

Copper and copper alloys - Plumbing fittings - Part 5:
Capillary fittings with short ends for brazing to copper
tubes

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

**Copper and copper alloys - Plumbing fittings - Part 5:
Capillary fittings with short ends for brazing to copper
tubes**

Cuivre et alliages de cuivre - Raccords - Partie 5 :
Raccords à emboîture courte pour brasure forte par
capillarité pour tubes en cuivre

Kupfer und Kupferlegierungen - Fittings - Teil 5:
Kapillarlötfittings mit geringer Einstecktiefe zum
Verbinden von Kupferrohren mittels Hartlötten

This European Standard was approved by CEN on 23 November 2020.

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

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European foreword

This document (EN 1254-5:2021) 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of an identical text or by endorsement, at the latest by November 2021, and conflicting national standards shall be withdrawn at the latest by November 2021.

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

This document supersedes EN 1254-5:1998.

The main changes to EN1254-5:1998 are:

- separation of test methods into part 20.

This part of the standard (EN 1254-5) should be read in conjunction with EN 1254-20:2021.

EN 1254 comprises the following parts under the general title “Copper and copper alloys — Plumbing fittings”:

- *Part 1: Capillary fittings for soldering or brazing to copper tubes*
- *Part 2: Compression fittings for use with copper tubes*
- *Part 3: Compression fittings for use with plastics and multilayer pipes*
- *Part 4: Threaded fittings*
- *Part 5: Capillary fittings with short ends for brazing to copper tubes*
- *Part 6: Push-fit fittings for use with metallic tubes, plastics and multilayer pipes*
- *Part 7: Press fittings for use with metallic tubes*
- *Part 8: Press fittings for use with plastics and multilayer pipes*
- *Part 20: Definitions, thread dimensions, test methods, reference data and supporting information*

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

Introduction

Products complying with this document may be used for several fluids including the transport of water intended for human consumption if they comply with the relevant national, regional or local regulatory provisions applicable in the place of use.

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1 Scope

This document specifies product characteristics, assessment methods, compliance criteria of the test results and a designation system for capillary fittings with short ends for brazing to copper tubes e.g. EN 1057, EN 13348, EN 13349, EN 12735-1, EN 12735-2, etc. These fitting ends exist in two forms: end feed fittings and integral brazing ring fittings. For the purposes of joining copper tubes, the fitting ends have a nominal diameter from 14,7 mm to 159 mm. The fittings are designed for a service lifetime up to fifty years.

The fittings are used up to the operating temperatures and corresponding maximum operating pressures as indicated in Annex A.

This document applies to copper alloy fittings. A non-exhaustive list of these copper alloys is given in CEN/TS 13388.

The capillary fittings with short ends for brazing to copper tubes are used with brazing alloys in accordance with alloys specified in EN ISO 17672.

Not all copper alloys that can be used to manufacture fittings can be brazed and those that can be brazed may require different brazing techniques (guidance is provided in EN 1254-20:2021, Annex A).

Fittings with short ends for capillary brazing may also have threaded end connections. These threaded ends exist with metallic and with non-metallic sealing elements. For the purposes of joining with tubes, pipes, fittings or valves, the threaded ends have a size range from 1/8" to 4".

Adaptor fittings for use with copper tubes may combine short ends for capillary brazing with fitting ends defined in the other parts of EN 1254.

Capillary fittings with short ends for brazing may also have flanged end connections according to EN 1092-3.

Fittings can be produced by machining, metal forming, casting, or fabrication.

Products covered by this document are intended to be used in:

a) liquid applications:

- hot, cold or combined hot and cold water, including systems according to EN 806;
- closed heating systems according to EN 12828;
- cooling systems;
- drainage systems;
- fire protection systems including sprinkler systems according to EN 12845;
- refrigeration systems;
- supply systems for points of consumption with liquid fuels according to EN 12514.

b) gas applications:

- natural gas and liquefied petroleum gas systems with a maximum operating pressure less than or equal to 5 bar according to EN 1775;
- gas line systems with an operating pressure exceeding 0,5 bar for industrial installations and exceeding 5 bar for industrial and non-industrial installations according to EN 15001-1;
- compressed air systems;
- medical gas systems according to EN ISO 7396;
- refrigeration systems.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 723, *Copper and copper alloys — Combustion method for determination of the carbon content on the inner surface of copper tubes or fittings*

EN 1057:2006+A1:2010, *Copper and copper alloys — Seamless, round copper tubes for water and gas in sanitary and heating applications*

EN 1254-20:2021, *Copper and copper alloys — Plumbing fittings — Part 20: Definitions, thread dimensions, test methods, reference data and supporting information*

EN 10226-3, *Pipes threads where pressure tight joint are made on the threads — Part 3: Verification by means of limit gauges*

EN 12502-2, *Protection of metallic materials against corrosion — Guidance on the assessment of corrosion likelihood in water distribution and storage systems — Part 2: Influencing factors for copper and copper alloys*

EN ISO 6506-1, *Metallic materials — Brinell hardness test — Part 1: Test method (ISO 6506-1)*

EN ISO 6507-1, *Metallic materials — Vickers hardness test — Part 1: Test method (ISO 6507-1)*

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

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

ISO 2859-1:1999, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*