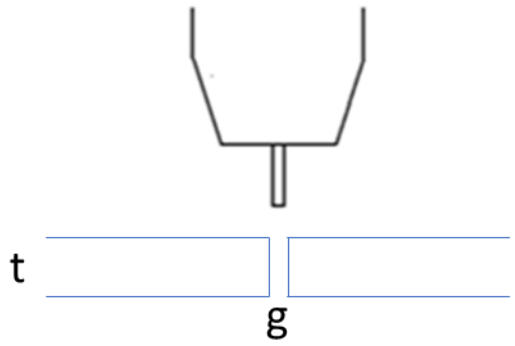
The test weld, that is closest to the selected simulation, is this *Single pass square butt joint in 3 mm sheet thickness*

Base material	Thickness mm	Joint	Joint preparation	Welding process	Filler metal	Shielding gas	Backing gas
DX 2304 EN 1.4362	3	I	2 mm gap	GMAW (MAG)	22 9 3 NL Solid wire Ø1.0 mm	MISON 2 He*	Formier 10

*MISON 2 He (Ar+30%He+2%CO_2+0.03%NO), Formier 10 (N_2+10%H_2)

Joint preparation

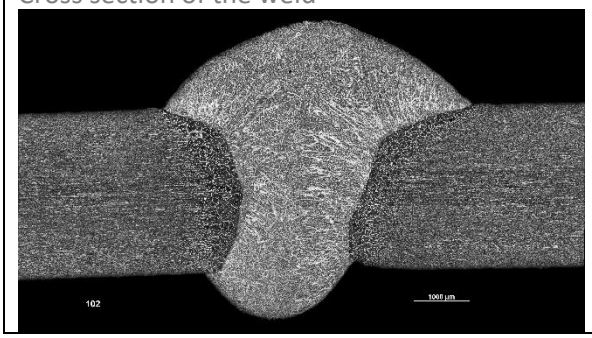


Sheet thickness (t) was 3 mm. Root gap (g) was 2 mm.

The test weld was intended as a complete single pass weld.
Welding position PA.

Welding current A	Voltage V	Heat input kJ/mm	Wire feed speed m/min	Welding speed cm/min	Number of passes
82	16.4	0.27	3.6	24	1

Cross section of the weld



Measured ferrite fraction in the weld (the rest is assumed to be austenite), and the ferrite fraction more in detail in different regions of the weld, are shown in the table below. The fraction is measured using image analysis.

The ferrite fraction is an average value based on several measurements using image analysis in each location and the standard deviation in average values were around 5%.

Heat input kJ/mm	Weld	Top of the weld	Middle of the weld	Bottom of the weld
0.27	42%	41%	43%	43%

Measured ferrite fraction in the HAZ	
Very close to the fusion line	72%
About 0.4 mm from the fusion line	66%

Nitrides and sigma phase were not analysed in this weld.