

# DIN EN 1254-6:2012-12 (E)

## Copper and copper alloys - Plumbing fittings - Part 6: Fittings with push-fit ends

---

<b>Contents</b>		<b>Page</b>
Foreword .....		5
Introduction .....		6
<b>1</b>	<b>Scope .....</b>	<b>7</b>
<b>2</b>	<b>Normative references .....</b>	<b>8</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>9</b>
<b>4</b>	<b>Requirements .....</b>	<b>10</b>
4.1	General .....	10
4.2	Materials .....	10
4.2.1	General .....	10
4.2.2	Reaction to fire .....	11
4.2.3	Resistance to high temperature (for heating networks) .....	11
4.3	Dimensions and tolerances .....	12
4.3.1	Minimum bore area .....	12
4.3.2	Minimum bore area through fittings with an integral or separate internal support .....	12
4.3.3	Tolerance for the alignment of the fitting ends .....	14
4.4	Design and manufacture .....	14
4.4.1	Tube and pipe abutment .....	14
4.4.2	Surface condition .....	14
4.4.3	Plated or coated surfaces .....	14
<b>5</b>	<b>Testing, assessment and sampling methods .....</b>	<b>14</b>
5.1	Type testing .....	14
5.1.1	General .....	14
5.1.2	Preparation of fittings for testing .....	15
5.1.3	Test temperature .....	15
5.1.4	Leaktightness under internal hydrostatic pressure .....	15
5.1.5	Resistance to pull-out .....	16
5.1.6	Temperature cycling .....	16
5.1.7	Pressure cycling test .....	17
5.1.8	Vacuum test .....	18
5.1.9	Vibration test (metallic tube only) .....	18
5.1.10	Leaktightness under internal hydrostatic pressure while subjected to bending (metallic tube only) .....	18
5.1.11	Static bending test (plastics pipe only) .....	19
5.1.12	Disconnection and re-use (for fittings capable of being disconnected) .....	19
5.1.13	Rotation test .....	20
5.1.14	Resistance to stress corrosion .....	20
5.2	Factory production control system .....	20
5.2.1	General .....	20
5.2.2	Integrity of fittings bodies with as-cast microstructure or fabricated by welding or brazing .....	21
5.2.3	Resistance to dezincification .....	21
<b>6</b>	<b>Evaluation of conformity .....</b>	<b>21</b>
6.1	General .....	21
6.2	Type testing .....	21
6.2.1	General .....	21

6.2.2	Requirements and characteristics .....	22
6.2.3	Use of historical data .....	22
6.2.4	Further type testing .....	22
6.3	Sampling, testing and conformity criteria .....	22
6.3.1	Sampling .....	22
6.3.2	Testing and conformity criteria .....	22
6.4	Factory production control (FPC) .....	22
6.4.1	General .....	22
6.4.2	Personnel .....	23
6.4.3	Equipment .....	23
6.4.4	Raw materials and components .....	23
6.4.5	In-process control .....	23
6.4.6	Traceability and marking .....	23
6.4.7	Non-conforming products .....	23
6.4.8	Corrective action .....	24
6.4.9	Handling, storage, packaging .....	24
7	Classification and designation .....	24
8	Marking .....	24
8.1	General .....	24
8.2	Dezincification resistant copper-zinc alloys .....	25
9	Documentation .....	25
9.1	Declaration of conformity .....	25
9.2	User instructions .....	25
<b>Annex A (normative) Method for testing leaktightness of joints under internal hydrostatic pressure</b>		
	.....	26
A.1	Introduction .....	26
A.2	Principle .....	26
A.3	Apparatus .....	26
A.4	Test piece .....	26
A.5	Procedure .....	27
<b>Annex B (normative) Method for testing resistance to pull-out of joints with metallic tube</b>		28
B.1	Introduction .....	28
B.2	Principle .....	28
B.3	Apparatus .....	28
B.4	Test assembly .....	28
B.5	Procedure .....	28
<b>Annex C (normative) Test method for resistance of joints with metallic tube to temperature cycling</b>		30
C.1	Introduction .....	30
C.2	Principle .....	30
C.3	Apparatus .....	30
C.4	Test assembly .....	30
C.5	Procedure .....	31
<b>Annex D (normative) Method for testing the resistance of joints with metallic tube to pressure cycling</b>		32
D.1	Introduction .....	32
D.2	Principle .....	32
D.3	Apparatus .....	32
D.4	Test pieces .....	33
D.5	Procedure .....	33
<b>Annex E (normative) Test method for leaktightness of joints with metallic tube under vacuum</b>		34

E.1	Introduction .....	34
E.2	Principle .....	34
E.3	Apparatus .....	34
E.4	Test piece .....	35
E.5	Procedure .....	35
<b>Annex F (normative) Test method for the resistance of joints with metallic tube to vibration .....</b>		<b>36</b>
F.1	Introduction .....	36
F.2	Principle .....	36
F.3	Apparatus .....	36
F.4	Test assembly .....	36
F.5	Procedure .....	37
<b>Annex G (normative) Test method for leaktightness of joints with metallic tube under internal hydrostatic pressure while subjected to bending .....</b>		<b>38</b>
G.1	Introduction .....	38
G.2	Principle .....	38
G.3	Apparatus .....	38
G.4	Test piece .....	38
G.5	Procedure .....	39
<b>Annex H (normative) Test method for disconnection and re-use .....</b>		<b>40</b>
H.1	Introduction .....	40
H.2	Principle .....	40
H.3	Apparatus .....	40
H.4	Test assembly .....	40
H.5	Procedure .....	40
<b>Annex I (normative) Fitting rotation test .....</b>		<b>41</b>
I.1	Introduction .....	41
I.2	Principle .....	41
I.3	Apparatus .....	41
I.4	Test assembly .....	41
I.5	Procedure .....	42
<b>Annex J (normative) Determination of resistance to stress corrosion .....</b>		<b>43</b>
J.1	Introduction .....	43
J.2	Test piece .....	43
J.3	Procedure .....	43
J.4	Test report .....	43
<b>Annex K (normative) Pressure test for fittings bodies with as-cast microstructure or fabricated by welding or brazing .....</b>		<b>44</b>
K.1	Introduction .....	44
K.2	Principle .....	44
K.3	Apparatus .....	44
K.4	Test piece .....	44
K.5	Procedure .....	45
<b>Annex L (normative) Determination of mean depth of dezincification .....</b>		<b>46</b>
L.1	Introduction .....	46
L.2	Procedure .....	46
L.3	Expression of results .....	46
<b>Bibliography .....</b>		<b>48</b>