



Gas Explosion Testing

With over 20 years experience in studying gas cloud explosions, Germanischer Lloyd (GL) is a world leader in the field. Gas cloud explosions can be studied within confined or partially confined geometries or within regions of pipework and vessels, typical of process sites.

Using a validated scaling technique explosions in regions of pipework and vessels can be conducted at a reduced scale providing a cost effective approach to understanding explosion behaviour.



Offshore Module

The offshore module test rig provides a flexible explosion test facility for studying both gas accumulation and explosions in a geometry representative of a full scale offshore module. The rig is 28m long, 12m wide and 8m high.

- The walls and roof are made up of 4m by 4m panels enabling wide flexibility in the confinement configurations
- A deluge system representative of those installed offshore enabling studies of explosion suppression by water deluge prior to ignition
- A high pressure gas supply enables dynamic releases at up to 20kg/s and 50 bar to be produced for both gas build up and explosion studies
- Internal pipework and vessels can be added or removed to provide different levels of congestion

Instrumentation

All explosions can be extensively instrumented to measure:

- Overpressure using transducers recorded on high speed data acquisitions systems
- Flame arrival times
- Response of structures to explosion loading using strain gauges, displacement transducers or accelerometers



Explosion Chamber

The Explosion Chamber is 4.5m in cross-section and 9m long. With a flexible vent opening in the front face and varying levels of pipework congestion inside, this chamber can be used to provide overpressure pulses with peaks from 60mbar to 4bar and durations from 50msec to over 300msec.

With this level of flexibility, the chamber is well suited for testing the performance of blast resistant equipment and structures such as doors, fire walls, panels, passive fire protection etc. Test samples can be mounted as part or all of the back panel of the chamber, or mounted across the vent opening. The testing can be used by the manufacturer to show that the product is fit for purpose.

The chamber is also ideal for studying mitigation systems, such as water deluge at a representative scale.

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