

Approved Product News

Where There's Smoke...

New lab accelerates time to market
for smoke detection systems



Member of the FM Global Group

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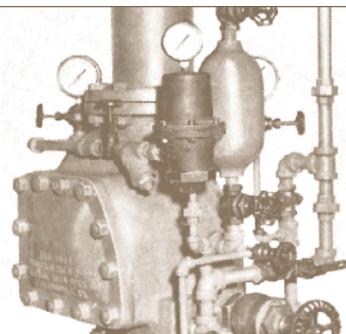
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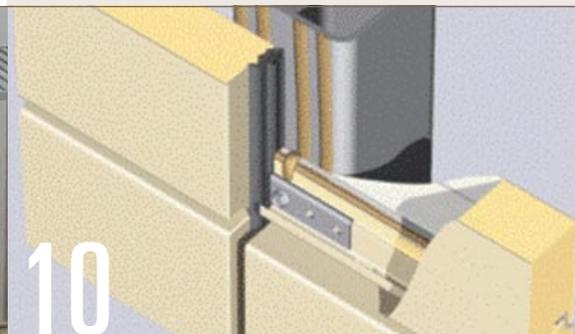
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FM Approvals Appointed as a Construction Products Notified Body for the European Union

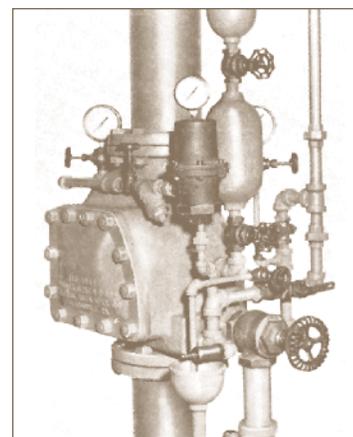
FM Approvals Limited has been appointed as a Notified Body under the Construction Products Directive (CPD) ref: 89/106/EEC by the European Union. This recognition is specific to sprinklers, fire pumps, valves, roofing material, interior wall panels and exterior sandwich panels and allows more locally manufactured and serviced FM Approved products in Europe.

“Companies are seeking a faster time to market and maximum transportability of their products within the global market,” said Andrew Was, manager of FM Approvals in Europe. “The expansion of our European services to include construction products means that FM Approvals can now offer a manufacturer the ability to satisfy European regulations in addition to those in Canada, the United States and beyond, all delivered by one reputable certification organization.”

Andrew went on to explain that, for a manufacturer, “choosing to use the certification services offered by FM Approvals can provide huge benefits. Significant savings in time and money can be achieved through conducting product testing and certification through one globally recognized body, eliminating the frustration of having to undertake certification programs through different national or regional certification agencies and the need to undergo numerous site assessments from each.”

As a Notified Body, FM Approvals will now be able to certify a range of construction products so that the manufacturer can apply the CE mark and sell products in the European Union. FM Approvals also is a recognized Notified Body under the ATEX (Equipment in Explosive Atmospheres) Directive.

The expansion of FM Approvals services and its recognition by many as the leading certification organization in its field, coupled with the global recognition of the FM APPROVED mark, means that, by gaining Approval, manufacturers of fire protection equipment, electrical equipment, hazardous location equipment, fire detection, signalling and other electrical equipment, construction material and roofing products can now access many of the key world markets.



Look for more information on FM Approvals CPD recognition and what this means for FM Approvals' customers in the next issue of *Approved Product News*.

To learn more, contact FM Approvals at +44 (0)1753 750 000 or send an e-mail to cpd@fmapprovals.com.

Customers See the Benefits in FM Approvals' Service

ATEX

FM Approvals Limited was notified under the ATEX (Equipment in Explosive Atmospheres) Directive in April 2006 and, since that time, more than 25 certification projects have begun and 17 more proposals are being reviewed for certification. The Directive requires companies that manufacture equipment used in potentially explosive atmospheres to receive certification from a Notified Body, such as FM Approvals. It not only considers potentially explosive concentrations of gas, vapor or mist in the air, but also concentrations of dust and applies to both electrical and mechanical sources of ignition.

As an ATEX Notified Body, FM Approvals offers, in addition to the FM APPROVED mark, the EU regulatory certification mark (e.g., the Ex mark,) for products used in hazardous locations, which permits the manufacturer to apply the CE mark and sell products in the European Union.

Four companies have already received ATEX certification from FM Approvals, including Invensys Systems, Inc., a global automation, controls and process solutions group and

the first company to receive ATEX certification from FM Approvals. Richard Casimiro, Invensys director of development engineering, said they have a long working relationship with FM Approvals, and the ATEX certification process was as smooth as previous projects.

“Over the past four or five years, we have really come to have a good appreciation for what FM Approvals can do and they have really gained a good understanding of our business and our business needs,” Casimiro said. “That level of trust and understanding really facilitates the process.” Casimiro added that Invensys routinely submits products to FM Approvals for Approval. The ability to receive certifications in both North America and the European Union means they can get their products the required certifications in less time, allowing them to reach customers and markets faster.

“Having the ability to go directly to FM Approvals for Approval in North America and ATEX certification in Europe is a great benefit to us and our customers,” Casimiro said.

FM Approvals also has been appointed as a Notified Body under the Construction Products Directive (CPD) for sprinklers, fire pumps, valves, roofing material, interior wall panels and exterior sandwich panels.

To learn more, contact Andrew Was, general manager, FM Approvals in Europe, at +44 (0)1753 750 000 or send an e-mail to andrew.was@fmglobal.com.

For more information related to ATEX, send an e-mail to atex@fmapprovals.com.

For more information on CPD certification, send an e-mail to cpd@fmapprovals.com.

“Over the past four or five years, we have really come to have a good appreciation for what FM Approvals can do and they have really gained a good understanding of our business and our business needs.”

– Richard Casimiro, Invensys
director of development engineering

Expansion into Europe and Canada

Canada

Since its 2005 accreditation by the Standards Council of Canada (SCC) to offer certification services to electrical and electronic product manufacturers, FM Approvals LLC has issued 58 certificates and there are more than 100 other Approval projects in various stages, with more than 20 proposals also being reviewed.

Having SCC accreditation means companies can now turn to FM Approvals for certification services for both Canada and the United States. This single point of service helps manufacturers reduce time to market, save money and eliminate redundant administrative overhead. “We were

able to consolidate the certification process into one Approval that encompassed all of North America,” said a representative from a leading air pollution control equipment manufacturer.

“We no longer have to pay for testing and documentation from two different entities. With FM Approvals, we can do it all under one roof, and that saved us considerable time and money.”

To learn more, contact Bob Martell, director, FM Approvals electrical group, at +1 (1)781 255 4850 or send an e-mail to robert.martell@fmglobal.com.

Advisory Council Gets a Closer Look

Earlier this year, members of FM Approvals North America Advisory Council visited the FM Global Research Campus to see, up close, the research and testing facilities that FM Approvals utilizes when customers seek Approval for their products.

FM Approvals has three Advisory Councils (Asia, Europe and North America) that serve a pivotal role in providing a forum for furthering FM Approvals’ understanding of the critical issues facing its customers. Input from the advisory council members on topics such as general industry trends, technological innovations and the quality of services provided by FM Approvals helps the company to better meet the changing needs of all customers.

Members on the advisory council are asked to contribute knowledge and opinions to help FM Approvals enhance its effectiveness and the efficiency of its services. At least one meeting of the advisory council is held each year.



Members of the North America Advisory Council recently toured the FM Global Research Campus, where FM Approvals routinely tests products during the Approval process.



Where There's Smoke...

New Lab Accelerates Time to Market for Smoke Detection Systems

According to a leading manufacturer of smoke detection systems, a fire that occurred in a large cleanroom was extinguished by a single sprinkler, but it subsequently took 74 days to clean up the “mess” and return to full operations. Even a small amount of smoke can bring many types of operations to a standstill, including semiconductor, pharmaceutical, food processing, telecommunications and data centers.

Smoke detection systems are a powerful loss prevention tool that can, in many cases, provide an alert before significant damage and business interruption occurs. For more than 30 years, FM Approvals has evaluated and Approved many types of smoke detection systems. The *Approval Guide*, a publication of FM Approvals, lists more than 30 manufacturers of FM Approved smoke-actuated detection devices.

Until now, all FM Approved smoke detection systems have been tested according to the requirements of Approval Standard 3230/3250, *Smoke Actuated Detectors for Automatic*

Fire Alarm Signaling. This Approval was required for use in FM Global client properties, and offered an added level of assurance for any commercial property owner.

While Approval Standard 3230/3250 is referenced in the National Fire Alarm Code® NFPA 72, it is the better known ANSI/UL 268, *Smoke Detectors for Fire Alarm Signaling Systems*, which most authorities having jurisdiction (AHJs) require for smoke detection devices and systems. A combination of factors, including requests from FM Approvals customers, manufacturer interest, and changes in the overall

make-up of the FM Global client base, has led to a new service from FM Approvals—testing and Approval to ANSI/UL 268 standards.

Smoke detection system manufacturers can now use FM Approvals' status as a nationally recognized testing laboratory (NRTL) to achieve certification to ANSI/UL 268 standards and obtain the FM APPROVED mark at the same time. Smoke detectors that pass FM Approvals testing to the ANSI/UL 268 standard will be listed in the next edition of the *Approval Guide*, and manufacturers will be permitted to mark their product with FM Approvals certification mark, and the words "FM Approved to ANSI/UL 268."

To accommodate the anticipated demand for this new service, FM Approvals has constructed a US\$300,000 smoke laboratory (see sidebar, page 8) at the FM Global Research Campus. The recently completed lab is designed to allow testing not only to ANSI/UL 268 and ANSI/UL 864 standards, but also to European Norm (EN) standards.

"About a year ago, representatives from the electronics industry came to us and asked if we would consider providing testing to the ANSI/UL 268 standard," explained Bob Martell, electrical group director for FM Approvals. "These manufacturers were truly interested in finding an additional source for this type of testing. Time to market is critical and

"The fact engineers and managers at FM Approvals have demonstrated to us a very deep level of technical competency and expertise, and that a commitment has been made by FM Approvals at the highest levels are what really matter."

– Isaac Papier, vice president of industry relations for the Honeywell division

delays can be costly. We had follow-up meetings with these manufacturers and explained we were going to move ahead, build a new laboratory and begin this service. We are already a leader in fire loss prevention research and many of these manufacturers are already FM Approvals customers—this made perfect sense for us."

One leading manufacturer of smoke detection and fire alarm control systems is Honeywell Life Safety, based in Northford, Conn., USA. Isaac Papier, vice president of industry relations for the Honeywell division, welcomes the new testing service from FM Approvals. "Product life cycles have become increasingly shorter," he explained. "I can't afford to lose six or eight months waiting in line at a testing agency because they are the only game in town. That can translate into lost revenue. As a manufacturer, the fact that FM Approvals is committed to providing this service is terrific. I think competition, even among testing agencies, is a good thing and will result in better service, lower costs and faster time to market."

Does FM Approvals have what it takes to deliver this new service? "You cannot underplay the complexity and challenge in making this work," Papier noted. "The fact engineers and managers at FM Approvals have demonstrated to us a very deep level of technical competency and expertise, and that a commitment has been made by FM Approvals at the highest levels are what really matter."

The move to provide this new service also made sense based on the changing nature of industry over the past decade. Increasingly, highly protected risk (HPR) clients are those in technology-based businesses, as well as a growing percentage in the so-called "light occupancy market," such as hospitals, nursing homes, hotels and college dormitories. Many of these occupancies require smoke detection and alarm systems to protect against business interruption and property loss.



According to FM Global Property Loss Prevention Data Sheet 5-48, *Automatic Fire Detection*, smoke detectors sense visible or invisible particles of combustion, and can be classified according to their operating principles. Common types of smoke detection systems include:

- **Ionization.** These detectors typically contain a small amount of radioactive material (e.g., Americium-241), which ionizes air in a special chamber, making the air conductive. If smoke particles enter the chamber, ions attach to the particles and a drop in ionization current is detected and an alarm sounds.
- **Photoelectric or beam type** (open area or spot detectors). A light source is projected across the protected area to a photoelectric cell. Smoke obscuring the light beam reduces the light intensity reaching the cell, and a signal is issued. Spot detectors incorporate the light source and receiver in the same unit.
- **Laser.** A type of light-scattering photoelectric detector, laser detectors are typically used with an air-sampling system and are often used in groups to protect critical areas such as cleanrooms.
- **Video smoke detection (VSD).** One of the newest and most advanced methods of smoke detection uses pattern recognition technology to detect subtle changes that may indicate smoke that poses a risk.

New Smoke Lab is State-of-the-Art

In order to begin testing smoke detection systems to the standards of ANSI/UL 268, FM Approvals first had to construct a new smoke laboratory at the FM Global Research Campus. Luckily, there was a large space available in FM Global's US\$80 million research facility to accommodate the new laboratory. FM Approvals engineers designed and built a flexible, fully instrumented environment that could accommodate testing to North America standards embodied by ANSI/UL 268 and ANSI/UL 864, but also to European Norm (EN) standards.

The new smoke laboratory measures 22 ft. x 36 ft. (6.7 m x 11 m) with a raised floor that allows the ceiling height to be set at 10 ft. (3 m) for ANSI/UL 268 testing or to approximately 13 ft. (4 m) for EN54 testing. According to FM Approvals Technical Team Manager Don Major, the specific EN54 standards the organization will be testing products to include EN54 Part 7, covering light scattering or ionization-type smoke detectors, and EN54 Part 12, covering line detectors that use an optical beam.

The raised floor in the new smoke laboratory also allows FM Approvals to eventually offer application-specific Approval for facilities such as data centers where raised floors are prevalent and other confined space applications. Special applications that may not be covered under



Workers construct FM Approvals new smoke detection laboratory, a state-of-the-art facility which allows FM Approvals to test smoke detection systems to North America and European Norm standards.

In addition to testing to ANSI/UL 268 standards, the new FM Approvals smoke laboratory will enable the testing of complete smoke detection systems, including monitoring systems in accordance with ANSI/UL 864, *Control Units for Fire-Protective Signaling Systems*.

According to FM Approvals Technical Team Manager Don Major, the testing organization soon will update the pre-existing Approval Standard 3230/3250, using it to cover special applications for smoke detection systems. “For instance, we have tested aspirating smoke detection systems for use in freezer storage warehouse areas, where conventional ionization-type detectors can’t function,” he said. “These types of special uses may be covered in our revision of 3230. The original Approval Standard also contains some test criteria for false alarms, and environmental testing not covered by other standards.”

What about AHJs and local acceptance of the new FM Approvals certification? FM Approvals Senior Engineering Specialist Bob Elliott acknowledged there will be a learning curve among building code enforcement officials and other AHJs. “However, it’s not as though we are an unknown in the fire protection system world,” Elliott stressed. “We are pioneers in fire loss prevention and most AHJs who frequent commercial facilities have heard of us and seen the FM APPROVED mark. The fact that this mark will now appear on a smoke detector or detection system is not a tremendous leap. It’s really a natural extension of our services.”

To learn more, contact Bob Martell, director, FM Approvals electrical group, at +1 1(781) 255 4850 or send an e-mail to robert.martell@fmglobal.com.



ANSI/UL 268 will be integrated into the original Approval Standard 3230/3250, *Smoke Actuated Detectors for Automatic Fire Alarm Signaling*, which will be revised in the near future.

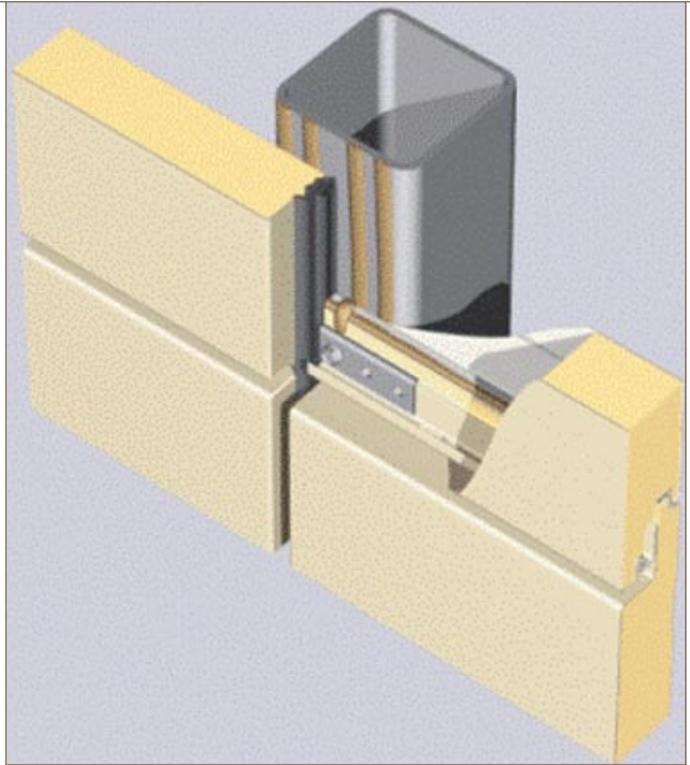
Monitoring equipment, including video cameras, data acquisition computers and software, are located in an adjacent 8 ft. x 16 ft. (2.4 m x 4.9 m) control room. The smoke laboratory itself is equipped with flush-mounted sprinklers, replaceable Armstrong CermaGuard fire-resistant ceiling tiles, thermocouples, cameras and fully insulated walls to protect it from external thermal influences.

Smoke density is measured as a percentage of obscuration per linear foot within the smoke chamber as measured by optical density meters (ODM) and by measuring ionization chambers (MIC). Most open-area smoke detectors operate in the range of 1- to 4-percent obscuration, while high sensitivity smoke detection systems detect smoke obscuration at well below one percent.

The ANSI/UL 268 smoke tests that will be used as part of the test program include the following:

- Paper test – 1.5 oz. (42 grams) of shredded newspaper (black print only)
- Wood crib test – 17 oz. (482 grams) of wood is ignited with .004 liters (4 ml) of denatured alcohol
- Flammable liquid – 4 oz. (.12 liters) blend of 25 percent toluene and 75 percent heptane
- Smolder test – 6.1 oz. (173 grams) of Ponderosa Pine heated on a hot plate

According to FM Approvals Senior Engineering Specialist Bob Elliott, “the new smoke laboratory and the FM Approvals testing program provide manufacturers with another nationally recognized testing laboratory (NRTL) for obtaining ANSI/UL 268 and 864 certification. What we are certain of is that manufacturers are looking for this service from us and hoping we can provide an alternative route to the market. We strongly believe they will come to view this as a viable option.”



Pushing the Envelope: New Approval Standard for Exterior Wall Systems

FM Approvals has made significant advances since 1992's Hurricane Andrew to strengthen its standards and testing programs for roofing systems. The effectiveness of these fortified requirements for roofing and other structural components can be seen in the aftermath of recent, powerful storms. A comparison of "improved" and "unimproved" FM Global client locations showed that properties that had been improved per FM Global recommendations showed 85-percent lower losses following Hurricane Katrina, and 75 percent less following Hurricane Rita.

Now, FM Approvals, a nationally recognized testing laboratory (NRTL), is applying the same successful principles to the evaluation of exterior wall systems. The new Approval Standard 4881, *Class 1 Exterior Wall Systems*, provides the first comprehensive performance-based test program for exterior wall assemblies. The new standard provides a wide range of Approval ratings to allow manufacturers to target exterior wall systems for almost any geographic area, from hurricane-free zones to the most hurricane-prone regions.

"The ultimate goal is to achieve a complete FM Approved building envelope," noted George Smith, director of FM Approvals materials group. "We've been fire testing exterior walls since the 1960s because that was a primary cause of large losses. Over time, hurricane frequency and intensity, combined with increased development in coastal regions around the world, has led to large losses due to roof and wall failures. We've done a great job addressing roofing systems; now we want to extend that to wall systems as well."

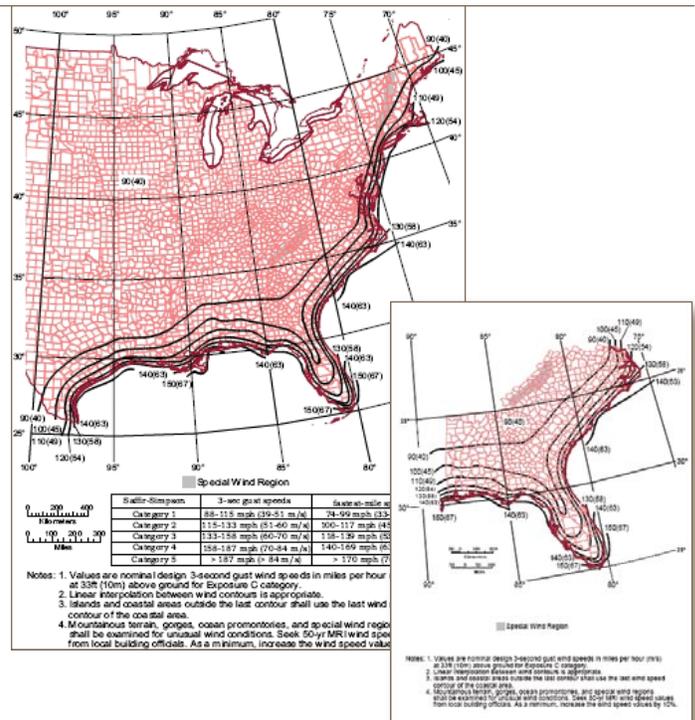
Distilled from the best standards

According to FM Approvals Senior Engineering Specialist Jeff Gould, Approval Standard 4881 took two years to develop and is designed to meet the needs of manufacturers and FM Global clients alike. “We pulled together the best standards in use from around the country and used them to design our new standard,” Gould explained. “Approval Standard 4881 addresses the natural hazards to which exterior walls are commonly exposed, including the cyclic nature of high-wind events, and the impact of windborne debris.”

To meet the requirements of Approval Standard 4881, exterior wall systems must first meet the requirements for Class 1 Fire Rating as called for in Approval Standard 4880. Wall systems intended for interior use only that have been Approved under Approval Standard 4880 do not need to be evaluated under Approval Standard 4881. For instance, FM Approved wall systems used solely for interior freezers or coolers need no further examination. Wall assemblies intended for exterior use that have been fire-tested and FM Approved under Approval Standard 4880 will now need to undergo the natural hazard testing required under Approval Standard 4881 to maintain their FM Approved status.

The requirements of new Approval Standard 4881 include:

- Fire rating of Class 1 in accordance with Approval Standard 4880 is a prerequisite.
- Wind-Load Rating. All FM Approved Class 1 exterior wall assemblies shall have a wind-load rating expressed as a pair of inward and outward pressures. The pressures are determined by a static pressure test and a cyclic pressure test.
- Windborne-Debris Resistance. This is an optional test that allows a manufacturer to demonstrate a product’s performance potential against large and small missiles.



Certain building codes (e.g., International Building Code and Florida Building Code) require missile-impact resistance.

- Hail-Resistance Ratings. This test simulates the expected impact of hail on exterior wall assemblies. This type of test has been used for years to evaluate roofing coverings. The ratings available are “Severe” and “Moderate.” FM Global Property Loss Prevention Data Sheet 1-29, *Roof Deck Securement and Above-Deck Roof Components*, is used to determine the hail impact rating needed for a particular geographic region.

The wind-load rating required for all exterior wall systems under Approval Standard 4881 includes separate static and cyclic tests.

Each 16 ft. x 14 ft. (4.9 m x 4.3 m) exterior wall test assembly is first tested to a minimum of 30 psf (.207 MPa) static pressure. Manufacturers may choose to increase the static pressure in 5 psf (.0345 MPa) increments in order to obtain a higher wind rating. The pressure is applied in both inward (windward) and outward (leeward) directions to simulate the conditions found in actual wind storms. The ratio of outward pressure to inward pressure is -1.4 or -2.0, depending on the rating desired.

Cyclic air pressure testing is done on the same test frame as the static pressure test, but the pressure is cycled a total of either 9,000 or 1,056 cycles, depending on the rating desired. Again, the ratio of outward to inward pressure is the same as that used in the static test. In addition, all exterior wall assemblies are subjected to a simulated hail-resistance test.

High-impact testing

For the most severe hurricane zones, such as those found along the U.S. coast of Florida, Puerto Rico and other areas, missile tests also are performed. The large missile impact test requires that the test wall prevent penetration of an 8-ft. (2.4-m) wooden beam weighing 9 lbs (4 kg), fired from an air cannon at a speed of 50 ft./sec (15.25 m/s), which is approximately 35 mph (56 km/h). This test requires the sample be subjected to two impacts at specific locations. The small missile test requires three separate impacts from a cluster of 10 steel balls traveling at approximately 90 mph (145 km/h).

Approval Standard 4881 recognizes three different wind zone categories, including:

- **Zone HM** – denotes exterior wall assemblies that have been qualified for locations subject to both hurricane-force winds and impact from windborne debris. The wall rating is determined from static and cyclic pressure tests, and missile impact tests.
- **Zone H** – denotes exterior wall assemblies that have been qualified for locations subject to hurricane-force winds, but no impact from windborne debris. This rating is determined from static and cyclic pressure tests.
- **Zone NH** – denotes exterior wall assemblies for non-hurricane zones not subject to either hurricane-force winds or impact from windborne debris.

FM Approvals Senior Engineer Jim Goodwillie is supervising the first 4881 Approval Standard programs, which are currently underway at the FM Global Research Campus. “We already have four manufacturers who are either in the middle of an Approval Standard 4881 test program or signed up to participate,” he said. “The manufacturer saves time because we can do all of the required testing right here, from fire tests to the natural hazard testing required for use along the coast. Time to market is reduced and that’s critical. Hopefully, this effort will lead to an upgrade of the entire industry, and result in fewer losses and less business interruption.”

Once Approved, the manufacturer and product will be listed in the *Approval Guide*, a publication of FM Approvals, which lists thousands of products that are FM Approved. In addition, the FM Approved product must be labeled with the manufacturer’s name, product trade name and the FM APPROVED mark. Upon completion of an installation using the FM Approved wall system, the manufacturer is required to attach a permanent, corrosion-resistant nameplate to the exterior of the building wall with all the above information, as well as date of construction, and applicable Approval rating for fire, wind and hail.

According to Gould, a new Approval Standard covering building fenestration (e.g., doors, windows) is being drafted and will eventually help clients achieve even greater loss prevention assurance. “Of course, the weakest link will fail in severe wind events,” Gould noted. “So, even if you have the strongest possible roof and walls, you can still have a door or window failure. This follow-on standard will address that final component.”

To learn more about Approval Standard 4881, please contact George Smith, director, FM Approvals materials group, at +1 (1)781 255 4870 or send an e-mail to george.smith@fmglobal.com.



Armand Brandao



Larry King



Nick Ludlam



Bill Lawrence



Patrick Bryne

FM Approvals Employees Help Guide Standards Development

Armand Brandao, senior engineer, chaired a teleconference meeting of the NFPA 18 Technical Committee, to review comments for new standard NFPA 18, *Water Additives for Fire Control and Vapor Mitigation*. This is the first performance standard for this material and will be used as a resource in future FM Approvals evaluations.

Numerous FM Approvals staff participated in the NFPA World Safety Conference and Exhibition in Orlando, Fla., USA. Senior Consultant Engineer **Larry King** gave a presentation, “Water Mist System Fire Testing Codes and Standards,” at the joint NFPA/International Water Mist Association day seminar and another presentation on “Water Mist Systems for Light Hazard Occupancies” at the NFPA Lodging Industry section seminar.

Larry King also attended the Association of State Flood Plain Managers (ASFPM) 2006 conference and exhibition in Albuquerque, NM, USA, on June 12-16, 2006. FM Approvals and FM Global also sponsored an exhibition booth for the introduction of the new FM Approvals draft Approval Standard Class 2510: *Flood Abatement Equipment* and of the FM Global engineering natural hazards capabilities. King also gave two presentations introducing the new Approval Standard to the ASFPM. King also attended the DEFRA Flood and Coastal Management Conference and Exhibition (York, U.K.) to provide information on Approval Standard 2510 throughout Europe.

Nick Ludlam headed the U.S. delegation to the October 2006 meeting of IEC SC31G (Intrinsic Safety for Explosive Atmospheres) in Rio de Janeiro, Brazil. He also partici-

pated in SC31G MT60079-11, which is starting work on the 6th edition of IEC 60079-11 (intrinsically safe apparatus), SC31G MT60079-25, which will be starting work on the 2nd edition of IEC 60079-25 (intrinsically safe systems); and TC31 MT60079-15, which will be starting work on the 4th edition of IEC 60079-15 (type of protection ‘n’).

In December 2006, FM Approvals will be represented by **Bill Lawrence** and Nick Ludlam who will attend the meeting of NEC® Code-Making Panel 14 to address the public comments on revision of Articles 500-517 (hazardous locations).

Bill Lawrence headed the U.S. delegation to the October 2006 meeting of IEC TC31 (Explosive Atmospheres) in Rio de Janeiro, Brazil. He also convened the working group meeting of IEC TC31/WG22 to review and address the comments on the Committee Drafts for Vote (CDV) of the 3rd editions of IEC 60079-5 (Powder filling “q” for Explosive Atmospheres) and IEC 60079-6 (Oil immersion “o” for Explosive Atmospheres). Major changes to “q” include a relaxation for fault assessment for fuse-protected equipment, allowing a broader application of the technique.

In late 2006, ISA SP12 (Hazardous Locations) meetings will be attended by **Patrick Byrne**, Bill Lawrence and Nick Ludlam. Major topics will include continued development and revision of the U.S. standards for open-path gas detection, Dust Protection by Enclosure “tD,” Intrinsic Safety “i,” Increased Safety “e,” Flameproof “d,” and ignition systems for internal combustion engines.

ATEX Standards Update

The Official Journal of the European Union ref 2006/C 168/04, July 2006 includes the following changes:

1. New Standards added in this issue:
 - [EN 1010-2:2006](#), Safety of machinery — Safety requirements for the design and construction of printing and paper converting machines — Part 2: Printing and varnishing machines including pre-press machinery
 - [EN 12621:2006](#), Machinery for the supply and circulation of coating materials under pressure — Safety requirements
 - [EN 14491:2006](#), Dust explosion venting protective systems
 - [EN 14678-1:2006](#), LPG equipment and accessories — Construction and performance of LPG equipment for automotive filling stations — Part 1: Dispensers
 - [EN 60079-1:2004](#), Electrical apparatus for explosive gas atmospheres — Part 1: Flameproof enclosures ‘d’ (IEC60079-1:2003)
 - [EN 60079-2:2004](#), Electrical apparatus for explosive gas atmospheres — Part 2: Pressurized enclosures ‘p’ (IEC60079-2:2001)
 - [EN 60079-15:2005](#), Electrical apparatus for explosive gas atmospheres — Part 15: Construction, test and marking of type of protection ‘n’ electrical apparatus (IEC 60079-15:2005)
 - [EN 60079-18:2004](#), Electrical apparatus for explosive gas atmospheres — Part 18: Construction, test and marking of type of protection encapsulation ‘m’ electrical apparatus (IEC 60079-18:2004)
2. Amendments issued to existing standards:
 - [EN 13616:2004/AC:2006 to EN 13616:2004](#), Overfill prevention devices for static tanks for liquid-petroleum fuel
 - [EN 13617-1:2004/AC:2006 to EN 13617-1:2004](#), Petrol filling stations — Part 1: Safety requirements for construction and performance of metering pumps, dispensers and remote pumping units
 - [EN 14591-1:2004/AC:2006 to EN 14591-1:2004](#), Explosion prevention and protection in underground mines — Protective systems — Part 1: 2-bar explosion proof ventilation structure

Please note that no reference to superseded standards or date of cessation has been included for these amendments and as such they apply immediately. Had FM Approvals issued any ATEX certificates under these standards, customers would be advised of the change and might have to have the products reviewed and recertified to ensure that they satisfy the ATEX requirements that are current.

Implications of the new standards

With the publication of the standards as noted above, previous standards are considered to be superseded on the dates given below, at which time they shall be withdrawn from the Official Journal:

- [EN 60079-1:2004](#) will supersede [EN 50018:2000](#), including all amendments as of March 1, 2007
- [EN 60079-15:2005](#) will supersede [EN 60079-15: 2003](#), as of June 1, 2008

Products within the scope of the ATEX Directive 94/9/EC placed on the market are required to be accompanied by an EC Declaration of Conformity prepared by the manufacturer. For those categories of equipment that require the involvement of a Notified Body, this declaration is usually supported by an EC-Type Examination Certificate based on the standards listed in the Official Journal, which are considered to provide a presumption of conformity with the ATEX Directive.

When standards are withdrawn from the Official Journal, on the dates identified above, the presumption of conformity can no longer be claimed and an EC-Type Examination Certificate referencing them can no longer support the issue of a valid EC Declaration of Conformity.

As an ATEX Notified Body, FM Approvals can assist manufacturers in updating EC-Type Examination Certificates for their products to ensure the uninterrupted validity of EC Declarations of Conformity.

For more information, send an e-mail to atex@fmapprovals.com.

Approvals Standards Update

As a result of recent testing programs, the following Approval Standards have been issued:

(New) **Class 5420 – Carbon Dioxide Extinguishing Systems**, August 2006. This Approval Standard states Approval requirements for fixed carbon dioxide fire extinguishing systems. It provides system and component performance and durability criteria and evaluation protocols for both low- and high-pressure systems for both total flooding and local applications.

(Updated) **Class 4911 – Wafer Carriers for Use in Cleanrooms**, August 2006. This Approval Standard states Approval criteria for wafer carriers used in cleanrooms by evaluating the ability of these products to limit fire spread and smoke damage. Wafer carriers are used by the semiconductor industry to store and transport wafers. This Approval Standard has been updated to include a modified fire test.

(Updated) **Class 3613 – Electric Flashlights and Lanterns for Use in Class I, II and III, Division 2, Hazardous Locations**, August 2006. This Approval Standard states Approval criteria for electric flashlights and lanterns for use in Class I, II and III, Division 2, hazardous (classified) locations as defined in the National Electrical Code®, ANSI/NFPA-70 (NEC®).

The Approval Standard has been updated to include:

- Class II and III hazardous (classified) locations
- Lettering size requirements for marking information;
- A maximum allowable venting pressure; and
- Enclosure and temperature testing for Class II and III environments.

(Updated) **Class 1112 – Indicating Valves (Butterfly or Ball Type)**, August 2006. This Approval standard states the Approval criteria for indicating ball and butterfly valves used in fire protection systems. The standard encompasses the design and performance requirements for 2 in. (5 cm) through 12 in. (30 cm) nominal size valves. The revision to the Approval Standard has updated the requirements for: product design, documentation, Approval testing and the manufacturer's production testing.



FM Approvals On Location

FM Approvals is hosting two seminars designed to educate and provide assistance to current and potential FM Approvals customers in the design, Approval and installation of electrical equipment for use in hazardous (classified) locations. Topics include coverage of the changes to Articles 500-506 of the 2005 National Electrical Code® (NEC®) and addressing the installation of electrical equipment in hazardous (classified) locations, as well as national and international standards and updates on certification activities.

The dates/locations of the seminars are:

- **Dec. 4 and 5, 2006**
San Diego, Calif., USA
- **Dec. 7 and 8, 2006**
Norwood, Mass., USA

These seminars are geared to electrical and mechanical design engineers, along with those responsible for installation of electrical equipment in the petrochemical industry, area classification, inspection of installations, quality control and marketing. All classes will be presented by experts in the design and installation of electrical equipment who also are members of the NEC committee and national/international committees that are addressing design and installation of hazardous location electrical equipment. For more information, please visit www.fmglobal.com/seminars.



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