
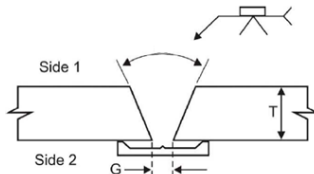
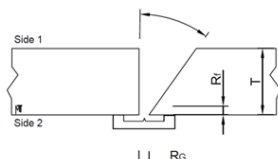

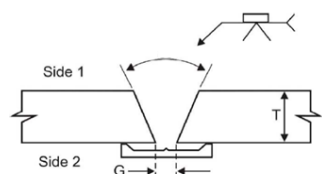
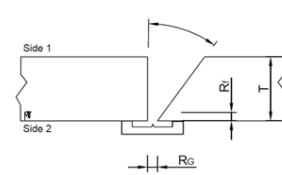


POLAR POCKET WPDS					Pocket-POLAR-02		0	April 17, 2025									
					WPDS No.		Rev.	Date									
<div> Seaspan Vancouver Shipyards Co. Ltd.</div>							Applicable Standard(s)		Lloyds Register - Rules for the Manufacture, Testing and Certification of Materials 2022								
Process/Mode		Electrode (Wire) Classification			Brand Name(s)		Manufacturer(s)										
1	FCAW/Semi-Auto(Hand)	AWS A5.20 E71T-1C/9C-J-H4 LR Grade: 4Y40S			Dual Shield Prime 71 LT H4/C1		ESAB										
Material Designation	Base material 1		Base material 2		Min. Preheat / Interpass Temp.	50°C for root and hot pass, fill/cap as per VSY Preheat and Interpass/Temperature Requirements for Welding											
	EH 36 and all lower grades excluding A,B, D and E (Note 5)		EH 36 and all lower grades excluding A,B, D and E (Note 5)														
Delivery Condition(s)	All except QT		All except QT		Max. Interpass Temp.	180°C											
Thickness or Dia	3 to 100 mm		3 to 100 mm														
Nominal Pipe Size	500mm and above		500mm and above		PWHT	N/A											
Welding Position	* All positions excluding Vertical down * Ceramic Backing: 1G, 2G and 3G-up ONLY.				Joint Design	Butt single Bevel/Vee											
Groove angle = 40-70° Root face for ceramic= 0-1mm Root gap for ceramic= Target 4-7mm (max 1.5xT or 11mm, whichever smaller, is acceptable)																	
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TYPICAL JOINT PREPARATION																	
COMPLETE JOINT PENETRATION			Welding Layer	JOINT TYPE	Back Purge	N/A		Contact Tip to Work Distance	9.5-20 mm								
<input type="checkbox"/> Back-gouged to sound metal			multi-layer	<input checked="" type="checkbox"/> BUTT	Backing type	Ceramic/Steel		Interpass Cleaning	Grinding and Wire Wheel								
<input checked="" type="checkbox"/> Welded onto backing			One/Two side	<input checked="" type="checkbox"/> CORNER	Welding Technique	Stringer/Slight Weave											
<input type="checkbox"/> Welded from one side without backing			Gun travel angle	<input checked="" type="checkbox"/> LAP	Max. Bead Width	18mm											
<input type="checkbox"/> Welded both sides w/o back-gouging			Pull w/ slight push on V	<input checked="" type="checkbox"/> TEE	Tungsten Electrode	N/A	Ø:	Shielding Gas	100% CO2								
Method of steel preparation			Oxy fuel/Plasma cut Grinding Milling	<input checked="" type="checkbox"/> EDGE	No. of electrodes	1		Gas Flow	16-25 LPM								
									34-53 CFH								
BM Thickness, T(mm)	Layers / Passes	Position	Electrode Size (mm)	Welding Process	Power Mode	Consumable	Amperage	Voltage	WFS (IPM)	Travel Speed (mm/min)	Heat Input ¹ kJ/mm						
3 ≤ T ≤ 100	Root (Ceramic)	1G, 2G, 3G up	1.2, 1.4	FCAW (Hand)	CV/DC+	E71T-1C/9C	130 - 250	19 - 25	170 - 300	55 - 140	See Note 8						
3 ≤ T ≤ 100	Hot/Fill/Cap	All Ex. Vd.	0.9 - 1.6	FCAW (Hand)	CV/DC+	E71T-1C/9C	110 - 430	16 - 38	170 - 500	100 - 650							
Note 1: Heat Input (kJ/mm) = [V x A x 60] / [Travel Speed (mm/min) x 1000] Note 2: Amps and volts are to be set by the amp/volt meter Note 3: Grind joint and adjacent surfaces to bright metal prior to welding to remove all traces of paint, primer, scale, rust, moisture and any other contaminants. Wire brush, grinding to be used for interpass cleaning. Note 4: Travel angle = 5-10° Pull, For vertical up position/progression slight push should be used. Note 5: Welding of the normal strength hull structure steel to normal strength hull structure steel (Grade A,B,D and E) using Dual Shield Prime 71LT is subject to special agreement with Lloyds Register. Note 6: Rectangular groove ceramic tile is recommended (Gulco, KATBAK # 1G93-R) for butt joints. If round ceramic used, weld shall be followed by GTSM Note 7: For the root pass on the ceramic backing, it is recommended to use 1.2mm (0.045") wire size with max. 180 amps.																	
Note 8:		Base Metal THK (mm)		3 ≤ T < 24		24 < T ≤ 100											
		Root Heat Input (kJ/mm)		1.5 - 3.2		1.5 - 3.8											
		Hot/Fill/Cap (kJ/mm)		0.5 - 2.0		0.6 - 2.7											
									Engineer Stamp								
Reference WPS No. FC-CS-G-01 (Rev. 2)																	

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