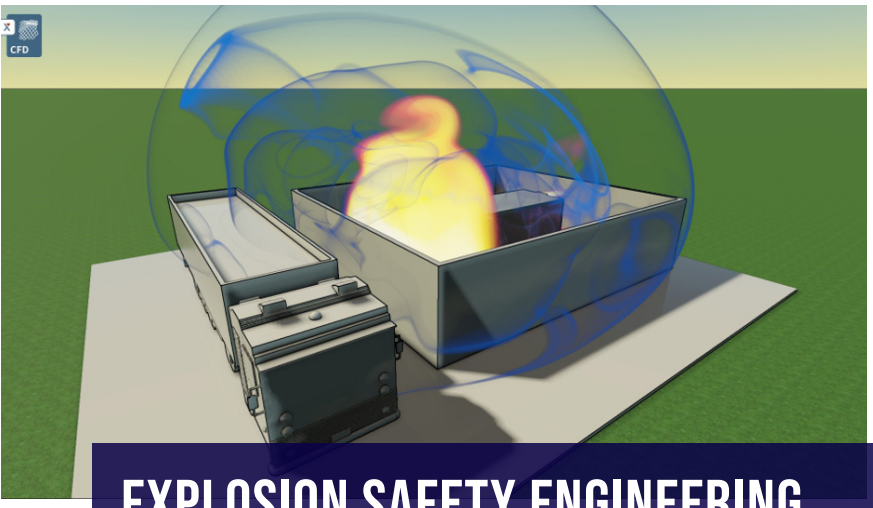
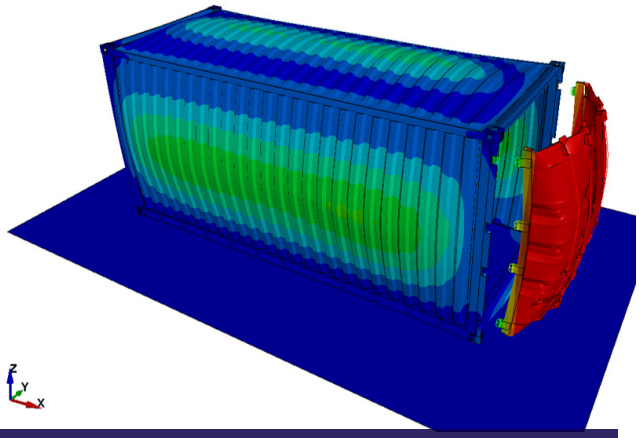
Efectis is an independent third party assessing the fire performance of products, systems, designs and constructions. We can help you worldwide.





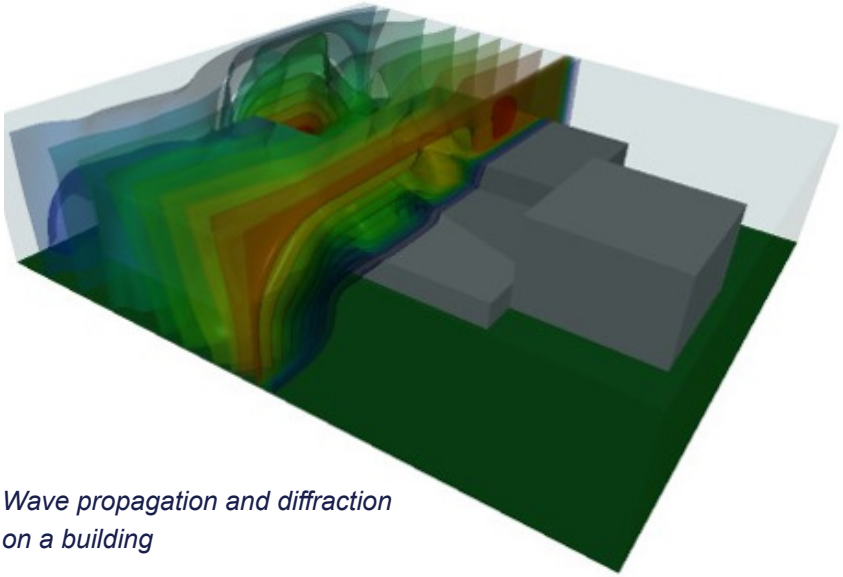
EXPLOSION SAFETY ENGINEERING

WHO IS INVOLVED?

- Project owners
- Project managers & engineering
- Contractors, operators
- System Developers

OUR AREAS OF ACTIVITY

- Hydrogen (Production, Storage, Transport and Use)
- Batteries (Stationary & mobility)
- Oil & Gaz
- Defence & Pyrotechnics
- Mining and Metals
- Life Science
- Food & Beverage



Wave propagation and diffraction on a building

A FULL INTEGRATED APPROACH FROM RISK EVALUATION TO TECHNICAL SOLUTIONS

With more than 70 years experience, our Efectis experts have extensive knowledge of the interaction of fire and explosive risks and are therefore able to assist at any stage of the process. We are involved in all phases of a project, from the conceptual stages to final completion. We provide technical solutions tailored to the specific needs of our clients in accordance with the regulatory standards. We are also actively involved in national and international (ISO) working groups regarding explosion safety.

When an efficient and controlled energy detonation is required, we are able to assist due to our extensive expertise with different explosion phenomena i.e. solid detonation, gas & dust deflagration.

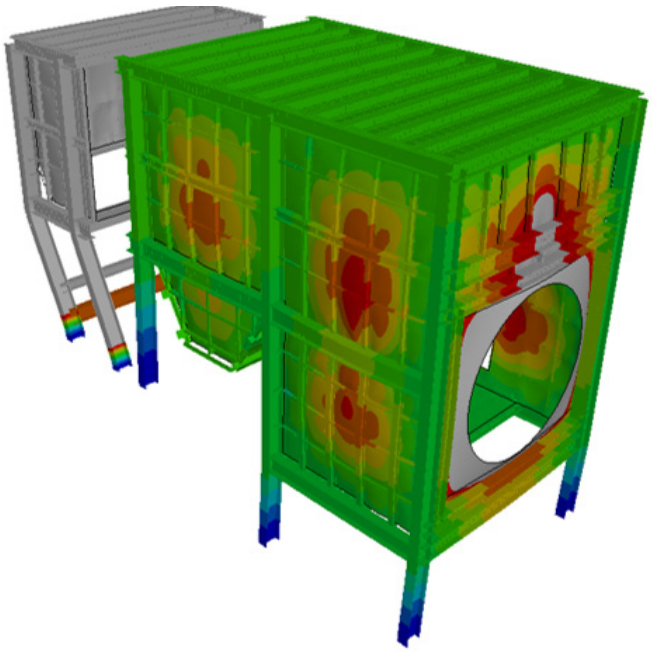
We regularly support client with the development of a safe and socially acceptable energy transition.

"Efectis is a global player in Fire & Explosion science and covers all Fire safety skills in testing and modelling, certification, inspection, education and expertise."

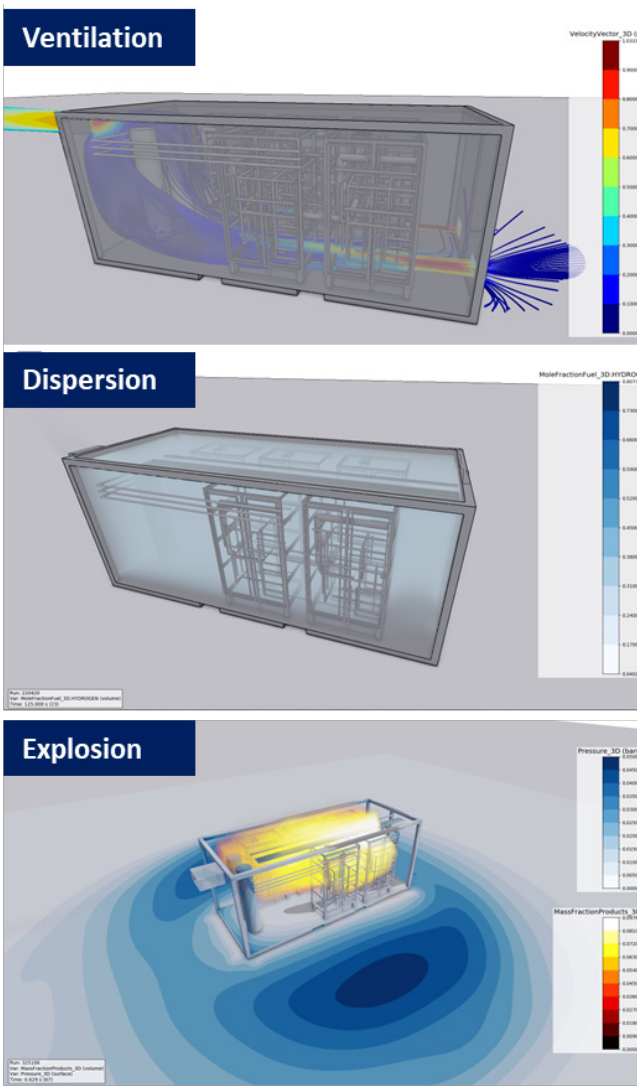
EXPLOSION SAFETY ENGINEERING

OUR SERVICES

- Layout and safety distances
- Explosion safety reviews and concepts
- 3D gas detection analyses
- 3D dispersion analyses
- 3D explosion analyses
- Structures verification to explosion events according UFC standard (TM5-1300 for instance) or ASCE
- Vulnerability infrastructure studies (Batirsûr guide)
- Optimisation of explosion relief panels (NFPA 68, EN 14497) or CFD
- Support in execution phase of 3rd party review
- Accident Investigation



Explosion response of an incineration furnace (LS DYNA)



Combination of ventilation/dispersion and exlosion simulations in container

OUR MODELLING TOOLS

A progressive and fit for purpose performance based approach to safety issues.

For consequences **modelling**

- Empirical approach (TNT sharts)
- Phenomelogical approach (Multi-Energy) with PHAST® or HYRAM®
- Numerical CFD approach with FLACS for gas deflagration, VIPER:BLAST or LS-DYNA for detonation and subsequent wave propagation

For structural **response modelling**

- Equivalent stake approach (DLF)
- Non linear approach SDOF with SBEDS or similar
- Numerical FEA approach with ANSYS or LS-DYNA

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Efectis

Laurent Paris | Explosion Safety Technical Director
laurent.paris@efectis.com | T +33 (0)6 49 54 30 22