SLOVENSKI STANDARD
SIST EN 764-2:2012

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Nadomešča:
SIST EN 764-2:2002

Tlačna oprema - 2. del: Veličine, simboli in enote

Pressure equipment - Part 2: Quantities, symbols and units

Druckgeräte - Teil 2: Größen, Symbole und Einheiten

Equipements sous pression - Partie 2: Grandeurs, symboles et unités

Ta slovenski standard je istoveten z: EN 764-2:2012

ICS:

01.060	Veličine in enote	Quantities and units
23.020.30	Tlačne posode, plinske jeklenke	Pressure vessels, gas cylinders

SIST EN 764-2:2012 **en,fr,de**

EUROPEAN STANDARD

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Supersedes EN 764-2:2002

English Version

Pressure equipment - Part 2: Quantities, symbols and units

Equipements sous pression - Partie 2: Grandeurs, symboles et unités

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: Avenue Marnix 17, B-1000 Brussels

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Contents

Foreword

This document (EN 764-2:2012) has been prepared by Technical Committee CEN/TC 54 “Unfired pressure vessels”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by July 2012, and conflicting national standards shall be withdrawn at the latest by July 2012.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 764-2:2002.

This European Standard consists of seven parts which are:

Part 1 *Terminology – Pressure, temperature, volume and nominal size;*

Part 2 *Quantities, symbols and units;*

Part 3 *Definition of parties involved;*

Part 4 *Establishment of technical delivery conditions for metallic materials;*

Part 5 *Compliance and Inspection Documentation of Materials;*

Part 6 *Structure and content of operating instructions;*

Part 7 *Safety systems for unfired pressure equipment.*

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

1 Scope

This European Standard specifies the basic quantities, symbols and units to be used for pressure equipment and assemblies addressed by the European Directive 97/23/EC.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references the latest edition of the referenced document (including any amendments) applies.

ISO 80000-1, *Quantities and units – Part 1: General*

ISO 80000-2, *Quantities and units – Part 2: Mathematical signs and symbols to be used in the natural sciences and technology*

ISO 80000-3, *Quantities and units – Part 3: Space and time*

ISO 80000-4, *Quantities and units – Part 4: Mechanics*

ISO 80000-5, *Quantities and units – Part 5: Thermodynamics*

ISO 80000-11, *Quantities and units – Part 11: Characteristic numbers*

3 General

3.1 All units used for pressure equipment shall be derived from the base units of the international system of Units (SI) in accordance with ISO 80000-1, ISO 80000-2, ISO 80000-3, ISO 80000-4, ISO 80000-5, and ISO 80000-11 unless otherwise prescribed in the European Directive 97/23/EC.

3.2 The choice of the appropriate multiple (decimal multiple or sub-multiple) of unit is governed by convenience, the multiple chosen for a particular application being one which would lead to numerical values within a practical range. Therefore when indicating quantities it is recommended to choose decimal multiple or sub multiple quantities such that the resulting values are easy to handle, e.g. between 0,1 and 1 000.

4 Quantities, symbols and units

Symbols and units for the quantities used in pressure equipment shall be in accordance with Tables 1 and 2, otherwise according to ISO 80000 series for other quantities and in particular ISO 80000-5 for thermodynamic quantities.

Table 1 — General quantities

Quantity	Symbol	Unit
Time	*t*	s, min, h
Frequency	*f*	Hz
Dimension	any Latin letter [b]	mm
Length	*l*	mm
Thickness	*e* [a]	mm
Corrosion allowance	*c*	mm
Diameter	*d*, *D*	mm
Radius	*r*, *R*	mm
Area	*A*, *S*	mm^2
Volume, capacity	*V*	m^3 [c, d]
Weight	*W* [a]	N, kN
Density	ρ	kg/m^3 [e]
Power	–	kW, MW
Second moment of area	I	mm^4
Section modulus	*Z*	mm^3
Acceleration	γ [a]	m/s^2
Plane angle	any Greek letter [b]	rad, °

a Symbol differs from the one recommended in ISO 80000.

b Symbols may use any lower-case letter, except for those defined elsewhere in this table.

c Volume may also be given in L, when required by Pressure Equipment Directive, or in mm^3.

d Litre "L" is a non-SI unit which may be used with SI units and their multiples.

e Density may also be given in kg/dm^3 and kg/mm^3.

Table 2 — Mechanical quantities

Quantity [b]	Symbol [c]	Unit
Force	F	N
Moment	M	N·mm
Pressure	p, P [a]	bar [d], MPa
Temperature	T [a]	°C
Thermodynamic temperature	T	K
Linear expansion coefficient	α	10^{-6}m/(m∗°C)
Normal stress	σ	MPa, N/mm^2
Shear stress	τ	MPa, N/mm^2
Nominal design stress	f	MPa, N/mm^2
Tensile strength	R_m	MPa, N/mm^2
Tensile strength at 20 °C	$R_{m/20}$	MPa, N/mm^2
Yield strength	R_e	MPa, N/mm^2
Yield strength at 20 °C	$R_{e/20}$	MPa, N/mm^2
1,0 % proof strength	$R_{p1,0}$	MPa, N/mm^2
Proof strength at temperature T	$R_{p/T}$	MPa, N/mm^2
Upper yield strength	R_{eH}	MPa, N/mm^2
0,2 % proof strength	$R_{p0,2}$	MPa, N/mm^2
0,2 % proof strength at temperature T	$R_{p0,2/T}$	MPa, N/mm^2
Ultimate tensile strength at temperature T	$R_{m/T}$	MPa, N/mm^2
1 % plastic creep strain strength limit at temperature T and time t [e, g]	$R_{cp1/T/t}$ [g]	MPa, N/mm^2
Creep rupture strength at temperature T and time t [e]	$R_{cm/T/t}$ [g]	MPa, N/mm^2
Modulus of elasticity	E	MPa, N/mm^2
Shear modulus	G	MPa, N/mm^2
Poisson's ratio	υ	-
Strain	ε	%
Elongation after rupture/fracture	A	%
Impact energy	KV	J
Hardness	HB [h], HV [f]	-
Joint coefficient	z	-
Safety factor	S	-