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## Copper and copper alloys – Plumbing fittings – Part 4: Fittings combining other end connections with capillary or compression ends

The European Standard EN 1254-4:1998 has the status of a Swedish Standard. This document contains the official English version of EN 1254-4:1998.

This standard supersedes the Swedish Standards SS 1258 and SS 1259.

Swedish Standards corresponding to documents referred to in this Standard are listed in "Catalogue of Swedish Standards", issued by SIS. The Catalogue lists, with reference number and year of Swedish approval, International and European Standards approved as Swedish Standards as well as other Swedish Standards.

## Koppar och kopparlegeringar – Rördelar – Del 4: Rördelar med andra anslutningsändar kombine- rade med kapillärlödändar eller klämkopplingsändar

Europastandarden EN 1254-4:1998 gäller som svensk standard. Detta dokument innehåller den officiella engelska versionen av EN 1254-4:1998.

Standarden ersätter SS 1258 och SS 1259.

Motsvarigheten och aktualiteten i svensk standard till de publikationer som omnämns i denna standard framgår av "Katalog över svensk standard", som ges ut av SIS. I katalogen redovisas internationella och europeiska standarder som fastställts som svenska standarder och övriga gällande svenska standarder.

ICS 23.040.40



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 1254-4**

January 1998

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Descriptors: Copper tubes, plastics tubes, copper, copper alloys, pipe fittings, screwed connections, flanged unions, joining, dimensions, dimensional tolerances

English version

**Copper and copper alloys – Plumbing fittings –  
Part 4: Fittings combining other end connections  
with capillary or compression ends**

Cuivre et alliages de cuivre – Raccords –  
Partie 4: Raccords combinant des  
assemblages par capillarité ou par  
compression à d'autres types d'assemblage

Kupfer und Kupferlegierungen – Fittings –  
Teil 4: Fittings zum Verbinden anderer  
Ausführungen von Rohrenden mit  
Kapillarlötverbindungen oder  
Klemmverbindungen

This European Standard was approved by CEN on 24 November 1997.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 BRUSSELS

## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 133, Copper and copper alloys, 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 July 1998, and conflicting national standards shall be withdrawn at the latest by July 1998.

Within its programme of work, Technical Committee CEN/TC 133 requested CEN/TC 133/WG 8, Copper and copper alloy fittings, to prepare the following standard:

EN 1254-4, *Copper and copper alloys — Plumbing fittings — Part 4: Fittings combining other end connections with capillary or compression ends.*

This standard is one of five parts for copper and copper alloy fittings for joining copper tubes or plastics pipes. The other four parts of the standard are:

EN 1254-1, *Copper and copper alloys — Plumbing fittings — Part 1: Fittings with ends for capillary soldering or capillary brazing to copper tubes.*

EN 1254-2, *Copper and copper alloys — Plumbing fittings — Part 2: Fittings with compression ends for use with copper tubes.*

EN 1254-3, *Copper and copper alloys — Plumbing fittings — Part 3: Fittings with compression ends for use with plastics pipes.*

EN 1254-5, *Copper and copper alloys — Plumbing fittings — Part 5: Fittings with short ends for capillary brazing to copper tubes.*

It is recommended that fittings manufactured to this standard are certified as conforming to the requirements of this standard, based on third party testing and continuing surveillance, which should be coupled with an assessment of a supplier's quality system against the appropriate standard, i.e. EN ISO 9001 or EN ISO 9002.

In respect of potential adverse effects on the quality of water intended for human consumption caused by the product covered by this standard:

- 1) this standard provides no information as to whether the product may be used without restriction in any of the Member States of the EU or EFTA;
- 2) it should be noted that, while awaiting the adoption of verifiable European criteria, existing national regulations concerning the use and/or the characteristics of this product remain in force.

The attention of the user of this standard is drawn to the fact that national or local regulations or practices might restrict the choice of dimensions and threads in the application of products conforming to this standard.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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## 1 Scope

This European Standard specifies materials, assembly dimensions and tolerances and test requirements for fittings of copper and copper alloys with or without plating or coating. Maximum permissible temperatures and pressures are also established. This part of EN 1254 specifies connection end dimensions for fittings combining capillary and/or compression ends with other types of connecting ends.

## 2 Normative references

This European Standard incorporates, by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European standard only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

EN 1254-1, *Copper and copper alloys — Plumbing fittings — Part 1: Fittings with ends for capillary soldering or capillary brazing to copper tubes.*

EN 1254-2, *Copper and copper alloys — Plumbing fittings — Part 2: Fittings with compression ends for use with copper tubes.*

EN 1254-3, *Copper and copper alloys — Plumbing fittings — Part 3: Fittings with compression ends for use with plastics pipes.*

EN 1254-5, *Copper and copper alloys — Plumbing fittings — Part 5: Fittings with short ends for capillary brazing to copper tubes.*

ISO 7-1, *Pipe threads where pressure-tight joints are made on the threads — Part 1: Dimensions, tolerances and designation.*

ISO 7-2, *Pipe threads where pressure-tight joints are made on the threads — Part 2: Verification by means of limit gauges.*

ISO 228-1, *Pipe threads where pressure-tight joints are not made on the threads — Part 1: Dimensions, tolerances and designation.*

ISO 228-2, *Pipe threads where pressure-tight joints are not made on the threads — Part 2: Verification by means of limit gauges.*

NOTE Informative references to documents used in the preparation of this standard, and cited at the appropriate places in the text, are listed in a bibliography, see annex A.

## 3 Definitions

For the purposes of this standard, the following definitions apply:

### 3.1

#### plumbing fitting

device used in a tube system for the purpose of connecting the tubes either to each other or to a component part of a system

### 3.2

#### capillary end

end in which the joint is made by the flow of solder or brazing alloy by capillary action into the annular space

### 3.3

#### compression end

end in which the joint is made by the compression of a ring or sleeve on the outside wall of the tube

### 3.4

#### screwed union connector

coupling which enables disconnection without disturbance of other pipe sections

NOTE 1 Screwed union connectors can be sphere to cone, cone to cone, cone to radius or flat face with a sealing member.

NOTE 2 Component parts of screwed union connectors from different manufacturers should not be regarded as interchangeable.

### 3.5

#### nominal diameter

nominal diameter of the fitting end expressed as the nominal outside diameter of the connecting tube

## 4 Requirements

### 4.1 Materials and tests

The relevant requirements specified in EN 1254-1, EN 1254-2, EN 1254-3 and EN 1254-5 apply to the complete fitting.

### 4.2 Screwed union connections

Screwed union joints, when assembled in accordance with the manufacturer's instructions, shall be capable of meeting the appropriate pressure test requirements for the respective end connections to relevant tube or pipe material and shall be capable of disconnection and reconnection, when the joint shall again be capable of meeting the pressure test requirements.

**4.3 Thread dimensions**

Internal parallel threads shall be in accordance with Table 2 or Table 3 of this part of this standard.

External taper threads shall be in accordance with Table 4 or Table 5 of this part of this standard.

External parallel threads shall be in accordance with Table 6 of this part of this standard.

Thread details not specified in this part of this standard shall conform to ISO 7 or ISO 228.

NOTE Alternative thread lengths or gauging systems should be agreed between the manufacturer and the purchaser.

**4.4 Tightening systems**

Shapes for transmitting tightening torques are required on nuts and straight bodies.

**4.5 Minimum wall thickness**

The minimum wall thickness at threaded portions of fittings shall be in accordance with Table 1.

**4.6 Minimum bore for unequal-ended fittings**

Minimum bores quoted in this part of the standard shall not restrict other outlets.

**4.7 Minimum outside diameter of sealing face**

If a sealing face is provided on the fitting then the minimum outside diameter of the face shall be in accordance with dimension *C* given in Table 6.

**4.8 Flange-type fittings**

Loose flanges and fasteners on flange-type fittings may be of ferrous materials unless otherwise specified.

NOTE Ferrous flanges and fasteners should be protected against corrosion in accordance with the customer's specification.

**Table 1 — Minimum wall thickness**

Thread designation	Minimum wall thickness of fitting <i>N</i>	
	Wrought coppers and copper alloys mm	Cast coppers and copper alloys mm
1/8	1,0	1,0
1/4	1,0	1,0
3/8	1,1	1,1
1/2	1,2	1,2
3/4	1,4	1,5
1	1,5	1,8
1 1/4	1,6	1,8
1 1/2	1,8	2,0
2	1,9	2,3
2 1/2	2,0	2,4
3	2,3	2,6
4	2,8	2,9