

WELDING PROCEDURE SPECIFICATION

WPS NO.: RU 11003

PROCESS : GMAW

COMPONENT FABRICATION PLANT

BHEL, RUDRAPUR

WELDING PROCEDURE SPECIFICATION

WPS NO. :RU 11003

REV. : 00

DATE : 05.02.2000

Company Name : CFP-BHEL, RUDRAPUR

WPS NO. : RU 11003

Date : 19.04.2000

REV No. : 00

SUPPORTING PQR NO. : 03 DATE :

Welding Process : GMAW Type (s) : Manual

JOINTS :

DETAILS

JOINT DESIGN : As per approved production drawings.

BACKING : Yes

BACKING MATERIAL : Base Metal / Weld Metal

BASE METALS :

P.NO. : 21 to P.NO. : 21

Spec. type / Chemical Analysis : N.R.

TO

Spec. type / Chemical Analysis : N.R.

THICKNESS RANGE

Base Metal : Groove : 5-24 mm. Fillet : All sizes

Pipe dia. Range : Groove : All diameters Fillet : All sizes

FILLER METALS:

SFA Spec. No. : 5.10

AWS Qualification no. : E1ER 4043

Filler metal F No. : 23

Weld material Analysis A No. : N.A.

Size of filler material : Dia. 1.6 mm. for GMAW

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WELD METAL (THICKNESS RANGE)

Groove : _____ 24.00 mm. max.
Fillet : _____ All Sizes _____
Electrode flux class : _____ N.A. _____
Consumable insert : _____ N.A. _____
Others : _____ NIL _____

POSITION

Position of Groove : _____ 1 G _____
Weld Progression (Yuphill / Downhill) _____ N.A. _____
Position of Fillet : _____ 1 F _____

PREHEAT

Preheat Temp. : _____ Min. + 150 deg C _____
Interpass Temp. : _____ Max. + 230 deg C _____
Preheat Maint. : _____ IN.R. _____

POSTWELD HEAT TREATMENT

Temperature : _____ NONE _____
Time _____ NONE _____
Other _____ NIL _____

GAS**Percent Composition**

	Gas(es)	(Mixture)	Flow rate(LPM)
Shielding	_____ Argon _____	_____ Pure _____	18 - 20
Trailing	_____ N.A. _____	_____ N.A. _____	_____ N.A. _____
Backing	_____ N.A. _____	_____ N.A. _____	_____ N.A. _____

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ELECTRICAL CHARACTERISTICS

Current : ____ DC ____ Polarity : ____ RP ____

Amps. : ____ 180 TO 250 ____

Voltage range : ____ 18 TO 26 ____

Tungsten Electrode Type or Size : ____ N.A. ____

Mode of metal transfer for GMAW : ____ Spray ____

Electrode wire feed speed range : ____ 400 to 500 mm. /min. ____

Other : ____ NIL ____

TECHNIQUE

Travel Speed : ____ 200 TO 300 MM/ Min. ____

String or Wave Bead : ____ String ____

Orifice or Gas cup size : ____ Dia. 10 mm. ____

Initial Interpass cleaning : ____ Brushing with wire brush ____
(Brushing, Grinding etc.)

Method of back guaging : ____ N. A. ____

Oscillation : ____ N.A. ____

Contact tube to work distance : ____ 3 mm. Minimum .

Multipass or Single Pass (per side)) : ____ Multipass ____

Travel speed range : ____ 200 to 300 mm. /min. ____

Single or Multiple Electrode : ____ Single ____

Peening : ____ Not permitted ____

Weld Layer:	Process	Filler Metal	Current	Voltage	Travel Speed
	Class	Dia.	Type	Amp.	Range(V)

Root run	GMAW	ER4043	1.60 mm.	DCRP	180-250	18-26	200-300 mm./min.
First run	GMAW	ER4043	1.60 mm.	DCRP	180-250	18-26	200-300 mm./min.
Subsequent run							

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