

# ISO 2553:2019-03 (E)

## Welding and allied processes - Symbolic representation on drawings - Welded joints

<b>Contents</b>		<b>Page</b>
Foreword .....		v
Introduction .....		vi
<b>1</b>	<b>Scope .....</b>	<b>1</b>
<b>2</b>	<b>Normative references .....</b>	<b>1</b>
<b>3</b>	<b>Terms and definitions .....</b>	<b>1</b>
<b>4</b>	<b>Welding symbol .....</b>	<b>5</b>
4.1	General .....	5
4.2	Basic welding symbol .....	5
4.3	Welding symbol systems .....	6
4.4	Elementary symbols .....	6
4.4.1	General .....	6
4.4.2	Combinations of elementary symbols .....	9
4.4.3	Double-sided butt welds .....	9
4.5	Supplementary symbols .....	10
4.5.1	General .....	10
4.5.2	Weld-all-around symbol .....	13
4.5.3	Welds of the same type made from point to point .....	14
4.5.4	Field welds .....	15
4.5.5	Root reinforcement -- Butt welds made from one side .....	15
4.5.6	Welds on flanged butt and flanged corner joints .....	15
4.6	Arrow line .....	17
4.6.1	General .....	17
4.6.2	Multiple arrow lines .....	17
4.6.3	Broken arrow line .....	17
4.7	Reference line and weld location .....	18
4.7.1	Reference line .....	18
4.7.2	Weld location .....	18
4.7.3	Multiple reference lines .....	19
4.8	Tail .....	20
<b>5</b>	<b>Dimensioning of welds .....</b>	<b>21</b>
5.1	General .....	21
5.2	Cross-sectional dimensions .....	21
5.3	Length dimensions .....	21
5.3.1	General .....	21
5.3.2	Intermittent welds .....	21
5.4	Butt welds .....	22
5.4.1	Penetration depth .....	22
5.4.2	Double-sided welds .....	22
5.4.3	Flanged butt welds .....	22
5.4.4	Flare bevel and flare-V butt welds .....	22
5.5	Fillet welds .....	22
5.5.1	Weld size .....	22
5.5.2	Deep penetration fillet welds .....	22
5.6	Plug welds in circular holes .....	23
5.7	Plug welds in elongated holes (slots) .....	23
5.8	Spot welds .....	23

5.9	Seam welds .....	23
5.10	Edge welds .....	23
5.11	Stud welds .....	23
5.12	Overlay welds .....	23
5.13	Stake welds .....	24
6	Dimensioning of joint preparations .....	37
6.1	General .....	37
6.2	Root gap .....	37
6.3	Included angle .....	37
6.4	Root radius and depth of root faces -- U and J butt joints .....	38
6.5	Depth of joint preparation .....	38
6.6	Countersink angle for plug welds .....	39
7	Alternative butt weld symbol with required weld quality .....	39
7.1	General .....	39
7.2	Example .....	40
	Annex A (informative) Examples of the use of welding symbols .....	41
	Annex B (informative) Tolerances and transition points for weld types .....	51
	Annex C (informative) Alternativemethodsfordesignatingintermittentbuttandfilletwelds .....	52
	Bibliography .....	55