



# Combined hyperbaric and dielectric test platform

*A unique facility for integrated tests on subsea equipment*

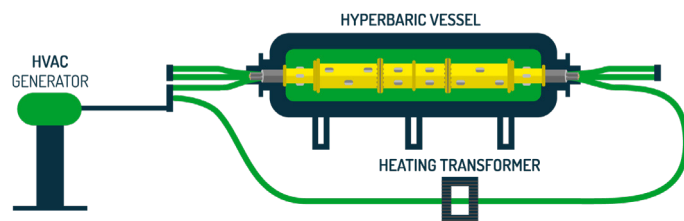
*SuperGrid Institute offers a combination of pressure, high voltage and current testing for your subsea applications.*

## OVERVIEW

The key to design validation is conducting tests in a controlled environment with conditions as close to real-life as possible.

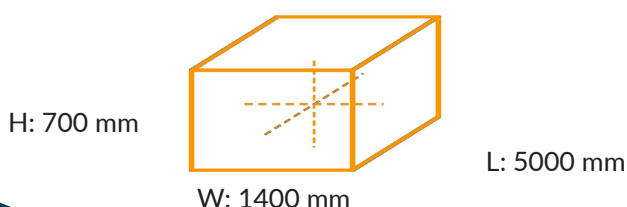
SuperGrid Institute's hyperbaric vessel is designed for the testing of subsea equipment under water pressure up to 40 bar.

Along with SuperGrid Institute's high voltage testing equipment, our test platform specifically targets subsea cable and their accessories such as connectors or penetrators, for AC/DC medium to extra high voltage.



Subsea equipment is subjected to high water pressure, thermal cycling, electric current and high voltage. Our test platform is able to reproduce these conditions simultaneously thanks to custom-made feedthroughs connecting the test object with the electrical testing equipment. When feedthroughs are not needed, blind flanges can be used to seal the vessel.

## MAXIMUM DIMENSIONS OF OBJECTS TO BE TESTED



## DESCRIPTION

The stainless steel cigar-shaped vessel can accommodate large objects that can be tested up to 40 bar – equivalent to a depth of 400 m.

The non-magnetic properties of the stainless steel prevent undesired losses when AC heating current is applied.

The material's high corrosion resistance enables the use of salt water as the pressure medium to achieve conditions that are as close as possible to real-life.

## AVAILABLE SERVICES

SuperGrid Institute's hyperbaric vessel is valuable for subsea material or equipment suppliers and their end users – for example, system operators – during the development and qualification phases, to assess:

- Mechanical behaviour of subsea components
- When coupled to HV testing equipment:
- Dielectric strength under pressure and thermal stresses of subsea HV equipment
  - Ageing behaviour of materials under high voltage, thermal and hydrostatic pressure stresses
  - Other characteristics, according to specific requirements

## PRESSURE REGULATION



- Regulated pressure test profiles with PID controlled pressure and depressurisation rate up to 20 bar/min
- Up to 40 bar of hydrostatic pressure

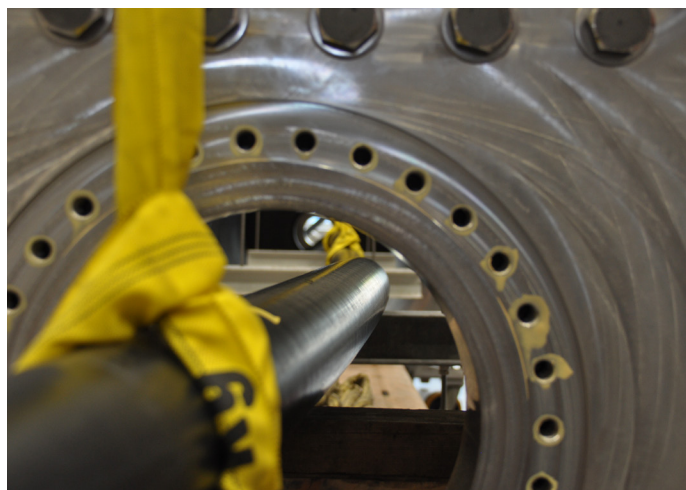
## MONITORING



- Continuous recording of water pressure and temperature measurements
- Ability to add additional monitoring or power supplies through custom-made partition crossings in two DN100 flanges
- Active water temperature regulation can be added on demand

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- Porthole for visual inspection



## INTERNAL MEDIUM



- Fresh or salt water
- Dedicated circuit on the upper part of the vessel to safely recover any gas or liquid released during the test

## POWER CABLE FEEDTHROUGHS



- Up to 6 HV (< 66 kV) or 2 EHV (< 600 kV) cables through the front door
- Up to 3 HV or 1 EHV cables through the rear flange



## THERMO-ELECTRIC COMBINATION

The vessel is mobile and can be easily moved into either of SuperGrid Institute's HV platforms to combine pressure conditions with thermal and dielectric tests, in AC or DC.

	Medium voltage hall Electrical cage	High voltage laboratory Faraday cage
Hall dimensions	L 9.5 m x W 5.5 m x H 3 m	L 18 m x W 17 m x H 15 m
HV source	Up to 100 kVAC	Up to 600 kVAC Up to 1200 kVDC
Heating transformer (with dummy loop)	2 x 1 kA	2 x 5 kA
Impulse generator	N / A	2000 kV - 200 kJ



### CONTACT

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