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English Version

## Welded fittings for the food and chemical industries - Tees, bends and reducers for welding

Raccords soudés pour l'industrie alimentaire et chimique - Tés, coudes et réducteurs à souder

Anschweißarmaturen in der Lebensmittel- und chemischen Industrie - T-Stücke, Bogen und Reduzierstücke zum Anschweißen

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EUROPEAN COMMITTEE FOR STANDARDIZATION  
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## **European foreword**

This document (prEN 10374:2019) has been prepared by Technical Committee CEN/TC 459/SC 10 “Steel tubes and fittings for steel tubes”, the secretariat of which is held by UNI.

This document is currently submitted to the CEN Enquiry.

## 1 Scope

This document specifies dimensions, tolerances, internal and external surface characteristics and marking of welded fittings for the food and chemical industry.

## 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 10027-1, Designation systems for steels — Part 1: Steel names

EN 10027-2, Designation systems for steels — Part 2: Numerical system

EN 10028-7, *Flat products made of steels for pressure purposes — Part 7: Stainless steels*

EN 10088-1, *Stainless steels — Part 1: List of stainless steels*

EN 10088-2, *Stainless steels — Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes*

EN 10204, *Metallic products — Types of inspection documents*

EN 10216-5, *Seamless steel tubes for pressure purposes — Technical delivery conditions — Part 5: Stainless steel tubes*

EN 10217-7, *Welded steel tubes for pressure purposes — Technical delivery conditions — Part 7: Stainless steel tubes*

EN 10253-4, *Butt-welding pipe fittings — Part 4: Wrought austenitic and austenitic-ferritic (duplex) stainless steels with specific inspection requirements*

EN 13480 (all parts), *Metallic industrial piping*

EN 10357, *Austenitic, austenitic-ferritic and ferritic longitudinally welded stainless steel tubes for the food and chemical industry*

EN ISO 4287, *Geometrical product specifications (GPS) — Surface texture: Profile method — Terms, definitions and surface texture parameters (ISO 4287)*

EN ISO 4288, *Geometrical product specifications (GPS) — Surface texture: Profile method — Rules and procedures for the assessment of surface texture (ISO 4288)*

EN ISO 6520-1, *Welding and allied processes — Classification of geometric imperfections in metallic materials — Part 1 Fusion welding (ISO 6520-1)*

ISO 13715, *Technical product documentation — Edges of undefined shape — Indication and dimensioning*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN ISO 6520-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

### 3.1

#### **elbow**

bend fitting to allow a change direction of the pipeline with a radius 45°, 90° or 180°

#### 3.1.1

##### **elbow form BS (short execution)**

elbows with standard welding ends

#### 3.1.2

##### **elbow form BL (long execution)**

elbows with prolonged welding ends

### 3.2

#### **reducer**

fitting that reduces the pipeline size from larger to a smaller diameter

#### 3.2.1

##### **reducer form RCS (short type)**

reducer with concentric diameters with short length

#### 3.2.2

##### **reducer form RCL (long type)**

reducer with concentric diameters with long length

#### 3.2.3

##### **reducer form RES (short type)**

reducer with eccentric diameters with short length

#### 3.2.4

##### **reducer form REL (long type)**

reducer with eccentric diameters with long length

### 3.3

#### **T-piece**

T-shaped fitting with a straight run and a branch perpendicular to the run

#### 3.3.1

##### **T-piece form TL**

T-piece with equal tube diameter connections

#### 3.3.2

##### **T-piece form TS**

T-piece with a short branch and equal tube diameter connections

#### 3.3.3

##### **T-piece form TRL**

T-piece with the branch tube diameter connection smaller than the run tube diameter connections

#### 3.3.4

##### **T-piece form TRS**

T-piece with branch short length and the branch tube diameter connection smaller than the run tube diameter connections

## 4 Symbols and abbreviations

For the purposes of this document, the symbols and abbreviated terms in Table 1 shall be applied.

**Table 1 — Symbols and abbreviated terms**

Symbol	Unit	Description
$d_1 d_2$	mm	specified inside diameter for reducers
$D, OD$	mm	specified outside diameter for T-pieces and elbows
$l_0$	mm	<ul style="list-style-type: none"> <li>– distance from the axis of the branch outlet to the face of the centre body of the T-pieces</li> <li>– distance from the centre of one welding end to the centre of a 90° elbow form BS at the welding ends</li> <li>– distance from one welding end to the axis of the centre line for elbow form BS-180</li> </ul>
$l_{0BS5}$	mm	distance from the centre of one welding end to the centre of a 90° elbow form BS5 at the welding ends
$l_1$	mm	<ul style="list-style-type: none"> <li>– distance from the centre of one welding end to the centre of a 90° elbow form BL at the welding ends</li> <li>– distance from one welding end to the axis of the centre line for elbow form BL-180</li> <li>– face to face distance of reducer form RK</li> </ul>
$l_2$	mm	<ul style="list-style-type: none"> <li>– distance from the axis of centre line of the run to the face of the branch outlet of tees</li> <li>– distance from one welding end to centre for elbow form BL-45</li> <li>– face to face distance of reducer form RE</li> </ul>
$l_3$	mm	– difference between elbow form BL5-90 and BS5-90, BL-45 and BS-45, BL-90 and BS-90, BL-180 and BS-180 at the welding ends aka tangent length
$l_4$	mm	centre to centre distance for elbows 180°
$l_{1BL5}$	mm	distance from the centre of one welding end to the centre of a 90° elbow form BL5 at the welding ends
$l_5$	mm	distance from the extrados of a BS-45 or a BL-45 bend to the face of the welding end
$O$	%	out-of-roundness
$R, R_{BS5}, R_{BL5}$	mm	bending radius of elbows
$s, s_1, s_2$	mm	specified wall thickness at the welding ends for T-pieces, elbows and reducers
$WT$	mm	wall thickness of T-piece