

A fuel tank should not be a bomb waiting to happen.

Lattix prevents BLEVE explosions and gas leaks by geometry — no electronics, no extinguishing agents, no moving parts. European technology validated by Bureau Veritas, the German government, the European Commission, and Spain's critical-infrastructure agency CNPIC.

WHAT IS LATTIX?

Eneraq Lattix is a three-dimensional aluminium-alloy mesh embedded inside fuel tanks, cylinders, or vessels. Its calibrated hexagonal geometry multiplies the internal heat-capture surface by more than 4 000×, distributing any thermal input across the full mass of the tank before the hot spot that triggers a BLEVE (Boiling Liquid Expanding Vapor Explosion) can form. Unlike pressure-relief valves, foam systems, or water deluge — which respond after the pressure wave has already formed — Lattix is always on, fully passive. It requires no power, no maintenance, has no moving parts that can fail. The tank operates exactly as before; the only thing that changes is that it can no longer explode.

FOUR FUNCTIONS, ONE PIECE

Dissipate, quench, contain, seal — all by geometry

■ Dissipate

Aluminium alloy with 238 W/m·°C thermal conductivity. Spreads heat from an external source across the full tank wall in seconds, eliminating localised overheating.

■ Contain

Pressure waves from internal ignition cancel out against calibrated irregular geometries. Energy is dissipated before it can rupture the tank.

■ Quench

The interior walls of the hexagonal cells act as flame arrestors: they cool the flame front below its propagation temperature, stopping any internal ignition.

■ Seal

The same lattice, embedded in plaster, concrete, Kevlar or other structural panels, blocks fire propagation in industrial compartments. Wall tested at 1 200 °C; plate tested at 1 470 °C.

HOW IT WORKS

A patented geometry, validated under real conditions

■ External heat source

An adjacent fire, ballistic impact, hot work, or valve failure raises the local tank temperature.

■ Redistribution

Aluminium's high conductivity (238 W/m·°C) spreads the thermal energy across the full tank mass in seconds, eliminating the hot spot.

■ Internal capture

The Lattix mesh, in intimate contact with the inner wall, absorbs heat at the point of application with ×4 000 capture surface.

■ BLEVE prevented

No hot spot → no explosive vaporisation. No pressure wave → no catastrophic rupture. The fuel stays stable.

APPLICATIONS

From a residential cylinder to a refinery tank; from a rail tanker to airport refuelling.

■ Service stations

Underground tanks for diesel, gasoline, LPG.

■ Hydrogen storage

Validated for high-pressure H₂.

■ Marine & FPSO

Tankers, platforms, vessel protection.

■ Defence

Military vehicles, field tanks, JP-8.

■ Residential cylinders

Butane and propane for home and industry.

■ Refineries & petrochemicals

Storage tanks and process vessels.

■ Fuel transport

Road and rail tankers.

■ Airport refuelling

Hydrants, tank trucks, Jet A1 storage.

■ Data centers

Backup-diesel storage for generators.

■ Fireproof compartmentation

Embedded panels (plaster, concrete, Kevlar or other structural carrier) for passive protection.

TECHNICAL SPECIFICATION

Material	Aluminium alloy, 238 W/m·°C thermal conductivity
Geometry	3D hexagonal cells, calibrated irregular lattice
Internal surface increase	×4 000 (LPG cylinder); ×3 000 (sheet form)
Validated fuels	LPG / butane / propane / Jet A1 / JP-8 / kerosene / gasoline / autogas / hydrogen
Wall with embedded mesh	Structural integrity at 1 200 °C
Plate with embedded mesh	Certified test at 1 470 °C
Maintenance	None · no moving parts · no power
Installation	Embedded in new vessel or retrofit through manhole

INDEPENDENT VALIDATION

Not a promise. Documented by third parties.

■ Bureau Veritas

No-BLEVE large-tank tests, welding without degassing, +1 000 °C cylinder cut with angle grinder (Madrid)

■ CNPIC Spain

National Centre for Critical Infrastructure Protection assessment

■ UCLM

University of Castilla-La Mancha — wave-inhibitor study

■ German government

BAN Report (Bundesanstalt für Materialforschung) on high-temperature behaviour

■ EU

Letter to the European Commission, EEC Security Committee

■ 9 fuels

LPG, butane, propane, Jet A1, JP-8, kerosene, gasoline, autogas, hydrogen

WANT TO EVALUATE LATTIX FOR YOUR INSTALLATION?

Our engineering team studies your tank, fuel, and operating conditions, and delivers a technical report with recommended geometry, expected performance, and retrofit feasibility.

Eneraq

info@eneraq.com · eneraq.com/en/solutions/lattix-protection

European technology · In-house R&D