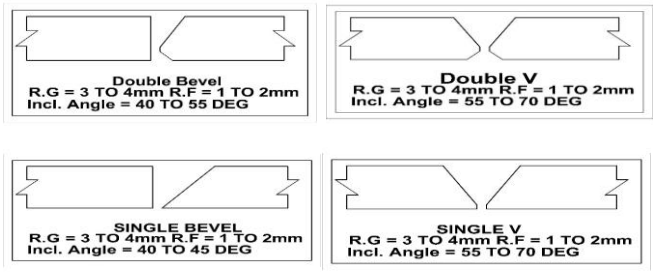
VISHAL ENTERPRISE & VRISHAL ENGINEERING PRIVATE LIMITED
GROUP OF COMPANIES

WELDING PROCEDURE SPECIFICATION (WPS) (As per AWS D1.1)

WELDING PROCEDURE SPEC. NO. : VEPL/WPS/016	**REV NO. 00**	**DATE : 07-02-2025**
SUPPORTING PQR NO.: VEPL/PQR/016	**REV NO. 00**	**DATE : 07-02-2025**

WELDING PROCESS: SMAW + SAW	**TYPE: MANUAL + SEMI AUTOMATIC**

WELD DESIGN : TYPICAL / AS PER APPROVED DRAWING



JOINT DESIGN		**POSITION**	
GROOVE DESIGN	AS PER AFC DRAWING / TYPICAL	**TEST PLATE POSITION**	1G (SMAW) & 1G (SAW)
BACKING	NO FOR ROOT / YES FOR REST		
BACKING MATERIAL	BASE / WELD METAL	**QUALIFIED POSITION FOR GROOVE**	1G (SMAW) & 1G (SAW)
ROOT SPACING	3 - 4 mm		
ROOT FACE	1-2 mm	**VERTICAL PROGRESSION**	NA
GROOVE ANGLE	AS PER AFC DRAWING / TYPICAL		

BASE METALS		**PREHEAT/INTERPASS TEMPERATURE (As per table 5.8 of AWS D1.1)**			**PREHEAT METHOD**		
					PREHEAT SHALL BE CHECKED WITHIN 75mm FROM EACH SIDE OF THE WELD AND		
MATERIAL SPEC. & GROUP	IS2062 E350 GR.BR, or Equivalent	**THICKNESS (mm)**	**PREHEAT TEMPERATURE**	**INTERPASS TEMPERATURE**	**SHIELDING GAS**		
		3 to 20	Ambient	250°C	**WELD PROCESS**	SMAW	SAW
TEST PLATE THICKNESS	30 mm	>20 to 38	65°C	250°C	**TYPE OF GAS**	NA	NA
QUALIFIED THICKNESS	3 mm to Unlimited	>38 to 65	110°C	250°C	**COMPOSITION**	NA	NA
FILLET	Any	>65	150°C	250°C	**FLOW RATE (LPM)**	NA	NA

FILLER METALS	**AWS SPECIFICATIONS**	**AWS CLASSFICATION**	**POST WELD HEAT TREATMENT**	**METHOD OF PWHT**	**SOAKING TEMP. (°C)**	**SOACKING PERIOD (Minutes)**
	SMAW:SFA 5.1 , SAW: SFA 5.17	E 7018 & F7A5 + EM12K		**NA**	NA	NA

ELECTRICAL CHARACTERISTICS			**TECHNIQUE**		
			WELD PROCESS	SMAW	SAW
TRANSFER MODE(GMAW)	NA		**STRING OR WEAVE BEAD (Note 3)**	STRING / WEAVING	STRINGER
			MULTIPASS OR SINGLE PASS	MULTIPASS	MULTIPASS
SHORT CIRCUITING	NA		**NUMBER OF ELECTRODE**	SINGLE	SINGLE
WELD PROCESS	SMAW	SAW	**CONTACT TUBE TO WORK DISTANCE**	NA	20-35
CURRENT	DC	DC	**PEENING**	NO	NO
POLARITY	EP	EP	**FLUX DETAILS**	FLUX COVERED	F7A5
OTHER	NA		**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)**
		CLASS	**DIA. (mm)**					
ROOT PASS	SMAW	E 7018	2.5	DCEP	65-95	18 - 30	70-100	0.7 - 2.44
HOT PASS	SMAW	E 7018	2.5	DCEP	85-120	20 - 30	90-120	0.85 - 2.4
FILLUP PASSES	SAW	F7A5 + EM12K	4.0	DCEP	450-540	27-33	480-580	1.25 - 2.22
CAPPING PASSES	SAW	F7A5 + EM12K	4.0	DCEP	450-480	27-30	480-580	1.8 - 2.22
AFTER BACKCHIPPING (BACKING RUN OF SMAW)								
REST	SMAW	E 7018	2.5	DCEP	65-95	20 - 30	90-120	0.65 - 1.9

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	VISHAL ENTERPRISE QA/QC	VISHAL ENTERPRISE QA/QC
DATE	**07-02-2025**	**07-02-2025**