

EPC: Logo		Owner / Buyer: Logo		WPS-N°		Qualified Date: xx/xx/20xx		Fabricator: Logo	
						Field / Shop Welding			
				(ASME-IX: QW-200.1) WELDING PROCEDURE SPECIFICATION (WPS)					
				QW-Code: AWS-D1.1_Section 4 (&) AWS-D19.0-72_Part 5 & 6					
				Welds Application: HDG- Steel Welding: (§4.11)_ Primary Load Joints					
Ref.		Ref.		Process: SMAW + FCAW	(§4.4) Weld position: 2G + 1G (PJP-Fillet)	Job: N°			
Fabricator address				Weldment -N°		Volumetric NDT			
PQR-N°	EOR	Compliance Spec.				MDMT: °C			
PQR-N°	EOR	Project Drawing/s				HSE - Welding Code		ANSI-Z 49.1_(2012)	

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Joint Details		AWS-D1.1-Secton 2_Part-B_ §2.8 & §2.9		(\$Table 4.2) Welding Variables + Qualification Ranges + Technical Notes/ EPC Comments									
<p>Electrode Angle Whipping 30° 8 mm 1.6 mm (max) Gap space PJP-Joint Weld-side = A & B a = Fillet Leg-length a = 0.707 x t_n HDG Surface HDG T (Bare-metal)</p>		<p>WELDER Instruction: (a) Electrode angle shall be kept to 30° projected side-on to the work piece. (b) Use a short Arc & Whipping the electrode or torch back and forth will promote volatilization of zinc in front of the weld pool ... i.e. pushing the zinc away from weld crater, and to prevent under-cut formation. Your travel speed will need to be reduced to about 20 to 30% lower than for non-zinc steels; -- this allows the zinc to dispel from the weld crater. (c) Clean the weld area with a wire brush after each pass, -then blow off the zinc-dust --- a bicycle pump would be handy. (d) Pay attention to the weld-crater -- so to fill in the undercuts as they appear on the weld pool edges. WELDER Limits & Safety: (1) Weaving technique is NOT allowed. (2) Use a 3M-N95_Half-mask respirator at all time during welding on or near galvanize surfaces. (3) Use vacuum fume extractors out. (4) Take regular breaks, drink plenty of water or milk during welding.</p> <p>NCPfirst_X-Form_PDF example</p>											
Remarks		Travel speed in the Welding Parameters table shall be reduced by 30%, to eliminate undercuts, porosity, cracks & spatter											
WPS_QW-Test		AWS-D1.1_Para. 4.12.2)_ Figuer: 4.19 Fillet Weld Soundness Test - (In conformity with EN 9015-1)											
Surface Condition		Hot Dip Galvanize		Mill Scale Removal		Zinc Clearance Near weld area = 5 to 10 mm (Welder's option)							
Weldment Service		Non-building Structure		API 1104: Clause 5.3.2.10: Lay Hot-pass immediately after root pass									
Weldment Manipulation:		Static / Turn Table / Rollers / Lifting Gantry		Lifting Gantry		(\$4.9) Visual Quality Level: Class 1							
(\$B-422) Base Metal		Carbon Steel		Grade: EN: S355J2-N + S355J2-M		Type: Structural Steel							
Safety Factor (S _r) N°		NR		Weld Reinforcement (mm) = Leg-length x S _r =		NR							
Weld Profile		Convex											
Groove Angle x° ±5°		Radius R ₁		Fillet Leg (mm): a = 0.707 x T _n =		(\$O-403.2) Metal Thk. Range (mm) 2T =							
Groove Angle y° ±5°		Radius R ₂		Fillet Throat (mm) = 0.7 x Leg =		(\$5.15) Joint Preparation: Flame cutting + bevel finished by angle grinder							
Misalignments Tolerance (mm)		(\$4.10) & (\$4.1) Welding Progression		Flat-forehand		(\$O-410.6) Back Gouging Method: No							
Metal Designator		ISO-15608: Group 1		EOR: Sub-group. 1.1		Welded to: Sub-group. 1.2							
(\$3.5: T-3.2 / \$5.6) Preheat (For)		Heating Mode		Heating Temp. °C (Mini. - Maxi)		Soak-time (min)							
(\$3.14) / (\$5.8 / T-5.3) SR/PWHT		Heating Rate: °C / min		Hold: °C		Soak-time (min)							
Heat Pads Type		Thermocouple Brand & Type		Thermocouple Locations: 1T/C, 2T/C, 3T/C, 4T/C									
(\$2.11) Tacking Method		(\$5.14) Tack-length (mm)		Tack-spacing (mm)		(\$3.7.1) Vertical-up / Under-cut Repair: Vertical down							
(\$5.10 & \$5.31) Root Backing - Insert/Retainer/Tabs/Ends		(\$5.30) Inter-pass cleaning & Dressing		Slag-chipper, Wire-brush, Grinding, Compress Air-gun									
(\$O-404.23) Product Form (SMAW)		Batch-N°		(\$O-404.12) Filler Type: Basic Electrode		Brand							
(\$O-404.23) Product Form (SMAW)		Batch-N°		(\$O-404.12) Filler Type: Basic Electrode		Brand							
(\$O-404.23) Product Form (FCAW)		Outershield-71E-H		Batch-N°		(\$O-404.12) Flux Type: Cored Wire (Tubular)							
(\$A5.32) Shielding Gas (GTAW)		(\$3.7.4) Shielding Gas (FCAW)		82%Argon, 18% CO2		Purging Gas							
(\$O-256) GTAW		Manual		(\$O-253) SMAW		Manual							
				(\$O-255) FCAW / MCAW		Semi - Automatic							
				(\$O-254) SAW		Fully - Automatic							
<p>(QW-250 thru. 280) MULTI-PROCESS PROCEDURE (QW-200.4 & QW-451.1) «AND» RECORDED **WELDING PARAMETERS** (QW-409)</p>													
QW-403 Bead N°	§ 3.2 & 4.7.1 Process	QW-404 AWS-Filler Spec. & Class	QW-404 Filler Size mm	QW-409 Amps	QW-409 Volts	QW-409 Travel Speed mm/min	QW-409 Wire Feed inch/min	Cup Size mm	QW-408 Shield Gas Lt/min	QW-410.8 CTWD mm	QW-409 Heat Input kJ/mm	Joint Side A & B	(QW- 410.1) (462.12 /13) Weld Bead Technique
1 10 -	SMAW	A5.1_70F3	2.5							Short Arc		A	Whipping (B+F)
2 10 3	SMAW	A5.1_7016	3.25							Short Arc		A & B	Whipping (B+F)
4 10 n	FCAW	A5.20_E71T-1M-H8	1.2							5		A & B	Whipping-Circle Bead
- 10 -													
N°	E°	E°	N°	S° E°	S°	N°	S°	E°	E°	S°	N°	N°	S°+ (QW-409.1(b2))
(\$O-409) Current & Polarity: GTAW		DCRP (+)		(\$O-409) Current & Polarity: SAW / SMAW		DCSP (-)		(\$O-409) Current & Polarity: FCAW/MCAW		DCSP (-)			
(\$O-406.8) Max. Inter-pass Thk. Range (mm)		GTAW =		& SMAW =		& FCAW =		(403.2) Max. Inter-pass °C					
FCAW / MCAW-Metal Transfer: Full or Semi Spray		Full Spray		GTAW Tungsten Type				(403.2) Min. Inter-pass °C					
MIG / STT-Metal Transfer: Globular, Short-Circuit, Semi Spray				(AWS-D1.1_§ 5.27) Peening by: Hammer, Metal-shots, Peening-gun									
Filler Metal _F-N°		Base Metal _A-N°		(AWS-D1.1_§C-8.4.1) Fatigue-dressing Method: TIG, UP Burr-grinding,									
(AWS-D1.1_§5.3.2.4) Electrode Manufacturer Recommended Re-drying Temp: °C				Electrode Manufacturer Recommended Re-drying Soak time (min)									
Acceptance Criterion		AWS-D1.1_Table 6.1 + (4.9.1.1/2) Inspection of CJP + Fillet Welds & (EN ISO 5817-Part B)		Heat Input: → kJ/mm = (Amps x Volts x 60) ÷ TS (where: TS = Travel Speed x 1000)									
Project Specific Note													
Acronym		CHM =Continued Heat & Maintaining, S _r =Safety Factor, t° =Variables), UP =Ultrasonic Peening, CTWD =Contact-To-Work-Distance, β =AWS-D19.0-72, QW =ASME-IX, § =D1.1-Clause, SR =Stress Relief, B+F=Back & Forth,											

Declaration		We declare that this WPS qualification Test coupon was welded & mechanical tested in the presence of the nominated Third Party/s duly signed & stamped herein					
Rev	Prepared by: (Welding Engineer)	Approved by: (QA / Manager)	AWS Accreditation		Welding Engineer (Stamp)	Third Party Inspection Agency (Stamp)	Third Party Inspection Agency (Stamp)
			N°	XXXXXXX			