Contents

1 Subject of specification 2
2 Scope of validity 2
2.1 Deviations 2
3 General requirements 2
3.1 Marking of materials 3
3.2 Marking of welded joints 3
3.3 Marking of technical equipment 3
4 Relevant documents 5
5 Norms and standards
Błąd! Nie zdefiniowano zakładki.
6 Record of changes 6

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1 Subject of specification

This specification and other documents referenced herein establish the minimum requirements for marking of equipment. .

2 Scope of validity

This specification applies to the preparation of tender documents, inquiries and contracts for newly planned investment or modernization projects of Grupa LOTOS S.A.

It shall also be a basis for preparing both detailed specifications and inquires for individual or package unit supplies.

2.1 Deviations

Any deviation from this specification and the relevant specifications, standards and related documents including proposals, which the bidder claims to be economically and / or technically superior solutions must be submitted in writing for review and approval by Grupa LOTOS S.A. Non-approved exceptions are not acceptable by Grupa LOTOS S.A.

The supplier must report in writing any ambiguity in this or any other specifications of Grupa LOTOS S.A. or non-compliance with the referred documents / standards and obtain a written explanation from Grupa LOTOS S.A.

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2.2 Order of Precedence

In case of conflicts existing between this specification and other documents, the following order of precedence shall govern:

- The current Polish legislation
- Terms of purchase order / contract and other requirements agreed in writing Grupa LOTOS S.A.
- Data Sheets approved by Grupa LOTOS S.A.
- This specification
- Other Specifications
- Drawings and other documents
- Standards

3 General requirements

Manufactured, repaired or modernised equipment and its elements shall have marking ensuring its identification with respect to:

- materials used
- welded joints performed

- pressure equipment and its components.

3.1 Marking of materials

The entity manufacturing, repairing or modernising technical equipment shall ensure full identification of materials used for its construction during the whole process of manufacture, repair or modernisation.

The basic marking method shall be stamping. Materials shall be marked in a such way so that the marking will be visible and accessible during equipment inspection.

Marking shall comprise;

- material grade
- heat number
- the mark of the person responsible for properly the material marking.

A sketch / drawing showing the marking locations shall be attached to the Technical Documentation of the equipment.

3.2 Marking of weld joints

3.2.1 Marking method

Welding joints (fusion welded and pressure welded) shall be marked with the welder's or welding operator's stamp placed 20 – 50 mm from the edge of the joint.

3.2.2 Marking location:

- For longitudinal joints – the mark shall be placed 100 – 200 mm from their ends.
- For circumferential joints intersecting with a longitudinal joint – the mark shall be placed in the vicinity of the intersection.
- If all welding joints of equipment have been made by one welder – the mark shall be located only within the name plate and it should be placed within a painted frame.

3.3 Marking of technical equipment

- marking with the equipment process symbol
- marking of the equipment technical parameters
- marking of the equipment erection orientation

3.3.1 Marking with the equipment process symbol

- Each piece of equipment shall be marked with 200 mm high process symbols made with water-insoluble paint.
- When austenitic and high nickel alloy steels are to be marked, the marking shall be made with water-insoluble paint that does not contain sulphur, chlorides or metallic pigments.

- For equipment containing hazardous medium, the name of the medium or its chemical symbol together with special warning signs defined in separate industrial safety- and fire-protection regulations shall be placed below the process symbol.
- Marking shall be placed in visible places, enabling easy identification of equipment. For un-insulated equipment - directly on equipment. For insulated equipment - on the insulation jacketing. For small equipment - on special plates or pedestals.

3.3.2 Marking of the equipment technical parameters

Each piece of equipment shall have a legible nameplate where the basic technical data shall be permanently placed. The nameplates shall be resistant to corrosion, working medium and ambient conditions.

Moreover, depending on the type of equipment, further information and warnings required for safe erection, operation and maintenance shall be placed

3.3.2.1 Marking of complex pressure equipment

All markings required for each pressure space shall be stamped on the nameplate of the respective pressure space or on a plate common for several spaces, with identification of the space to which they apply.

Besides the above-mentioned marking, the following data should be additionally stamped on the largest non-removable part of the pressure equipment and on the main removable components of the equipment:

- manufacturer's name or trademark
- serial number
- year of manufacture.

3.3.2.2 Nameplates of pressure equipment and atmospheric vessels

The nameplate shall be attached to the equipment wall or to a bracket attached to that wall in a place that will be accessible and visible during the operation of the equipment.

The nameplate of a piece of pressure equipment shall be attached in a permanent way preventing its reuse. Metal plates shall be attached with screws or rivets of which one should have its head stamped with the manufacturer's symbol and another – with the third party symbol (Notified Body, UDT, ZDT).

The location of the nameplate shall be indicated in the drawing or in the as-built documents of the piece of equipment.

In justified cases it shall be allowed to apply the marking directly on the pressure equipment wall, in a place visible during equipment operation. In such case the method of making the marking shall be agreed with the Grupa LOTOS S.A.

3.3.2.3 Marking of the equipment erection orientation

Vertical vessels shall be marked on the upper ring of the vessel skirt with a mark indicating the north, in the form of a vertical line and the symbol „PN”.

For anchored vertical vessels supported on legs or brackets, the marking shall be made on the bottom part of the shell (the bottom) near to the bottom tangent line.

Horizontal vessels shall have one end marked with the selected direction (north, south, east or west) to indicate the vessel orientation for erection purposes.

4 Relevant documents

Any “Technical Specification” issued by Grupa LOTOS S.A. listed in Contract Files.

5 Record of changes

Rev.	Date	Description	Introduced by
1	30-11-2013	Review, update, standardize and changes to the Standard within scope of order No. OK/990/2012	Editorial board coordinated by T.Wróbel
-	08-01-2016	Page layout corrections, no contents changes.	T. Wróbel