



Through the educational services offered and the research activity carried out, the **Petroleum-Gas University of Ploiești** received official recognition of the level of quality it ensures by obtaining the **HIGH CONFIDENCE DEGREE** rating granted by the Romanian Agency for Quality Assurance in Higher Education following the institutional evaluation and the Certificate of Conformity of the **Quality Management System** with **SR EN ISO 9001 : 2015** and **EN ISO 9001:2015**, granted by AEROQ.

Regional Centre for the Determination of the Characteristics and Monitoring of the Technical State of OCTG – Oil Country Tubular Goods



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For detailed information regarding the capabilities and competences of the experimental research centre and the possibilities to use it, based on collaboration protocols or contracts, please contact the management team using the following contact information:

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1. Installation for complex testing of OCTG under combined loadings (including its threaded connections) - 4 MN



The *Installation for complex testing of OCTG under combined loadings* (traction/compression, bending, and internal/external pressure), with the axial loading capacity of 4 MN, the internal/external pressure loading capacity up to 225 MPa and the maximum bending force of 1.5 MN.

This installation can perform static tests under traction/ compression, internal pressure and bending loads, applied independently or in combination, simultaneously or successively, on full scale OCTG specimens or full scale threaded connections for OCTG, with the outside diameter (OD) values between **50 ... 500 mm (2 ... 20 in)** and the length of **400 ... 5000 mm**.

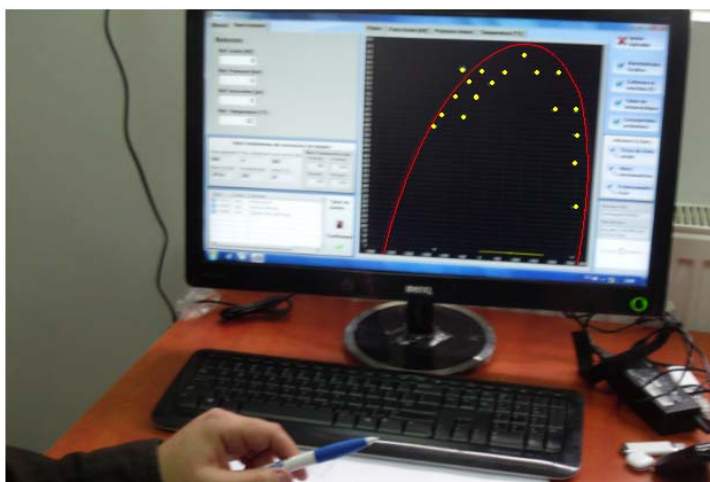
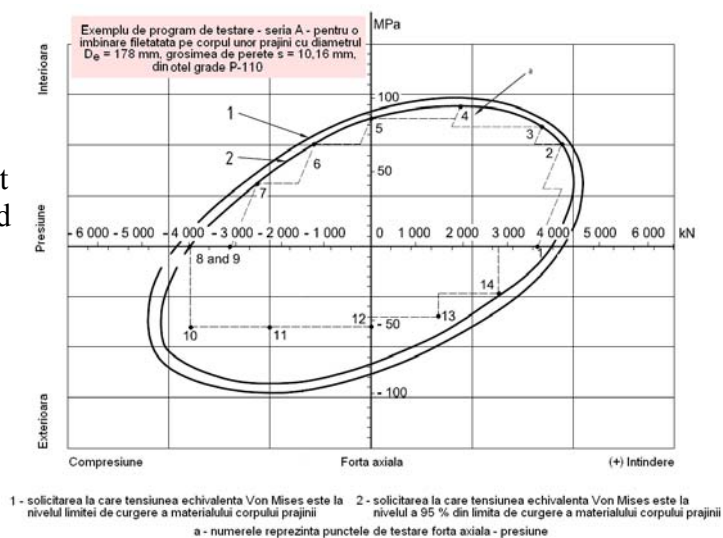
External pressure loadings can also be applied with the help of an additional pressure chamber (belonging to the *installation for collapse testing*). Our installation can perform experimental test programs in which the specimens with threaded connections are subjected to complex loadings, consisting of the

successive application of standard combinations of mechanical loads, as per *ISO 13679*; a threaded connections passing all testing series validates its appropriate behaviour during exploitation and represents the basis for the qualification of the existing or new types of threads.

Equipment and software for data acquisition during OCTG complex mechanical testing

The installation is completed with a *command and data acquisition laboratory*, provided with specialised equipment and dedicated software, including video equipment for recording and visualizing the tests through which all the components of the installations for complex mechanical testing and for collapse testing are operated and supervised, and which ensures the acquisition, storage, management, processing and interpretation of all data obtained during OCTG testing.

Scheme of a complex test series for OCTG threaded connection, according to *ISO 13679*



PC while running the software for data acquisition and tests supervision

2. Installation for external pressure (collapse) testing of OCTG



The *installation for collapse testing of OCTG* (for drilling – extraction and pipelines) is provided with three *pressure chambers* (5 in; 8 in and 10 in), capable of testing tubulars with the outside diameter between $2\frac{3}{8}$...**10 in**, and threaded connections up to $9\frac{5}{8}$ in, at a nominal pressure up to **150 MPa** (maximum: 225 MPa).

The external pressure can be applied either as a separate, unique load (using the 10 in pressure chamber – below) or in combination with traction/compression and/or bending loads, applied by the installation for complex testing of OCTG (using the 5 in or 8 in pressure chamber – above – mounted on the *complex testing installation*).



3. Make up / break out testing machine for OCTG



The *make up / break out testing machine* with controlled torque (maximum torsion moment **68 kNm**), for OCTG with outside diameters up to **23 3/8 in** and the length up to **2000 m**, is equipped with an automatic recording system for the torsion moment.

This machine performs the continuous making up of the threaded connection until a given torsion moment is reached and the continuous breaking out of the threaded connection at a value of the moment allowing for an easy breaking out by hand of the connection.

5. Microscope for threads



The *microscope for threads* can control the profile of the threads / threaded connections used for OCTG, is provided with a maximum loading capacity of the table of 130 kg and is able to measure specimens with the diameter up to **250 mm** (magnification 10x) or **100 mm** (magnification 100x).