

Unipetrol RPA, s.r.o.	Acceptance conditions for complete pressure vessels, steam boilers and their parts	N 11 792
Technical Services		

The standard is binding for all departments of the company and external organizations which order, deliver and accept complete pressure vessels, their parts and steam boilers for Chemopetrol, a.s. The departments are obliged to present the standard to all external organizations performing these activities for them, and for whom the standard is also binding. It does not apply to the Litvínov and Kralupy Refinery unit.

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1. General provisions

1.1 Scope of validity

The standard applies to ordering, acceptance and supply of complete pressure vessels, their parts and steam boilers.

1.2 N 11 151 applies for forged vessels.

1.3 Terms and abbreviations

SOD – State supervisory body

ITI - technical inspection institute

SÚIP – State Labour Inspectorate

OTD TS – Technical supervision department, technical services

PK – steam boiler

TDP – Technical delivery terms

Inspection technician – employee of OTD

Notified body – a legal entity determined for activities when assessing compliance of the product with technical requirements

1.4 Pressure vessels and boilers are ordered as complete sets. Pressure parts of vessels (bottoms, bellmouths, safety accessories, etc.) and non-pressure parts of the vessels (lifting attachments, etc.) are ordered also separately as parts intended for replacement during repairs after inspections.

1.4.1 The order must contain at least the following tech. data:

- a) total number of ordered sets or parts
- b) detailed breakdown with number of pieces
- c) numbers of drawings including stress analysis

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- d) material mark including requirement of technical delivery terms, quality certificate of material which was used during manufacture and results of executed weld join inspections.
- e) The highest allowed pressure and temperature together with operating liquid.
- f) Safety equipment including location, type and performance
- g) Other specification: requirements for inner and outer surface finish, insulation
- h) Manufacturer's data – inland, foreign...
- i) Required anticorrosion addition

1.4.2 the order must contain explicitly the annex that it concerns pressure vessel or a part of the pressure vessel or a boiler.

1.5 What concerns pressure vessels () that should be delivered to our company and are subject to approval pursuant to Government Decree No 26/2003 Coll. the obligation in the order to ask for handover of construction documentation, that must be approved by a notified body, precedes prior to initiation of manufacture.

2. Technical requirements

2.1 The order may be placed only with a manufacturer that is officially authorized to manufacture pressure vessels and boilers or their parts , pursuant to § 4 Decree of ČÚBP No. 18/1979 Coll..

2.2 Manufacture of pressure vessels intended for operation in Chemopetrol, a.s. may be executed only pursuant to approved production documentation (1 year) Approval of the respective documentation is confirmed by signature into the approval stamp printed on the drawing of main set of the vessels on the first page of the stress analysis by the contractual welding technologist and Head of OTD. IN case of changes in documentation, it is proceeded pursuant to N 11 005.

2.3 Final and first pressure tests, except for imported equipment, are usually carried out by an inspection technician of the manufacturer or by a notified body. Results of the tests have to be documented in the passport of the respective equipment. Participation of the inspection technician of OTD TS needs to be specified in the order (contract).

2.4 Complete pressure vessels, boiler and individual pressure parts delivered independently as part intended for repair manufactured in the Czech republic and abroad must comply in every respect with ČSN, ČSN EN and regulations for manufacture and repairs:

- a) Steam boilers, pursuant to ČSN 07 0620, ČSN 07 0622, ČSN 07 0623, ČSN EN 12952 (1-11)
- b) Stationary pressure vessels, pursuant to ČSN 69 0010, ČSN EN 13445, ČSN EN 764
- c) Transportable pressure equipment pursuant to government Decree No. 42/2003 Coll
- d) Simple unfired pressure vessels pursuant to ČSN EN 286-1 (69 5286)

2.5 Designation of pressure vessels and boilers is carried out by the manufacturer pursuant to relevant ČSN, ČSN EN and regulations listed in art. 2.4.

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2.6 Designation of parts of pressure vessels and boilers is carried out by the manufacturer by embossing its mark, material mark and heat number to the material or on a tag in stainless execution.

2.7 Scope of all tests, both material and inner pressure tests as well as radiography tests of weld joints of complete pressure vessels, boilers or their parts is determined by relevant ČSN, ČSN EN and regulations listed in art. 2.4

3. Acceptance

3.1 Complete pressure vessels and their pressure parts (based upon concluded economic contract) is accepted at the manufacturer by a client's representative responsible – an employee of technical machinery inspection, a maintenance employee or an inspection technician for reserved pressure vessels of OTD TD pursuant to relevant ČSN, ČSN EN and regulation and as per provision herein.

3.2 Participation of the client's representative responsible during inspection and final assessment must be specified in the order (contract). Participation of the inspection technician OTD TS, see art. 3.1.

4. Handed-over documentation

4.1 For complete pressure vessels irrespectively of the highest allowed pressure, the manufacturer shall provide a passport (two copies) if not stipulated by the contract otherwise, that contains (pursuant to ČSN 69 0010 -7.2) the following:

- a) Content of the passport
- b) List of documents attached to the vessel passport
- c) General data
- d) Technical characteristics and parameters
- e) Data on pressure relief valves and other equipment
- f) Data on basic valve
- g) Basic data on measurement, signalling, control and automatic protection devices.
- h) Data on basic and auxiliary materials used for manufacturing parts subjected to compression
- i) Protocol on vessel shell measurement (the measurement is performed only for vessels with the highest allowed pressure exceeding 10 MPa)
- j) Results of tests and inspections of weld joints
- k) Data on non-destructive inspection of weld joints
- l) Other tests and inspections
- m) Data on heat treatment (may be replaced by heat treatment diagram, in case it contains all data given in the table)
- n) Certificate of final and first pressure test performed by the accepting body within the meaning of art. 2.3.

4.1.2 For steam boilers the manufacturer shall provide production documentation pursuant to Government decree No. 26/2003 Coll. annex No. 3 art. 2. 3a) – f, and pursuant to ČSN EN 12862-6

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4.2 Documents that are elaborated and provided by the manufacturer in form of appendix to the passport, must contain the following:

- a) drawings of the vessel, total set and details necessary for inspection of dimensions determined by the calculation.
- b) draft of designation for identification of places for non-destructive testing of weld joints.
- c) stress analysis of parts subjected to compression, stress analysis of standardised parts manufactured pursuant to relevant standards (flanges, fittings, cover of holes, adapting pieces, etc.) must be added.
- d) certificate of pressure relief (safety) valves or its copy including declaration of conformity.
- e) instructions for operation, assembly, inspection, repair and checking under operation in case the character of the vessels and its safe operation requires these.
- f) issued expert supervisor's decisions
- g) declaration of conformity for stationary pressure vessels (boilers)

4.3 The documentation pursuant to the contract must be handed over no later than one month after delivery of the vessel or the boiler, however at least 14 days prior to commissioning of the respective vessel or boiler.

4.4 The documentation must be handed over no later than seven days prior to initiation of acceptance procedure of the investment for operation and maintenance.

4.5 For parts of the pressure vessels and boilers for all operating pressures, the supplier provides certificate on quality of used material or welds with presented results of the test carried out pursuant to ČSN, ČSN EN and regulations stipulated in art. 2.4.

4.6 Any pressure vessel or boiler (both from domestic or foreign manufacturers) with missing documents and documentation, which were not handed over as per valid standards and regulations including this standard, will not be accepted by the buyer (client) and it will be considered as failure to meet the contractual terms and conditions with all penalties resulting from the respective concluded contracts.

In exceptional cases, the pressure vessel or boiler supplied from abroad with missing passport and without possibility to get its copy, issuance of such a passport (the number as per contract) shall be ensured by the supplying company from submitted documents of the manufacturer. Prior to execution of final and first pressure test, the manufacturer is obliged to submit for inspection production documents for issuing the passport to the notified body and client's representative.

The respective documentation for vessels and boilers supplied from abroad must be submitted in original copy and documents determined in advance in Czech translation – see N 11 005, art. 14.2.

5. Delivery

5.1 parts of the boilers and complete pressure vessels or their parts are usually delivered unpacked, unless the accompanying documentation stipulates otherwise, except for sealing surfaces which are usually protected by a tin cover, finished surfaces fitted with conservation coating, other surfaces with simple coating of basic colour secured against mechanical damage during transport.

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5.1.1 In case the pressure vessel is delivered with complete coatings performed as per the standard of the company N 10 051, it is necessary to state (embody) in the order (contract or agreement concluded with the manufacturer). This is conditioned with performed and confirmed first pressure test in the vessel passport. In case the vessel is welded no site, all welds and their vicinity is without coating.

5.2 Boilers and pressure vessels delivered in scope of investment units.

5.2.1 For boilers and pressure vessels that are delivered in scope of investment units, this standard applies in full. Articles 1.4.1 and 1.4.2 and paragraphs of part 5 may be solved individually in the concluded contracts or contract for delivery of an investment unit.

5.2.2 In case further requirements need to be added for delivery of boilers and pressure vessels in scope of investment units both from inland and from import, these requirements have to correspond with requirements herein and will be attached as an annex to the contracts with manufacturers or will be embodied directly into the contracts.

5.2.3 When concluding contract for delivery to Chemopetrol, a.s. it must be embodied (stipulated) that the equipment shall be designed, manufactured and delivered pursuant to DIN, ANSI, ČSN, ČS EN or other standards, which has to be approved by a notified body.

6. Amendment – list of quoted and related standards and documents

Decree of ČÚBP No. 18/1979 Coll. determining reserved pressure equipment and defining some conditions for ensuring their safety.

ČSN 07 0620	Construction and equipment of steam boiler and heat-water boiler.
ČSN 07 0622	Construction of steam and hot water boilers.
ČSN 07 0623	Technical documentation of boilers.
ČSN 07 0624	Erection of boilers and boiler equipment.
ČSN 07 0705	Steam boilers. Putting into operation.
ČSN 07 0706	Steam and hot-water boilers Rules for past assembly acceptance.
ČSN EN 12952 Část 1-16 (07 7604)	Water-tube boilers and auxiliary installations
ČSN 07 8304	Gas cylinders - Operation rules.
ČSN 07 8305	Metal pressure vessels for transport of gasses. Technical rules

ČSN EN 10204 (42 0009)

Metallic products - Types of inspection

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ČSN 69 0010	documents. Stationary pressure vessels. Technical rules.
ČSN EN 13445 Část 1÷6 (69 5245)	Unfired pressure vessels.
ČSN EN 286 - 1 (69 5286)	Simple unfired pressure vessels designed to contain air or nitrogen. Part 1, Pressure vessels for general purposes
ČSN EN 764-1 (69 0004)	Pressure equipment. Part 1, Terminology - Pressure, temperature, volume, nominal size
N 10 051	Surface protection of metallic structures and equipment.
N 11 005	Operation rules of pressure equipment.
N 11 151	Metallic shells and accessories of HP bodies. Technical delivery terms.

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