

BRITISH STANDARD

**BS EN
12627:1999**

Industrial valves — Butt welding ends for steel valves

The European Standard EN 12627:1999 has the status of a
British Standard

ICS 23.060.01

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National foreword

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Summary of pages

This document comprises a front cover, an inside front cover, the EN title page, pages 2 to 9 and a back cover.

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English version

Industrial valves — Butt welding ends for steel valves**Appareils de robinetterie — Extrémités à souder en
bout pour appareils de robinetterie en acier****Industriearmaturen — Anschweißenden für
Armaturen aus Stahl**

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CEN

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Comité Européen de Normalisation
Europäisches Komitee für Normung

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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 69, Industrial valves, the Secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by November 1999, and conflicting national standards shall be withdrawn at the latest by November 1999.

This European Standard has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association. This European Standard is considered to be a supporting standard to those application and product standards which in themselves support an essential safety requirement of a New Approach Directive and which make reference to this European Standard.

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1 Scope

This European Standard specifies the dimensions of butt welding ends of steel valves DN 8 to DN 1400 designed to be butt welded to standardized pipes.

NOTE For the outside diameters and wall thickness of standardized pipes in accordance with ISO 4200.

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 736-1, *Valves — Terminology — Part 1: Definition of types of valves.*

EN 736-2, *Valves — Terminology — Part 2: Definition of components of valves.*

EN 736-3, *Valves — Terminology — Part 3: Definition of terms.*

ISO 4200, *Plain end steel tubes, welded and seamless — General tables of dimensions and masses per unit length.*

3 Definitions

For the purposes of this standard the definitions of EN 736-1, EN 736-2 and prEN 736-3 apply.

4 Symbols

The symbols used in this standard are as follows:

$\varnothing A$ is the outside diameter of the valve butt welding end (see Table 1);

$\varnothing B$ is the inside diameter of the pipe;

T is the wall thickness of the pipe;

t_D is the thickness of the valve butt welding end.

5 Requirements

5.1 Butt welding ends of steel valve bodies shall have the form and dimensions as shown in Figures 1, 2, 3, 4 or 5 unless the contract states that the weld to the pipe is to be ultrasonically tested.

5.2 Where the weld to the pipe is to be ultrasonically tested, butt welding ends of steel valve bodies shall have the form and dimensions as shown in Figures 4 and 5 except that for globe valves of “Z” form the 10° maximum angle can be increased to 20° maximum.

5.3 For pipe wall thickness, T , greater than 4 mm and less than or equal to 22 mm, Figures 2 or 4 shall be used. For valves having a wall thickness, t_D , of less than or equal to 4 mm, the butt welding ends can be cut square as shown in Figure 1.

5.4 For pipe wall thickness of more than 22 mm Figures 3 or 5 shall be used.

5.5 The inside and outside surfaces of the butt welding end shall be machined all over. The internal profile of the body is at the option of the manufacturer unless otherwise specified by the purchaser.

5.6 The outside diameter of $\varnothing A$ of the butt welding end shall have the dimensions and tolerances as shown in Table 1 when the allowable stress of the valve butt welding end material is greater than or equal to that of the pipe material.

Table 1 — Dimensions and tolerance of outside diameter, $\varnothing A$, of butt welding ends

Valve DN (nominal size)	DN 8	DN 10	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50	DN 65	DN 80	DN 100	DN 125	DN 150	DN 200
$\varnothing A$ in mm	14	18	22	28	35	44	50	62	77	91	117	144	172	223
Tolerance in mm	+2.5 -1		+2.5 -1.5		+2.5 -2		+2.5 -2.5		+2.5 -2.5		+4 -2.5			
Valve DN (nominal size)	DN 250	DN 300	DN 350	DN 400	DN 450	DN 500	DN 600	DN 700	DN 750	DN 800	DN 900	DN 1000	DN 1200	DN 1400
$\varnothing A$ in mm	278	329	362	413	464	516	619	721	772	825	927	1029	1235	1440
Tolerance in mm	+4 -2.5													

5.7 When the allowable stress of the valve butt welding end material is less than that of the pipe material the thickness of the valve butt welding end shall be increased to compensate as shown in Figure 6. The thickness of the valve butt welding end shall be determined according to the equation:

$$t_D = T \times \frac{\text{Allowable stress of pipe material}}{\text{Allowable stress of valve butt welding end material}}$$

but limited to $t_D \leq 1,5 \times T$.

5.8 The inside diameter of the butt welding end shall be equal to the inside diameter of the pipe to which it is to be welded to within the tolerance stated in Table 2.

Table 2 — Tolerance of inside diameter of butt welding ends

Valve DN (nominal size)	DN 8 to DN 250	DN 300 to DN 450	DN 500 to DN 1400
Tolerance in mm	+1 -1	+2 -2	+3 -2

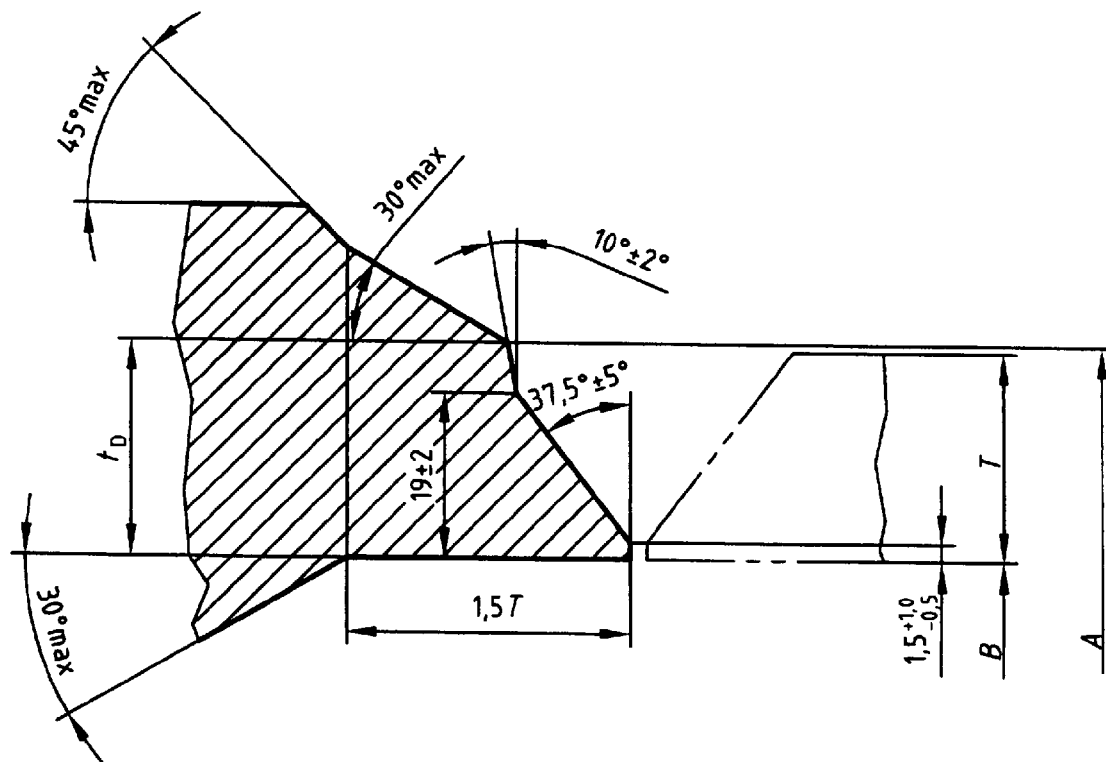
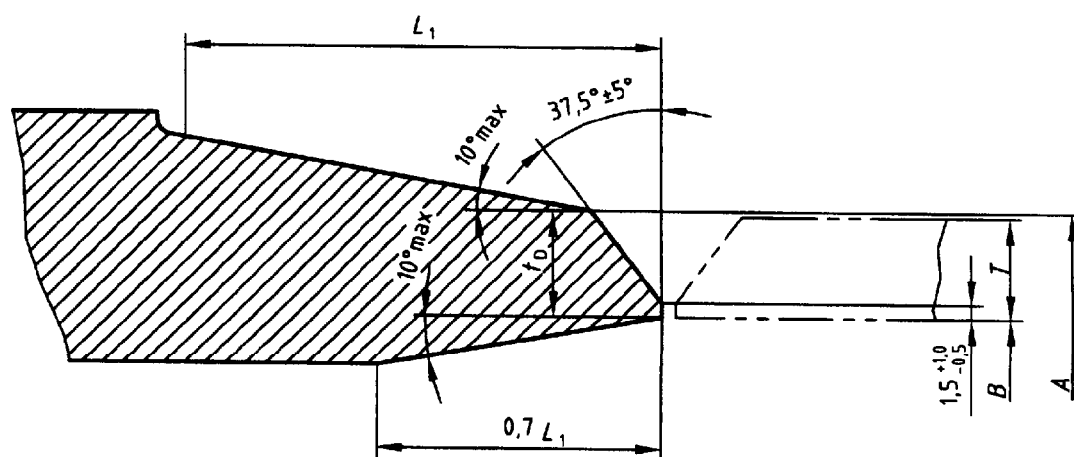
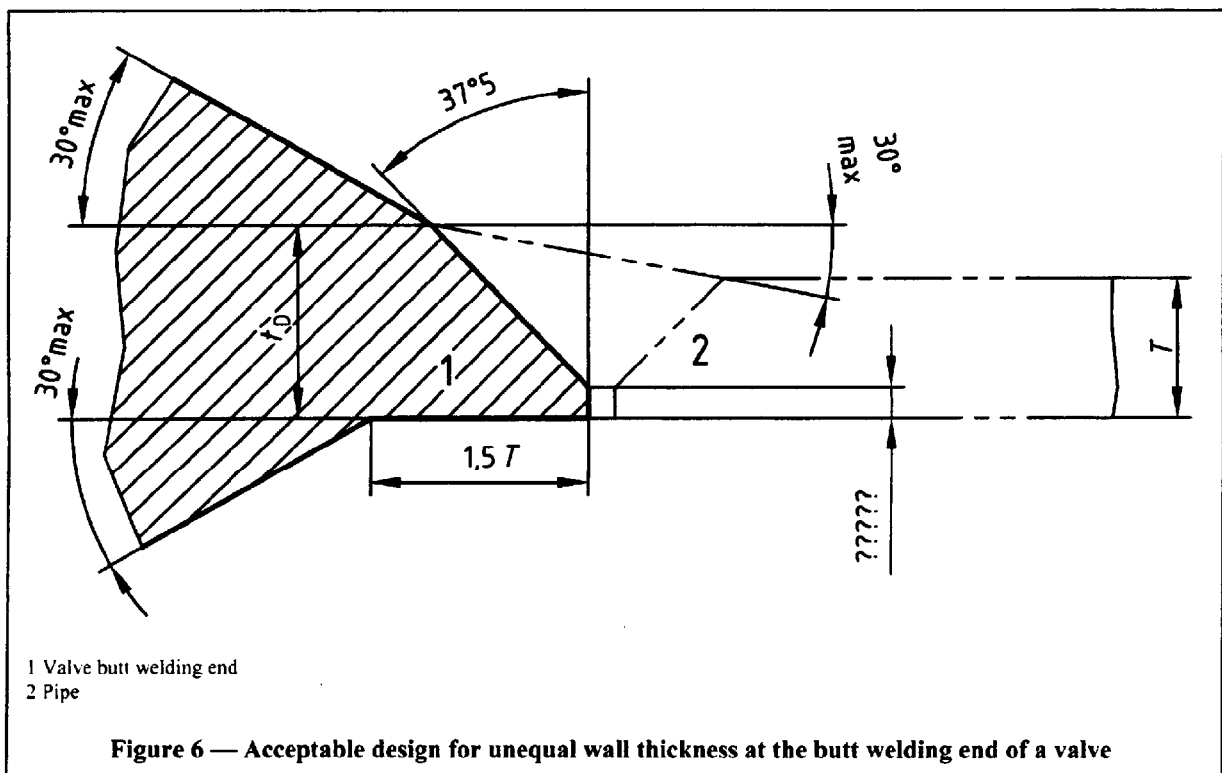
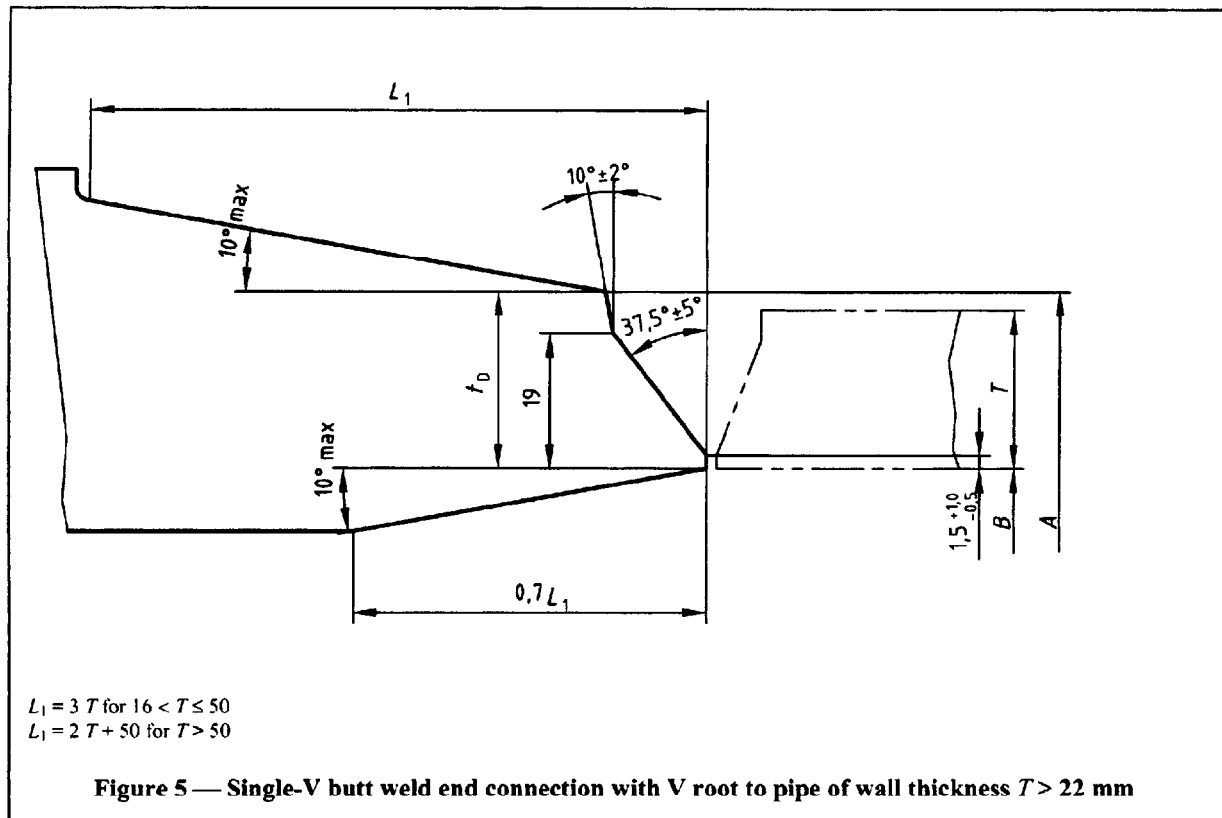


Figure 3 — Single-V butt weld end connection with V root to pipe of wall thickness $T > 22$ mm



$L_1 = 48$ for $T \leq 16$
 $L_1 = 3 T$ for $16 < T \leq 50$

Figure 4 — Single-V butt weld end connection to pipe of wall thickness $4 \text{ mm} < T \leq 22$ mm



6 Designation

A butt welding end shall be designated by:

- the wording “Butt welding end”;
- the reference to this standard (EN 12627);
- the number of the corresponding figure of this standard (e.g. 3);
- the DN (nominal size) of the valve (e.g. DN 50)

EXAMPLE:

Butt welding end EN 12627 – 3 – DN 50

Annex A (informative) Basis for this standard

The butt weld end connections used have been taken from EN 29692, the appropriate references being given hereafter:

Figure 1: EN 29692 reference 1.2;

Figures 2 and 3: EN 29692 reference 1.5;

Figures 4 and 5: EN 29692 reference 1.3.3;

Experience has shown that these butt weld end connections are the most appropriate for the welding of valve bodies to pipes and pipeline components.

EN 29692 relates only to butt weld end connections.

Moreover, this European Standard considers the dimensions of the valve body in the welding area.

Annex B (informative) Bibliography

EN 29692, *Metal-arc welding with covered electrode, gas-shielded metal arc welding and gas welding — Joint preparations for steel* (ISO 9692:1992).

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