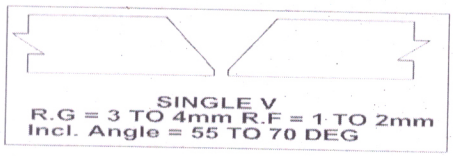
VISHAL ENTERPRISE & VRISHAL ENGINEERING PRIVATE LIMITED
GROUP OF COMPANIES

WELDING PROCEDURE SPECIFICATION (As per AWS D1.1)

WELDING PROCEDURE SPEC. NO. : VEPL/WPS/10	REV NO. 00	DATE : 29.11.2022
SUPPORTING PQR NO.: VEPL/PQR/10	REV NO. 00	DATE : 29.11.2022
WELDING PROCESS: GTAW + SMAW	TYPE: MANUAL + MANUAL	

JOINT DESIGN	
GROOVE DESIGN	AS PER FIGURE (For PQR : Single V)
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	6G
QUALIFIED POSITION FOR GROOVE	ALL
VERTICAL PROGRESSION	UPHILL



BASE METALS	
MATERIAL SPEC. & GROUP	SA 106 GR.B, or Equivalent (Group -I to I)
TEST PLATE THICKNESS	12.7 mm
QUALIFIED THICKNESS	5 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

FILLER METALS	
AWS SPECIFICATIONS	GTAW:SFA 5.18 , SMAW: SFA 5.1
AWS CLASSFICATION	ER 70S-2 & E 7018

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

SHIELDING GAS		
WELD PROCESS	GTAW	SMAW
TYPE OF GAS	ARGON	NA
COMPOSITION	99.998%	NA
FLOW RATE (LPM)	5-15	NA

ELECTRICAL CHARACTERISTICS		
TRANSFER MODE(GMAW)	NA	
SHORT CIRCUITING	NA	
WELD PROCESS	GTAW	SMAW
CURRENT	DC	DC
POLARITY	EN	EP
OTHER	NA	

TECHNIQUE		
WELD PROCESS	GTAW	SMAW
STRING OR WEAVE BEAD (Note 3)	STRING / WEAVING	STRING / WEAVING
MULTIPASS OR SINGLE PASS	MULTIPASS	MULTIPASS
NUMBER OF ELECTRODE	SINGLE	SINGLE
CONTACT TUBE TO WORK DISTANCE	NA	NA
PEENING	NO	NO
FLUX DETAILS	NA	FLUX COVERED
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	VOLTS	TRAVEL SPEED (mm/min)	HEAT INPUT (kJ/mm) Max.
		CLASS	DIA. (mm)					
ROOT PASS	GTAW	ER 70S-2	1.6 / 2.4	DCEN	80-120	11-16	60-90	2.5
HOT PASS	GTAW	ER 70S-2	1.6 / 2.4	DCEN	80-160	11-16	72-140	2.5
FILLUP PASSES	SMAW	E 7018	2.5 / '3.15 / 4.00	DCEP	70-110	22-28	80-120	2.5
CAPPING PASSES	SMAW	E 7018	3.15 / 4.00	DCEP	90-130	22-28	100-130	2.5

NOTE :
1) 50 mm OR 4 times the thickness whichever is less.
2) Pre-heating shall be strictly followed for tacking also
3) Weaving should not exceed 2.5 times of electrode

	PREPARED BY	APPROVED BY
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SIGNATURE	Y Bairagi	
DATE	29.11.2022	29.11.2022

VISHAL ENTERPRISE QA/QC