



ANNUAL REPORT

2012

The European Group of Organisations
for Fire Testing, Inspection and Certification



EGOLF members outside LEITAT Technological Center, Terrassa, Spain, October 2012.

FINANCIAL REPORT

2012

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INCOME

Membership subscriptions	115,400
Courses	4,800
Other income	1,042
Total income	121,242

EXPENDITURE

Secretary General	59,098
Executive expenses	3,642
Plenary & TC meeting costs	6,618
GNB FSG Secretariat	7,749
Round robins, courses & workshops	6,233
Website hosting & developments	5,040
Printing costs	2,930
Other expenses	5,072
Total expenditure	96,382



A VIEW FROM THE PRESIDENT

Dear Members, Partners and Stakeholders,

After three years in office, I have had the great pleasure to be re-elected as EGOLF President for a further term of three years. This comes both as a reward and a new challenge. I intend to make the most of this opportunity to further develop the interests of EGOLF, on behalf of you all.

I very much thank Anders Drustrup, from DBI in Denmark, who recently stepped down as Chair of Technical Committee 2 "Fire Resistance", for both his solid commitment to the harmonization of standards and especially for organizing the first fire resistance round robin. I welcome Lars Boström from SP, Sweden, who has taken over as Chair.

EGOLF is, and will remain, a valuable quality label which allows all members access to the widest possible marketplace. A European laboratory does not "have" to be an EGOLF member but will definitely benefit from the added value which this affords. Some markets are even demanding the EGOLF label of their fire laboratories and in this way membership is fast becoming a real "must-have". Consequently, most laboratories are keen to apply. EGOLF would certainly be delighted to extend the number of its members but without compromising its core values. Beyond the willingness and the ability to perform tests, not only according to European standards but also in accordance with EGOLF's harmonized interpretation of these standards, there is the so called "EGOLF independence criteria".

We are strongly convinced that, in order to issue a professional classification, there should be no potential conflict of interest which could influence judgement. The Executive Committee, which assesses membership applications, has the difficult task of identifying any such possible conflict of interest. We are always very disappointed when we cannot welcome an applicant. However, we would be even more disappointed if we were to grant access to an organization which does not embrace the values of EGOLF. Being demanding is the price we have to pay if we are to preserve the value of our brand.

The EGOLF approach to test standards is very effective and gives all EGOLF members what they expect: a deeper common understanding, interpretation and set of implementation practices. As soon as the harmonized standard for fire doors is published, more than 50% of our tests will be performed for CE product marking. Our challenge is to develop a similar approach for inspection and certification. We have been very active in this field, especially in our support of the Fire Sector Group of Notified Bodies (SHO2). We now need to ensure effective harmonization, by providing adequate training, helpdesk forums, exchange of information and by adopting common rules.

Wherever possible, it is also our aim to promote the European system worldwide and, to this end, would welcome partnership agreements with other organizations outside Europe.

Finally, it is my sincere hope that the future will be as exciting as the past few years.

A handwritten signature in blue ink, consisting of several fluid, overlapping strokes that form the name 'Pascal Coget'.

Pascal Coget
EGOLF President

EGOLF MEETINGS

AUTHOR: Christine Roszykiewicz
(EGOLF Secretary General)

Plenary meetings

Two plenary meetings took place in 2012, the first hosted by VTT Expert Services Ltd. in **Espoo, Finland** and the second by **LEITAT in Terrassa, Spain**. At the first event, a special dinner was held to pay tribute to Paul Vandeveldel of Warringtonfiregent (Belgium), one of the founder members of EGOLF who was retiring from EGOLF, and also to say thanks to Ulf Wickström of SP (Sweden) for his contributions as a member of Executive. John Osborn of CIFL was thanked in absentia, for his work as one of two internal auditors during the past three years.

A special welcome was extended to Stefanie Steinmeier, representing EGOLF's new member laboratory DMT GmbH & Co. KG (Germany), which is featured in this Report.

When reviewing harmonisation courses currently available to members, there was wide support for a general course to be developed aimed at new laboratory staff. This two day general introductory course will be delivered in two parts and in future will be made available to Members for delivery in-house. The first part will cover heat transfer and other basic phenomena and the second will deal with European systems for testing, classification and certification under the new CPR. The course will assist members when their accreditation bodies request evidence of staff competence to perform fire tests. More information about this and other harmonisation courses can be found in the EGOLF Course Catalogue which is regularly update online at www.egolf.org.uk/activities/harmonisation-courses.html



EGOLF Members enjoying a visit to VTT Fire Testing Laboratory, Espoo, Finland, March 2012



Meeting of TC1, LeitAt, Spain



Hendrik Rademacher, MPA NRW (Chair TC1) and Christine Roszykiewicz, EGOLF Secretary General

Technical Committee meetings

TC1 (Reaction to fire) chaired by Hendrik Rademacher (MPA NRW)

A record number of helpdesk items were the subject of discussion and

resolution during two intense one day technical meetings in 2012. On each occasion, members divided into break-out groups to more effectively tackle the large number

of issues arising from the Helpdesk Forum during the course of the year. Many items submitted to the Forum involved straightforward requests for clarification of the standard and had been dealt with very quickly online. Others required more involved input and discussion within the wider Technical Committee in order to seek agreement on interpretation.

Where necessary, recommendations were prepared and are available to both members and the public on the Publications folder of the EGOLF website.

TC1 – Reaction to Fire

EGOLF Recommendations (EGRs) published in 2012

These are publicly available and can be downloaded at:
www.egolf.org.uk/documents/egolf-recommendations.html

EGR 61	2012 FprEN 15101-1 loose fill materials
EGR 62	EN ISO 11925-2 distance of filter paper
EGR 69	Correct use of DD CEN/TS 1187:2012

Round Robins

In the framework of TC1 activities in 2012, a round robin was launched on TS 1187:2012 - External fire exposure to roofs with burning brands for test methods 1 and 2. This is being organised by BDA in the Netherlands, in collaboration with Prüfinstitut Hoch, Germany.

Eighteen laboratories are participating and the first set of results is expected in the Autumn of next year. A second round robin on EN ISO 9239-1, to be organised by Warringtonfiregent, Belgium, in collaboration with SINTEF NBL, Norway, is expected to be launched in the Summer of 2013.

TC2 (Fire resistance) chaired by Anders Drustrup (DBI, Denmark)

At the Autumn meeting of TC2, Anders Drustrup stood down as chair and was thanked for his excellent work since first being elected in 2007. The main focus of that meeting revolved around the forthcoming EXAP workshop for timber doorsets, which was organised by Chiltern Fire International Ltd. (CIFL), UK (see article on page 10) and on the new round robin dealing with

classification and field of application of a wall test, which was launched by SP Fire Technology, Sweden, in November. The outcome of the round robin will be reported in the Autumn.

A large number of helpdesk items were addressed and EGOLF recommendations prepared as a result of solutions arrived at during the year. Examples of topics under consideration included a discussion of the influence on temperature measurement deriving from different manufacturing techniques, type of glue and method of fixing thermocouples. The outcome was a proposal to perform a comparative test in order to evaluate the influence on measurement of fixing thermocouples. This is being led by DBI in Denmark.

TC4 (Accreditation, Certification and Inspection) chaired by Gert van den Berg (Efectis NL)

During the meeting of TC4, members discussed the forthcoming workshop for potential EA assessors, which would be facilitated by Paul Vandeveld, Warringtonfiregent, Belgium. They also reviewed the results of a recent enquiry amongst all 58 members of EGOLF on national accreditation of members for classification and EXAP according to ISO IEC 17025. This survey had revealed that some accreditation bodies are willing to accept accreditation for classification and EXAPs and others not and that, even within the same country, accreditation bodies have a different approach. A lively debate ensued

TC2 – Fire Resistance

EGOLF Recommendations (EGRs) published in 2012

These are publicly available and can be downloaded at:
www.egolf.org.uk/documents/egolf-recommendations.html

EGR 63	Aspect ratio glass – DIAP glazed elements
EGR 64	Density of insulation for small samples
EGR 65	Calculation of adjusted leakage rate
EGR 66	EN 1634-1 omitting failed glass element
EGR 67	Glazed constructions – exchange of FR elements
EGR 68	EN 1363-1 unexposed thermocouples
EGR 69	Correct use of DD CEN/TS 1187:2012

and the situation was described by one member as akin to the "Wild West", with members expressing

concerns about the risk of unsafe products ending up on the market. As an enthusiastic stakeholder of EA

(European Accreditation), EGOLF is keen to help find a solution to this problem in 2013.

Executive meetings

In June, Executive were delighted to welcome Anne-Steen Hansen of SINTEF, Norway, as a new member of the Committee, replacing Ulf Wickström who retired from office after six years on the Committee.

Round Robin EN ISO 1182

A key topic for discussion on the Agenda of Executive Committee meetings in 2012 was the outcome of EGOLF round robin to EN ISO 1182 and the importance of working with CEN/TC 127 to improve reproducibility and repeatability of this test method for non combustibility which is highly recognised and widely used but

which, as demonstrated by the round robin, would benefit from some revisions. Indeed, there are many factors that can have a significant effect on the thermal conditions in the test furnace and which are difficult to control e.g. the positioning of thermocouples during calibration and testing, the influence of the specimen on thermal conditions and temperature measurements etc..

EGOLF Appointments



Executive Committee (Conseil de Gérance) – Anne-Steen Hansen, SINTEF NBL (Norway), was appointed to serve an initial term of three years.



Chair TC1 Reaction to Fire – Hendrik Rademacher, MPA NRW (Germany) re-appointed to serve a further term of three years.



Chair TC2 Fire resistance – Lars Boström, SP Fire Technology (Sweden), was appointed to serve an initial term of three years.



Internal Auditor – Richard Zammitt, FM Approvals (UK) was appointed to serve a term of three years.



Swedish-Norwegian collaboration on fire technology

In December, SP Technical Research Institute of Sweden and the Norwegian Research Institute SINTEF

signed an agreement concerning close co-operation between SP Fire Technology and SINTEF NBL AS, as a wholly owned subsidiary of SINTEF. The Agreement states that SP and SINTEF will own and run NBL together, with

SP as the majority owner. For more information, readers are welcome to contact Bjorn Sundström, Manager of Fire Technology, SP Technical Research Institute of Sweden.

EGOLF HARMONISATION COURSES AUTUMN 2013

Test Method	Standard	Location and date	Course fee for EGOLF members (additional €300 for non-members)	Registration contact
AUTUMN 2013				
Fire doors and shutters	EN 1634-1	DBI (Denmark) 17-18 September 2013	1150€	Anders Drustrup adr@dbi-net.dk
Ducts and smoke control ducts	EN 1366-1, -8 and -9	DBI (Denmark) 19-20 September 2013	1150€	Anders Drustrup adr@dbi-net.dk
External fire exposure to roofs with burning brands	TS 1187-2012 TM1	BDA (Netherlands), 25 September 2013	850€	Albert Hameete a.hameete@bda.nl
Floorings	EN 9239-1	SP (Sweden), 7 October 2013	800€ 2700€ (week of RtoF courses)	Kaisa Kaukoranta kaisa.kaukoranta@sp.se
Ignitability of building products – single flame source test	EN 11925-2	SP (Sweden), 8 October 2013	800€ or 2700€ (week of RtoF courses)	Kaisa Kaukoranta kaisa.kaukoranta@sp.se
Single burning item	EN 13823	SP (Sweden), 9 October 2013	800€ or 2700€ (week of RtoF courses)	Kaisa Kaukoranta kaisa.kaukoranta@sp.se
Single burning item + Determination of heat of combustion	EN 13823 + EN ISO 1716	SP (Sweden), 10 October 2013	800€ or 2700€ (week of RtoF courses)	Kaisa Kaukoranta kaisa.kaukoranta@sp.se
Non-combustibility	EN 1182	SP (Sweden), 11 October 2013	800€ or 2700€ (week of RtoF courses)	Kaisa Kaukoranta kaisa.kaukoranta@sp.se
General course for new lab. staff	Part – 1 Heat transfer & other basic phenomena Part – 2 The European systems for testing, classification and certification	WFRGENT, Het Pand, Gent University 17 and 18 October 2013	1250€ (2 day course)	Leen De Clippel leen.declippel@wfrgent.com
Heat Transfer for fire laboratory experts		Organised by SP. Course location is Munich (Germany) Part 1 29-30 October 2013 Part 2 26-27 November 2013	2000€	Kaisa Kaukoranta kaisa.kaukoranta@sp.se
External fire exposure to roofs with burning brands	TS 1187-2012 TM2	To be confirmed	To be confirmed	
Penetration seals	EN 1366-3 and EN 15882-3	20-21 November	To be confirmed	Kaisa Kaukoranta kaisa.kaukoranta@sp.se

NEW MEMBER

Author: Stefanie Steinmeier, DMT GmbH & Co. KG, Germany

DMT – Member of TÜV NORD Group

More than 100 years of safety technology

For decades now, DMT has been a provider of safety technology in different fields. Examples of such fields include natural resources exploration and extraction, construction and real estate. DMT consists of six business units and several international subsidiary companies, whose spectrum of activities is divided into three main areas: (a) services for active mining operations, (b) testing, inspection and engineering surveys with primary emphasis on the construction industry, real estate trade and mechanical engineering and (c) natural resources, with a broad range of services worldwide, for investors in the raw materials industry, for operators of mines and coking plants, and for oil and gas production companies.

In the business unit Building Safety we build technical safety into

products, structures and tunnels. Fire prevention, refrigeration, climate control and filter system technology, air and potable water hygiene, and fire brigade training are our areas of expertise. Here we offer systematic solutions for manufacturers, architects, general contractors and planners, for building operators and fire brigades.

Our capabilities are:

- Consulting, assessment and testing in the fields of fire prevention, refrigeration, climate control and hygiene
- Seminars and training in fire prevention and fire fighting
- Product testing and certification in the fields of fire prevention, filtering and hygiene

DMT's Centre for Fire and Explosion Protection, located in Dortmund and

Lathen, belongs to the business unit Building Safety. It boasts more than 50 employees who offer a holistic spectrum of services concerning fire and explosion protection. Starting with the creation of fire safety concepts and independent expert reports, we support our clients in all fire safety matters throughout the planning and construction phases of their projects. We carry out fire risk analyses and assessments and prepare hazard prevention plans according to TRGS 800 (German Technical Regulations for Hazardous Substances).

We monitor the planning and engineering of all kinds of special structures, ensuring the necessary fire protection systems are fitted in line with regulations. We make sure that installations and safety technology are duly tested and approved, as well as checking the operational safety of ventilation systems, fire extinguishers, fire alarms and smoke extraction systems.

In addition, we provide services in the field of fire simulation. On hand from simulations we are able to accurately determine heat and smoke distribution patterns after a fire has broken out. Fire simulation also serves as a useful tool when investigating the cause of a fire or explosion, which, along side specialist fire-fighting e.g. for landfill sites, mines, coal stores and silos, is a central focus of our work.

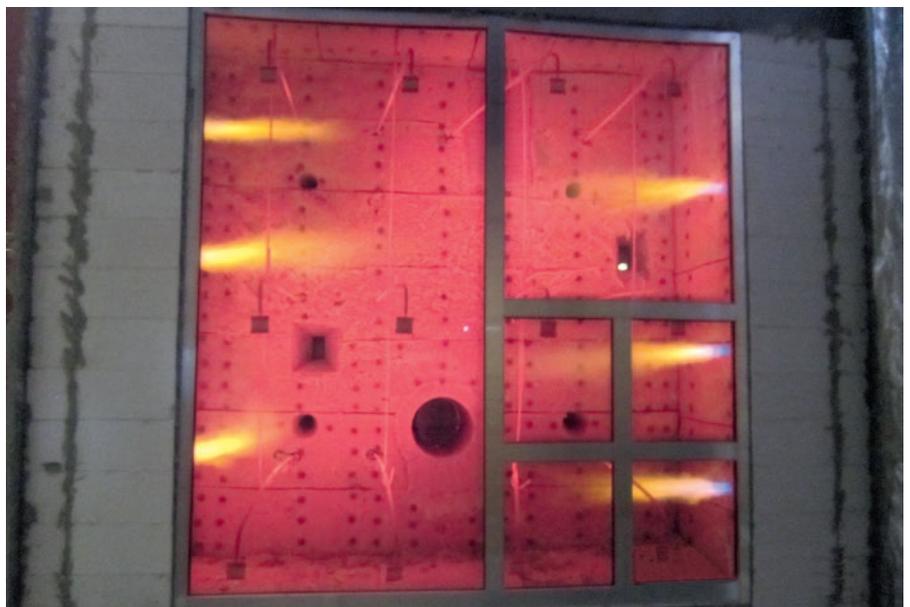
Another service area which we have successfully developed, particularly in recent years, is



explosion protection. We not only prepare the relevant concepts and documentation, but also offer consulting services and expert reports and carry out ignition risk analyses for non-electrical devices. Furthermore, we test systems in high-risk explosive areas according to BetrSichV (German Ordinance on Industrial Health and Safety), determine fire and explosion protection safety parameters and perform explosion risk assessments for plant and machine manufacturers.

In 2009 we decided to significantly expand our fire test labs, enabling us to offer a vast increase in fire and explosion related tests. In addition to the main site in Dortmund, we opened a fire testing lab in Lathen in 2010. Our fire test centre is accredited by DAkkS (German Accrediting Body) according to DIN EN ISO/IEC 17025, a recognised DIBt test facility (German Institute for Structural Engineering) and a recognised EBA test facility (German Federal Rail Authority). Since 2011 we have also been recognised by the International Maritime Organization (IMO) as a fire testing facility for ships and maritime equipment, plus, as an FIA Notified Body, we are also permitted to test fire extinguishing systems in motor vehicles. In our two fire tunnels, 25 m long and 90 m long, we have the capacity to perform large-scale fire tests of up to 30 MW.

Other key areas of expertise are acceptance testing and certification for the mining industry and in tunnels, for instance as part of the ADAC tunnel test for the German Automobile Association, for which we produce expert reports and assess the ventilation and safety systems in place. As the safety representative for numerous tunnels, it is our job to develop safety concepts for underground traffic systems and ensure they are implemented and adhered to.



CHILTERN INTERNATIONAL FIRE HOSTS EGOLF WORKSHOP



Mark Cummings reports from an EGOLF workshop aimed at discussing the extended field of applications for timber door sets'. (EXAP)

Part of the BM TRADA Group and with almost 40 years' experience, Chiltern International Fire (CIF) is one of Europe's leading authorities on fire, providing a range of services to clients around the world. In that time, CIF has become renowned for its specialist expertise in doors, windows and fire-rated products.

This made CIF the ideal choice to host a workshop on the harmonisation of EN 15269-3: 2012: Extended application of test results for fire resistance and/or smoke control for door, shutter and openable window assemblies, including their elements of building hardware. Fire resistance of hinged and pivoted timber doorsets and openable timber framed windows

The complex subject of extended field of applications for timber door sets (EXAP) was originally raised by CIF's Ross Newman back in March 2011 at the EGOLF TC2 meeting in Borås Sweden. After prolonged discussions Chiltern International Fire agreed to offer a workshop to discuss the subject.

On 28 and 29 November 2012, 28 keen EGOLF delegates arrived at the picturesque and historical Missenden Abbey in Great Missenden Buckinghamshire. With superb views of the Chilterns from the 12th Century vaulted windows, Missenden Abbey provided a delightful backdrop to the workshop.

The aim was to allow all the laboratories an opportunity to

discuss interpretations and foresee problems within the EN 15269-3: 2012 standard, in order to attempt to develop a harmonised approach when writing an EXAP across Europe.

Although challenging, the workshop was extremely useful and rewarding for the delegates.

Within the workshop, there was a wide range of different expertise and competency levels. This offered its own challenges, as did the language barriers. Going forward it is clear that it is important that test laboratories writing the EXAP documents must be confident with the competency levels and EGOLF will be offering guidance on this.

Prior to the workshop, CIF set some 'homework' for the delegates, which was designed to provide the basis and structure to the workshop. Using a hypothetical test specimen, 14 questions were devised using the construction parameter variations given in EN 15269-3:2012. The questions were received well. Although not all the delegates

completed these exercises, this did not stop the session from being a great success.

The workshop highlighted a number of questions, interpretation issues and several actions required to start the harmonisation process. Where required, delegates took action and delivered against the actions in time for the next EGOLF meeting which took place between March 19th -22nd, in Champs - Sur - Marne, Paris. A special thanks to all those who made this happen.

While it is clear that harmonisation of EN 15269-3: 2012 will be a long and difficult process as the document is very complex, the workshop has contributed significantly to the process.

EGOLF is planning a harmonisation course on the base standards that support the Extended Field of Application process. I believe this will be of great interest and CIF will be attending. The course will be a good introduction to those who have little experience in the EXAP process



but for those with lots it will start the EGOLF harmonized approach.

To close, I would like to suggest that if you are planning to attend a EGOLF workshop of any kind that you come prepared, as you only get out what you put in!

Chiltern International Fire – reaching out to industry

Chiltern International Fire (CIF) is one of Europe's leading authorities, specialising in doors, windows and fire-rated products.

With almost 40 years' experience, CIF provides a range of services to clients around the world. Services include: UKAS accredited fire resistance and reaction-to-fire testing to British, European and International standards; bespoke fire research projects and ad-hoc testing programmes; product assessment reports for extending the coverage of existing test data; and on-site examinations of critical passive fire

protection measures. The company also offers a first class training facility for fire services personnel.

Product and personnel certification is provided through BM TRADA Certification which operates the BM TRADA Q-Mark and Competent Persons Schemes for manufacturers, installers and maintainers of doors, windows and construction products.

The BM TRADA Group is an international Testing, Inspection, Certification and Compliance organisation trading in over 70 countries. It has an international network of offices and representatives and over 350 employees worldwide.

The Group has attained an unrivalled position in its field, and is a highly respected centre of excellence with a demonstrable track record in delivering results for its customers.

Experienced professionals – Some faces you may recognise CIF staff have proven expertise in fire testing and fire research and legislation. As a result, the

organisation has gained an impressive reputation within the industry both for its technical expertise and its specialist facilities.



Philip Howard runs the Fire Behaviour Services department. The department has three primary roles: UKAS-accredited reaction-to-fire testing; bespoke fire research, testing and investigative projects; and providing carbonaceous fire brigade training facilities. Phil represents CIF at national and international technical trade associations and committees.

Outside of work, Phil sings and plays guitar in a rock band and is passionate about steam railways, currently training to be a fireman and eventually a driver at the Buckinghamshire Railway Centre.



Principal Test Engineer, Ross Newman has worked within the Fire Resistance Testing department of CIF since 2004, having started as a Test Engineer in the fire resistance laboratory. His role has developed to incorporate delivery of training seminars, writing technical reports and assessments

and managing laboratory staff. Ross attends national and international committee meetings and plays a key role in developing a number British and CEN European Norm standards. He has recently been appointed as Vice Chair for the UK's Passive Fire Protection Federation.

Outside of work, Ross has a keen interest in architecture and design, classic cars and holidays involving extreme sports such as

snowboarding, wakeboarding, windsurfing and scuba diving.

Deputy Technical Manager, Mark Cummings has worked at CIF since 2000, starting in the fire resistance testing laboratory as a Technician and rising to Deputy Technical Manager overseeing the Fire Resistance Testing and Fire Technical Services departments. Mark is also responsible for the development of new test and operational

procedures, training of staff and active representation of CIF at national and international technical trade associations and committees.

Outside of work, Mark is a new father and, when not with his daughter, can be found on the golfing green, and enjoying good food with friends and family.

Education and standards

Providing independent and confidential testing and fire research to commercial, government and professional organisations, CIF offers clients a professional and reliable service. However, its services do not stop here; the organisation is dedicated to raising awareness and improving the quality of installed fire protection.

CIF plays an active role, not just in developing standards but in educating the industry. CIF works actively with a range of UK professional organisations – including the Association for Specialist Fire Protection, the Passive Fire Protection Federation, and the Fire Sector Federation.

CIF offers a range of seminars and courses designed to improve the understanding of professionals involved in the design, specification, construction and management of buildings and provide suitable guidance.

As was stated previously, 'You only get out what you put in', and CIF is dedicated to doing its utmost to play an active role in improving quality and developing standards and understanding across the fire industry.



TESTING AND EVALUATING THE DISCHARGE COEFFICIENT FOR NATURAL SMOKE AND HEAT EXHAUST VENTILATORS ACCORDING TO EN 12101-2

Author: Štefan Rástocký, FIRES, s.r.o., Batizovce, Slovak Republic

European standard EN 12101-2 has been valid for conformity assessment of natural smoke and heat exhaust ventilators with natural ventilation (NSHEV) since 2003. Notified body FIRES, s.r.o. has been carrying out testing of NSHEVs for a longer period of time, except for testing of the aerodynamic free area. In 2010 we put into operation unique testing equipment for carrying out these tests jointly with three certification authorities in the European Union, thereby offering certification and all necessary NSHEV tests in one location.

The aerodynamic free area is one of the most important parameters in NSHEV and is used for proper design of ventilation of the building in case of fire. The aerodynamic free area depends mainly on the dimensions and shape of the product, so there is an opportunity for the manufacturer to improve this parameter with appropriate product design. The higher the value of the aerodynamic free area compared to a competitor's product, the smaller

the number of NSHEVs necessary for ventilation of a building in case of fire, in turn leading to a reduction in project costs.

The aerodynamic free area testing facility in Figure 1 consists of two parts: The first part is a test chamber with opening for accommodation of test specimen. A fan creates pressure in the top part of the test chamber simulating buoyancy forces from hot fire effluents (test is carried out under normal ambient temperature and subject to air flow). The test standard prescribes testing at six pressure levels ranging from 3 Pa to 12 Pa. Speed of air flow from the test chamber has to be uniform across the whole area of opening and may not be affected by turbulence. Uniform speed is achieved by geometry of the test chamber and by use of flow guides. A set of tubes with orifice plates for air flow forms part of the test chamber. This equipment is prepared according to EN ISO 5167-1 and EN ISO 5167-2. Calculation of mass flow is according to the same standards.

The second part of the testing facility is a wind tunnel with fan for simulation of side wind. Minimum dimensions of wind tunnel outlet in relation to dimension of test specimen are specified by the standard. Again, uniformity of the speed of air flow in the area of tunnel outlet is very important. It is achieved by installation of flow guides in the tunnel. Speed of air flow in the location of wind tunnel outlet is 10 ms⁻¹ according to test standard EN 12101.

Because it is not possible to test each variation in dimension for particular types of NSHEV, the testing laboratory takes several specimens from the list of dimensions offered (2 specimens in case the list contains maximum 7 variations in product dimension, 4 specimens in case the manufacturer offers 8 or more variations in product dimension). After testing, discharge coefficients for untested dimensions are interpolated by using the method dependent on parameters which influence the flow (depending mainly on the type of product and type of test) specified in EN 12101-2.

Some variations in product dimension are so great (e.g. 2 m x 3 m), that we would need a wind tunnel with a very huge outlet area if we wanted to test them. In these cases reduced models of the product are tested. This is valid only if all details influencing the flow are carefully prepared to scale (e.g. 1:2). During the test of model, similarity of flow has to be achieved based on the Reynolds' number. It means that speed of air flow in tunnel outlet as well as pressure inside the test chamber has to be increased adequately.

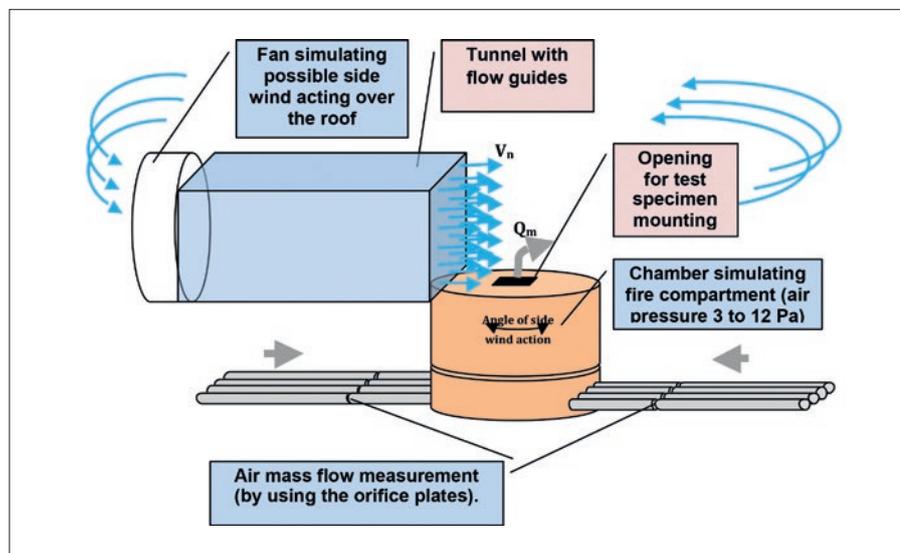


Fig. 1: Layout of testing facility

To achieve comparable results (within acceptable tolerances) of the same product in different laboratories, the technical committee has included minimal and maximal values for specified specimens in the proposed new version of the standard (prEN 12101-2: 04.2011). Limiting values according to the standard and results achieved in our laboratory for simplified NSHEV with dimensions 1,4 m x 1,4 m are plotted in Figure 2.

Manufacturers from Central and Eastern Europe have welcomed the construction of a facility for testing the aerodynamic free area of NSHEV in our testing laboratory FIRES, s.r.o. Testing laboratories offering such services were previously located in Western Europe only. Transport of the test specimens to the laboratory and back increases costs for manufacturers. Furthermore it is common for manufacturers' representatives to be present during tests at the laboratory. They can benefit from this experience during testing in order to further improve their product.

Moreover, manufacturers' decisions are required if some optimization is to be carried out during the testing process.

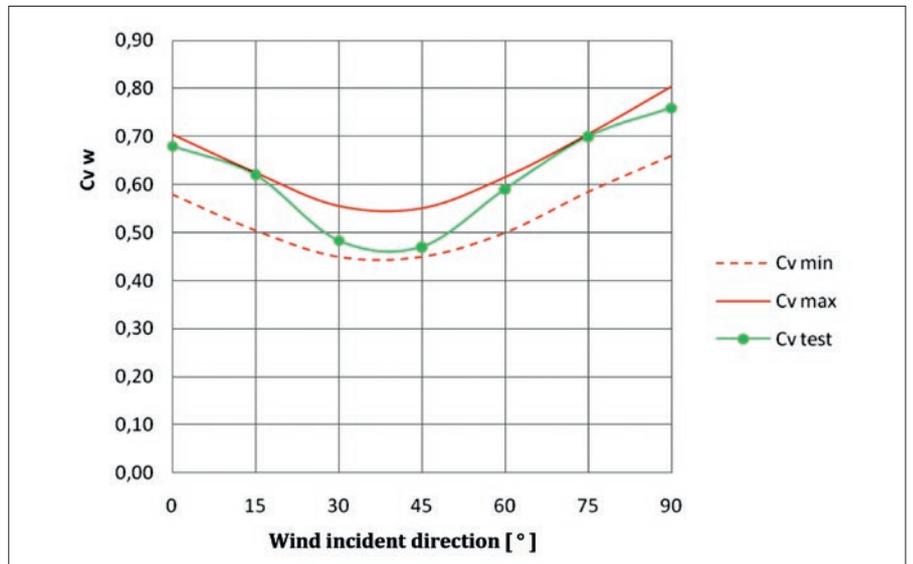


Fig. 2: Plot of the limiting values of C_{vw} specified in the proposed standard prEN 12101-2: 04.2011 (red curves) and measured values C_{vw} (green values).



Fig. 3: Fan for side wind simulation. Diameter of propeller is 2,8 m.



Fig. 4: General view of the facility. Exit area of wind tunnel is 9 m².

NEW FIRE TESTING LABORATORY AT THE BUILDING RESEARCH INSTITUTE (ITB), POLAND

Authors: Marek Lukomski and Andrzej Borowy, ITB, Poland

The development of national economy is usually associated with dynamic investment in the building industry. Existing standards require the use of modern building techniques and technologies as well as reliable, good quality products that ensure compliance with the global environmental protection policy and human safety requirements.

For a number of years, the Building Research Institute (Instytut Techniki Budowlanej, ITB) has cooperated with and supported the building sector, playing the important role of a research, approval and certification centre with extensive scientific and technical facilities. EU decisions on the building industry have a major impact on the scope of work done in the ITB.

Practical application of Community legislation in the area of construction supports the pursuit of our mission, which is to ensure high quality throughout the Polish building industry and to protect the interests of end users of construction works. To face research challenges and meet customer needs, we are constantly developing our laboratory facilities in line with European standards.

In October 2012, ITB completed a significant investment in the enlargement and transfer of the Fire Testing Laboratory from Warsaw to Pionki (100 km from the capital of Poland).

Our new advanced Laboratory in Pionki is a place where construction products and building elements and



Cleaning plant



Vertical furnace (10x7m)



Modulated horizontal vertical furnace



Vertical furnace (3,7x3,7m)

installations and their components are tested under fire conditions.

Fire is one of the major threats to humans and it is almost always associated with substantial losses. One of the goals of the building industry is thus to use such technical solutions that can control and minimize the spread of fire and to use materials/products for which reaction to fire time enables the evacuation of people. At the same time it is extremely vital to keep toxic combustion products at a minimum.

The ITB Laboratory provides upgraded testing facilities to conduct a number of unique tests:

- resistance to fire tests. It is possible to perform large scale tests on loadbearing elements
- tests to determine the reaction of cables to fire in accordance with EC requirements; it is one of only a few such facilities for conducting tests in Europe.

- tests to determine the spread of fire of external walls under external fire exposure, now carried out inside the testing hall all year, regardless of weather conditions.
- full scale reaction to fire tests
- tests on the resistance of roofs to external fire for methods 1, 2 and 3 in accordance with European standards.
- tests associated with the certification of fire doors and/or smoke control doors (all in the same location).

A large, spacious room, divided into independent units adapted to the specific nature of tests, currently contains the largest vertical furnace in the world (when the opening area is taken into account) which can test samples as big as 10x7 m and with a load-carrying capacity of up to 30 tons.

The second furnace, for horizontal tests, is also quite impressive in terms of size. It can be used for testing elements up to 11.5 m long load-bearing bending elements up to 400 tons, and for compressive elements up to 500 tons.

The other two furnaces can be used to test vertical elements up to 5x4.5 m, horizontal elements up to 3x5 m and also vertical elements up to 3.7x 3.7 m.

The comprehensive list of classification methods regarding reaction to fire includes heat and smoke emission and fire spread tests. Similar tests are conducted on a larger scale at the SBI facility, at the Room Corner facility and in the cable testing chamber according to the standard EN 50399.

Due to the central gas cleaning plant for collecting and cleaning all gases emitted during fire tests, the facility is ecologically safe and all types of building products can be



Combo furnace - vertical (5x4,5m) and horizontal (3x5m)



Cable chamber EN 50399



SBI test



Test in cables chamber



Test of roof with bitumen and PS insulation



Roof with ventilation and smoke duct connections

tested including PS or PUR insulations and bitumen membranes.

All the solutions adopted by the ITB Laboratory and its special features are the result of the efforts of well-

experienced and well-qualified ITB specialists.

All the facilities in the laboratory comply with relevant Polish and European Standards. Moreover, the laboratory is accredited under

the Polish Centre for Accreditation, which is important in the process of conformity assessment for labelling construction products with the building mark as well as for CE marking.

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