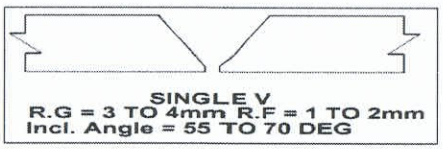
VISHAL ENTERPRISE & VRISHAL ENGINEERING PRIVATE LIMITED
GROUP OF COMPANIES

WELDING PROCEDURE SPECIFICATION (As per AWS D1.1)

WELDING PROCEDURE SPEC. NO. : VEPL/WPS/15	REV NO. 00	DATE : 12.04.2024
SUPPORTING PQR NO.: VEPL/PQR/15	REV NO. 00	DATE : 11.04.2024
WELDING PROCESS: SMAW + FCAW	TYPE: MANUAL + SEMI-AUTOMATIC	

JOINT DESIGN	
GROOVE DESIGN	AS PER FIGURE / AS PER THE APPROVED DRAWINGS
BACKING	NO FOR ROOT / YES FOR REST
BACKING MATERIAL	BASE / WELD METAL
ROOT SPACING	3 - 4 mm
ROOT FACE	1-2 mm
GROOVE ANGLE	AS PER FIGURE

POSITION	
TEST PLATE POSITION	2G,3G & 4G
QUALIFIED POSITION FOR GROOVE	ALL
VERTICAL PROGRESSION	UPHILL



BASE METALS	
MATERIAL SPEC. & GROUP	IS2062 E350 Gr.C / E250 Gr.B0/BR/A, or Equivalent (Group -II to II)
TEST PLATE THICKNESS	32 mm
QUALIFIED THICKNESS	3 mm to Unlimited
FILLET	Any

PREHEAT/INTERPASS TEMPERATURE (As per table 5.8 of AWS D1.1)		
THICKNESS (mm)	PREHEAT TEMPERATURE	INTERPASS TEMPERATURE
≤ 20	10°C	250°C
>20 to 38	65°C	250°C
>38	150°C	250°C

PREHEAT METHOD

PREHEAT SHALL BE CHECKED WITHIN 75mm FROM EACH SIDE OF THE WELD AND THROUGH OUT THE WALL THICKNESS

FILLER METALS	
AWS SPECIFICATIONS	SMAW:SFA 5.1 , FCAW: SFA 5.20
AWS CLASSFICATION	E-7018 & E-71T-1C

POST WELD HEAT TREATMENT	
METHOD OF PWHT	NA
SOAKING TEMP. (°C)	NA
SOACKING PERIOD (Minutes)	NA
OTHERS	NA

SHIELDING GAS		
WELD PROCESS	SMAW	FCAW
TYPE OF GAS	NA	CO_2
COMPOSITION	NA	100%
FLOW RATE (LPM)	NA	10 - 20

ELECTRICAL CHARACTERISTICS		
TRANSFER MODE	NA	
SHORT CIRCUITING	NA	
WELD PROCESS	SMAW	FCAW
CURRENT	DC	DC
POLARITY	EP	EP
OTHER	NA	

TECHNIQUE		
WELD PROCESS	SMAW	FCAW
STRING OR WEAVE BEAD (Note 3)	STRING / WEAVING	STRING / WEAVING
MULTIPASS OR SINGLE PASS	MULTIPASS	MULTIPASS
NUMBER OF ELECTRODE / FILLER	SINGLE	SINGLE
CONTACT TUBE TO WORK DISTANCE	NA	15-25 mm
PEENING	NO	NO
FLUX DETAILS	NA	NA
INITIAL / INTERPASS CLEANING	GRINDING / WIRE BRUSHING	
TACK WELD TECHNIQUE	SAME AS WITH ROOT PASS (Note 2)	
TACK LENGTH	REFER NOTE 1	

PASS or WELD LAYER(s)	WELDING PROCESS	FILLER METALS		CURRENT & POLARITY	AMPS (A)	VOLTS (V)	ELECTRODE RUNOUT LENGTH MINIMUM (mm)	TRAVEL SPEED (mm/min)	HEAT INPUT (kJ/mm) Max.
		CLASS	DIA. (mm)						
ROOT	SMAW	E-7018	2.5 / 3.15	DCEP	65-125	21-28	50	60 - 190	3.5
HOT PASS	SMAW	E-7018	2.5 / 3.15 / 4.00	DCEP	65-125	21-28	50	60 - 190	3.5
FILL-UP	FCAW	E-71T-1C	1.20	DCEP	140-275	25-31	50	100-250	2.1
CAPPING	FCAW	E-71T-1C	1.20	DCEP	140-275	25-31	50	100-250	2.1

NOTE :
1. 50 mm OR 4 times the thickness whichever is less, with a min. throat size of 6mm - 2 Pass maximum
2. The Inter pass Temperature shall be measured on the welding pass. In case if it is not possible, it shall be nearest possible.
3. This WPS can be used for Repair also and Repair welding shall be done as per the approved procedure.
4. WEP cleaning shall be done just before the start of welding.
5. This WPS is applicable for V-GROOVE, DOUBLE V GROOVE, SINGLE BEVEL, DOUBLE BEVEL, FILLET & Their Combination.

	PREPARED BY	APPROVED BY
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SIGNATURE	12/04/24	
DATE	12.04.2024	12.04.2024