



VISHAL ENTERPRISE & VRISHAL ENGINEERING PVT.LTD. GROUP OF COMPANIES

WELDING PROCEDURE SPECIFICATION (As per AWS D1.1)

WELDING PROCEDURE SPEC. NO. : VEPL/WPS/02		REV NO. 01	DATE : 28.07.2022
SUPPORTING PQR NO.: VEPL/PQR/02		REV NO. 00	DATE : 12.02.2019
WELDING PROCESS: FCAW			TYPE: SEMI-AUTOMATIC
JOINT DESIGN			
GROOVE DESIGN	AS PER FIGURE		
BACKING	NO ROOT / YES FOR REST		
BACKING MATERIAL	BASE / WELD METAL		
ROOT SPACING	3 - 4 mm		
ROOT FACE	1-2 mm		
GROOVE ANGLE	AS PER FIGURE		
BASE METALS			
MATERIAL SPEC.	A516 Gr70/60, A573 Gr.70, A283 Gr.C, A106 Gr.B, A105, A53Gr B, IS2062 E350 / 250 or Equivalent		
TEST PLATE THICKNESS	20 mm		
QUALIFIED THICKNESS	3 mm to 40 mm		
FILLET	Any		
FILLER METALS		POSITION	
AWS SPECIFICATIONS	SFA 5.20	QUALIFIED POSITION FOR GROOVE	
AWS CLASSIFICATION	E 71T-1C	VERTICAL PROGRESSION	
POST WELD HEAT TREATMENT		PREHEAT/INTERPASS TEMPERATURE (AS PER TABLE 3.2 OF AWS D1.1)	
NA		THICKNESS	≤ 38 >38 to 50
SHIELDING		PREHEAT TEMPERATURE	21°C 65°C
TYPE OF GAS	CO ₂	INTERPASS TEMPERATURE	250°C
COMPOSITION	100%	TECHNIQUE	
FLOW RATE (LPM)	20-35	STRING OR WEAWE BEAD	STRING / WEAWE
GAS CUP SIZE	12-20 mm	MULTIPASS OR SINGLE PASS	MULTIPASS
ELECTRICAL CHARACTERISTICS		NUMBER OF ELECTRODE	SINGLE
TRANSFER MODE(GMAW)	NA	CONTACT TUBE TO WORK DISTANCE	10-25 mm
SHORT CIRCUITING	NA	PEENING	NO
CURRENT	DC	INTERPASS CLEANING	GRIND / WIRE BRUSH
POLARITY	DCEP	TACK WELD TECHNIQUE	SAME AS WITH ROOT PASS
OTHER	NA	TACK LENGTH	REFER NOTE 1
PASS OR WELD LAYER	WELDING PROCESS	FILLER METALS	CURRENT
		CLASS	DIA. mm
		TYPE OF POLARITY	AMPS
			VOLTS (V)
			ELECTRODE RUNOUT LENGTH MINIMUM (mm)
			TRAVEL SPEED mm/min (Min.)
			HEAT INPUT kJ / mm (Min. - Max.)
ROOT PASS	FCAW	E71T-1C	1.20
HOT PASS	FCAW	E71T-1C	1.20
REST	FCAW	E71T-1C	1.20

NOTE :
 1) 100 mm OR 4 times the thickness whichever is less, with a min. throat size of 6mm - 2 Pass maximum
 2) Pre-heating shall be strictly followed for tacking also
 3) Weaving should not exceed 2.5 times of electrode

PREPARED BY		APPROVED BY	
NAME		NAME	
SIGNATURE		SIGNATURE	
DATE		DATE	

