Technical Regulations of the Customs Union on safety of equipment working under pressure (CU TR 032/2013)

CU TR on safety of equipment working under pressure is in power from 1 February 2014.

Products covered:

a) vessels for gases, liquefied gases dissolved under pressure, vapors working with group 1 environment and having:

- a maximum allowable operating pressure of above 0.05 MPa, with a capacity of more than 0,001 cubic meter and the the maximum allowable operating pressure multiplied by the value of the capacity more than 0.0025 MPa *cubic meter;

- a maximum allowable operating pressure exceeding 20.0 MPa, with a capacity from 0.0001 cubic meter to 0,001 cubic meter

b) vessels for gases, liquefied gases dissolved under pressure, vapors working with group 2 environment and having:

- a maximum allowable operating pressure of above 0.05 MPa, with a capacity of more than 0,001 cubic meter and the the maximum allowable operating pressure multiplied by the value of the capacity more than 0.005 MPa *cubic meter;

- a maximum allowable operating pressure exceeding 100.0 MPa, with a capacity from 0.0001 cubic meter to 0,001 cubic meter

c) vessels for liquids with group 1 environment and having:

- a maximum allowable operating pressure of above 0.05 MPa, with a capacity of more than 0,001 cubic meter and the the maximum allowable operating pressure multiplied by the value of the capacity more than 0.02 MPa *cubic meter;

- a maximum allowable operating pressure exceeding 50.0 MPa, with a capacity from 0.0001 cubic meter to 0,001 cubic meter

d) vessels for liquids with group 2 environment and having:

- a maximum allowable operating pressure of above 1 MPa, with a capacity of more than 0,01 cubic meter and the the maximum allowable operating pressure multiplied by the value of the capacity more than 1 MPa *cubic meter;

- a maximum allowable operating pressure exceeding 50.0 MPa, with a capacity from 0.0001 cubic meter to 0,001 cubic meter

e) boilers having a capacity of more than 0,002 cubic meter designed to produce hot water at a temperature above 110 degrees Celsius, or vapor the high pressure of which is above 0.05 MPa, as well as fire-heated vessels having a capacity of more than 0,002 cubic meter

f) pipelines having the maximum allowable operating pressure of above 0.05 MPa, the nominal diameter of more than 25 mm for gases and vapors and used for working environments of Group 1

g) pipelines having the maximum allowable operating pressure of above 0.05 MPa, the nominal diameter of more than 32mm and the maximum allowable operating pressure multiplied by the value of the nominal diameter of more than 100.0 MPa*mm for gases and vapors which are used for working environments of Group 2

h) pipelines having the maximum allowable operating pressure of above 0.05 MPa, the nominal diameter of more than 25mm and the maximum allowable operating pressure multiplied by the value of the nominal diameter more than 200.0 MPa for liquids which are used for working environments of Group 1

i) pipelines having the maximum allowable operating pressure of above 1.0 MPa, the nominal diameter of more than 200mm and the maximum allowable operating pressure multiplied by the value of the nominal diameter of more than 500.0 MPa*mm for liquids which are used for working environments of Group 2

j) equipment parts (assembly units) and its components designed to be accommodated on the equipment and to withstand the pressure;

k) valves with the nominal diameter of more than 25mm for the equipment with working environment of Group 1, the nominal diameter of more than 32mm for the equipment used for the gases with the working environment of Group 2, with nominal diameter of more than 200mm for pipelines intended for liquids used for working environments of Group 2;

l) indicating and safety devices;

m) low-pressure chambers (except medical ones);

n) safety equipment

Products not covered by this regulation:

The major pipeline transport, intra-field and local distribution pipelines intended for transportation of gas, oil and other products, except for the equipment used on pressure regulating stations or compression stations;
Gas distribution and gas consumption networks;
Equipment specially designed for use in the field of nuclear energy, equipment operating with radioactive environment;
Vessels operating under the pressure built by the explosion inside them, in accordance with technological process or combustion in the mode of self-propagating high temperature synthesis;
Equipment specially designed for use on sea and river vessels and other watercrafts and underwater facilities;
Braking equipment of railway vehicles, motor transport and other vehicles;
Vessels specially designed for use on airplanes and other aircraft;
Defense equipment the details of which are a state secret;

Machine parts which are not separate vessels (pump or turbine housings, steam, hydraulic, internal combustion engine cylinders, air machines and compressors);
Single medical hyperbaric chambers;
Equipment with aerosol sprays;
Housings of high voltage electrical equipment (switchgears, distribution gears, transformers and rotating electrical machines);
High pressure casings and housings, elements of the electric power transmission systems (power cable products and communication cables);
Equipment made of non-metallic flexible (elastic) shells;
Exhaust or gas mufflers;
Containers or siphons for carbonated beverages.

Conformity compliance in a frame of Customs Union Technical Regulations.

1. Declaration of conformity
   Declaration of conformity is issued for the Category 1 and Category 2 products and for devices manufacturing of which takes place in the location of operating of the device and the manufacturing process include the use of permanent connections. Valid time of declarations of conformity is up to 5 years.
2. Certificate of conformity
   Certification is used for the product Category 3 and Category 4. The valid time of certificate is up to 5 year.

Full text of CU technical regulations on safety of pressure devices

Categories of the equipment in a frame of Technical Regulations on safety of pressure devices.

1. Equipment categories are defined according to Tables 1 - 9 of this document. Safety devices are classified to category 4, with the exception of safety devices manufactured (made) for the specific equipment that can be classified in the same category as the equipment for which they are made (produced) .
2. Category of equipment intended for use with design temperature above the transition creep temperature of metal increases by 1 (except for category 4).
3. Transition creep temperature is:

   400 ° C - for carbon and low alloy silica steels;

   450 ° C - for low-alloy chromium-molybdenum and molybdenum vanadium steel ;

   525 ° C - for high-chromium alloy martensitic and austenitic steels ;

   575 ° C - for the iron-nickel and nickel alloys

Table 1
Categories of vessels intended for gases used for working environments of Group 1

Categories of equipment	Capacity of equipment, m3	Maximumallowable operating pressure multiplied by the value of capacity, MPa●m3	Maximum allowable operating pressure MPa
I	Over 0.001	Over 0.0025 to 0.005 inclusive	Over 0.05
II	Over 0.001	Over 0.005 to 0.02 inclusive	Over 0.05
III	Over 0.0001 to 0.001 inclusive	Not standardized	Over 20 to 100 inclusive
	Over 0.001	Over 0.02 to 0.1 inclusive	Over 0.05
IV	Over 0.0001 to 0.001 inclusive	Not standardized	Over 100
	Over 0.001	Over 0.1	Over 0.05

Table 2

Categories of vessels intended for gases used for working environments of Group 2

Categories of equipment	Capacity of equipment, m3	Maximumallowable operating pressure multiplied by the value of capacity, MPa●m3	Maximum allowable operating pressure MPa
I	Over 0.001	Over 0.005 to 0.02 inclusive	Over 0.05
II	Over 0.001	Over 0.02 to 0.1 inclusive	Over 0.05
III	Over 0.0001 to 0.001 inclusive	Not standardized	Over 100 to 300 inclusive
	Over 0.001 to 1 inclusive	Over 0.1 to 0.3 inclusive	Over 0.05
	Over 1	Not standardized	Over 0.05 to 0.4 inclusive
IV	Over 0.0001 to 0.001 inclusive	Not standardized	Over 300
	Over 0.001 to 1 inclusive	Over 0.3	Over 0.4
	Over 1	Not standardized	Over 0.4

Table 3

Categories of vessels intended for liquids, used for working environments of Group 1

Categories of equipment	Capacity of equipment, m3	Maximum allowable operating pressure multiplied by the value of capacity, MPa●m3	Maximum allowable operating pressure MPa
I	Over 0.01	Over 0.02	Over 0.05 to 1 inclusive
II	Over 0.001	Over 0.02	Over 1 to 50 inclusive
	Over 0.0001 to 0.001 inclusive	Not standardized	Over 50
III	Over 0.001	Not standardized	Over 50

Table 4

Categories of vessels intended for liquids, used for working environments of Group 2

Categories of equipment	Capacity of equipment, m3	Maximum allowable operating pressure multiplied by the value of capacity, MPa●m3	Maximum allowable operating pressure MPa
I	Over 0.01	Over 1	Over 1 to 50 inclusive
II	Over 0.0001 to 0.01	Not standardized	Over 100
	Over 0.01	Over 1	Over 50

Table 5

Categories of steam, hot water boilers and vessels with fire heating

Categories of equipment	Capacity of equipment, m3	Maximum allowable operating pressure multiplied by the value of capacity, MPa●m3	Maximum allowable operating pressure MPa
I	Over 0.002 to 0.1 inclusive	Up to 0.005 inclusive	Over 0.05
II	Over 0.002 to 0.4 inclusive	Over 0.005 to 0.02 inclusive	Over 0.05 to 3.2
III	Over 0.002 to 1	Over 0.02 to 0.3 inclusive	Over 0.05 to 3.2 inclusive
IV	Over 0.002 to 0.01 inclusive	Not standardized	Over 3.2
	Over 0.01 to 1 inclusive	Over 0.3	Over 0.3
	Over 1	Not standardized	Over 0.05

Table 6

Categories of pipelines intended for gases, used for working environments of Group 1

Categories of equipment	The nominal diameter, mm	Maximum allowable operating pressure multiplied by the nominal diameter, MPa●mm	Maximum allowable operating pressure MPa
I	Over 25 to 100 inclusive	Not standardized	Over 0.05 to 1 inclusive
	Over 25 to 100 inclusive	Up to 100 inclusive	Over 1 to 3.5 inclusive
II	Over 100 to 350	Not standardized	Over 0.05 to 1
	Over 25 to 350	Over 100 to 350 inclusive	Over 1 to 3.5 inclusive
	Over 25 to 100	Not standardized	Over 3.5
III	Over 350	Not standardized	Over 0.05 to 1 inclusive
	Over 100 to 350 inclusive	Over 350	Over 1 to 3.5 inclusive
	Over 100	Not standardized	Over 3.5

Table 7

Categories of pipelines intended for gases, used for working environments of Group 2

Categories of equipment	The nominal diameter, mm	Maximum allowable operating pressure multiplied by the nominal diameter, MPa●mm	Maximum allowable operating pressure MPa
I	Over 32	Over 100 to 350 inclusive	Over 0.05 to 3.2 inclusive
	Over 32 to 100 inclusive	Not standardized	Over 3.2
II	Over 100	Over 350 to 500 inclusive	Over 0.05 to 3.2 inclusive
	Over 100 to 250 inclusive	Not standardized	Over 3.2
III	Over 250		Over 3.2
	Over 250	Over 500	Over 0.05 to 3.2 inclusive

Table 8

Categories of pipelines intended for liquids, used for working environments of Group 1

Categories of equipment	The nominal diameter, mm	Maximum allowable operating pressure multiplied by the nominal diameter, MPa●mm	Maximum allowable operating pressure MPa
I	Over 25	Over 200	Over 0.05 to 1 inclusive
II	Over 25	Over 200	Over 1 to 8 inclusive
	Over 25	Over 350	Over 8 to 50 inclusive
III	Over 25	Not standardized	Over 50

Table 9

Categories of pipelines intended for liquids, used for working environments of Group 2

Categories of equipment	The nominal diameter, mm	Maximum allowable operating pressure multiplied by the nominal diameter, MPa●mm	Maximum allowable operating pressure MPa
I	Over 200	Over 500	inclusive
II	Over 200	Not standardized	Over 50