POLAR POCKET WPDS

Pocket-POLAR-05	0	April 17, 2025
WPDS No.	Rev.	Date

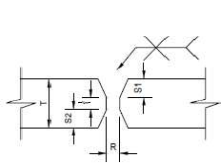
Seaspan Vancouver Shipyards Co. Ltd.

Applicable Standard(s): Lloyds Register - Rules for the Manufacture, Testing and Certification of Materials 2022

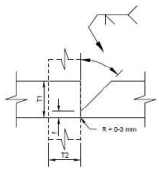
	Process/Mode	Electrode (Wire) Classification		Brand Name(s)	Manufacturer(s)
1	FCAW/Semi-Auto FCAW/Auto(Moggy)	**AWS A5.20 E71T-1C/9C-J**	**LR Grade: 4Y40S**	**Dual Shield Prime 71 LT H4**	**ESAB**

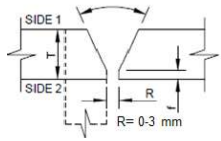
Material Designation	Base material 1	Base material 2	Min. Preheat / Interpass Temp.	50°C for root and hot pass, fill/cap to be as per VSY preheating procedure
	EH 36 and all lower grades excluding A,B, D and E (Note 5)	EH 36 and all lower grades excluding A,B, D and E (Note 5)		
Delivery Condition(s)	All except QT	All except QT		
Nominal Pipe Size	**500mm and above**	**500mm and above**	PWHT	**N/A**
Thickness or Dia	**3mm to 100 mm**	**3 mm to 100 mm**	Max. Interpass Temp.	**180°C**
Nominal Pipe Size	**500mm and above**	**500mm and above**	PWHT	**N/A**
Welding Position	**All ex. Vd**		Joint Design	**Butt single Bevel/Vee**

Groove angle = 40-70° Root Gap= 0-3mm Root face= 0-3mm



TYPICAL JOINT PREPARATION





TYPICAL JOINT PREPARATION

COMPLETE JOINT PENETRATION		JOINT TYPE					
■ **Back-gouged to sound metal**	multi-layer	■ **BUTT**	Back Purge	N/A	Contact Tip to Work Distance	9.5-20 mm	
☐ Welded onto backing	One/Two side	■ **CORNER**	Backing type	N/A			
☐ Welded from one side without backing	Gun travel angle	☐ **LAP**	Welding Technique	Stringer/Slight Weave	Interpass Cleaning	Grinding and Wire Wheel	
☐ Welded both sides w/o back-gouging	Pull w/ slight push on Vu	☐ **TEE**	Max. Bead Width	18mm	Shielding Gas	100% CO2	
Method of steel preparation	Oxy fuel/Plasma cut | Grinding | Milling	☐ **EDGE**	Tungsten Electrode	N/A Ø:	Gas Flow	16-25 LPM	
			No. of electrodes	1		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	All Ex. Vd.	1.2,1.4	FCAW Hand	CV DC+	AWS A5.20: E71T-1C/9C	130 - 250	19 - 25	170 - 300	55 - 140	**See Note 6**
3 ≤ T ≤ 100	All	All Ex. Vd.	0.9-1.6	FCAW **Moggy**	CV DC+	AWS A5.20: E71T-1C/9C	110 - 420	16-38	190-500	110 - 750	

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:

Base Metal THK (mm)	**3 ≤ T < 24**	**24 < T ≤ 100**
Root Heat Input (kJ/mm) Hand	1 .5 - 3.2	1.5 - 3.8
Hot/Fill/Cap (kJ/mm) Moggy	0.5 - 2.1	0.5 - 2.7

			Engineer Stamp
Bug-O Weave Setting	Dwell(L&R): 0-1.0	Weave width: 0-18	Vancouver Shipyards Co. Ltd. #1002295 PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA Dr. P. BABAGHORBANI # 43695 2025-04-17
	Weave No.: #1 for 2G position #1 and #3 for other positions	Weave speed: 0-50	
Reference WPS No.	FC-CS-G-01 (Rev. 2)		