

Hyperbaric chamber to test robustness of electric cables

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The testing of connecting accessories used for underground electric cables under EN 33-226 annex 7, requires the use of a hyperbaric chamber adapted to run those particular tests.

Such a chamber can be built to the specific needs of client's application. The basic principles are the following:

1. A stainless steel tubular chamber certified for a service pressure of 2 bars carries all the operational penetrators to:
 - fill (and empty) the chamber with the experimental fluid,
 - pressurize the chamber to the selected pressure value
 - circulate the fluid,
 - heat and cool the fluid according to preset temperature profile(s)

The chamber is fitted with a pressure release safety valve; it is internally protected against heat exchanges.

2. Each end of the tube can be closed with a flange connected with secured quick clamping devices. Those flanges carry through wall passages for cables size from 30 to 42 mm. The flanges can be clamped then the cables are fitted.

The number of cables tested simultaneously can be from 3 to 12 according the size of the test chamber.

3. A main control panel fitted directly on the external of the chamber gathers all commands and information needed to run the tests.
 - Filling and emptying,
 - Pressurization,
 - Flowing the fluid (on/off),
 - Setting the temperature schedule,
 - Vacuum pump for capsules at the cables end.

 - Record all relevant parameters (pressure, temperature profiles, cable temperature, and pressure at both ends of the cables...).
4. Sets of small capsules to be fitted on both ends of each cable meant to apply reduced pressure (- 0.3 bar). Pressure sensors are fitted to record pressure during the test.
5. The whole system is installed on 3 trolleys, one for the tubular structure, and one for each flange. An umbilical is used to connect the system to the external supplies (Electric power, experimental fluid tank)