

TABLE 6.2.2

**PERMISSIBLE LEVELS OF IMPERFECTIONS IN BUTT AND FILLET WELDS AS DETERMINED BY VISUAL, MAGNETIC PARTICLE AND LIQUID PENETRANT EXAMINATION OF THE WELD ZONE (see also Figure 6.2.2)**

Imperfection (see Note 1)		Symbol	Maximum allowable dimension or number of imperfections	
Type	Parameter		GP	SP
<b>BUTT WELDS</b>				
Cracks	Length	$L$	Crater cracks only	No cracks allowed
	Cumulative length	$\Sigma L$	6 mm in 1000 mm weld (crater cracks only)	
Lack of fusion or incomplete penetration	Length for SP Depth for GP	As for undercut depth	$L$	Where located more than $3t$ from end of weld, $2t/3$ , but not more than 20 mm Where located within $3t$ of end of weld, 3 mm
			$\Sigma L$	$t$ in $6t$ length, but proportionally less for shorter length
Undercut-continuous (see Note 2)	Depth	$h$	$t/10$ , but not more than 1.5 mm	$t/20$ , but not more than 1 mm
Undercut-intermittent (see Note 2)	Depth	$h$	$t/5$ , but not more than 2 mm	$t/10$ , but not more than 1.5 mm
Shrinkage grooves Root concavity	—	—	As for undercut	
Reinforcement (each side)	Height	$h$	Not limited	For $t \leq 12$ mm, 3 mm For $12 < t \leq 25$ mm, 5 mm For $t > 25$ mm, 6 mm
Excess penetration	Height (depth)	—	As for reinforcement	
Linear misalignment	—	—	See Clauses 5.2.2 and 5.2.3	
Overlap (see Note 3)	Length	$L$	$2t$ , but not more than 20 mm	$t$ , but not more than 10 mm
	Cumulative length	$\Sigma L$	60 mm in 300 mm, but proportionately less for shorter lengths	30 mm in 300 mm, but proportionately less for shorter lengths
Toe shape, other than above	—	—	No restriction	Suitable to permit required NDE
Surface pores (see Note 3)	Size of pore	$D$	Not limited	$t/3$ , but not more than 5 mm
	Number of pores	—	Six per $12t$ length	Two per $12t$ length
Loss of cross-sectional area (see Notes 4 and 5)	Loss of area	—	$\leq 10\%$	$\leq 5\%$
<b>FILLET WELDS</b>				
Reinforcement	Height	$H$	Not limited	For $S \leq 12$ mm, 2 mm For $12 < S \leq 25$ mm, 3 mm For $S > 25$ mm, 4 mm
Undersize-intermittent (see Note 6)	Leg length	—	$S/5$ , but not more than 4 mm	$S/10$ , but not more than 3 mm
Other surface imperfections	—	—	As for butt welds	
Loss of cross-sectional area (see Note 5)	Loss of area	—	As for butt welds	