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Manufacturing and Erection of Pressure and Non-pressure Equipment and Welded Constructions

Part 9: Documentation

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9.1 Scope of application and purpose

This section applies to pressure equipment and their components, as well as for pressure-less system parts, such as tanks, vessels, pipelines, appliances, storage tanks and their components and shall be used for the creation of offers, ordering and throughout the entire process of the order processing up to the final documentation.

The term 'pressure equipment' is used later in this document and applies to all of the components and installations mentioned above.

The purpose of this section is to determine the minimum scope and the minimum requirements of the technical documentation.

9.2 General

The documentation shall be created in Czech and English and Mondí's Standard 28 – Project documentation standard shall be followed.

The obligatory operating instructions in accordance with the Pressure Equipment Directive, as well as possibly necessary safety and warning information shall be created in the Czech language.

Great importance is placed on the flawless readability of the documents with regard to font size, as well as quality of printing and copying (no unreadable and/or blackened copies). If these quality requirements are not observed, these documents shall be rejected and the documentation shall not be considered as transmitted.

The documents shall be clearly labelled and assigned. For example, it must be ensured that a document which was taken from a folder shall be clearly allocatable and returned to its original place simply due to the labelling.

Revisions shall be clearly labelled and must be comprehensible. Their content and intention must have a comprehensible form.

General phrases and designations which do not define the intention and the scope of the revision shall not be permitted

All specifications in the transmitted drawings, parts lists, calculation documents, inspection and test reports and other documents shall be complete and truthful.

The scope of the documentation varies according to the type and complexity of the equipment. The sections 9.3 Offer documentation, 9.4 Calculation and design and, 9.5 Fabrication, 9.6 Inspection and test, 9.7 Marking and 9.8 Final documentation give us a guideline for the minimum scope of the documentation and the point of time when these must be transmitted.

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If documents or reports are listed in the sections described above, which are not applicable to the equipment to be delivered, or do not appear useful in the implementation, as the equipment is extremely simple, for example, or has a very low hazard potential and hence the effort is not justified by the benefits, the supply of individual documents can be waived in agreement with Mondí Štětí a.s. This waiver shall be carried out in writing and justified prior to issuing the order.

The manufacturer or supplier of the equipment is obligated to deliver documentation that exceeds these specifications as long as this is required for the operation, the maintenance and/or safety.

9.2.1 Process-related documents and reports

The manufacturer shall create and maintain a suitable system which ensures that the current and valid documents are always available and can be applied anywhere during the manufacture of the pressure equipment.

At any point in time during the manufacture, fabrication and assembly, the documentation shall correspond with the status of the manufacturing process.

The provision of this documentation to Mondí Štětí a.s. or its representative shall be possible at any time and shall be ensured.

The forwarder of a document shall supply the reason of the submission during the submission of the process-related documentation to Mondí Štětí a.s.

For information

Under this title, documents shall be forwarded to the customer or persons involved with the manufacturing process for information purposes.

A statement or activity shall not be expected and also not assured by Mondí Štětí a.s.

For inspection

These documents shall be forwarded to Mondí Štětí a.s. for checking and statement.

Mondí Štětí a.s. shall check these documents within 10 working days and submit comments and statements on this in writing, or take notice of them without comment.

The checking of these documents with the title "For inspection" is usually limited to "cross checking", i.e. to random samples or partial checks and shall be applied, for example, to design criteria, main dimensions, scope of delivery and similar.

As long as no other agreements were made, the manufacturer can continue his activities during this phase.

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For release

Documents "For release" are forwarded to Mondí Štětí a.s. for checking and release. Unless otherwise agreed, Mondí Štětí a.s. shall check these documents within 10 working days and shall submit its comments and statements on them in writing.

If the manufacturer uses unreleased documents for the manufacture of the pressure equipment, it is fully responsible for all consequences that result from this.

Comments and statements by Mondí Štětí a.s. do not free the manufacturer from its complete responsibility and its duties of due diligence. However, the comments and statements shall be taken into account as long as no legal or normative restraints require anything else. Economical aspects cannot counteract the implementation of the comments and statements by Mondí Štětí a.s.

9.2.2 Storing of documents and report

Internal production documentation shall be stored for at least 10 years by the manufacturer. During this time, Mondí Štětí a.s. shall receive an insight into the documents at any time and without charging any fees.

During this period of time, the manufacturer is responsible for protecting the documents against deterioration and damage.

After the due date has expired and prior to the documents being destroyed, the manufacturer of the pressure equipment shall provide Mondí Štětí a.s. with all documents without receiving a request and free of charge.

9.3 Offer documentation

The documents submitted with the offer shall serve the evaluation and selection of the requested pressure equipment, the requested system or its components.

9.3.1 Type of technical documentation

The type and scope of the technical documentation shall be defined during the tender.

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9.4 Calculation and design

9.4.1 Type and scope of the documentation

9.4.1.1 Technical specification of the pressure equipment

In these technical specifications, the manufacturer of the pressure equipment shall clearly designate this pressure equipment and state the design criteria and operating conditions for which it is designed and suitable.

Here, the calculated service life, the types of load and maintenance work shall be described and recommendations for maintenance intervals shall be made.

The experience gained from the hazard analysis shall be incorporated in the technical specifications.

9.4.1.2 Piping and instrumentation diagram (P & I diagram)

Here, the contractor must reach an agreement with the project department.

9.4.1.3 Design and operating conditions

The manufacturer of the pressure equipment shall state the design and operating conditions for which the pressure equipment is designed and suitable.

This can also be carried out and documented as part of the hazard analysis.

9.4.1.4 Risk analysis

The manufacturer shall carry out and document an adequate analysis and assessment of the risk(s). The risk analysis shall record all failure possibilities and loads which, after reasonable assurance, can occur during the assembly, operation, maintenance and cleaning as well as decommissioning of the equipment. This shall record all life cycles of the equipment and has to fulfil all the requirements shown in the related EC-Directive.

9.4.1.5 Design calculations and drawings

The manufacturer must have proof of its skills and experience for the calculation and design of the equipment.

On the basis of the hazard analysis, the manufacturer shall carry out and document a construction calculation in accordance with the standard to be applied.

Calculated damage mechanisms, for example dynamic loads, thermal loads and such like, shall be specifically marked in the documentation of the construction calculations.

If creep rupture values are taken into account in the design, a service life of 200,000 operating hours shall be set as the minimum assumption. Values below this require the written consent of Mondí Štětí a.s.

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A stress analysis shall be carried out for pipelines if they are subject to increased temperatures. This must also take into account possible operating conditions such as steam blow cleaning.

9.4.1.6 Design and manufacturing drawing

The manufacturer shall create fully dimensioned and detailed drawings and provide them to Mondí Štětí a.s.

These drawings shall include all welded and pressure-retaining parts, and include details concerning weld joint preparation and weld joint details

These drawings shall include parts lists with all material designations.

Furthermore, the drawings or to the drawings related documents shall clearly include allocatable specifications concerning the calculated minimum wall thicknesses and designate the corrosion allowance as far as applicable.

9.4.1.7 Plant schematics – procedural schematics

If a procedural or plant schematic is required for the safe operating of pressure equipment or an assembly, it shall be created by the manufacturer.

Besides the technical safety aspects as described above, this shall also take into account the measurement and control systems if necessary.

9.4.1.8 Conformity assessment procedure

Specifications concerning the classification of the pressure equipment in accordance with the pressure equipment regulation and the selected conformity assessment procedures shall be created.

If a notified body is incorporated, he shall be identified.

9.4.1.9 Design examination

The manufacturer shall carry out and confirm a design examination prior to beginning fabrication.

If this is not carried out by a notified body, this internal design examination shall be carried out by a person or group which was not part of the original design and can carry out this test completely freely and independently.

This shall be documented and confirmed in the confirmation of the design examination.

The documents of the design examination, including all comments and any required corrections of the design, shall be fully submitted to Mondí Štětí a.s.

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9.5 Fabrication

9.5.1 Type and scope of the documentation

9.5.1.1 Purchase order specifications

For all parts, components and/or assemblies, the manufacturer shall create a purchase order specification and submit them to Mondí Štětí a.s. on request.

9.5.1.2 Manufacturing schedule

In this manufacturing schedule, the steps for production shall be shown. Critical production steps shall be designated and described.

9.5.1.3 List of sub-supplier/list of any subcontracted services or parts

All subcontractors shall be recorded in this list and allocated to the supplied components.

9.5.1.4 Manufacturing drawings

For this, see also the section Calculation and Design.

All drawings shall be summarised in a list and marked with the respective revision status.

9.5.1.5 Parts lists

Parts lists shall be allocated to the production drawings.

These parts lists shall be complete and record all components necessary for manufacture.

The specifications concerning the respective components shall be clear and include all component-specific specifications and characteristic data.

9.5.1.6 List of materials – parts list of components

A list - traceable to the parts lists - of all used materials with reference to respective delivery and/or purchase order specifications, as well as material certificates or comparable acceptance certificates shall be created.

9.5.1.7 Material certificates

For all materials used during the manufacture of the pressure equipment, material certificates shall be included in the final documentation.

Traceability must be given for every individual component.

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9.5.1.8 Procedures for assuring material traceability

The manufacturer shall create a procedure which describes the system that ensures that a clear identification of the used materials is provided from the receipt of goods through the manufacturing process to the final acceptance. This shall also apply explicitly to welding filler material.

This procedure shall be submitted to Mondí Štětí a.s. prior to beginning production for review and release.

9.5.1.9 Documents and data related to the preparation of component parts

Drawings, procedures and other documents for individual parts which have to be formed or machined during the manufacturing process (forming, cold-formed and/or hot-formed; machining and similar), individual parts which are not standard parts or standard parts that must be adjusted, machined or formed.

9.5.1.10 Forming procedures

Forming processes shall be described in the forming procedure. The relevant procedure qualification shall be referred to in them. The procedure qualification report shall be fully included.

9.5.1.11 Documents related to welding

All documents related to the welding process shall be fully included and traceability to weld joint and component shall be given.

For a detailed description of the documents, see also Part 7 Welding.

9.5.1.12 Results of production test coupons

Component-related production tests shall be fully documented with reference to fabrication step and procedure, used standards and acceptance criteria as well.

9.5.1.13 Documents related to heat treatment

The documents shall be fully included and traceable to the heat treatment and the weld joint and/or to the component. Wherever relevant, hardness tests shall be traceable to the respective heat treatment report.

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9.6 Inspection and testing

9.6.1 Type and scope of the documentation

9.6.1.1 Inspection and test plan

The type and scope of the inspection and tests shall be clear mentioned in the inspection and test plans and the respective inspections and tests steps shall be follow the production steps.

9.6.1.2 Documents related to non-destructive testing

All documents related to the manufacturing process shall be fully included and fully traceability to the inspection and test activities, reports and components shall be given. For a detailed description of the documents, see Part 8 Testing.

9.6.1.3 Non-conformity reports, repair procedures and results

Non-conformities, no matter in which form, shall always be documented and communicated to Mondí Štětí a.s.

Each repair work or activity (if required) and the respective inspections and tests after the repair work shall be documented.

Each non-conformity report shall be traceable to the component.

9.6.1.4 Proof test procedure

The manufacturer shall create a proof test procedure for the mandatory proof test and, as far as required, must create a work instruction created from this procedure and submit it to Mondí Štětí a.s. in good time.

If the procedure of the proof test deviates from the usual procedure of the hydrostatic pressure test, the manufacturer shall agree upon this alternatively planned proof test procedure with Mondí Štětí a.s. prior to beginning of fabrication.

Any additional required measures and the acquisition of official permits must be arranged by the manufacturer who shall bear the costs and responsibility.

The documents for design, manufacture and inspection and tests are an important part of the final inspection and thus prerequisite for carrying out the proof test and shall be provided fully and in a verifiable form to Mondí Štětí a.s. in good time prior to the proof test.

The 'As-built' documentation shall be provided at least as a "Red pen correction" prior to the proof test.

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9.6.1.5 Certificate of the proof test / pressure test

A certificate of the pressure test shall be provided as a result of the proof test.

9.6.1.6 Leakage test procedure

If a leakage test is prescribed or intended, the manufacturer shall create a test procedure and, if required, create a work instruction created from this procedure and submit it to Mondí Štětí a.s. in good time.

In this instruction, the procedure for the leakage test shall be described, as well as the permitted leakage rate listed and the personnel qualification determined.

9.6.1.7 Certificate of the leakage test

A certificate of the pressure test shall be provided as a result of the leakage test.

9.7 Marking

9.7.1 Marking of pressure equipment

In addition to the required marking and labelling of pressure equipment in accordance with the Pressure Equipment Directive, the pressure equipment, assemblies and plant parts shall be labelled or marked with the customer-specific designations and symbols.

In addition, agreement with Mondí Štětí a.s. shall be made in good time.

9.7.2 Declaration of conformity

The manufacturer shall provide the declaration of conformity including ES certificate if Notified Body has been involved.

9.7.3 Declaration of compliance

If no declaration of conformity can be issued – because the pressure equipment is not part of the scope of the Pressure Equipment Directive, or the manufacturer/producer is not assigned as the manufacturer in accordance with the Pressure Equipment Directive – a declaration of compliance shall be issued. In this, the compliance of the component with the agreed and applied standards and specifications shall be confirmed.

If a supplier or a sub-supplier is only responsible for a partial area during the manufacture of the pressure equipment (e.g. design and construction), he shall only provide its declaration of compliance for this partial area. The manufacturer, who bears full responsibility, shall incorporate this in its complete documentation and shall include this in the final documentation to Mondí Štětí a.s.

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9.7.4 Operating instructions

The obligatory operating instructions in accordance with the Pressure Equipment Directive shall be created in the Czech language and shall record all operating conditions (e.g. shut-down, decommissioning and disassembly).

9.8 Final documentation

In addition to reports and documents that have to be included for the design, manufacturing, inspection and test, the results of the final inspection and proof test shall be included as well as any resulting actions and measures and the 'As-built' documentation.

The final documentation shall be submitted in a structured form.

The structure of the documentation and their structure shall be presented in the table of contents of the documents.

If there is no documentation for a register because a manufacturing step to be basically documented does not apply, the section shall be implemented in the table of contents any way, and at least the information "not applicable" shall be inserted.



Concept and content of final documentation for piping

	Description			
	Table of contents of the documents			
	Technical specification			
	Piping and instrumentation diagram (P & I diagram)			
	Compilation of design and operating conditions			
	Design calculation			
	Hazard analysis/risk analysis			
	Conformity assessment procedure			
	Drawings such as			
	Plant schematics			
	Drawing for the piping (isometric drawings)			
	Drawings for the support (primary and secondary)			
	Manufacturing drawings			
	Design examination			
	Manufacturing schedule			
	List of sub-supplier			
	List of subcontracted services or parts			
	Part lists for piping components including dimensioning, standard and material designation			
	Material certificates for base materials, filler materials and welding consumables			
	Purchase order specification			
	Procedures for assuring material traceability			
	List of installation parts			
	Documents and data related to the processing of components and individual parts			
	Welding documents			
	NDT documents			
	Heat treatment documents			
	Non-conformity reports, repair procedures and results			
	Proof test procedure			
	Leakage test procedure			
	Marking information			
	Declaration of design compliance			
	Declaration of compliance for piping fabrication/installation			
	As-Built documentation			
	Report of proof test			
	Report of leakage test			
	Declaration of compliance with EN 13480			
	EC declaration of conformity			
	Operating instructions			

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Concept and content of final documentation for pressure vessels

	Designation			
	Index of the documents of each pressure vessel against its serial identification number			
	Technical specification of equipment			
	Compilation of design and operating conditions			
	Manufacturers analysis of hazard			
	Conformity assessment procedure			
	Manufacturing drawings			
	Design calculations			
	Design examination			
	Manufacturing schedule			
	List of sub-supplier			
	List of any subcontracted services or parts			
	Part lists for piping components including dimensioning, standard and material designation			
	Material list			
	Material certificates for base materials, filler materials and welding consumables			
	Purchase order specification			
	Procedures for assuring material traceability			
	Quality test plan			
	Forming procedures			
	data related to the preparation of component parts (e.g. forming, chamfering)			
	Welding documents			
	Results of production test coupons			
	NDT documents			
	PWHT procedures and results (time/temperature charts)			
	Non-conformity reports, repair procedures and results			
	Proof test procedure			
	Leakage test procedure			
	Report of proof test			
	Report of leakage test			
	As-Built documentation			
	Record of marking and nameplate			
	written declaration of compliance with EN 13445			
	EC declaration of conformity			
	Operating instructions			