

Fire resistance testing

Evaluate the strength, stability and fire insulation of products and materials



In the event of a fire in buildings, vehicles or means of transportation, the fire resistance time of the materials and products is the most critical variable and has a direct influence on the occupants' safety. Fire-resistant products should allow the structures to retain their minimum functions during the time required to evacuate the people, even despite the extreme conditions of heat and pressure to which they are subjected. Manufacturers of these products, must evaluate product resistance, stability and fire insulation according to the applicable regulation.

Accredited Fire Resistance Testing Laboratory

Applus+ Laboratories provides fire resistance testing service for all kind of passive fire protection products. Our fire laboratories in Barcelona, Spain (LGAI Technological Center S.A.) are **ISO/IEC 17025 accredited by ENAC/ILAC (nº 9/LE895)** to test under international standards applicable to various sectors: International Standards (**ISO**), American Standards (**NFPA, UL**), European Standards (**EN**), National Standards (**BS, UNE**, etc.), Specific Standards for Oil and Gas, Marine, Railway (**ASTM, IMO**). [See the complete list of our accreditations](#)

We are Europe's leaders in annual volume of fire tests and equipment. We have been working for more than 25 years in the fire industry. We are **members of EGOLF and ASFP** and our experts are involved in the major technical and regulatory forums (CEN) for developing new standards

Comprehensive Testing services for Fire Safety Products

- **Test Plan** management and execution
 - Fire resistance simulation
 - Test tooling design and manufacture
 - On-line test visualization
 - Data post-processing and test report issuing
- Assessments for **extension applications reports EXAP** (evaluation of the behavior of other untested components)
- **Training** for technicians

Product Certification and Conformity for International Markets

Applus+ Laboratories is an European Notified Body (No. 0370) for all products with fire resistance and fire reaction requirements that fall within the scope of the Construction Products Regulation. We also have the required notifications and recognitions needed to issue certificates of conformity for access to the major international markets.

- **Europe:** [CE Marking](#) and European Certifications for Innovative Construction Products (ETA, EAD, amongst others)
- **Middle East:** Certification body recognized by Dubai, Qatar, Oman and Kuwait governments.
- **Americas:** Agreement with UL
- **China:** Support and management of the [CCC Certificate](#)
- **Switzerland:** VKF-AEAI recognition

FIRE RESISTANCE TEST STANDARDS

Partitions and structures

- **EN 1363-1:** Fire resistance, general requirements
- **EN 1363-2:** Fire resistance, alternative and additional procedures
- **EN 1364-1:** Non-load bearing walls
- **EN 1364-2:** False ceilings
- **EN 1364-3-4:** Curtain walling
- **EN 1364-5:** Air transfer grilles
- **EN 1365-1:** Load bearing walls
- **EN 1365-2:** Floors and roofs
- **EN 1365-3:** Beams
- **EN 1365-4:** Pillars
- **EN 1365-5:** Balconies and walkways
- **EN 1365-6:** Stairs
- **BS 476-20:** Fire tests on building materials and structures
- **BS 476-21:** Fire resistance of loadbearing elements of construction
- **BS 476-22:** Fire resistance of non-loadbearing elements of construction

- **ASTM E119-15:** Building construction and materials
- **NFPA 251:** Building constructions and materials, fire resistance
- **UL 263:** Building constructions and materials

Equipment and services

- **EN 1366-1:** Ducts
- **EN 1366-2:** Fire dampers
- **EN 1366-3:** Penetration seals
- **EN 1366-4:** Linear joint seals
- **EN 1366-5:** Service ducts and shafts
- **EN 1366-6:** Raised access and hollow core floors
- **EN 1366-7:** Conveyor systems and their closures
- **EN 1366-8:** Smoke extraction ducts
- **EN 1366-9:** Single compartment smoke extraction ducts
- **EN 1366-10:** Smoke dampers
- **EN 1366-11:** Fire protective systems for cable systems and associated components
- **EN 1366-12:** Non-mechanical fire barrier for ventilation ductwork
- **EN 1366-13:** Chimneys
- **EN 81-58:** Lift doors
- **EN 14470-1:** Safety cabinets for flammable liquids
- **EN 12101-1:** Smoke Barriers
- **EN 12101-2:** Natural smoke and heat exhaust ventilators
- **EN 12101-3:** Smoke and heat control systems
- **EN 12101-7:** Smoke duct sections
- **EN 12101-8:** Smoke control dampers
- **ASTM E2816-18:** Fire resistive metallic HVAC duct systems
- **EN 1634-1:** Doors, gap closing elements, and openable windows
- **EN 1634-3:** Smoke control test for door and shutters
- **BS 476-24:** Fire resistance of ventilation ducts
- **ASTM E814-13a:** Fire resistance. Penetration seals
- **UL 9:** Window assemblies, fire resistance
- **UL 10B:** Fire tests to door assemblies
- **UL 10C:** Door assemblies: positive pressure fire tests
- **UL 10D:** Fire protective curtains
- **UL 155:** Vault and file room doors
- **UL 555:** Fire dampers walkways
- **NFPA 252:** Door assemblies
- **UL 1479:** Through-penetration firestops
- **NFPA 105:** Smoke door assemblies and other opening protectives
- **EN 15650:** Ventilation for buildings - Fire dampers
- **EN 16034:** Pedestrian doorsets, industrial, commercial, garage doors and openable windows - Product standard, performance characteristics - Fire resisting and/or smoke control characteristics

Protective structure and materials

- EN 13381-1: Horizontal protective membranes
- EN 13381-2: Vertical protective membranes
- EN 13381-3: Protection of concrete
- EN 13381-4: Protection of steel structures
- EN 13381-5: Concrete/profiled sheet composite
- EN 13381-6: Concrete filled hollow steel columns
- prEN 13381-7: Protection of wood structures
- EN 13381-8: Protection of steel structure
- EN 13381-9: Protection systems to steel beams with web opening
- prEN 13381-10: Protection to solid steel bar in tension
- EN 14135: Coverings. Determination of fire protection ability
- ISO 22899-1: Resistance to jet fires of passive fire protection materials and systems
- ISO 22899-2: Determination of the resistance to jet fires of passive fire protection
- BS 476-23: Contribution of components to the fire resistance of a structure
- UL 1709: Protection Materials for Structural Steel

Others (Marine, Oil and Gas, Railway, and Aircraft)

- EN 15659: Secure storage units. Classification and test methods
- ASTM E 2226-15b: Hose stream
- UL 1709: Heating curve
- UL 1724: Electrical circuit protective system
- UL 1784: Door Assemblies: Leakage
- UL 2196: Resistive cables
- IMO 2010 FTP code
- NFPA 415: Airport terminal buildings, fuelling ramp drainage, and loading walkways
- ISO 20902-1: Divisional elements used in oil, gas and petrochemical industries

Highly specialized laboratory and equipment

- 1 Vertical furnace (3x5 m)
- 2 Horizontal furnaces (3x4x3 m)
- 1 furnace for experimental RandD (1,5 x 1,5 x 1,5 m)
- 2 furnaces (3x3 m)
- 1 [Jet Fire](#) installation
- Supplementary sample characterization equipment, auxiliary loads
- Combined acoustic plus fire tests with the same sample (vertical and horizontal airborne noise transmission chamber)

Benefits



- Increase the product's reliability by detecting latent defects
- Improve your product's quality and lower the costs for non-quality, post-sale incidents, etc.
- Applus+ Laboratories, one-stop-shop for your product's full characterization and validation.