



## PW Weld Test Tool

In order to test spot weld integrity, the welds must be pulled apart. Weld nugget diameter can then be measured and this can be used to determine the tensile strength of the spot.

How do you check your spot welds? With this tool from PW, sample welds on material up to 3mm thick can be effectively peel tested. This tool applies the force slowly, simulating a tensile test, and gives a measurable nugget diameter.

The PW peel test tool is made from solid steel bar and plated to prevent corrosion.  
PW part number : PW-88



## Calculation of weld strength

The weld strength depends on weld size and steel strength. Typical minimum values for single spot specimens of low carbon steel, tested in shear, are given below. For steels of higher strength, use the following :  $P_s = 2,6t \times d \times P_{TS}$  where :-

$P_s$  is the shear strength of the weld in N  
 $t$  is the sheet thickness in mm  
 $d$  is the weld diameter in mm  
 $P_{TS}$  is the tensile strength of the steel in  $N/mm^2$

For unequal thicknesses, the shear strength may be taken as  $P_s = 2,7 \times \sqrt{t} \times dP_y$  where

$P_y$  in  $N/mm^2$  is the design strength of the thinner sheet material  
 $t$  is the thickness of the thinner sheet.

Typical minimum weld strength values (shear to failure) for low carbon steel of 280 N/mm <sup>2</sup> minimum yield strength.				
Sheet thickness mm	Nominal $4\sqrt{t}$ weld size		Nominal $5\sqrt{t}$ weld size	
	Weld diameter mm	Weld strength kN	Weld diameter mm	Weld strength kN
0,6	3,1	1,6	3,9	2,0
0,8	3,6	3,0	4,5	3,6
1,0	4,0	3,7	5,0	4,3
1,2	4,4	4,6	5,5	5,4
1,6	5,1	6,0	6,3	7,4
2,0	5,7	8,4	7,1	10,8
2,5	6,3	11,8	7,9	14,5
3,0	6,9	14,0	8,7	17,8

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