



INTERIM LIST OF INTERNATIONAL COMPONENT STANDARDS

ISO/TC 197 AD HOC GROUP ON HYDROGEN COMPONENTS **N 12**

Replaces: N09

Date: 2007-09-14

Standard no.	Title	Scope
ISO 264:1976	Unplasticized polyvinyl chloride (PVC) fittings with plain sockets for pipes under pressure -- Laying lengths -- Metric series	Contains tables with specifications of dimensions and tolerances of unplasticized PVC-fittings under pressure, fitting together with the specified nominal outside diameters of tubes according ISO 161-1. It should be used as a guide to manufacturers and users and as a basis for specific standards.
ISO 2042	Aircraft electrical circuit diagrams	This International Standard provides for uniformity in the preparation of aircraft electrical diagrams to permit the greatest ease of drawing consistent with the need for clear definition and legibility. It is intended that these drawings should be of a format suitable for use as production drawings or for reproduction in wiring diagram manuals. A diagram illustrating the application of the principles laid down in this International Standard is shown in the Annex.
ISO 2536	Unplasticized polyvinyl chloride (PVC) pressure pipes and fittings, metric series - Dimensions of flanges	This International Standard specifies the principal dimensions of loose backing flanges for use with solvent-welded flange adaptors) for polyvinyl chloride (PVC) metric series pressure pipes and fittings.
ISO 2714:1980	Liquid hydrocarbons - Volumetric measurement by displacement meter Systems other than dispensing Pumps	This International Standard specifies the characteristics of displacement meters and gives rules for systematically applying appropriate consideration to the nature of the liquids to be measured, to the installation of a metering System, and to the selection, Performance, Operation and maintenance of the same.
ISO 3419	Non-alloy and alloy steel butt-welding fittings	This International Standard specifies the dimensions, tolerances and generally used grades of non-alloy, low-alloy and alloy steels for butt-welding bends (type 2D (90° and 180°) and 30 (45O, 90° and 1800), concentric and eccentric reducers, tees, caps and stub ends with quality requirements as used for piping work.
ISO 3601-3:1987	Fluid systems -- Sealing devices -- O-rings -- Part 3: Quality acceptance criteria	This part of ISO 3601 lays down the quality acceptance criteria of O-rings used in fluid systems, the dimensions of which are standardized in ISO 3601-1, ISO 16031-1 and ISO 16031-2. This part of ISO 3601 also defines and classifies surface imperfections on O-rings and specifies maximum acceptable limits for these imperfections. This part of ISO 3601 is also applicable to O-rings to be used in aerospace construction.
ISO 4126-1	Safety devices for protection against excessive pressure -- Part 1: Safety valves	ISO 4126-1:2004 specifies general requirements for safety valves irrespective of the fluid for which they are designed. It is applicable to safety valves having a flow diameter of 6 mm and above which are for use at set pressures of 0,1 bar gauge and above. No limitation is placed on temperature. This is a product standard and is not concerned with applications for safety valves.
ISO 4126-2	Safety devices for protection against excessive pressure -- Part 2: Bursting disc safety devices	ISO 4126-2:2003 specifies the requirements for bursting disc safety devices. ISO 4126-2:2003 includes the requirements for the design, manufacture, inspection, testing, certification, marking, and packaging. The requirements for the application, selection and installation of bursting disc safety devices are given in ISO 4126-6.

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ISO/DIS 4126-3	Safety devices for protection against excessive pressure -- Part 3: Safety valves and bursting disc safety devices in combination (available in English only)	ISO 4126-3:2006 specifies the requirements for a product assembled from the in-series combination of safety valves or CSPRS (controlled safety pressure relief systems) according to ISO 4126-1, ISO 4126-4 and ISO 4126-5, and bursting disc safety devices according to ISO 4126-2 installed within no more than five pipe diameters from the valve inlet. It specifies the design, application and marking requirements for such products, which are used to protect pressure vessels, piping or other enclosures from excessive pressure, and which comprise the bursting disc safety device, a safety valve or CSPRS and, where applicable, a short length of connecting pipe or spool piece. In addition, it gives a method for establishing the combination discharge factor used in sizing combinations.
ISO 4126-4	Safety devices for protection against excessive pressure -- Part 4: Pilot-operated safety valves	ISO 4126-4:2003 specifies general requirements for pilot operated safety valves, other than those covered in ISO 4126-1, irrespective of the fluid for which they are designed. In all cases, the operation is carried out by the fluid in the system to be protected. ISO 4126-4:2003 is applicable to pilot operated safety valves having a valve flow diameter of 6 mm and above which are for use at set pressures of 0,1 bar gauge and above. No limitation is placed on temperature. This is a product standard and it is not concerned with applications for pilot operated safety valves.
ISO 4126-5	Safety devices for protection against excessive pressure -- Part 5: Controlled safety pressure relief systems (CSPRS)	ISO 4126-5:2004 specifies the requirements for controlled safety pressure relief systems, irrespective of the fluid for which they are designed. It is applicable to main valves having a flow diameter of 6 mm and above for use at pressures of 0,1 bar (= 0,01 MPa) gauge and above. No limitation is placed on temperature. This is a product standard and is not concerned with applications.
ISO 4132:1979	Unplasticized polyvinyl chloride (PVC) and metal adaptor fittings for pipes under pressure -- Laying lengths and size of threads -- Metric series	Specification of the series of diameters to be used and the dimensions, which are common to all types of PVC- and metal adaptor fittings for pipes under pressure, to achieve connection to existing metal pipes, fittings and valves.
ISO 4144	Pipework — Stainless steel fittings threaded in accordance with ISO 7-1	This International Standard specifies the types, pressure-temperature ratings, minimum dimensions and materials of stainless steel fittings for threaded connections in accordance with ISO 7-1, used for ordinary piping for steam, air, gas, water, oil, etc.
ISO 4145	Non-alloy steel fittings threaded to ISO 7/1	This International Standard specifies requirements for nonalloy steel fittings for threaded connections in accordance with ISO 711. used mainly for industrial purposes.
ISO 4434:1977	Unplasticized polyvinyl chloride (PVC) adaptor fittings for pipes under pressure -- Laying length and size of threads -- Metric series	This International Standard specifies the metric series of diameters to be used and the dimensions which are common to all types of unplasticized polyvinyl chloride (PVC) adaptor fittings 1) for pipes under pressure, to secure the connection to existing metal pipes and/or fittings with pipe threads. Extension to new designs of adaptor fittings not specifically covered in this International Standard should nevertheless follow the principles here laid down.
ISO 5251	Stainless steel butt-welding fittings	This International Standard specifies the dimensions, tolerances and generally used grades of stainless steel for butt-welding bends [type 3D (90° and Wo) with and without straight ends and type 5D Wo)], concentric and eccentric reducers, tees, taps and stub ends with quality requirements as used for piping work.

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ISO 5752	Metal valves for use in flanged pipe systems -- Face-to-face and centre-to-face dimensions	Specifies the dimensions for two-way valves. Each basic series of these dimensions may be used as required with flanges of mating dimensions conforming to ISO 2084 or ISO 2229. The range of pressure ratings, in PN values, is from 1 up to and including 40, and the classes from 125 to 600; the range of nominal sizes, in DN values, is from 10 up to and including 2000. This second edition cancels and replaces the first edition (1997).
ISO 6002	Bolted bonnet steel gate valves	Specifies the requirements for valves of nominal sizes DN 10 up to DN 1 000 and nominal pressures PN 10 up to PN 100 having the following features: bolted bonnet, outside screw and yoke, inside screw (alternative for PN 10, 16, 20, 25 and 40 only), single or double obturator, wedge or parallel seating, with or without non-metallic obturator or seat seals, flanged or butt-welding ends.
ISO 6447:1983	Rubber seals -- Joint rings used for gas supply pipes and fittings -- Specification for material	Specification refers to operating temperatures up to 50 °C. Other requirements, particularly functional tests for the actual sealing materials, shall be specified in national standards. Applicable to joint rings for all pipeline materials including iron, steel, copper, plastics. The standard does not include joint rings made from cellular rubbers or with enclosed voids. 2 tables with general and optional requirements.
ISO 7005-1	Pipe flanges -- Part 1: Steel flanges for industrial and general service piping systems	Specifies requirements for circular steel flanges in the PN series 1 and 2: types, facings, dimensions, tolerances, threading, bolt sizes, flange face surface finish, marking, testing and inspection. Annex D gives guidance on selected materials, and Annex E gives guidance on the pressure/temperature ratings for some flanges made from the materials listed in Annex D.
ISO 7030:1987	Road vehicles - Screw-mounted injection nozzle holders, types 12, 13, 14, 15, 16, 17, 18 and 19	This International Standard specifies dimensional requirements for the mounting of injection nozzle holders in internal combustion compression-ignition (diesel) engines. The location of the fuel inlet and leak-off connections are not defined since they vary according to the particular application. This International Standard applies to screw-mounted injection nozzle holders, types 12, 13, 14, 15, 16, 17, 18 and 19. Nozzle holders types 12 and 13 are used with the nozzles specified in ISO 2697; nozzle holders types 14 and 15 may also be used with these nozzles.
ISO 7121	Flanged steel ball valves	Specifies requirements for nominal pressure ranges from ISO PN10 to ISO PN100 and nominal sizes from DN10 to DN500. Contains definitions and figures to illustrate them. Gives tables for body wall thickness, body and port inside diameter, effective diameters, and drain tapings. Includes an annex for information to be specified by purchaser.
ISO 7440-1:1991	Road vehicles - Fuel injection equipment testing - Part 1: Calibrating nozzle and holder assemblies	This part of ISO 7440 specifies two types of calibrating nozzle and holder assemblies intended for the testing and setting of diesel fuel injection pumps on test benches. It applies to a) a calibrating nozzle and holder assembly with a single hole orifice plate; b) a calibrating nozzle and holder assembly with a delay pintle type nozzle. The approximate range of the calibrating nozzle and holder assembly is up to - 300. mm ³ /stroke with the single hole orifice plate - 150 mm ³ /stroke with the delay pintle type nozzle.

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ISO 7440-2:1991	Road vehicles - Fuel injection equipment testing - Part 2: Orifice plate flow-measurement	This part of ISO 7440 specifies the flow-measuring System, including the fixture, to be used for flow testing the Single hole orifice plates used in an orifice plate type nozzle and holder assembly (described in ISO 7440-1) which are intended for testing and setting diesel fuel injection Pumps on test benches. The flow-measuring System and fixture described in this part of ISO 7440 ensure accurate flow-testing of the entire range of orifices from 0,4 mm to 0,8 mm diameter as specified in ISO 7440-1. It is intended primarily for use by the manufacturers of Single hole orifice plates.
ISO 7866	Gas cylinders — Refillable seamless aluminium alloy gas cylinders — Design, construction and testing	This International Standard specifies minimum requirements for the material, design, construction and workmanship, manufacturing processes and tests at manufacture of refillable seamless aluminium alloy gas cylinders of water capacities from 0,5 l up to and including 150 l for compressed, liquefied and dissolved gases for worldwide use (normally up to + 65 °C). NOTE If so desired, cylinders of water capacity less than 0,5 l may be manufactured and certified to this International Standard.
ISO 7876-2:1991	Fuel injection equipment - Vocabulary - Part 2 : Fuel injectors	This part of ISO 7876 establishes a vocabulary relating to fuel injectors and their components for compression-ignition (diesel) engines.
ISO 7876-4:2004	Fuel injection equipment — Vocabulary — Part 4: High-pressure pipes and end-connections	This part of ISO 7876 establishes a vocabulary for high-pressure pipes and end-connections in fuel injection systems for diesel (compression-ignition) engines. These high-pressure pipes and end-connections are used in fuel injection systems worldwide and require precise terminology. NOTE When the word "fuel" is used in the terms listed it can be omitted providing there can be no misunderstanding.
ISO 7876-5:2004	Fuel injection equipment — Vocabulary — Part 5: Common rail fuel injection system	This part of ISO 7876 establishes a vocabulary for common rail (CR) fuel injection systems for diesel (compression-ignition) engines and their components. The terms defined in this part of ISO 7876 are unique to common rail fuel injection systems; terms and definitions relating to other fuel injection systems are to be found in the other parts of ISO 7876. NOTE When the word "fuel" is used in the terms listed, it can be omitted providing there can be no misunderstanding
ISO 8085-1:2001	Polyethylene fittings for use with polyethylene pipes for the supply of gaseous fuels -- Metric series -- Specifications -- Part 1: Fittings for socket fusion using heated tools	This part of ISO 8085 specifies the requirements for polyethylene (PE) socket fusion fittings intended to be used with PE pipes and fittings for the supply of gaseous fuels. In addition, it specifies some general properties of the material from which these fittings are made. This part of ISO 8085 also lays down requirements for dimensions and performance of such fittings. It is applicable to socket fusion fittings designed to be fusion-jointed to PE pipes conforming to ISO 4437, and to spigot fittings conforming to ISO 8085-2.
ISO 8085-2:2001	Polyethylene fittings for use with polyethylene pipes for the supply of gaseous fuels -- Metric series -- Specifications -- Part 2: Spigot fittings for butt fusion, for socket fusion using heated tools and for use with electrofusion fittings	This part of ISO 8085 specifies the requirements for polyethylene (PE) spigot fittings intended to be used with PE pipes and fittings for the supply of gaseous fuels. In addition, it specifies some general properties of the material from which these fittings are made. This part of ISO 8085 also lays down requirements for dimensions and performance of such fittings. It is applicable to spigot fittings designed to be fusion-jointed to _ PE pipes conforming to ISO 4437; _ socket fusion fittings conforming to ISO 8085-1; _ electrofusion fittings conforming to ISO 8085-3; _ other spigot fittings conforming to this part of ISO 8085.

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Standard no.	Title	Scope
ISO 8085-3:2001	Polyethylene fittings for use with polyethylene pipes for the supply of gaseous fuels -- Metric series -- Specifications -- Part 3: Electrofusion fittings	This part of ISO 8085 specifies the requirements for polyethylene (PE) electrofusion fittings intended to be used with PE pipes and fittings for the supply of gaseous fuels. In addition, it specifies some general properties of the material from which these fittings are made. This part of ISO 8085 also lays down requirements for dimensions and performance of such fittings. It is applicable to electrofusion fittings designed to be fusion-jointed to PE pipes conforming to ISO 4437, and to spigot fittings conforming to ISO 8085-2.
ISO 8309:1991	Refrigerated light hydrocarbon fluids -- Measurement of liquid levels in tanks containing liquefied gases -- Electrical capacitance gauges	Specifies the essential requirements and verification procedures for capacitance-type liquid level gauges to be used for ship and shore tanks containing hydrocarbon fluids. Annexes A and B are for information only.
ISO 8535-1:1996	Compression-ignition engines – Steel tubes for high-pressure fuel injection pipes - Part 1: Requirements for seamless cold-drawn single wall tubes	This part of ISO 8535 specifies dimensions and requirements for seamless cold-drawn single-wall steel tubes for high-pressure fuel injection pipes used on diesel (compression-ignition) engines (Class 2) and for fuel injection pump testing (Class 1). It applies to diesel engines (reciprocating internal combustion compression-ignition engines).
ISO 8535-2:2003	Compression-ignition engines — Steel tubes for high-pressure fuel injection pipes — Part 2: Requirements for composite tubes	This part of ISO 8535 specifies the dimensions of, and gives requirements for, composite steel tubes for high pressure fuel injection pipes used on diesel (compression-ignition) engines (Class 2) and for fuel injection pump testing (Class 1).
ISO 9300	Measurement of gas flow by means of critical flow Venturi nozzles	This International Standard specifies the geometry and method of use (installation in a system and operating conditions) of critical flow Venturi nozzles (CFVN) used to determine the mass flow-rate of a gas flowing through a system. It also gives the information necessary for calculating the flow-rate and its associated uncertainty. It is applicable to Venturi nozzles in which the gas flow accelerates to the critical velocity at the throat (this being equal to the local sonic velocity), and only where there is steady flow of single-phase gases. At the critical velocity, the mass flow-rate of the gas flowing through the Venturi nozzle is the maximum possible for the existing upstream conditions while CFVN can only be used within specified limits, e.g. limits for the nozzle throat to inlet diameter ratio and throat Reynolds number. This International Standard deals with CFVN for which direct calibration experiments have been made in sufficient number to enable the resulting coefficients to be used with certain predictable limits of uncertainty. Information is given for cases where the pipeline upstream of the CFVN is of circular cross-section, or it can be assumed that there is a large space upstream of the CFVN or upstream of a set of CFVN mounted in a cluster. The cluster configuration offers the possibility of installing CFVN in parallel, thereby achieving high flow-rates. For high-accuracy measurement, accurately machined Venturi nozzles are described for low Reynolds number applications.

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ISO 9809-1	Gas cylinders — Refillable seamless steel gas cylinders — Design, construction and testing — Part 1: Quenched and tempered steel cylinders with tensile strength less than 1 100 MPa	This part of ISO 9809 specifies minimum requirements for the material, design, construction and workmanship, manufacturing processes and tests at manufacture of refillable quenched and tempered seamless steel gas cylinders of water capacities from 0,5 l up to and including 150 l for compressed, liquefied and dissolved gases exposed to extreme world-wide ambient temperatures (normally between - 50 °C and + 65 °C). This part of ISO 9809 is applicable to cylinders with a maximum tensile strength R_m of less than 1 100 MPa. NOTE 1 If so desired, cylinders of water capacity less than 0,5 l may be manufactured and certified to this part of ISO 9809. NOTE 2 For quenched and tempered cylinders with maximum tensile strength greater than or equal to 1 100 MPa refer to ISO 9809-2. For normalized steel cylinders refer to ISO 9809-3.
ISO 10297	Gas cylinders -- Refillable gas cylinder valves -- Specification and type testing	ISO 10297:2006 specifies valve design, production and marking requirements, and type test methods for valves intended to be fitted to gas cylinders which convey compressed, liquefied or dissolved gases. ISO 10297:2006 does not apply to valves for cryogenic equipment, for fire extinguishers or for liquefied petroleum gas (LPG). Additional specific requirements for valves fitted with pressure-reducing devices (see ISO 22435 and EN 738-3), residual pressure-retaining devices and non-return devices (see ISO 15996), and bursting discs and pressure-relief devices (see ISO 4126 and prEN 14513) are not covered by ISO 10297:2006. NOTE Requirements for valves for liquefied petroleum gas (LPG) are specified in ISO 14245 and EN 13152, and in ISO 15995 and EN 13153. Requirements for valves for cryogenic vessels are specified in ISO 21011. Further specific requirements for valves for breathing apparatus are specified in EN 144-1, EN 144-2 and EN 144-3.
ISO 10380	Pipework — Corrugated metal hoses and hose assemblies	This International Standard specifies the requirements for the design, manufacture and testing of corrugated metal hoses and hose assemblies for general purposes. It also specifies sizes from DN 4 to DN 300, pressures from PN 0,5 to PN 250, pressure derating factors for elevated temperatures, two methods of construction and three types of flexibility of hose assembly.

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Standard no.	Title	Scope
ISO 10434	Bolted bonnet steel gate valves for the petroleum, petrochemical and allied industries	<p>This International Standard specifies the requirements for a heavy-duty series of bolted bonnet steel gate valves for petroleum refinery and related applications where corrosion, erosion and other service conditions would indicate a need for full port openings, heavy wall sections and large stem diameters. This International Standard sets forth the requirements for the following gate valve features:</p> <ul style="list-style-type: none"> · bolted bonnet; · outside screw and yoke; · rising stems; · non-rising handwheels; · single or double gate; · wedge or parallel seating; · metallic seating surfaces; · flanged or butt-welding ends. <p>It covers valves of the nominal sizes DN: 25; 32; 40; 50; 65; 80; 100; 150; 200; 250; 300; 350; 400; 450; 500; 600; corresponding to nominal pipe sizes NPS: 1; 1 1/4; 1 1/2; 2; 2 1/2; 3; 4; 6; 8; 10; 12; 14; 16; 18; 20; 24; and applies for pressure Class designations: 150; 300; 600; 900; 1500; 2500.</p>
ISO 10439	Petroleum, chemical and gas service industries -- Centrifugal compressors	ISO 10439 specifies requirements and gives recommendations for the design, materials, fabrication, inspection, testing and preparation for shipment of centrifugal compressors for use in the petroleum, chemical and gas service industries. It is not applicable to machines that develop less than 35 kPa above atmospheric pressure, nor is it applicable to packaged, integrally geared centrifugal air compressors, which are covered in ISO 10442
ISO 10440-1	Petroleum and natural gas industries -- Rotary-type positive- displacement compressors -- Part 1: Process compressors (oil-free)	This part of ISO 10440 specifies requirements and gives recommendations for helical, spiral and straight lobe rotary compressors used for vacuum or pressure, or both, for use in the petroleum and natural gas industries. This part of ISO 10440 is applicable to compressors that are in continuous duty and are unspared. This part of ISO 10440 does not apply to standard air compressors, liquid ring compressors, vane-type compressors, or compressors in oxygen-bearing gas service using flammable liquid for injection or flooding.
ISO 10440-2	Petroleum and natural gas industries -- Rotary-type positive-displacement compressors -- Part 2: Packaged air compressors (oil-free)	This part of ISO 10440 covers the minimum requirements for helical, spiral and straight-lobe, oil-free rotary compressors used for applications up to 0,20 MPa in refinery services. It is applicable to air (and other inert gas) compressors that are in continuous duty on process units. This part of ISO 10440 is not applicable to oil injected rotary compressors.
ISO 10442	Petroleum, chemical and gas service industries -- Packaged, integrally geared centrifugal air compressors	ISO 10442:2002 specifies requirements and gives recommendations for the design, materials, fabrication, inspection, testing and preparation for shipment of constant-speed, packaged, integrally geared centrifugal air compressors, including their accessories, for use in the petroleum, chemical and gas service industries. It is also applicable to gas services other than air that are non-hazardous and non-toxic. It is not applicable to machines that develop a pressure rise of less than 35 kPa above atmospheric pressure, which are classed as fans or blowers.

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ISO 10574:1993	Refrigerated light-hydrocarbon fluids -- Measurement of liquid levels in tanks containing liquefied gases -- Float-type level gauges	Specifies the essential requirements and verification procedures for float-type level gauges (including those operated by servomechanism) for ship and shore tanks.
ISO 10806	Pipework — Fittings for corrugated metal hoses	This International Standard specifies the characteristics of fittings for corrugated metal hose conforming with the requirements of ISO 10380. This International Standard is also valid for other fittings provided they meet the material, design, assembly and test requirements specified herein.
ISO 11119-1	Gas cylinders of composite construction — Specification and test methods — Part 1: Hoop wrapped composite gas cylinders	<p>ISO 11119-1 specifies requirements for composite gas cylinders up to and including 450 litres water capacity, for the storage and conveyance of compressed or liquefied gases with test pressures up to and including 650 bar. The cylinders are constructed in the form of a seamless metallic liner over-wrapped with carbon fibre or aramid fibre or glass fibre (or a mixture thereof) in a resin matrix, or steel wire, to provide circumferential reinforcement.</p> <p>This part of ISO 11119 addresses cylinders with a design life from 10 a to non-limited life. For cylinders with a design life in excess of 15 a, and in order for these cylinders to remain in service beyond 15 a, re-qualification of these cylinders is recommended.</p> <p>This part of ISO 11119 does not address the design, fitting and performance of removable protective sleeves. Where these are fitted they should be considered separately.</p>
ISO 11119-2	Gas cylinders of composite construction — Specification and test methods — Part 2: Fully wrapped fibre reinforced composite gas cylinders with load-sharing metal liners	<p>ISO 11119-2 specifies requirements for composite gas cylinders up to and including 450 litres water capacity, for the storage and conveyance of compressed or liquefied gases with test pressures up to and including 650 bar. The cylinders are constructed in the form of a seamless metallic liner over-wrapped with carbon fibre or aramid fibre or glass fibre (or a mixture thereof) in a resin matrix, or steel wire, to provide circumferential reinforcement.</p> <p>This part of ISO 11119 refers to fully wrapped composite cylinders with a load-sharing liner (i.e. a liner that shares the load of the overall cylinder design) and a design life from 10 a to non-limited life. For cylinders with design life in excess of 15 a, and in order for these cylinders to remain in service beyond 15 a, re-qualification of these cylinders is recommended.</p> <p>This part of ISO 11119 does not address the design, fitting and performance of removable protective sleeves. Where these are fitted they should be considered separately.</p>

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Standard no.	Title	Scope
ISO 11119-3	Gas cylinders of composite construction — Specification and test methods — Part 3: Fully wrapped fibre reinforced composite gas cylinders with non-load-sharing metallic or non-metallic liners	<p>ISO 11119-3 specifies requirements for composite gas cylinders up to and including 450 l water capacity, for the storage and conveyance of compressed or liquefied gases with test pressures ranging up to and including 650 bar.</p> <p>ISO 11119-3 applies to:</p> <ol style="list-style-type: none"> 1. Fully wrapped composite cylinders with a non-load-sharing metallic or non-metallic liner (i.e. a liner that does not share the load of the overall cylinder design) and a design life from 10 years to non-limited life. 2. Composite cylinders without liners (including cylinders without liners manufactured from two parts joined together) and with a test pressure of less than 60 bar. <p>The cylinders are constructed:</p> <ol style="list-style-type: none"> 1. in the form of a disposable mandrel overwrapped with carbon fibre or aramid fibre or glass fibre (or a mixture thereof) in a resin matrix to provide longitudinal and circumferential reinforcement; 2. in the form of two filament wound shells joined together. <p>ISO 11119-3 does not address the design, fitting and performance of removable protective sleeves.</p>
ISO 13631	Petroleum and natural gas industries -- Packaged reciprocating gas compressors	ISO 13631:2002 gives requirements and recommendations for the design, materials, fabrication, inspection, testing and preparation for shipment of packaged skid-mounted, reciprocating, separable or integral compressors with lubricated cylinders and their prime movers, for use in the petroleum and natural gas industries for the compression of hydrocarbon gas.
ISO 13689:2001	Refrigerated light hydrocarbon fluids -- Measurement of liquid levels in tanks containing liquefied gases -- Microwave-type level gauge	This International Standard specifies the essential requirements and verification procedures for microwave-type level gauges to be used for ship and shore tanks containing refrigerated light hydrocarbon fluids.
ISO 13706	Petroleum, petrochemical and natural gas industries — Air-cooled heat exchangers	This International Standard gives requirements and recommendations for the design, materials, fabrication, inspection, testing and preparation for shipment of air-cooled heat exchangers for use in the petroleum and natural gas industries. This International Standard is applicable to air-cooled heat exchangers with horizontal bundles, but the basic concepts can also be applied to other configurations.
ISO 13707:2000	Petroleum and natural gas industries -- Reciprocating compressors	This International Standard covers the minimum requirements for reciprocating compressors and their drivers used in the petroleum and natural gas industries with either lubricated or nonlubricated cylinders. This International Standard may be used for other services or in other industries by agreement. Compressors covered by this International Standard are moderate to low-speed and in critical services. Also included are related lubricating systems, controls, instrumentation, intercoolers, aftercoolers, pulsation suppression devices and other auxiliary equipment. Excluded are integral gas-engine driven compressors, packaged high-speed separable engine-driven reciprocating gas compressors, compressors with single-acting trunk-type (automotive-type) pistons that also serve as crossheads and either plant or instrument air compressors that discharge at gauge pressures of 9 bar or below. Also excluded are gas engine and steam engine drivers.

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Standard no.	Title	Scope
ISO 13709	Centrifugal Pumps for Petroleum Petrochemical and Natural Gas Industries.	<p>ISO 13709:2003 specifies requirements for centrifugal pumps, including pumps running in reverse as hydraulic power recovery turbines, for use in petroleum, petrochemical and gas industry process services.</p> <p>ISO 13709:2003 is applicable to overhung pumps, between-bearings pumps and vertically-suspended pumps. Clause 8 provides requirements applicable to specific types of pump. All other clauses of ISO 13709:2003 are applicable to all pump types. Illustrations are provided of the various specific pump types and the designations assigned to each specific type.</p> <p>ISO 13709:2003 is not applicable to sealless pumps.</p>
ISO 13710	Petroleum, petrochemical and natural gas industries -- Reciprocating positive displacement pumps	<p>ISO 13710:2004 specifies requirements for reciprocating positive-displacement pumps and pump units for use in the petroleum, petrochemical and natural gas industries. It is applicable to both direct-acting and power-frame types.</p> <p>ISO 13710:2004 is not applicable to controlled-volume pumps and rotary pumps.</p>
ISO 13984	Liquid hydrogen — Land vehicle fuelling system interface	<p>This International Standard specifies the characteristics of liquid hydrogen refuelling and dispensing systems on land vehicles of all types in order to reduce the risk of fire and explosion during the refuelling procedure and thus to provide a reasonable level of protection from loss of life and property.</p> <p>This International Standard is applicable to the design and installation of liquid hydrogen (LH₂) fuelling and dispensing systems. It describes the system intended for the dispensing of liquid hydrogen to a vehicle, including that portion of the system that handles cold gaseous hydrogen coming from the vehicle tank, that is, the system located between the land vehicle and the storage tank.</p>
ISO 13985	Liquid hydrogen — Land vehicle fuel tanks	<p>ISO 13985:2006 specifies the construction requirements for refillable fuel tanks for liquid hydrogen used in land vehicles as well as the testing methods required to ensure that a reasonable level of protection from loss of life and property resulting from fire and explosion is provided. It is applicable to fuel tanks intended to be permanently attached to land vehicles</p>
ISO 14847	Rotary Positive Displacement Pumps – Technical Requirements	<p>This standard specifies the technical requirements, other than safety and testing, for rotary positive displacement pumps and rotary positive displacement pump units. This standard does not apply to rotary positive displacement pumps for fluid power applications.</p>

Legend:

Yellow: Standards referenced in ISO/TC 197 standards

Blue: Standards developed by ISO/TC 197



INTERIM LIST OF INTERNATIONAL COMPONENT STANDARDS

ISO/TC 197 AD HOC GROUP ON HYDROGEN COMPONENTS N 12

Replaces: N09

Date: 2007-09-14

Standard no.	Title	Scope
ISO 15500-3:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 3: Check valve	<p>This part of ISO 15500 specifies tests and requirements for the check valve, a compressed natural gas fuel system component intended for use on the types of motor vehicles defined in ISO 3833.</p> <p>This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar(1)] settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>
ISO 15500-4:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 4: Manual valve	<p>This part of ISO 15500 specifies tests and requirements for the manual valve, a compressed natural gas fuel system component intended for use on the types of motor vehicles defined in ISO 3833.</p> <p>This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar(1)] settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>

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Date: 2007-09-14

Standard no.	Title	Scope
ISO 15500-5:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 5: Manual cylinder valve	<p>This part of ISO 15500 specifies tests and requirements for the manual cylinder valve, a compressed natural gas fuel system component intended for use on the types of motor vehicles defined in ISO 3833. This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar¹] settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>
ISO 15500-6:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 6: Automatic valve	<p>This part of ISO 15500 specifies tests and requirements for the automatic valve, a compressed natural gas fuel system component intended for use on the types of motor vehicles defined in ISO 3833. This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar¹] settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>
ISO 15500-7:2002	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 7: Gas injector	<p>This part of ISO 15500 provides tests and requirements for the gas injector, a compressed natural gas fuel system component intended for use on the types of motor vehicles defined in ISO 3833.</p> <p>This part of ISO 15550 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to injectors intended for high-pressure injection to the combustion chamber, or to the following: liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; fuel containers; stationary gas engines; container mounting hardware; electronic fuel management; refuelling receptacles.</p>

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Standard no.	Title	Scope
ISO 15500-8:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 8: Pressure indicator	<p>This part of ISO 15500 specifies tests and requirements for the pressure indicator, a compressed natural gas fuel system component intended for use on the types of motor vehicles defined in ISO 3833.</p> <p>This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar(1)] settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>
ISO 15500-9:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 9: Pressure regulator	<p>This part of ISO 15500 specifies tests and requirements for the pressure regulator, a compressed natural gas fuel system component intended for use on the types of motor vehicles defined in ISO 3833.</p> <p>This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar(1)] settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>

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Standard no.	Title	Scope
ISO 15500-12:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 12: Pressure relief valve (PRV)	<p>This part of ISO 15500 specifies tests and requirements for the pressure relief valve (PRV), a compressed natural gas fuel system component intended for use on the types of motor vehicles defined in ISO 3833. This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar¹] settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>
ISO 15500-13:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 13: Pressure relief device (PRD)	<p>This part of ISO 15500 specifies tests and requirements for the pressure relief device (PRD), a compressed natural gas fuel system component intended for use on the types of motor vehicles defined in ISO 3833. This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar¹] settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>

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Standard no.	Title	Scope
ISO 15500-14:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 14: Excess flow valve	<p>This part of ISO 15500 specifies tests and requirements for the excess flow valve, a compressed natural gas fuel system component intended for use on the types of motor vehicles defined in ISO 3833.</p> <p>This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar₁] settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>
ISO 15500-15:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 15: Gas-tight housing and ventilation hose	<p>This part of ISO 15500 specifies tests and requirements for the gas-tight housing and ventilation hose, compressed natural gas fuel system components intended for use on the types of motor vehicles defined in ISO 3833.</p> <p>This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar₁] settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>

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Standard no.	Title	Scope
ISO 15500-16:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 16: Rigid fuel line	<p>This part of ISO 15500 specifies tests and requirements for the rigid fuel line, a compressed natural gas fuel system component in accordance with ISO 1127 intended for use on the types of motor vehicles defined in ISO 3833.</p> <p>This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar1)] settled at 15°C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>
ISO 15500-17:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 17: Flexible fuel line	<p>This part of ISO 15500 specifies tests and requirements for the flexible fuel line, a compressed natural gas fuel system component in accordance with SAE J 517 (100R-8 hose) or JIS B 8362 intended for use on the types of motor vehicles defined in ISO 3833.</p> <p>This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar1)] settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>

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Standard no.	Title	Scope
ISO15500-18:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 18: Filter	<p>This part of ISO 15500 specifies tests and requirements for the filter (standalone compressed natural gas fuel system component) intended for use on the types of motor vehicles defined in ISO 3833.</p> <p>This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar¹] settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>
ISO 15500-19:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 19: Fittings	<p>This part of ISO 15500 specifies tests and requirements for fittings, compressed natural gas fuel system components intended for use on the types of motor vehicles defined in ISO 3833.</p> <p>This part of ISO 15500 is applicable to vehicles using natural gas in accordance with ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). It is not applicable to the following:</p> <ul style="list-style-type: none"> a) liquefied natural gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE 1 It is recognized that miscellaneous components not specifically covered herein can be examined to meet the criteria of this part of ISO 15500 and tested according to the appropriate functional tests.</p> <p>NOTE 2 All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified.</p> <p>NOTE 3 This part of ISO 15500 is based upon a service pressure for natural gas as a fuel of 20 MPa [200 bar¹] settled at 15 °C. Other service pressures can be accommodated by adjusting the pressure by the appropriate factor (ratio). For example, a 25 MPa (250 bar) service pressure system will require pressures to be multiplied by 1,25.</p>

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Standard no.	Title	Scope
ISO 15500-20:2001	Road vehicles -- Compressed natural gas (CNG) fuel system components -- Part 20: Rigid fuel line in material other than stainless steel	<p>This Part of ISO 15500 provides specific requirements and tests applicable to the Rigid Fuel Line in Carbon Steel, intended for use on the types of motor vehicles as defined in ISO 3833 with a service pressure for natural gas as a fuel of 20 MPa (200 bar) settled at 15 °C. ISO 15500 is intended to be applied to vehicles using natural gas which comply with requirements established in ISO 15403 (mono-fuel, bi-fuel or dual-fuel applications). This standard does not apply to the following:</p> <ul style="list-style-type: none"> a) Liquefied Natural Gas (LNG) fuel system components located upstream of, and including, the vaporizer; b) fuel containers; c) stationary gas engines; d) container mounting hardware; e) electronic fuel management; f) refuelling receptacles. <p>NOTE All references to pressure in this part of ISO 15500 are to be considered gauge pressures unless otherwise specified. 1 bar = 100 kPa = 0,1 MPa.</p>
ISO 15547-1:2005	Petroleum, petrochemical and natural gas industries — Plate-type heat exchangers — Part 1: Plate-and-frame heat exchangers	This part of ISO 15547 gives requirements and recommendations for the mechanical design, materials selection, fabrication, inspection, testing, and preparation for shipment of plate-and-frame heat exchangers for use in petroleum, petrochemical and natural gas industries. It is applicable to gasketed, semi-welded and welded plate-and-frame heat exchangers.
ISO 15547-2:2005	Petroleum, petrochemical and natural gas industries — Plate-type heat exchangers — Part 2: Brazed aluminium plate-fin heat exchangers	This part of ISO 15547 gives requirements and recommendations for the mechanical design, materials selection, fabrication, inspection, testing, and preparation for shipment of brazed aluminium plate-fin heat exchangers for use in petroleum, petrochemical and natural gas industries.
ISO 15649	Petroleum and natural gas industries — Piping	<p>1.1 This International Standard specifies the requirements for design and construction of piping for the petroleum and natural gas industries, including associated inspection and testing.</p> <p>1.2 This International Standard is applicable to all piping within facilities engaged in the processing or handling of chemical, petroleum, natural gas or related products.</p> <p>EXAMPLE Petroleum refinery, loading terminal, natural gas processing plant (including liquefied natural gas facilities), offshore oil and gas production platforms, chemical plant, bulk plant, compounding plant, tank farm.</p> <p>1.3 This International Standard is also applicable to packaged equipment piping which interconnects individual pieces or stages of equipment within a packaged equipment assembly for use within facilities engaged in the processing or handling of chemical, petroleum, natural gas or related products.</p> <p>1.4 This International Standard is not applicable to transportation pipelines and associated plant.</p> <p>EXAMPLE Pipeline pump station, pipeline compressor station, pipeline tank farm, offshore platform risers up to and including pig launching facility.</p>

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Standard no.	Title	Scope
ISO 15761	Steel gate, globe and check valves for sizes DN 100 and smaller, for the petroleum and natural gas industries	ISO 15761 specifies the requirements for a series of compact steel gate, globe and check valves for petroleum and natural gas industry applications. It is applicable to valves of nominal sizes (DN) 8, 10, 15, 20, 25, 32, 40, 50, 65, 80 and 100, to corresponding nominal sizes, to nominal pipe sizes (NPS) of a quarter, three eighths, half, three quarters, one, one and a quarter, one and a half, two, two and a half, three and four, and to pressure designation classes 150, 300, 600, 800 and 1500. It includes provisions for a wide range of valve characteristics and is applicable to valve end flanges in accordance with ASME B16.5 and valve body ends having tapered pipe threads to ISO 7-1 or ASME B1.20.1.
ISO/DIS 15869	Gaseous hydrogen and hydrogen blends -- Land vehicle fuel tanks	This International Standard specifies the requirements for light-weight refillable fuel tanks intended for the on-board storage of high pressure compressed gaseous hydrogen or hydrogen blends on land vehicles. This International Standard is not intended as a specification for fuel tanks used for solid or liquid hydride hydrogen storage applications. This International Standard is applicable for fuel tanks of steel, stainless steel, aluminium or non-metallic construction material, using any design or method of manufacture suitable for its specified service conditions. This Standard applies to the following types of fuel tank designs: <ul style="list-style-type: none"> — Type 1 – Metal fuel tanks; — Type 2 – Hoop wrapped composite fuel tanks with a metal liner; — Type 3 – Fully wrapped composite fuel tanks with a metal liner; — Type 4 – Fully wrapped composite fuel tanks with non-metallic liner.
ISO 15996	Gas cylinders -- Residual pressure valves -- General requirements and type testing	ISO 15996:2005 specifies requirements for residual pressure valves, with or without a non-return function, for gas cylinders and the methods of testing such valves, for type approval. ISO 15996:2005 is applicable to valves to be fitted to gas cylinders of up to 150 l water capacity, intended to contain compressed, liquefied or dissolved gases. ISO 15996:2005 does not cover valves for fire extinguishers, cryogenic equipment or liquefied petroleum gas.
ISO/TS 16111	Transportable gas storage devices — Hydrogen absorbed in reversible metal hydrides	This Technical Specification defines the requirements applicable to the safe design and use of transportable hydrogen gas storage canisters, including all necessary shut-off valve, pressure-relief devices (PRD), and appurtenances, intended for use with reversible metal hydride hydrogen storage systems. This Technical Specification only applies to refillable storage canisters where hydrogen is the only transferred media. Storage canisters intended to be used as fixed fuel storage onboard hydrogen fuelled vehicles are excluded.
ISO 16330	Reciprocating positive displacement pumps and pump units — Technical requirements	ISO 16330:2003 specifies the technical requirements, other than safety and testing, for reciprocating positive displacement pumps and pump units. It applies to pumps which utilize reciprocating motion derived from crankshafts and camshafts and also direct-acting fluid driven pumps. It does not apply to reciprocating positive displacement pumps, nor pumping water, where the whole pump is lubricated with the liquid being pumped.

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Standard no.	Title	Scope
ISO 16528-1	Boilers and pressure vessels -- Part 1: Performance requirements	<p>This part of ISO 16528 defines the performance requirements for the construction of boilers and pressure vessels. It is not the intent of this part of ISO 16528 to address operation, maintenance and in-service inspection of boilers and pressure vessels. In relation to the geometry of the pressure-containing parts for pressure vessels, the scope of this part of ISO 16528 includes the following:</p> <ul style="list-style-type: none"> a) welding end connection for the first circumferential joint for welded connections; b) first threaded joint for screwed connections; c) face of the first flange for bolted, flanged connections; d) first sealing surface for proprietary connections or fittings; e) safety accessories, where necessary. <p>In relation to the geometry of pressure-containing parts for boilers, the scope of this part of ISO 16528 covers the following:</p> <ul style="list-style-type: none"> f) feedwater inlet (including the inlet valve) to steam outlet (including the outlet valve), including all inter-connecting tubing that can be exposed to a risk of overheating and cannot be isolated from the main system; g) associated safety accessories; h) connections to the boilers involved in services, such as draining, venting, desuperheating, etc. <p>This part of ISO 16528 does not apply for nuclear components, railway and marine boilers, gas cylinders or piping systems or mechanical equipment, e.g. turbine and machinery casings.</p>
ISO 16812:2002	Petroleum and natural gas industries — Shell-and-tube heat exchangers	<p>This International Standard specifies requirements and gives recommendations for the mechanical design, material selection, fabrication, inspection, testing and preparation for shipment of shell-and-tube heat exchangers for the petroleum and natural gas industries. This International Standard is applicable to the following types of shell-and-tube heat exchangers: heaters, condensers, coolers and reboilers. This International Standard is not applicable to vacuum-operated steam surface condensers and feed-water heaters.</p>
ISO 17268	Compressed hydrogen surface vehicle refuelling connection devices	<p>ISO 17268:2006 applies to design, safety and operation verification of Compressed Hydrogen Surface Vehicle (CHSV) refuelling connection devices hereinafter referred to as nozzle and receptacle. CHSV Refuelling nozzles and receptacles consist of the following components, as applicable:</p> <ul style="list-style-type: none"> • Receptacle and protective cap (mounted on vehicle); and • Nozzle. <p>ISO 17268:2006 applies to devices which have working pressures of 25 MPa and 35 MPa, hereinafter referred to as the following:</p> <ul style="list-style-type: none"> • H25 - 25 MPa at 15 °C • H35 - 35 MPa at 15 °C <p>ISO 17268:2006 applies to nozzles and receptacles which (1) prevent hydrogen fuelled vehicles from being refuelled by dispenser stations with working pressures higher than the vehicle; (2) allow hydrogen vehicles to be refuelled by dispenser stations with working pressures equal to or lower than the vehicle fuel system working pressure; (3) prevent hydrogen fuelled vehicles from being refuelled by other compressed gases dispensing stations; and (4) prevent other gaseous fuelled vehicles from being refuelled by hydrogen dispensing stations</p>

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Standard no.	Title	Scope
ISO 17292	Metal ball valves for petroleum, petrochemical and allied industries	ISO 17292:2004 specifies the requirements for a series of metal ball valves suitable for petroleum, petrochemical, natural gas plants, and related industrial applications. It covers valves of the nominal sizes DN 8, 10, 15, 20, 25, 32, 40, 50, 65, 80, 100, 150, 200, 250, 300, 350, 400, 450 and 500, corresponding to nominal pipe sizes NPS 1/4, 3/8, 1/2, 3/4, 1, 1 1/4, 1 1/2, 2, 2 1/2, 3, 4, 6, 8, 10, 12, 14, 16, 18 and 20, and is applicable for pressure designations of Class 150, 300, 600 and 800 (the last applicable only for valves with reduced bore and with threaded and socket welding end), and PN 16, 25 and 40.
ISO/CD 21009-1	Cryogenic vessels -- Static vacuum-insulated vessels— Part 1: Design, fabrication, inspection and tests	This part of ISO 21009 specifies requirements for the design, fabrication, inspection and testing of static vacuum insulated cryogenic vessels designed for a maximum allowable pressure of more than 0,5 bar. This part of ISO 21009 applies to static vacuum insulated cryogenic vessels for fluids as specified in 3.1 and does not apply to vessels designed for toxic fluids. For static vacuum insulated cryogenic vessels designed for a maximum allowable pressure of not more than 0,5 bar this standard may be used as a guide.
ISO/DIS 21011	Cryogenic vessels — Valves for cryogenic service	This standard specifies the requirements for the design, manufacture and testing of valves for cryogenic service, i.e. for operation with cryogenic fluids in addition to operation at temperatures from ambient to cryogenic. It applies to sizes up to DN 150 and vacuum jacketed cryogenic valves. This standard is not applicable to pressure relief valves covered by ISO 21013-1.
ISO/DIS 21012	Cryogenic vessels — Hoses	This International Standard gives design, construction, type and production testing, and marking requirements for non insulated cryogenic flexible hose used for the transfer of cryogenic fluids within the following range of operating conditions : <input type="checkbox"/> working temperature: from – 270 °C to + 65 °C; <input type="checkbox"/> nominal size (DN): from 10 to 100. End fittings for mounting of any couplings are within the scope of this standard, but the couplings are subject to other standards.
ISO/DIS 21013-1	Cryogenic vessels — Pressure relief accessories for cryogenic service — Part 1: Reclosable pressure relief valves	This International Standard specifies the requirements for the design, manufacture and testing of pressure relief valves for cryogenic service, i.e. for operation with cryogenic fluids in addition to operation at temperatures from ambient to cryogenic. It is a requirement of this standard that the valves comply with ISO 4126-1. In the event of different requirements, this standard takes precedence over that standard. This International Standard is restricted to valves not exceeding a size of DN 150 designed to relieve single phase vapours or gases. A valve may be specified, constructed and tested such that it is suitable for use with more than one gas or with mixtures of gases. NOTE This part of ISO 21013 does not provide methods for determining the capacity of relief valve(s) for a particular cryogenic vessel. Such methods are provided in ISO 21013-3.

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Standard no.	Title	Scope
ISO/DIS 21013-2	Cryogenic vessels — Pressure relief accessories for cryogenic service — Part 2: Non-reclosable pressure relief devices	This International Standard specifies the requirements for the design, manufacture and testing of non reclosable pressure relief devices for cryogenic service, i.e. for operation with cryogenic fluids in addition to operation at temperatures from ambient to cryogenic. It is a requirement of this standard that the device(s) comply with ISO 4126-2. In the event of conflicting requirements, this standard takes precedence over ISO 4126-2. This standard is restricted to bursting disc and buckling pin devices not exceeding a size of DN 200 designed to relieve single phase vapours or gases. A bursting disc or buckling pin assembly may be specified, constructed and tested such that it is suitable for use with more than one gas or with mixtures of gases. NOTE This standard does not provide methods for determining the capacity of bursting disc or buckling pin devices for a particular cryogenic vessel. Such methods are provided in ISO 21013-3.
ISO 21029-1	Cryogenic vessels -- Transportable vacuum insulated vessels of not more than 1 000 litres volume -- Part 1: Design, fabrication, inspection and tests (available in English only)	ISO 21029-1:2004 specifies requirements for the design, fabrication, inspection and testing of transportable vacuum-insulated cryogenic vessels of not more than 1 000 l volume designed to operate at a maximum permissible pressure greater than atmospheric. ISO 21029-1:2004 applies to transportable vacuum-insulated cryogenic vessels for non-toxic gases (asphyxiant, oxidizing and flammable).
ISO/DIS 22435	Gas cylinders -- Cylinder valves with integrated pressure regulator -- Specification and type testing	This Standard applies to cylinder valves with integrated pressure regulators (VIPR) intended to be fitted to gas cylinders that convey compressed, liquefied or dissolved gases. This standard is not intended for medical applications (see ISO/DIS 10524-3.2). Additional specific requirements for valves fitted with safety valves and bursting disks (see prEN 14513) are not covered by this standard.
ISO 24490	Cryogenic vessels — Pumps for cryogenic service	ISO 24490:2005 specifies the minimum requirements for the design, manufacture and testing of pumps for cryogenic service. ISO 24490:2005 is applicable to centrifugal pumps. However the principles may be applied to other types of pump (e.g. reciprocating pumps). ISO 24490:2005 also gives guidance on the design of installations. It does not specify requirements for operation or maintenance. For cryogenic fluids, see ISO 21029-1, ISO 20421-1 and/or ISO 21009-1.
ISO/CD 26142	Hydrogen detector	This international standard defines the performance requirements and test methods of stationary hydrogen detection apparatus that is designed to measure and monitor hydrogen concentrations. The provisions in this standard cover the hydrogen detection apparatus used to achieve the safety operations such as nitrogen purging or ventilation and/or system shut-off corresponding to the hydrogen concentration. The requirements applicable to the control system as well as the installation requirements of such apparatus are excluded. This standard sets out only the requirements applicable to a product standard of hydrogen detection apparatus, such as precision, response time, stability, measuring range, selectivity, and poisoning. This standard can be used for quality assessment or certification of the detection apparatus and establishes the provisions for type test.

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Standard no.	Title	Scope
IEC 60335-2-41	Household and similar electrical appliances — Safety — Part 2-41: Particular requirements for pumps	Household and similar electrical appliances - Safety - Part 2-41: Particular requirements for pumps
IEC 60335-2-51	Household and similar electrical appliances — Safety — Part 2-51: Particular requirements for stationary circulation pumps for heating and service water installations	Household and similar electrical appliances - Safety - Part 2-51: Particular requirements for stationary circulation pumps for heating and service water installations
IEC 60534-1	Industrial-process control valves - Part 1: Control valve terminology and general considerations	Applies to all types of industrial-process control valves (hereinafter referred to as control valves). This part establishes a partial basic terminology list and provides guidance on the use of all other parts of IEC 60534
IEC 60534-2-3	Industrial-process control valves - Part 2-3: Flow capacity - Test procedures	Applies to industrial-process control valves and provides the flow capacity test procedures for determining some of the variables used in the equations given in IEC 60534-2.
IEC 60534-2-4	Industrial-process control valves. Part 2: Flow capacity. Section Four: Inherent flow characteristics and rangeability	Defines how to state typical control valve inherent flow characteristics and inherent rangeabilities. Also defines how to establish criteria for adherence to manufacturer's stated flow characteristics.
IEC 60534-5	Industrial-process control valves - Part 5: Marking	Gives equations for predicting the flow of compressible and incompressible fluids through multistage control valves. Is based on standard hydrodynamic equations for Newtonian incompressible fluids. Is applicable only to those designs of multistage multipath control valves and multistage single path control valves.
IEC 60730-1	Automatic electrical controls for household and similar use – General requirements	In general, this standard applies to the safety of automatic electrical controls, including controls using NTC or PTC thermistors, for use in, on, or in association with equipment for household and similar use, including controls for heating, air-conditioning and similar applications. The equipment may use electricity, gas, oil, solid fuel, solar thermal energy, etc., or a combination thereof. This part 1 is to be used in conjunction with the appropriate part 2 for a particular type of control, or for controls for particular applications. This part 1 may also be applied, so far as reasonable, to controls not mentioned in a part 2.
IEC 60730-2-5	Automatic electrical controls for household and similar use - Part 2-5: Particular requirements for automatic electrical burner control systems	Applies to automatic electrical burner control systems for the automatic control of burners for oil, gas, coal or other combustibles for household and similar use including heating, air conditioning and similar use. To be used in conjunction with IEC 60730-1 (second edition).
IEC 60730-2-6	Automatic electrical controls for household and similar use - Part 2-6: Particular requirements for automatic electrical pressure sensing controls including mechanical requirements	Applies to automatic electrical pressure sensing controls with a minimum gauge pressure rating of 60 kPa and a maximum gauge pressure rating of 4,2 MPa, for use in, or in association with, equipment for household and similar use. Applies to inherent safety, operating values, operating sequences and to the testing of such controls.
IEC 60730-2-9	Automatic electrical controls for household and similar use - Part 2-9: Particular requirements for temperature sensing controls	Applies to automatic electrical temperature sensing controls for use in, on, or in association with equipment for household and similar use, that may use electricity or another source of energy. It deals with inherent safety, the operating values, operating times and sequences where such are associated with equipment safety.

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Standard no.	Title	Scope
IEC 60730-2-17	Automatic electrical controls for household and similar use - Part 2-17: Particular requirements for electrically operated gas valves, including mechanical requirements	Applies to electrically operated gas valves for use in, on or in association with, equipment for household and similar use that use electricity, in combination with fuel in the gaseous state such as manufactured gas, or liquefied petroleum gas intended to be used for gas burning equipment.
IEC 60730-2-19	Automatic electrical controls for household and similar use - Part 2-19: Particular requirements for electrically operated oil valves, including mechanical requirements	Applies to electrically operated oil valves for use in, on or in association with equipment for household and similar use that use electricity, in combination with fuel in the liquid state such as distillates, residual fuels, etc. This part 2 also applies to electrically operated oil valves using NTC or PTC thermistors.
IEC 61779-4	Electrical apparatus for the detection and measurement of flammable gases — Part 4: Performance requirements for group II apparatus indicating up to 100 % lower explosive limit	Specifies requirements for group II (as defined in part 1) portable, transportable and fixed apparatus for the detection and measurement of combustible gas or vapour concentrations with air. The apparatus, or parts thereof, may be installed or used in potentially explosive atmospheres, other than mines susceptible to firedamp (i.e. group I). This standard is restricted to apparatus intended for the detection and measurement of combustible gas or vapour concentrations with air up to 100% lower explosive limit (LEL).

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