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Refrigerating systems and heat pumps - Pressure relief devices and their associated piping - Methods for calculation

Táto norma obsahuje anglickú verziu európskej normy.  
This standard includes the English version of the European Standard.

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STN EN 13136 (14 2006) z decembra 2002

English Version

## Refrigerating systems and heat pumps - Pressure relief devices and their associated piping - Methods for calculation

Systèmes frigorifiques et pompes à chaleur - Dispositifs de  
limitation de pression et tuyauteries associées - Méthodes  
de calcul

Kälteanlagen und Wärmepumpen -  
Druckentlastungseinrichtungen und zugehörige Leitungen -  
Berechnungsverfahren

This European Standard was approved by CEN on 24 August 2013.

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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EUROPÄISCHES KOMITEE FÜR NORMUNG

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

# Contents

Page

Foreword.....	3
Introduction .....	4
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions .....	5
4 Symbols.....	6
5 General .....	8
6 Pressure relief devices for protection of system components .....	8
6.1 General .....	8
6.2 Excessive pressure caused by heat sources .....	9
6.2.1 External heat sources .....	9
6.2.2 Internal heat sources .....	10
6.3 Excessive pressure caused by compressors .....	11
6.4 Excessive pressure caused by liquid expansion .....	11
7 Discharge capacities of pressure relief devices .....	12
7.1 General .....	12
7.2 Determination of pressure relief valve performance .....	12
7.2.1 Determination of coefficient of discharge.....	12
7.2.2 Critical and sub-critical flow .....	12
7.2.3 Function of the isentropic exponent (C) .....	12
7.2.4 Correction factor for sub-critical flow .....	13
7.2.5 Discharge capacity of pressure relief valves.....	13
7.3 Calculation of capacity and flow area of bursting discs or fusible plugs .....	14
7.4 Pressure loss in upstream/downstream lines.....	14
7.4.1 General .....	14
7.4.2 Pressure loss in components.....	14
7.4.3 Pressure loss in the upstream line.....	15
7.4.4 Pressure loss in the downstream line.....	15
Annex A (normative) Values of functions, factors and properties of refrigerants .....	17
Annex B (informative) Calculation of flow areas for non-evaporating and evaporating liquids.....	24
B.1 Calculation of the flow area for non-evaporating liquids .....	24
B.2 Calculation of the flow area for evaporating liquids.....	24
Annex C (informative) Example of calculation for sizing pressure relief devices with the corresponding pipes .....	26
C.1 Assumptions for the calculation example.....	27
C.2 Calculation of the required minimum discharge capacity, $Q_{md}$ at standard heat flow rate .....	27
C.3 Calculation of the required minimum discharge capacity $Q_{md}$ at reduced heat flow rate.....	28
C.4 Calculation of flow area $A_c$ , selection of pressure relief valve.....	28
C.5 Pressure loss in upstream line (from vessel to pressure relief valve).....	29
C.6 Pressure loss in downstream line (from pressure relief valve to atmosphere).....	30
Annex ZA (informative) Clauses of this European Standard addressing essential requirements or other provisions of EU Directives .....	32
Bibliography.....	33

## Foreword

This document (EN 13136:2013) has been prepared by Technical Committee CEN/TC 182 “Refrigerating systems, safety and environmental requirements”, the secretariat of which is held by DIN.

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 April 2014, and conflicting national standards shall be withdrawn at the latest by April 2014.

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 13136:2001.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative Annex ZA, which is an integral part of this document.

Compared to EN 13136:2001, EN 13136:2013 takes into account the application of CO<sub>2</sub> and the amendment A1, published in 2005.

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

## Introduction

This European Standard is based on applicable parts of EN ISO 4126-1:2013, EN ISO 4126-2:2003 and EN 12284.

It is suited to the specific requirements, and includes the data, of refrigerating systems. It provides means of satisfying the pressure relief devices requirements of EN 378-2:2008+A2:2012.

## 1 Scope

1.1 This European Standard describes the calculation of mass flow for sizing pressure relief devices for components of refrigerating systems.

NOTE The term "refrigerating system" used in this European Standard includes heat pumps.

1.2 This European Standard describes the calculation of discharge capacities for pressure relief valves and other pressure relief devices in refrigerating systems including the necessary data for sizing these when relieving to atmosphere or to components within the system at lower pressure.

1.3 This European Standard specifies the requirements for selection of pressure relief devices to prevent excessive pressure due to internal and external heat sources, the sources of increasing pressure (e.g. compressor, heaters, etc.) and thermal expansion of trapped liquid.

1.4 This European Standard describes the calculation of the pressure loss in the upstream and downstream line of pressure relief valves and other pressure relief devices and includes the necessary data.

1.5 This European Standard refers to other relevant standards in Clause 5.

## 2 Normative references

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

EN 378-1:2008+A2:2012, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 1: Basic requirements, definitions, classification and selection criteria*

EN 378-2:2008+A2:2012, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 2: Design, construction, testing, marking and documentation*

EN 764-1:2004, *Pressure equipment — Part 1: Terminology — Pressure, temperature, volume, nominal size*

EN 764-2:2012, *Pressure equipment — Part 2: Quantities, symbols and units*

EN 12284:2003, *Refrigerating systems and heat pumps — Valves — Requirements, testing and marking*

EN ISO 4126-1:2013, *Safety devices for protection against excessive pressure — Part 1: Safety valves (ISO 4126-1:2013)*

EN ISO 4126-2:2003, *Safety devices for protection against excessive pressure — Part 2: Bursting disc safety devices (ISO 4126-2:2003)*

ISO 817, *Refrigerants — Designation system*

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