



TECHNICAL REQUIREMENTS

MECHANICAL

Document No. OL-TR-MR-000

GENERAL

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TABLE OF CONTENTS

1. SCOPE	3
2. REFERENCES	3
2.1 General Requirements – OL Specifications	3
2.2 Civil Requirements – OL Specifications	3
2.3 Mechanical Requirements – OL Specifications	4
2.3.1 General	4
2.3.2 Piping	4
2.3.3 Pressure Vessels	4
2.3.4 Heat Exchangers	4
2.3.5 Heaters and Boilers	4
2.3.6 Cooling Towers	4
2.3.7 Welded Storage Tanks	4
2.3.8 Machinery	4
2.4 Automation and Instrumentation Requirements – OL Specifications	5
2.5 Electrical Requirements – OL Specifications	5
3. TERMS AND DEFINITIONS	5
4. GENERAL	5
5. REQUIRED DOCUMENTATION	6
5.1 General	6
5.2 Mechanical	6
5.2.1 Piping	6
5.2.2 Pressure Vessels	6
5.2.3 Heat Exchangers	6
5.2.4 Heater and Boilers	6
5.2.5 Cooling Towers	6
5.2.6 Welded Storage Tanks	6
5.2.7 Machinery	6

1. SCOPE

- 1.1 This document defines basic technical requirements in mechanical disciplines and it shall be considered as the mandatory design and / or construction criteria for the Project Management, Supervision and Maintenance Department, Investment project Department, Procurement Department in AB “ORLEN Lietuva” (OL), etc. /referred to as the OL / as well as for Design Offices, Subcontractors, Vendors and other external companies being the party of the contract /referred to as the Contractor/ during construction of the new plants and process units, revamping activities and reconstruction works in the premises of OL.
- 1.2 Basing on this document, CONTRACTOR shall establish with the OL the detailed assumptions (scope of design, construction works, etc.) which ought to be confirmed with a protocol signed by both Parties. CONTRACTOR is liable to make said agreements.
- 1.3 Any mechanical aspects related to the subject of the contract, which are not included in this document, are to be governed by Lithuanian laws and standards or internal regulations in OL.
- 1.4 Any deviations from technical requirements included in this document shall be agreed with and accepted in writing by OL.

2. REFERENCES

When this specification conflicts with local government or state codes, the more stringent document will govern.

Reference standards are included in the OL specifications:

2.1 General Requirements – OL Specifications

OL-TR-GR-000 *General Requirements*

OL-TR-GR-001 *General. Noise Level*

2.2 Civil Requirements – OL Specifications

OL-TR-CR-001 *Civil. Structural Design*

OL-TR-CR-002 *Civil. Heat Insulation*

OL-TR-CR-003 *Civil. Fire-Proofing*

OL-TR-CR-004 *Civil. Concrete Structures*

OL-TR-CR-005 *Civil. Structural Steel*

OL-TR-CR-011 *Civil. Corrosion Protection and Lining. Painting*

OL-TR-CR-012 *Civil. Corrosion Protection and Lining. Lining for Pressure Vessels and Piping*

OL-TR-CR-013 *Civil. Corrosion Protection and Lining. Lining for Heaters*

OL-TR-CR-014 *Civil. Corrosion Protection and Lining. Cathodic Protection*

2.3 Mechanical Requirements – OL Specifications

2.3.1 General

OL-TR-MR-001 *Mechanical. General Welding, Fabrication and Inspection*

OL-TR-MR-002 *Mechanical. Positive Material Identification*

2.3.2 Piping

OL-TR-MPR-001 *Mechanical. Piping*

OL-TR-MPR-002 *Mechanical. Piping Specifications*

2.3.3 Pressure Vessels

OL-TR-MVR-001 *Mechanical. Pressure Vessels*

OL-TR-MVR-002 *Mechanical. Internals for Towers, Drums and Fixed Bed Reactors*

2.3.4 Heat Exchangers

OL-TR-MER-001 *Mechanical. Shell and Tube Heat Exchangers*

OL-TR-MER-002 *Mechanical. Double Pipe Heat Exchangers*

OL-TR-MER-003 *Mechanical. Air Cooled Heat Exchangers*

2.3.5 Heaters and Boilers

OL-TR-MHR-001 *Mechanical. Fired Heaters*

OL-TR-MHR-002 *Mechanical. Industrial Boilers*

2.3.6 Cooling Towers

OL-TR-MCR-000 *Mechanical. Cooling Towers*

2.3.7 Welded Storage Tanks

OL-TR-MTR-000 *Mechanical. Welded Storage Tanks*

2.3.8 Machinery

OL-TR-MRR-000 *Mechanical. Machinery. General*

OL-TR-MRR-011 *Mechanical. Machinery. Centrifugal Pumps*

OL-TR-MRR-012 *Mechanical. Machinery. Sealless Centrifugal Pumps*

OL-TR-MRR-013 *Mechanical. Machinery. Shaft Sealing Systems for Centrifugal and Rotary Pumps*

OL-TR-MRR-021	<i>Mechanical. Machinery. Positive Displacement Pumps – Reciprocating</i>
OL-TR-MRR-022	<i>Mechanical. Machinery. Positive Displacement Pumps – Rotary</i>
OL-TR-MRR-023	<i>Mechanical. Machinery. Positive Displacement Pumps – Controlled Volume</i>
OL-TR-MRR-031	<i>Mechanical. Machinery. Axial, Centrifugal and Expander Compressors</i>
OL-TR-MRR-032	<i>Mechanical. Machinery. Positive Displacement Compressors – Rotary</i>
OL-TR-MRR-033	<i>Mechanical. Machinery. Reciprocating Process Compressors</i>
OL-TR-MRR-041	<i>Mechanical. Machinery. General-Purpose Steam Turbines</i>
OL-TR-MRR-042	<i>Mechanical. Machinery. Special-Purpose Steam Turbines</i>
OL-TR-MRR-051	<i>Mechanical. Machinery. General-Purpose Gear Units</i>
OL-TR-MRR-052	<i>Mechanical. Machinery. Special-Purpose Gear Units</i>
OL-TR-MRR-061	<i>Mechanical. Machinery. General-Purpose Centrifugal Fans</i>
OL-TR-MRR-062	<i>Mechanical. Machinery. Special-Purpose Centrifugal Fans</i>
OL-TR-MRR-063	<i>Mechanical. Machinery. Industrial Fans for General Process Service</i>
OL-TR-MRR-071	<i>Mechanical. Machinery. Protection Systems</i>

2.4 Automation and Instrumentation Requirements – OL Specifications

OL-TR-IR-000	<i>General Requirements</i>
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2.5 Electrical Requirements – OL Specifications

OL-TR-ER-000	<i>General Requirements</i>
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3. TERMS AND DEFINITIONS

For terms and definitions see separately mechanical requirements acc. to para. 2.3 of this Specification.

4. GENERAL

4.1 For mandatory mechanical requirements presented in para. 2.3 of this Specification.

4.2 Climatic, utilities and other data acc. to OL-TR-GR-000 para. 5.

5. REQUIRED DOCUMENTATION

5.1 General

For general required documentation see *OL-TR-GR-000* para. 19.

5.2 Mechanical

5.2.1 Piping

See *OL-TR-MPR-001* annex C.

5.2.2 Pressure Vessels

See *OL-TR-MVR-001* annex D.

5.2.3 Heat Exchangers

5.2.3.1 Shell and Tube – see *OL-TR-MER-001* para. 7 and data sheet *OL-TR-MER-DS1*.

5.2.3.2 Double Pipe – see *OL-TR-MER-002* para. 6 and data sheet *OL-TR-MER-DS2*.

5.2.3.3 Air Cooled – see *OL-TR-MER-003* para. 6 and data sheet *OL-TR-MER-DS3*.

5.2.4 Heater and Boilers

5.2.4.1 Fired Heaters – see *OL-TR-MHR-001* para. 4 basing on API Std. 560.

5.2.4.2 Industrial Boilers – see *OL-TR-MHR-002* para. 4.2 and data sheet *OL-TR-MHR-DS2*.

5.2.5 Cooling Towers

See *OL-TR-MCR-000* para. 4.

5.2.6 Welded Storage Tanks

See *OL-TR-MTR-000* para. 7.

5.2.7 Machinery

See *OL-TR-MRR-000* para. 5 and 6.