



TECHNICAL STANDARDS FOR GAS

Reference to CEN/CENELEC Technical Committees

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INTRODUCTION

MARCOGAZ actively collaborates with standardisation bodies such as CEN, and our members have been deeply involved in the standardisation work for decades.

Essentially, standards reflect the state of the art in terms of safe and sustainable operational gas supply activities. The standardisation process fosters the continuous improvement of assets' integrity and interoperability while ensuring the continuity of supply to the customers in the best conditions. The introduction of new gases is a major step in the gas value chain and technical standards are crucial to support the gas industry's contribution to decarbonisation.

Based on its technical work and experience, MARCOGAZ developed a [summary of technical standards applicable to the gas industry's](#) activities to guide representatives and players in the sector. Given the large number of existing standards, MARCOGAZ selected the most relevant for the gas mid and downstream sector. This list is subject to periodic updates, based on the evolving nature of the standardisation processes and industry needs.

Technical standards for gas

CEN / CENELEC Technical Committee			Title	CEN / CENELEC reference
CEN/CLC/JTC 6	Hydrogen in energy systems	WG1	Hydrogen in energy systems - vocabulary	prEN ISO 24078
CEN/TC 69	Industrial valves		Valves for gas distribution systems with maximum operating pressure less than or equal to 16 bar - Performance requirements	EN 13774
			Valves for natural gas transportation in pipelines - Performance requirements and tests	EN 14141
CEN/TC 219	Cathodic protection	WG1	General principles of cathodic protection of buried or immersed onshore metallic structures	EN 12954
CEN/TC 234	Gas infrastructure		Implementation Guide for functional standards prepared by CEN/TC 234 Gas infrastructure - Part 1: General	TR 13737-1
			Gas infrastructure - Implementation Guide for Functional Standards prepared by CEN/TC 234 - Part 2: National Pages related to CEN/TC 234 standards	TR 13737-2
		WG1	Gas supply - Gas pipework for buildings - Maximum operating pressure less than or equal to 5 bar - Functional recommendations	EN 1775
		WG2	Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 1: General functional requirements	EN 12007-1
		WG2	Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 2: Specific functional requirements for polyethylene (MOP up to and including 10 bar)	EN 12007-2
		WG2	Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 3: Specific functional requirements for steel	EN 12007-3
		WG2	Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 4: Specific functional requirements for renovation	EN 12007-4
		WG10	Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 5: Service lines - Specific functional requirements	EN 12007-5
		WG2	Gas infrastructure - Pipelines for maximum operating pressure up to and including 16 bar - Part 6: Specific functional recommendations for unplasticized polyamide (PA-U)	TS 12007-6
		WG2	Gas infrastructure - Pressure testing, commissioning and decommissioning procedures - Functional requirements	EN 12327
		WG2	Gas infrastructure - Safety Management System for Gas Networks with maximum operating pressure up to and including 16 bar operating pressure up to and including 16 bar	EN 15399
		WG3	Gas infrastructure - Safety Management System (SMS) for gas transmission infrastructure and Pipeline Integrity Management System (PIMS) for gas transmission pipelines - Functional requirements	EN 16348
		WG3	Gas infrastructure - Pipelines for maximum operating pressure over 16 bar - Functional requirements	prEN 1594 rev
		WG3	Gas infrastructure - Welding steel pipework - Functional requirements	FprEN 12732
		WG4	Gas infrastructure - Underground gas storage - Part 1: Functional recommendations for storage in aquifers	EN 1918-1
		WG4	Gas infrastructure - Underground gas storage - Part 2: Functional recommendations for storage in oil and gas fields	EN 1918-2
		WG4	Gas infrastructure - Underground gas storage - Part 3: Functional recommendations for storage in solution-mined salt cavern	EN 1918-3
		WG4	Gas infrastructure - Underground gas storage - Part 4: Functional recommendations for storage in rock caverns	EN 1918-4
		WG4	Gas infrastructure - Underground gas storage - Part 5: Functional recommendations for surface facilities	EN 1918-5
		WG5	Gas infrastructure - Gas measuring systems - Functional requirements	EN 1776
		WG6	Gas infrastructure - Gas pressure regulating stations for transmission and distribution - Functional requirements	EN 12186
		WG6	Gas supply systems - Gas pressure regulating installations on service lines - Functional requirements	EN 12279
		WG6	Gas infrastructure - CEN/TC 234 Pressure Definitions - Guideline Document	TR 16395
		WG7	Gas infrastructure - Compressor stations - Functional requirements	prEN 12583
		WG8	Gas infrastructure - Gas installation pipework with an operating pressure greater than 0,5 bar for industrial installations and greater than 5 bar for industrial and non-industrial installations - Part 1: Detailed functional requirements for design, materials, construction, inspection and testing	FprEN 15001-1
		WG8	Gas infrastructure - Gas installation pipework with an operating pressure greater than 0,5 bar for industrial installations and greater than 5 bar for industrial and non-industrial installations - Part 2: Detailed functional requirements for commissioning, operation and maintenance	FprEN 15001-2
		WG11	Gas infrastructure - Quality of gas - Group H	EN 16726
		WG12	Gas infrastructure - Safety Management System (SMS) and Pipeline Integrity Management System (PIMS) - Functional requirements	prEN 17649
		WG14	Assessment of methane emissions for gas transmission and distribution systems [Scope currently being extended to Underground Gas Storages and LNG Regasification Terminals]	prCEN/TR XXX
			Industrial Gas Installation - Guideline	TR 16787
			Domestic gas installations - Recommendations for safety	TR 16940
CEN/TC 235	Gas pressure regulators and associated safety devices for use in gas transmission and distribution	WG1	Gas pressure regulators for inlet pressure up to 10 MPa (100 bar)	EN 334
		WG1	Gas safety shut-off devices for inlet pressure up to 10 MPa (100 bar)	EN 14382

CEN/TC 237	Gas meters	WG2	Gas meters - Rotary displacement gas meters	EN 12480
		WG3	Gas meters - Turbine gas meters	prEN 12261
		WG4	Gas meters - Conversion devices - Part 1: Volume conversion	FprEN 12405-1
		WG4	Gas meters - Conversion devices - Part 2: Energy conversion	EN 12405-2
		WG4	Gas meters - Conversion devices - Part 3: Flow computer	EN 12405-3
		WG5	Gas meters - Smart Gas Meters	TR 16061
		WG5	Gas meters - Additional functionalities	EN 16314
		WG8	Gas meters - Diaphragm meters	EN 1359
		WG9	Gas meters - Ultrasonic domestic gas meters	prEN 14236
		WG10	Gas meters - Thermal-mass flow-meter based gas meter	FprEN 17526
CEN/TC 238	Test gases, test pressures, appliance categories and gas appliance types	WG1	Test gases - Test pressures - Appliance categories	EN 437
		WG1	Natural gas - Standard reference conditions (ISO 13443:1996 including Corrigendum 1:1997)	EN ISO 13443
		WG1	Natural gas - Quality designation (ISO 13686:2013)	EN ISO 13686
		WG1	Natural gas - Vocabulary (ISO 14532:2014)	EN ISO 14532
		WG1	Natural gas - Organic components used as odorants - Requirements and test methods	prEN ISO 13734 rev
		WG1	Natural gas - Determination of sulfur compounds using gas chromatography (ISO 19739:2004/Cor 1:2009)	EN ISO 19739
		WG1	Natural gas - Calculation of compression factor - Part 1: Introduction and guidelines (ISO 12213-1:2006)	EN ISO 12213-1
		WG1	Natural gas - Calculation of compression factor - Part 2: Calculation using molar-composition analysis (ISO 12213-2:2006)	EN ISO 12213-2
		WG1	Natural gas - Calculation of compression factor - Part 3: Calculation using physical properties (ISO 12213-3:2006)	EN ISO 12213-3
		WG1	Natural gas - Extended analysis - Gas-chromatographic method (ISO 6975:1997)	EN ISO 6975:2005
		WG1	Natural gas - Calculation of calorific values, density, relative density and Wobbe indices from composition (ISO 6976:2016)	EN ISO 6976:2016
		WG1	Natural gas - Determination of water content at high pressure (ISO 11541:1997)	EN ISO 11541:2000
		WG1	Gas analysis - Conversion of gas mixture composition data (ISO 14912:2003)	EN ISO 14912:2006
		WG1	Natural gas - Energy determination (ISO 15112:2018)	EN ISO 15112:2018
		WG1	Gas analysis - Investigation and treatment of analytical bias (ISO 15796:2005)	EN ISO 15796:2008
		WG1	Natural gas - Measurement of properties - Volumetric properties: density, pressure, temperature and compression factor (ISO 15970:2008)	EN ISO 15970:2014
		WG1	Gas analysis - Handling of calibration gases and gas mixtures - Guidelines (ISO 16664:2017)	EN ISO 16664:2017
		WG1	Natural gas - Calculation of thermodynamic properties - Part 1: Gas phase properties for transmission and distribution applications (ISO 20765-1:2005)	EN ISO 20765-1:2018
WG1	Natural gas - Calculation of thermodynamic properties - Part 2: Single-phase properties (gas, liquid, and dense fluid) for extended ranges of application (ISO 20765-2:2015)	EN ISO 20765-2:2018		
WG1	Natural gas - Calculation of thermodynamic properties - Part 5: Calculation of viscosity, Joule-Thomson coefficient, and isentropic exponent (ISO/DIS 20765-5:2020)	prEN ISO 20765-5		
CEN/TC 264	Air quality		Stationary source emissions - Predictive Emission Monitoring Systems (PEMS) - Applicability, execution and quality assurance	TS 17198
			Stationary source emissions - Automatic method for the determination of the methane concentration using flame ionisation detection (FID) (ISO 25140:2010)	EN ISO 25140
			Fugitive and diffuse emissions of common concern to industry sectors - Measurement of fugitive emission of vapours generating from equipment and piping leaks	EN 15446
CEN/TC 282	Installation and equipment for LNG		Installation and equipment for liquefied natural gas - Design of onshore installations	EN 1473
			Installations and equipment for liquefied natural gas - Design of onshore installations with a storage capacity between 5 t and 200 t	EN 13645
			Installations and equipment for liquefied natural gas - Suitability testing of LNG sampling systems	EN 12838
CEN/TC 408	Natural gas and biomethane for use in transport and biomethane for injection in the natural gas grid		Natural gas and biomethane for use in transport and biomethane for injection in the natural gas network - Part 1: Specifications for biomethane for injection in the natural gas network	EN 16723-1
			Natural gas and biomethane for use in transport and biomethane for injection in the natural gas network - Part 2: Automotive fuels specification	EN 16723-2
			Specification of liquefied natural gas as a fuel for marine applications (ISO 23306:2020)	EN ISO 23306
			Proposed limit values for contaminants in biomethane based on health assessment criteria	TR 17238
CLC/SC 9XC	Electric supply and earthing systems for public transport equipment and ancillary apparatus (Fixed installations)		Effects of electromagnetic interference on pipelines caused by high voltage a.c. electric traction systems and/or high voltage a.c. power supply systems	EN 50443
CLC/TC 31	Electrical apparatus for potentially explosive atmospheres		Explosive atmospheres – Part 0: Equipment – General requirements	EN 60079-0
			Explosive atmospheres - Part 10-1: Classification of areas - Explosive gas atmospheres	EN IEC 60079-10
			Explosive atmospheres - Part 14: Electrical installations design, selection and erection	EN IEC 60079-14
ISO Technical Committee		Title		ISO reference
ISO/TC193	Natural gas		Natural gas - Odorization	ISO/TR 16922
			Odorants and Odor character	ISO/AWI TR 5268
			Natural gas — Olfactory method for the evaluation of odour intensity	ISO/CD TS 5639
			Natural gas — Correlation between odorant concentration in air and odour intensity	ISO/DTR 18222
			Natural gas — Organic components used as odorants — Requirements and test methods	ISO/AWI 13734
	Natural gas — Odorization	ISO/CD TR 16922		
ISO/TC 207	Environmental management		Greenhouse gases — Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals	ISO 14064-1
			Greenhouse gases — Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements	ISO 14064-2
ISO/TC30	Velocity and mass methods		Measurement of fluid flow in closed conduits — Ultrasonic meters for gas — Part 1: Meters for custody transfer and allocation measurement	ISO 17089-1
			Measurement of fluid flow in closed conduits - Ultrasonic meters for gas — Part 2: Meters for industrial applications	ISO 17089-2