



# Procedure Qualification Records (PQR)

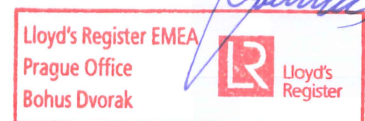
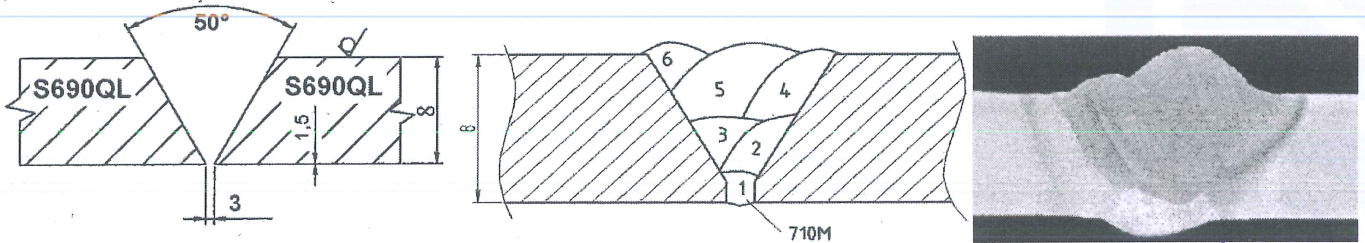
## AWS D1.1/D1.1M

Identification	<b>pWPS No. Prototyp 1</b>	<b>Note: The welding qualification is valid for thickness from 8 mm to 16 mm only.</b>	
Revision	<b>A</b>	Date	<b>24 April 2013</b> by <b>Mr. Zdenek SERBOUSEK</b>
Authorised by	<b>Bohus DVORAK</b>	Date	<b>12 February 2014</b>
Type	Manual <input type="checkbox"/> Machine <input type="checkbox"/> Semi-Automatic <input checked="" type="checkbox"/> Automatic <input type="checkbox"/>		
Company Name	<b>C.V. PROTOTYP s.r.o.</b>		
Welding Process(es)	<b>FCAW</b>		
WPS No.	<b>Prototyp 1 Rev. A</b>		

Joint Design Used	Position	
Type: <b>SINGLE-V-GROOVE (2)</b>	Position of Groove: <b>H / 2G</b>	Fillet: -
Single <input checked="" type="checkbox"/> Double Weld <input type="checkbox"/>	Vertical Progression: Up <input type="checkbox"/> Down <input type="checkbox"/>	
Backing: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Electrical Characteristics	
Backing Material: -	Transfer Mode (GMAW): Short-circuiting <input type="checkbox"/> Globular <input checked="" type="checkbox"/> Spray <input checked="" type="checkbox"/>	
Root Opening: <b>3 mm</b>	Root Face Dimension: <b>1,5 mm</b>	Current: AC <input type="checkbox"/> DCEP <input checked="" type="checkbox"/> DCEN <input type="checkbox"/> Pulsed <input type="checkbox"/>
Groove Angle: <b>50 deg.</b>	Radius (J-U): -	Power Source: CC <input type="checkbox"/> CV <input checked="" type="checkbox"/>
Back Gouging: Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Method: -	Other: -	Tungsten Electrode (GTAW): Size: - Type: -

Base Metals	Technique	
Material Spec: <b>EN10025-6</b>	Stinger or Weave Bead: <b>STINGER</b>	
Type or Grade: <b>S690QL (min. 690 MPa Yield Point Strength)</b>	Multi-pass or Single Pass (per side): <b>MULTI-PASS</b>	
Thickness: Groove <b>8 mm</b> Fillet -	Number of Electrodes: <b>1</b>	
Diameter (Pipe): -	Electrode Spacing: Longitudinal - Lateral - Angle -	
Filler Metals	Contact Tube to Work Distance: <b>17-22 mm</b>	
AWS Specification: <b>Root: A-5.18 / Fill: A-5.29</b>	Peening: -	
AWS Classification: <b>Root: E70 C-6M / Fill: E 110 T5-K4</b>	Interpass Cleaning: <b>GRINDING, BRUSHING</b>	
Shielding	Postweld Heat Treatment	
Flux: - Gas: <b>ISO 14175 - M24</b> Composition: <b>Ar-CO2-O2</b>	Temp.: -	
Electro-Flux (Class): - Flow Rate: <b>16-18 litre/min</b> Gas Cup Size: <b>16 mm</b>	Time: -	
Preheat		
Preheat Temp., Min: <b>20°C</b>		
Interpass Temp., - Max: <b>118°C</b>		

### Joint Details



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**Welding Procedure**

Pass or Weld Layer(s)	Process	Filler Metals		Type & Polarity	Current		Volts	Travel Speed
		Class	Diam.		Amps or Wire Feed Speed			
1	FCAW	A-5.18	1,0	DCEP	130	19,0	134	
2	FCAW	A-5.29	1,2	DCEP	173	19,5	298	
3	FCAW	A-5.29	1,2	DCEP	212	20,0	326	
4	FCAW	A-5.29	1,2	DCEP	176	19,5	288	
5	FCAW	A-5.29	1,2	DCEP	180	19,0	382	
6	FCAW	A-5.29	1,2	DCEP	186	20,0	414	
(*)		[ AWS ]	[ mm ]	[ reverse ]	[ A ]	[ V ]	[ mm/min ]	

**Procedure Qualification Record (PQR) / (\*) Next - see Welding Procedure Qualification Record**

**Test Results**

**TENSILE TEST**

Specimen No.	Width	Thickness	Area	Ultimate Tensile Load	Ultimate Unit Stress	Character of Failure and Location
T1	19,0	7,9	150,1	123	819	HAZ
T2	19,0	7,9	150,1	119	793	HAZ
-	[ mm ]	[ mm ]	[ mm2 ]	[ kN ]	[ MPa ]	-

**GUIDED BEND TEST**

Specimen No.	Type of Bend	Result	Remarks
BT1	Face	Acceptable	Bend angle = 180°, Former Diameter = 63,5 mm
BT2	Face	Acceptable	Bend angle = 180°, Former Diameter = 63,5 mm
BT3	Root	Acceptable	Bend angle = 180°, Former Diameter = 63,5 mm
BT4	Root	Acceptable	Bend angle = 180°, Former Diameter = 63,5 mm

**Visual Inspection**

Appearance	Acceptable
Undercut	Acceptable
Piping porosity	Acceptable
Convexity	Acceptable
Test date	24 April 2013
Witnessed by	Bohus DVORAK

Radiographic-ultrasonic examination

RT report no.:	-	Result	-
UT report no.:	1312/13	Result	Acceptable

**Fillet Test Results**

Minimum size multiple pass      Maximum size Single Pass

Macroetch	Macroetch
1. -	1. -
2. -	2. -
3. -	3. -

All-weld-metal tension test

Tensile strength      -

Yield point/strength      -

Elongation %      -

Laboratory test no.      -

Welder's Name **Mr. Augustin**

ID no. -

Stamp no. **CV6**

Test Conducted by: **VITKOVICE TESTING CENTER s.r.o., Czech Rep.** Laboratory

Test number **7097P13**

Per -

We, the undersigned, certify that the statements in this record are correct and that the test welds were prepared, welded, and tested in conformance with the requirements of Section 4 of AWS D1.1/D1.1M, ( 2010) Structural Welding Code – Steel.

Signed **Zdenek SERBOUSEK**  
 Manufacturer or Contractor

Signed

**Bohus DVORAK**

Surveyor to Lloyd's Register EMEA

Title **WELDING DEPARTMENT - EWE**

Date

**12 February 2014**

Date **12 February 2014**

