

SVENSK STANDARD

SS-EN 1736:2008

Fastställt/Approved: 2008-11-14

Publicerad/Published: 2008-12-18

Utgåva/Edition: 2

Språk/Language: engelska/English

ICS: 27.080; 27.200

Kyl- och värmepumpsutrustning – Flexibla rördelar, vibrationsdämpare, bälgar och icke-metalliska slangar – Krav, konstruktion och installation

Refrigerating systems and heat pumps – Flexible pipe elements, vibration isolators, expansion joints and non-metallic tubes – Requirements, design and installation

This preview is downloaded from www.sis.se. Buy the entire standard via <https://www.sis.se/std-68186>

Hitta rätt produkt och ett leveranssätt som passar dig

Standarder

Genom att följa gällande standard både effektiviserar och säkrar du ditt arbete. Många standarder ingår dessutom ofta i paket.

Tjänster

Abonnemang är tjänsten där vi uppdaterar dig med aktuella standarder när förändringar sker på dem du valt att abonnera på. På så sätt är du säker på att du alltid arbetar efter rätt utgåva.

e-nav är vår online-tjänst som ger dig och dina kollegor tillgång till standarder ni valt att abonnera på dygnet runt. Med e-nav kan samma standard användas av flera personer samtidigt.

Leveranssätt

Du väljer hur du vill ha dina standarder levererade. Vi kan erbjuda dig dem på papper och som pdf.

Andra produkter

Vi har böcker som underlättar arbetet att följa en standard. Med våra böcker får du ökad förståelse för hur standarder ska följas och vilka fördelar den ger dig i ditt arbete. Vi tar fram många egna publikationer och fungerar även som återförsäljare. Det gör att du hos oss kan hitta över 500 unika titlar. Vi har även tekniska rapporter, specifikationer och "workshop agreement".

Matriser är en översikt på standarder och handböcker som bör läsas tillsammans. De finns på sis.se och ger dig en bra bild över hur olika produkter hör ihop.

Standardiseringsprojekt

Du kan påverka innehållet i framtida standarder genom att delta i någon av SIS ca 400 Tekniska Kommittéer.

Find the right product and the type of delivery that suits you

Standards

By complying with current standards, you can make your work more efficient and ensure reliability. Also, several of the standards are often supplied in packages.

Services

Subscription is the service that keeps you up to date with current standards when changes occur in the ones you have chosen to subscribe to. This ensures that you are always working with the right edition.

e-nav is our online service that gives you and your colleagues access to the standards you subscribe to 24 hours a day. With e-nav, the same standards can be used by several people at once.

Type of delivery

You choose how you want your standards delivered. We can supply them both on paper and as PDF files.

Other products

We have books that facilitate standards compliance. They make it easier to understand how compliance works and how this benefits you in your operation. We produce many publications of our own, and also act as retailers. This means that we have more than 500 unique titles for you to choose from. We also have technical reports, specifications and workshop agreements.

Matrices, listed at sis.se, provide an overview of which publications belong together.

Standardisation project

You can influence the content of future standards by taking part in one or other of SIS's 400 or so Technical Committees.

Europastandarden EN 1736:2008 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 1736:2008.

Denna standard ersätter SS-EN 1736, utgåva 1.

The European Standard EN 1736:2008 has the status of a Swedish Standard. This document contains the official English version of EN 1736:2008.

This standard supersedes the Swedish Standard SS-EN 1736, edition 1.

© Copyright/Upphovsrätten till denna produkt tillhör SIS, Swedish Standards Institute, Stockholm, Sverige. Användningen av denna produkt regleras av slutanvändarlicensen som återfinns i denna produkt, se standardens sista sidor.

© Copyright SIS, Swedish Standards Institute, Stockholm, Sweden. All rights reserved. The use of this product is governed by the end-user licence for this product. You will find the licence in the end of this document.

Upplysningar om sakinnehållet i standarden lämnas av SIS, Swedish Standards Institute, telefon 08-555 520 00.

Standarder kan beställas hos SIS Förlag AB som även lämnar allmänna upplysningar om svensk och utländsk standard.

Information about the content of the standard is available from the Swedish Standards Institute (SIS), tel +46 8 555 520 00.

Standards may be ordered from SIS Förlag AB, who can also provide general information about Swedish and foreign standards.

SIS Förlag AB, SE 118 80 Stockholm, Sweden. Tel: +46 8 555 523 10. Fax: +46 8 555 523 11.

E-mail: sis.sales@sis.se Internet: www.sis.se

EUROPEAN STANDARD

EN 1736

NORME EUROPÉENNE

EUROPÄISCHE NORM

November 2008

ICS 27.080; 27.200

Supersedes EN 1736:2000

English Version

Refrigerating systems and heat pumps - Flexible pipe elements,
vibration isolators, expansion joints and non-metallic tubes -
Requirements, design and installation

Systèmes de réfrigération et pompes à chaleur - Eléments
flexibles de tuyauterie, isolateurs de vibration, joints de
dilatation et tubes non métalliques - Exigences, conception
et installation

Kälteanlagen und Wärmepumpen - Flexible
Rohrleitungsteile, Schwingungsabsorber, Kompensatoren
und Nichtmetall-Schläuche - Anforderungen, Konstruktion
und Einbau

This European Standard was approved by CEN on 5 October 2008.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

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 Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, 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 and United Kingdom.



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

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents		Page
Foreword		3
Introduction		4
1	Scope	5
2	Normative references	5
3	Terms and definitions	5
4	Applications	7
5	Materials	10
6	Pressure and pulsation requirements	10
7	Permeability of non-metallic flexible tubes	11
8	Internal cleanliness, internal humidity and permeability of water vapour	13
9	End connections	13
10	Pre-charged flexible pipe elements	13
11	Marking	13
12	Documentation	14

Foreword

This document (EN 1736:2008) 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 May 2009, and conflicting national standards shall be withdrawn at the latest by May 2009.

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 1736:2000.

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, 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 and the United Kingdom.

SS-EN 1736:2008 (E)

Introduction

The use of flexible pipe elements is required where impermissible stresses are to be eliminated from refrigerating circuits and pipe expansion or relative movements of components are to be absorbed.

The use of flexible pipe elements should not be specified unless it is necessary in the design of refrigerant circuits. If necessary, they should be designed and installed in accordance with this standard.

Flexible pipe elements are often the weakest part of a refrigerating system and the part most likely to suffer from fatigue or stress corrosion cracking.

1 Scope

This document describes requirements, design and installation of flexible pipe elements (e. g. metallic flexible pipe, metallic flexible tube, vibration isolator, expansion joint) and non-metallic tube used in the refrigerant circuits of refrigerating systems and heat pumps.

It also describes the requirements to qualify the tightness of non-metallic tubes (e.g. plastic) used in evaporating and/or condensing sides of refrigerating systems and heat pumps.

It does not apply to flexible pipes that are only occasionally stressed beyond the elastic limit, e. g. during repair work, or to joints which are free to rotate or hinge.

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.

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

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

EN ISO 175, *Plastics - Methods of test for the determination of the effects of immersion in liquid chemicals (ISO 175:1999)*

ISO 6605:2002, *Hydraulic fluid power — Hoses and hose assemblies — Test methods*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 378-1:2008 and the following apply.

3.1

flexible pipe element

any form of pipe or tube connecting two points which may move relative to each other

NOTE 1 This generic term includes all types, as defined in 3.2 to 3.6.

NOTE 2 Flexible pipe elements may include a plastic barrier in the construction, either as a liner on the inner surface or as a sandwich in the pipe wall. The main purpose of such a barrier is to reduce the permeation of refrigerant gas.

3.2

metallic flexible pipe

readily flexible, small bore pipe, e. g. capillary tube which is capable of movement within its elastic limit during operation of the refrigerating system (see Figure 1)

NOTE This type of pipe is flexible by virtue of the shape into which the tube is bent, e. g. coiled capillary tube.

3.3

metallic flexible tube

tubular flexible element designed to bend within defined limits and containing a corrugated metal bellows, the corrugations of which may be annular or spiral (see Figure 1)

SS-EN 1736:2008 (E)

NOTE 1 Metallic flexible tubes may be reinforced by metallic braiding which may be covered by rubber or plastic but the whole element should be designed so that, when bent within pre-determined limits, it is not stressed beyond the elastic limit.

NOTE 2 This type of pipe is flexible by virtue of its design and construction, e. g. bellows.

3.4

non-metallic flexible tube

tubular flexible element designed to bend within defined limits (see Figure 1)

NOTE 1 Non-metallic flexible tubes may have smooth bore or corrugated bore and they may be reinforced to withstand pressure, vacuum or external impact.

NOTE 2 This type of pipe is flexible by virtue of its material, e. g. elastomer.

NOTE 3 For non-metallic flexible tube are to be intended all the pipes made of plastic or rubber: mono-layer, multi-layer, reinforced and non-reinforced ones.

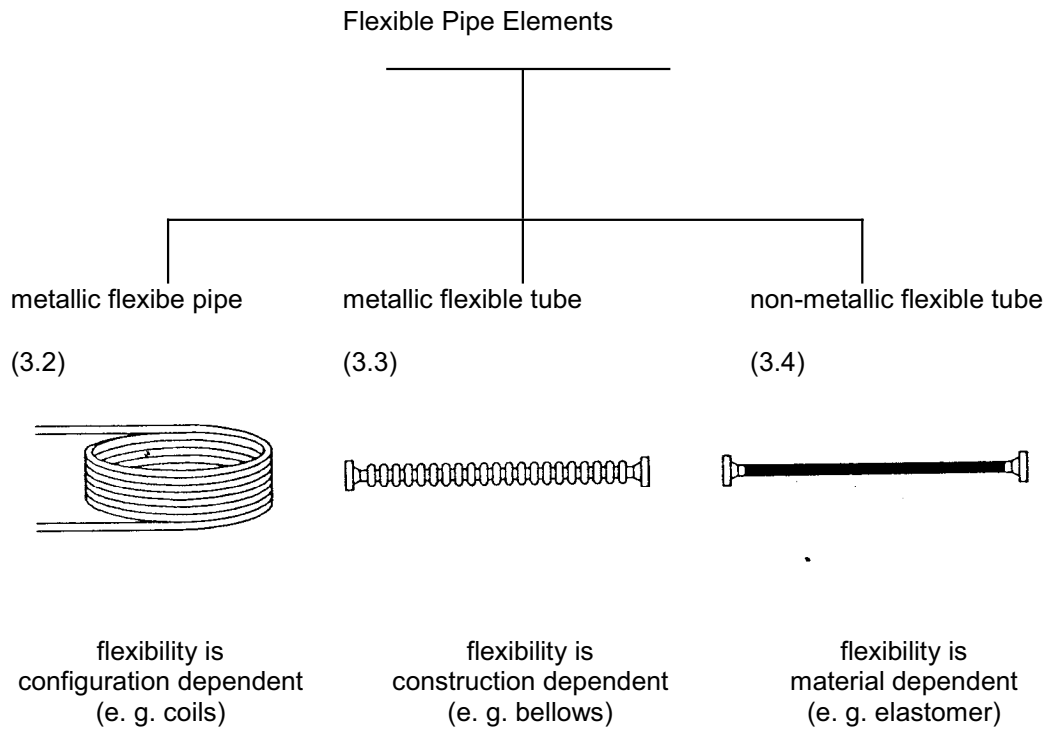


Figure 1 — Types of flexible pipe elements

3.5

expansion joint

tubular pipe element shaped in such a way that it provides limited movement to accommodate thermal expansion without reaching its elastic limit

3.6

vibration isolator

short flexible tube usually of metallic construction which is intended to reduce the effects of vibration from the compressor to other parts of the refrigerating system or vice versa

3.7

maximum allowable pressure PS

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

3.8

maximum/minimum allowable temperature TS

maximum/minimum temperature for which the equipment is designed, as specified by the manufacturer

4 Applications

4.1 General

4.1.1 The refrigerating system shall be so designed and constructed that the components being connected by the flexible pipe elements and non-metallic tubes cannot move in such a way as to stress the pipe element beyond its elastic limit.

4.1.2 Flexible pipe elements and non-metallic tubes shall be installed in accordance with the manufacturer's instructions.

4.1.3 Flexible pipe elements, vibration isolators, expansion joints and non-metallic tubes shall be used only if necessary.