :

- VdS 2035 Stahltrapezprofiltdächer, Planungshinweise für den Brandschutz;
- VdS 2216 Brandschutzmaßnahmen für Dächer, Merkblatt für die Planung und Ausführung;
- VdS 2244 – Sandwichelemente als raumabschließende Wand- und Dachbauteile, Brandschutz-Hinweise für die Planung,

Ausführung und Instandhaltung;

- VdS 2827 – Bemessungsbrände für Brandsimulationen und Brandschutzkonzepte;
- VdS 3461 – Wärmedämmverbundsystem.

### RELEVANT EUROPEAN BODIES

There is a European association of insurances, which is CEA, the European insurance and reinsurance federation. In addition insurance companies work closely with a number of European bodies engaged in fire safety, and participate in the European fire safety standardisation work.

### FUTURE TRENDS

System based tests are important and are expected to become increasingly more important. However, there are voices in certain countries calling for façades made out of non-combustible materials, therefore stifling the development of new façade systems.

There is a need for further scientific development, in order to address innovation regarding energy efficiency and renovation, to improve confidence in the fire safety of future building and construction systems with high performance insulation products.

