

# SVENSK STANDARD

## SS-EN 764-1:2015



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### **Tryckbärande anordningar – Del 1: Terminologi**

### **Pressure equipment – Part 1: Vocabulary**

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Denna standard ersätter SS-EN 764-1:2004, utgåva 1 och SS-EN 764-3, utgåva 1.

The European Standard EN 764-1:2015 has the status of a Swedish Standard. This document contains the official English version of EN 764-1:2015.

This standard supersedes the Swedish Standard SS-EN 764-1:2004, edition 1 and SS-EN 764-3, edition 1.

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EUROPEAN STANDARD

**EN 764-1**

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2015

ICS 01.040.23; 23.020.30

Supersedes EN 764-1:2004, EN 764-3:2002

English Version

## Pressure equipment - Part 1: Vocabulary

Équipement sous pression - Partie 1: Vocabulaire

Druckgeräte - Teil 1: Vokabular

This European Standard was approved by CEN on 14 February 2015.

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This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

<b>Contents</b>		<b>Page</b>
<b>Foreword</b> .....		<b>3</b>
<b>1</b>	<b>Scope</b> .....	<b>4</b>
<b>2</b>	<b>Normative references</b> .....	<b>4</b>
<b>3</b>	<b>Terms and definitions</b> .....	<b>4</b>
<b>3.1</b>	<b>General terms</b> .....	<b>4</b>
<b>3.2</b>	<b>Terms related to design</b> .....	<b>5</b>
<b>3.3</b>	<b>Terms related to manufacturing</b> .....	<b>19</b>
<b>3.4</b>	<b>Terms related to testing</b> .....	<b>20</b>
<b>3.5</b>	<b>Terms related to interested parties</b> .....	<b>21</b>
<b>Annex A</b> (informative) .....		<b>24</b>

## Foreword

This document (EN 764-1:2015) 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of an identical text or by endorsement, at the latest by October 2015, and conflicting national standards shall be withdrawn at the latest by October 2015.

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 764-1:2004 and EN 764-3:2002.

The 2015 edition of EN 764-1 supersedes both the 2004 edition and EN 764-3:2002. It constitutes a major expansion of the standard, which now comprises definitions for 223 terms as compared to only 18 + 14 in the two superseded standards.

An informative annex on notions of allowable pressures and temperatures has been added.

An annex containing translations of terms to several other languages is in the course of preparation.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

EN 764, *Pressure equipment* comprises the following parts:

- *Part 1: Vocabulary;*
- *Part 2: Quantities, symbols and units;*
- *Part 3: Definition of parties involved;*
- *Part 4: Establishment of technical delivery conditions for metallic materials;*
- *Part 5: Inspection documentation of metallic materials and compliance with the material specification;*
- *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, Former Yugoslav Republic of Macedonia, 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 terms and definitions to be used for pressure equipment and assemblies within the scope of European Directives on pressure equipment.

NOTE It can be applied to other pressure equipment.

## 2 Normative references

Not applicable.

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

If a term or definition only applies to a special area or is different in different areas, the relevant area is shown within brackets <....>.

### 3.1 General terms

#### 3.1.1

##### **ambient temperature**

temperature of the surrounding atmosphere in the immediate vicinity of the pressure component

#### 3.1.2

##### **assembly**

several pieces of pressure equipment assembled by a manufacturer to constitute an integrated and functional whole

#### 3.1.3

##### **cryogenic applications**

applications at low temperature

Note 1 to entry: Normally involving liquefied gases.

#### 3.1.4

##### **design validation**

examination of the design documents to verify that the design conforms to the relevant product standard

#### 3.1.5

##### **fluid**

gas, liquid and vapour in its pure phase as well as mixtures thereof

#### 3.1.6

##### **hazard category**

category of the pressure equipment taking into account the potential hazards

#### 3.1.7

##### **joint coefficient**

reduction coefficient (e.g. for a welded joint) related to the testing group and which is applied to the nominal design stress



### 3.1.8

#### **main pressure bearing parts**

parts which constitute the envelope under pressure, essential for the integrity of the equipment

### 3.1.9

#### **maximum allowable temperature**

$TS_{\max}$

maximum temperature for which the pressure equipment is designed as specified by the manufacturer

### 3.1.10

#### **minimum allowable temperature**

$TS_{\min}$

minimum temperature for which the pressure equipment is designed as specified by the manufacturer

### 3.1.11

#### **pipelines**

piping or piping system designed for the conveyance of any fluid or substance to or from an installation (onshore or offshore) starting from and including the first isolation device located within the installation and including all the annexed equipment designed specifically for pipelines

### 3.1.12

#### **piping**

tubing, fittings, expansion joints, hoses or other pressure-bearing components, intended for the transport of fluid, connected together and integrated into a pressure system

### 3.1.13

#### **pipings class**

category in which piping is classified in accordance with the Pressure Equipment Directive 97/23/EC

### 3.1.14

#### **pipings system**

pipe or system of pipes for the conveyance of fluids within an industrial site

Note 1 to entry: A piping system can be regarded as one single system, provided it conveys substances having the same properties and it is a whole designed for the same allowable pressure.

Note 2 to entry: Interruption by different components such as pumps, machines, vessels, etc. does not preclude the integration to one single piping.

### 3.1.15

#### **pressure vessel**

housing and its direct attachments up to the coupling point connecting it to other equipment, designed and built to contain fluids under pressure

### 3.1.16

#### **repair**

process of rectifying a defect in either base material or weld

## 3.2 Terms related to design

### 3.2.1

#### **action**

imposed mechanical, thermal or thermo-mechanical influence which causes stress and/or strain in a structure, e.g. an imposed pressure, force, displacement or temperature

### 3.2.2

#### **action type**

classification of action based on statistical properties and duration

**3.2.3**  
**analysis thickness**

$e_a$   
effective thickness available to resist the loading depending on the load case

**3.2.4**  
**anchor**

rigid device, which may itself be subject to imposed displacement, used to prevent all relative pipe rotation and displacement at the point of application, under the design conditions of temperature and loading

**3.2.5**  
**annular plate**

flat end of annular form, connected to one cylindrical shell at its outside diameter and another at its inside diameter, and subject predominantly to bending and not shear

**3.2.6**  
**application rule**

generally recognized rule that follows the principles of the relevant product standard and satisfies their requirements

**3.2.7**  
**assembly condition**

condition applying when the gasket or joint contact surface is seated during assembly of the joint at ambient temperature and the only loading comes from the bolts

**3.2.8**  
**assumed thickness**

thickness assumed by the designer between the minimum required shell thickness and the shell analysis thickness

**3.2.9**  
**bending stress**

equivalent linear distributed stress through the wall of the pressure part, proportional to the distance from the neutral axis

**3.2.10**  
**blind flange**

blank flange  
flat closure connected by bolts

**3.2.11**  
**bolted domed end**

cover or blind flange consisting of a flange and a dome of constant radius of curvature

**3.2.12**  
**calculation pressure**

differential pressure used for the purpose of the design calculations for a component

**3.2.13**  
**calculation temperature**

temperature used for the purpose of the design calculations for a component

**3.2.14**  
**chamber**

fluid space within a unit of pressure equipment

**3.2.15**  
**chamber volume**

internal volume of a chamber, including the volume of nozzles to the first connection (flange, coupling, weld) and excluding the volume of internal permanent parts (e.g. baffles, agitators)

### 3.2.16

#### **characteristic function**

characteristic function of an action is a representative function (of time) for the action

Note 1 to entry: Required for actions for which, in specific design checks, the time-dependence is of importance, e.g. temperature/pressure transients during start-up or shut-down.

### 3.2.17

#### **characteristic value**

characteristic value of an action is a representative value which takes account of the variation of an action

### 3.2.18

#### **coefficient of variation**

measure of statistical dispersion (standard deviation divided by mean value)

### 3.2.19

#### **collar**

<loose flange> abutment for the flange

<expansion bellows> cylinder attached to the end tangent

### 3.2.20

#### **combination factor**

factor applied to design values of variable actions with stochastic properties if combined with pressure, or if two or more of these actions are included in one load case

### 3.2.21

#### **compliance**

inverse of the axial stiffness of the assembly, symbol  $Y$ , units mm/N

### 3.2.22

#### **component**

part of pressure equipment which can be considered as an individual item for the calculation

### 3.2.23

#### **constant hanger**

constant support

pipe support with constant characteristic to carry vertical loads whilst permitting vertical displacements, base mounted or suspended

### 3.2.24

#### **continuous weld**

weld extending along the entire length of a joint

### 3.2.25

#### **convolution**

corrugation

flexible unit of an expansion bellows

### 3.2.26

#### **creep range**

temperature range in which material characteristics used in design are time dependent

### 3.2.27

#### **critical area**

<fatigue> an area where the total fatigue damage index exceeds a maximum value