



**Effectis**

# EFFECTIS GROUP

With offices located in France, the Netherlands, UK, Turkey, Spain and North Africa, Efectis is a global player in the fire science and specialises in fire safety including testing, modeling, certification, education and inspection.



Daniel Joyeux, Chairman of Efectis Group

Based on its 65 years of experience, from small to large scale, from materials to construction, Efectis is assessing the fire performance (fire resistance, reaction to fire, extinguishing systems...) of your products, systems and entire projects in many areas including nuclear, transportation, dwellings, infrastructure, tunnels, high rise buildings, industrial process and storage...

## EFFECTIS GROUP IN SOME FIGURES

Investment  
of 7M€  
since 2015

Recognized as  
an official testing  
institute for more  
than 65 years

240 employees  
across 19 sites  
& 6 countries

A consolidated  
turnover of over  
29M€ in 2018

A certification  
body recognized  
in 35 countries

More than 2800  
tests carried out  
in 2018  
(reaction to fire and  
fire resistance tests)

A growth of  
30% in 5 years  
(120% on 10 years)

14 fire resistance  
furnaces  
3 mobile furnaces  
22 facilities for  
reaction to fire testing

More than 800  
accredited  
standards



## Fire testing in laboratories

Efectis' extensive testing facilities allow us to carry out almost any type of fire test. These vary from standardized tests up to tailor made tests. Efectis does invest each year in new testing devices for enlarging its assessment services of all your products and systems.

### FIRE RESISTANCE TESTING

ALL CONSTRUCTION AND FIRE PROTECTION PRODUCTS, STRUCTURAL ELEMENTS...



G furnace 24 MW 1000 tonnes 8x6x5 m (LxWxH)

### REACTION TO FIRE TESTING

SBI, SMALL BURNER, CONE CALORIMETER, NON COMBUSTIBILITY, RADIANT FLOOR PANEL...



Large calorimeter 10 MW 9x9x9 m

### JET FIRE TESTING

WITH OR WITHOUT WITNESSING FROM THIRD PARTY ORGANIZATIONS (LLOYD'S, DNV, ABS...)



Test according to the ISO 22899-1 standard

### MOBILE FURNACE

COST-EFFECTIVE ON-SITE FIRE RESISTANCE TEST ON WALLS, CEILINGS, FLOORS, ROOFS...



Fire test on an existing tunnel wall using our MobiFire®

### FIREFIGHTING SYSTEMS' TESTING

ON ALL ACTIVE FIRE PROTECTION PRODUCTS: WATERMIST, SPRINKLERS, HOSE REELS...



OH1 test for watermist systems

### IN SITU & REAL SCALE TESTS

IN COLLABORATION WITH OUR SISTER COMPANY EFFECTIS OUTLABS VENTILATION



In-situ test

### TESTS COMBINATIONS

SEISMIC + FIRE + HOSE STREAM...  
PENETRATION SEAL FOR NUCLEAR PLANTS, DOORS...



Hose stream test (2 bar) applied just after the fire test

### ADDITIONAL TESTS

SMOKE & WATER TIGHTNESS, CYCLING, MECHANICAL...



Water tightness test on pipes and cables penetrations

### OUR STRENGTHS

Our fire resistance and reaction to fire tests are performed according to **national**, **european** and **worldwide** standards: ISO, EN, IMO, HC, HCM, RWS, UL, FM, BS, ASTM, GOST, GNB, NBR...

Efectis has a large experience in testing products according to the **EXAP (Extending Application)** standards allowing us to minimize the number of tests.

Apart from standardized tests, Efectis can perform any **specific tailor-made test** such as oversized specimen tests, extended testing time, higher exposure...





## Our accreditations, certifications, recognitions...

### OUR ACCREDITATIONS, CERTIFICATIONS...

- ISO/IEC 17025 Accreditation (TESTING)
- ISO/IEC 17020 Accreditation (INSPECTION)
- ISO/IEC 17065 Accreditation (CERTIFICATION of Products & Services)
- ISO 29990 Certification (TRAINING)
- ISO 9001 Certification
- CEFRI-E Certification for radiation protection
- EDF-UTO qualification
- Notified Body for CE-MARKING in accordance with EU CPR
- I.M.O. qualification

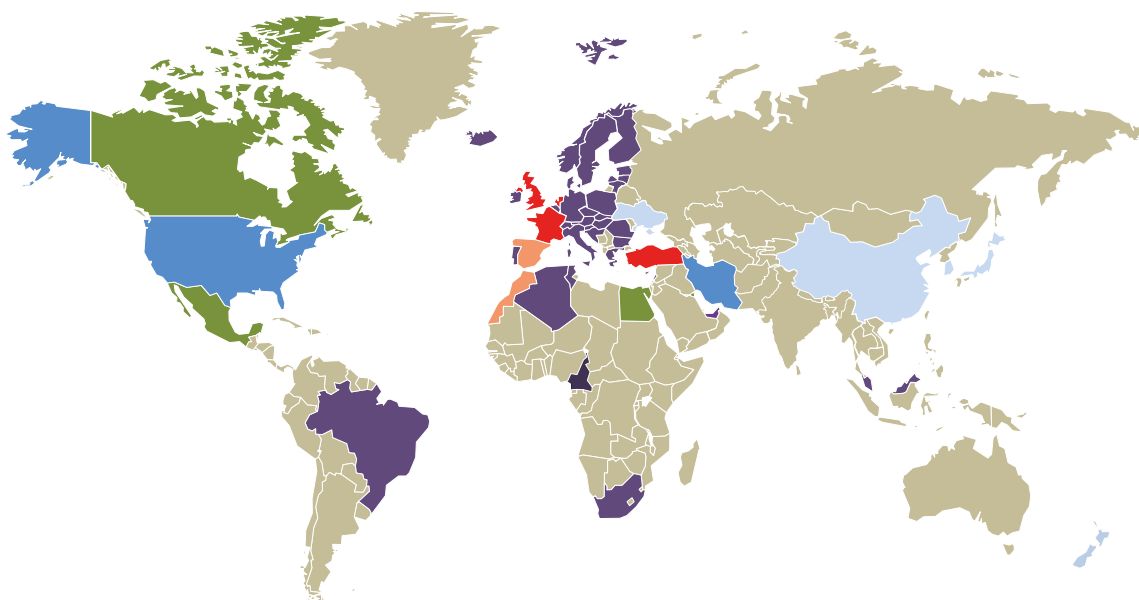
### OUR MAIN RECOGNITIONS, COLLABORATIONS...

- FM approval
- INTERTEK for the American market
- LLOYD'S approval for jet fire testing
- DIBT acceptance for fire tests according to European standards
- VKF for the Swiss market
- BHRC (Building & Housing Research Centers) in Iran
- KFSD (Kuwait Fire Service Directorate)
- Civil Defence of United Arab Emirates
- Civil Defence of Qatar



## Efectis all over the world

- **19 offices and laboratories** around the world recognized in **35 countries**
- Highly qualified staff speaking various languages (**English, French, Dutch, Turkish, Spanish, German, Arabic, Chinese, Farsi...**)



"Our target isn't to have a hundred offices scattered across the world, it is to be standing beside our clients wherever they need us"

Daniel Joyeux  
Chairman  
of Efectis

- Efectis Laboratories and offices
- Efectis Offices
- Efectis recognitions
- Efectis recognitions in progress
- Efectis cooperation agreements
- Cooperation agreements in progress and/or access to a professional network



## Fire safety engineering – performances verification

The high level of competence and a proven track record characterizes our studies of structural fire behavior, risk assessment and smoke spread.

### FIRE RISK ASSESSMENT AND RISK ANALYSIS

- Nuclear power plants and power stations
- Buildings and offshore installations

### REAL FIRE SCENARIO MODELING

- Numerical simulation of fire development in open and confined environment
- Parametrical study of fire development
- Thermal impact modeling (safety distance of thermal effects)

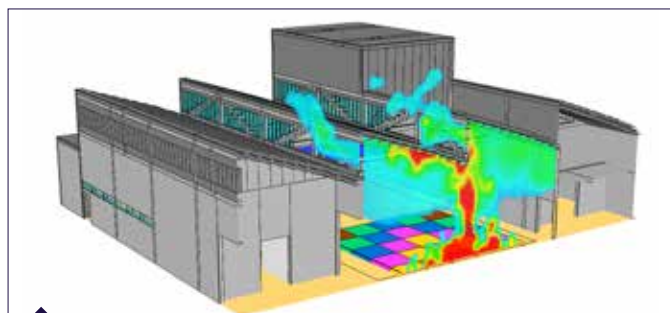
### CODE CONSULTING

- Fire and life safety code analysis
- Code compliance review
- Code evaluation and conflict resolution

### ASSESSMENT OF ENVIRONMENTAL ISSUES

- Atmospheric scattering simulation of pollutants and combustion products
- Evaluation of safety distance from toxic effects

### SMOKE SPREAD STUDIES



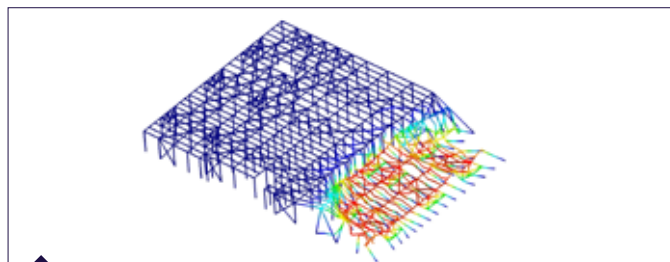
Smoke spread in a hall

- Simulation of fire effluent spread
- Design and validation of mechanical smoke exhaust systems
- Toxicity and smoke opacity

### FIRE BEHAVIOR OF PRODUCTS AND SYSTEMS BY MODELING APPROACH

- Construction products: doors, partitions...
- Safety equipment: dampers, fans...
- Protection products: intumescent coatings, sprayed products, board...

### STRUCTURAL FIRE BEHAVIOR ENGINEERING



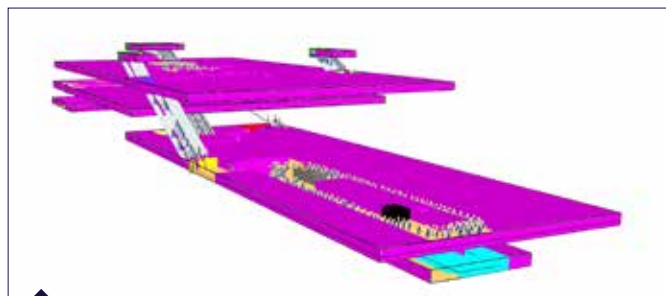
High automatic rack storage

- Modeling of structural fire behavior (timber, steel, concrete, composite...) exposed to real or standard fire
- Failure mode of structure (collapse)
- Integrity of firewalls
- Design and validation of structural design

### FIRE SPREAD AND PROTECTION OF BUILDINGS

- Assessment of building performance from external effects: explosion, jet fires, pool fire, BLEVE, boil-over...
- Vulnerability of environment from fire and explosion impact
- Forest fires vulnerability at wildland-urban interface

### EGRESS CONDITION MODELING



Egress condition

- Modeling evacuation conditions of public buildings, storage and industrial sites
- Fire detection, alarm and mass notification systems
- Assessment of egress management
- Egress conditions for disable people
- Conditions of fire safety of operators remaining on site (control room, safe room...)

### FIRE EXTINGUISHING MODELING (CFD)

- Fire extinguishing systems interaction
- Fire scenarios design including active systems
- Impact on structural assessment



## Operations & Fire and rescue

Our operational approach for ensuring the infrastructures security and safety, the protection of civilian populations, interveners and goods.

- Risks analysis and operational responses
- Technical and technological supports
- Crisis Management
- Qualification tests for fire fighting
- Training interveners



## Fire investigations

### EFFECTIS INTERNATIONAL FIRE INVESTIGATIONS

- Quicker recover of exploitation after fire
- Determination of the fire source and the fire scenario
- Analysis of the products/systems performance after fire
- Testing and numerical assistance to legal experts on fire behavior and fire dynamics





## On site expertise, approvals and certification

Efectis offers solutions during construction and operation of buildings and installations either with official certification and approvals, or with in site assessment. After a fire, Efectis is helping you to recover the exploitation as soon as possible and to reduce financial losses.

### CE MARKING OF CONSTRUCTION PRODUCTS

Efectis is a Notified Body in regard of CE marking of construction products with fire characteristics covering system 1+ (certification + inspection initial testing + audit testing), system 1 (certification + inspection + testing) and system 3 (testing) of the Assessment of Verification of Constancy of Performance (AVCP). See Nando website Notified Bodies **No. 1812, 1234, 2184, 2822**.

Our notification covers principally the construction products with fire performances (reaction to fire and fire resistance): smoke and heat exhaust systems, fire protective products, glass in building, thermal insulation, floorings, doors, etc...



### OTHER CERTIFICATION

Efectis is recognized by many countries or private organization for certifying the fire performance of products and systems, either based on EN standards or other international/national standards. In other countries, case by case recognition is also adopted.



### EXPERTISE

The Expertise department intervenes in any construction project by assessing the conformity of construction products and their application as regards the requirements of the different fire safety regulations.

These studies enable fire resistance performances to be justified without appealing to another fire test. They can be linked to:

- The degree of fire stability of the structures and their protection
- Fire resistance performance of doors, partitions, glazing, etc.
- Resistance to external fire of facades (facade assessment)
- Performances of smoke extraction systems
- Compliance with the requirements of the mechanism and automatism
- Verification of mounting conditions and performance of sandwich panels



### VOLUNTARY MARKS

Efectis is developing voluntary fire-safety marks to maintain a high fire safety level in buildings or infrastructures.

As the application of regulations and the fire resistance of construction elements are not always controlled, Efectis is able to check if the required fire safety level is reached.

Furthermore, based on voluntary marks, Efectis may assess the knowledge and the skills of the companies in charge of the installation of the fire products. The fire safety level of building is strongly dependent on the quality of installation, Efectis is now qualifying the products in laboratories and certifying the companies that will install them.



## Efectis Academy

### **If you work in the building, nuclear or rescue field, we can help you to further develop your skills in fire safety**

Efectis is delighted to share our knowledge and experience through a series of training sessions for those involved in construction, rescue and nuclear safety (project owners, prime contractors, subcontractors, fire trainers, technical officers...)

The sessions will cover all construction and building materials that have an obligation to ensure fire performance (fire resistance & reaction to fire) and buildings required by regulation to include fire safety requirements. These courses also touch on the firefighter education and training (theory and practice).

**View all our courses here: [www.effectis-academy.com](http://www.effectis-academy.com)**



Fire training



## OUR MARKETS



### Building materials

Efectis has the knowledge to assess the fire performance of building materials and to determine their impact on the fire safety of its environment.

### Commercial and high-rise buildings

In order to provide early warning in case of unavoidable disaster, the Efectis's objective for commercial and high-rise buildings is to focus on fire safety problems through protective measures, analyses, engineering, management, testing, control/audit.



### Public buildings

Our recognized fire laboratories as well as our experience in fire safety engineering, inspection and certification make us the appropriate partner for authorities, owners, designers and constructors.

### Storage and warehouse

We all trust that what we store is kept safe until such time as we need it, which is a good reason for looking at the conditions in which we leave our valuable products.



### Oil and gas industry

Fire hazards are present in every step of the production process, from upstream (extraction and transportation) to downstream (refineries and storage). Efectis has the knowledge and experience to evaluate, design or review the protection systems.

### Nuclear and power plants

Efectis has more than 30 years' experience in the nuclear field. It has worked extensively on fire safety in nuclear plants, becoming a major partner of nuclear operators for all fire safety related issues.



### Infrastructure

Efectis has the knowledge and experience to support governments, investors, manufacturers, operators, and insurers in taking the correct measures based on relevant scenarios to protect and maintain infrastructures.

### Transport and Marine safety

Thanks a range of fire tests and engineering studies, Efectis provide the necessary certification to prove compliance for fire protection products used in the marine, the transport and the railway fields (doors, fire dampers, cables trays, windows...).



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