DISCLAIMER

The details like name of project, name of fabricator, etc. are indicative only. These should never be referred for any WPSS related matters. Only the technical details should be referred and followed for the WPSS purpose.

Model WPSS for Railway OPEN WEB GIRDER (25t Loading)

Railway Open Web Girder (25t loading)
61.0m clear span
MODEL WPSS No- RDSO/ Infra-II/ B&S/ RG/
OWG./ WPSS 61.0 series (39 nos)

	Polarity		Reverse
	Туре	;	DC
8	Welding Current		
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. 17 & WBC - 2001 & IS 9595-2003
7.1	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Top/Bott Fing.Pit 8 8 8 8 8 8 Side Pk.
7.1	Joint design details	:	
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
6.3	Shielding Gas	:	NA .
	Drying Method	;	250°C for One hour before use or Recommendation as per Manufacturer.
	Туре	:	Agglomerated
0.2	Class	:	F1 of IRS M. 39-2001
6.2	Flux	•	NA .
	Dia Drying Method	:	4 MM NA
	Class	:	W1 of IRS M. 39/2001
6.1	Electrode/Wire		
6	Welding Consumable		
5	Welding Position	:	1F,2F
4	Welding Process	:	SAW (Submerged Arc Welding)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (16mm X 16mm)
2	Weld Joint description	:	8mm, Fillet weld (Flange Plate to Side Plate (Inside / Outside Location)
1	Drawing No.	:	RDSO/B-17182/4/R IN SECTION A - A Bottom Chord
o.u.iig	Procedure specification No.		RDSO/B-17182/R; (Section of L0 - L1 & L1 - L2) &
		:	SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA SEE/SCR/61.00m/WPSS/001
anic a	nd address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS

Page-02 Appendix-V (Ref.CI.26 of BI-2001) Welder Qualification As per IS:7310 (Part-I) - 1974 10 Welding parameters and technique : 11.1 Welding parameters as below Electrodes Wire Feed Electrical **Welding Pass** Current Arc Voltage Gas Flow Rate Travel Speed wire dia. Speed Stick out (Amps) (Volt) (I/min) (m/min) (mm) (m/min) (mm) 1 4 mm 475 - 525 27 - 32 1.2 -1.4 10 - 15 N.A. 0.45 - 0.5011.2 Welding Sequence and technique 5 THIND IN 7777777 7 *illilli* 12 Provision of run-on / run-off tabs Yes Cleaning of weld bead before laying of NA 13 next weld bead Root preparation before welding other NA side of groove welds 14 100°C -150°C 15 Preheating and inter pass temperature

Peening. NA 16 Post weld treatment NA 17 By re-welding after complete removal of defective weld as per CL.32.2 of Rectification of weld defect

IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. Test. 18 Inspection of weld Visual, D.P. Test, Macro Etching Test. 19

None.

Any other relevant detail

20

NAME OF WORK: Akola - Kandwa Section: Conversion of track from MG to BG between Khandwa - Amalkhurd stations -Proposed Re-Construction ROR (Rail Over Rail) Br No:570/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and Launching of open web through type welded steel girder of clear span 61.00m, supplying, fabrication & fixing of galvanised H-

	cation of RDSO and other protective works bet		of clear span 61.00m, supplying, fabrication & fixing of galvanised H- ks for approaches of ROR with COE, SQ2, blanketing to GE.14 n Khandwa and Mordar stations.
Name a	and address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR,AMEENPUR, SANGAREDDY-TELANGANA
Welding	Welding Procedure specification No.		SEE/SCR/61.00m/WPSS/002
1	Drawing No.	:	RDSO/B-17182/R ; (Section of L2 - L3 & L3 - L4) & RDSO/B-17182/4/R IN SECTION B - B Bottom Chord
2	Weld Joint description	٠:	8mm, Fillet weld (Side Plate to Addl Plate (Outside Location)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (20mm X 20mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position	;	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire	,	
	Class	:	W1 of IRS M. 39/2001
	Dia	:.	4 MM
	Drying Method	:	NA
6.2	Flux		
	Class	. :	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
h n	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA .
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		One pass on either side

As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. 17 & WBC - 2001 & Joint preparation

7.2 IS 9595-2003

Polarity

Welding Current 8 : DC Type

Reverse

Welder Qualification As per IS:7310 (Part-I) - 1974 Welding parameters and technique as below

11.1 Welding parameters Electrodes **Welding Pass** Wire Feed Arc Voltage Current wire dia. Speed (Amps) (Volt) (mm) (m/min) 1 4 mm 475 - 525 27 - 32 1.2 -1.4 11.2 Welding Sequence and technique

9

10

12

20

Provision of run-on / run-off tabs

Any other relevant detail

Travel Speed (m/min) 0.45 - 0.50

Gas Flow Rate Stick out (mm) 10 - 15

Electrical

(I/min) N.A.

Cleaning of weld bead before laying of NA 13 next weld bead : Root preparation before welding other NA side of groove welds 14 100°C -150°C 15 Preheating and inter pass temperature

Yes

16 Peening : NA 17 Post weld treatment : NA Rectification of weld defect Test. 18

By re-welding after complete removal of defective weld as per CL.32.2 of IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. Visual, D.P. Test, Macro Etching Test. Inspection of weld 19

None.

NAME OF WORK : Akola - Ka

of RDS	hing of open web through type welded type steel channel sleepers, Execution SO and other protective works betwee	Rail) Br No:5 1 steel girder (f track from MG to BG between Khandwa - Amalkhurd stations - 70/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and of clear span 61.00m, supplying, fabrication & fixing of galvanised H-ks for approaches of ROR with COE, SQ2, blanketing to GE.14 Specification and Mordar stations.
Name	and address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
weidir	Welding Procedure specification No.		SEE/SCR/61.00m/WPSS/003
1 2	Drawing No.	:	RDSO/B-17182/R; (Section of L2 - L3 & L3 - L4) & RDSO/B-17182/4/R IN SECTION B - B Bottom Chord
-	Weld Joint description	:	8mm, Fillet weld (Flange Plate to Side Plate (Inside / Outside Location)
3	Base Metal		IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (20mm X 20mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position		da on

1	Drawing No.	:	RDSO/B-17182/R; (Section of L2 - L3 & L3 - L4) & RDSO/B-17182/4/R IN SECTION B - B Bottom Chord
2	Weld Joint description	:	8mm, Fillet weld (Flange Plate to Side Plate (Inside / Outside Location)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (20mm X 20mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position	:	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire		
	Class		W1 of IRS M. 39/2001
	Dia	•	4 MM
	Drying Method	:	NA
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	<u></u>	100	

	Didwing No.		RDSO/B-17182/4/R IN SECTION B - B Bottom Chord
2	Weld Joint description	:	8mm, Fillet weld (Flange Plate to Side Plate (Inside / Outside Location)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (20mm X 20mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position	:	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	W1 of IRS M. 39/2001
	Dia	:	4 MM
	Drying Method	•	NA
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	::	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA ,
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Top/Bon Fing.Pit 20 Add. Pl. G20 Side Pl.
7.2	Joint preparation	;	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003

5	Welding Position	:	1F,2F
6	Welding Consumable		2.10.
6.1	Electrode/Wire		
	Class	:	W1 of IRS M. 39/2001
	Dia	:	4 MM
	Drying Method	:	NA
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA
7	Base metal preparation		Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Top/Bott Fing,Fit
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC .
	Polarity	:	Reverse

	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA ,
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Top/Bott Fing.Pit 8 Pt. 8 Pt. Gide Pt.
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC .
	Polarity	:	Reverse

_									Page-06		
9	Welder Q	ualification					Aj	ppendix-V (Ref	CI.26 of BI-2001)		
10	Welding	parameters and	l tooku!	;	As per IS:73	10 (Part-I) - 19	74				
11.1	Welding	parameters	technique	:							
		Electrodes		:	as below						
Weld	ling Pass	wire dia. (mm)	Current (Amps)	А	rc Voltage (Volt)	Wire Feed Speed	Travel Speed (m/min)	Electrical Stick out	Gas Flow Rate (I/min)		
	1	4 mm	475 - 525		27 - 32	(m/min)		(mm)	3.0		
			State and the st		27 32	1.2 -1.4	0.45 - 0.50	10 - 15	N.A.		
11.2	Welding 9	Sequence and to	echnique								
			(T)	3		3 2 2					
12	F-1000 11 200	of run-on / ru		:	Yes						
13	Cleaning next weld	of weld bead be l bead	efore laying of		NA						
14	Root prep side of gr	oaration before oove welds	welding other	:	NA .						
15	Preheatin	g and inter pas	s temperature	:	100°C -\	100°C -150°C					
16	Peening			:	NA		•				
17	Post weld	treatment		,	NA						
18	Rectificat	ion of weld defe	ect	:	By re-welding IS 9595-200 Test.	By re-welding after complete removal of defective weld as per CL.32.2 of IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. Test.					
19	Inspection	n of weld		:	Visual, D.P. 7	Γest, Macro Etc	hing Test.	Y			
20	Any other	relevant detail		:	None.		0				

NAME OF WORK: Akola - Kandwa Section: Conversion of track from MG to BG between Khandwa - Amalkhurd stations - Proposed Re-Construction ROR (Rail Over Rail) Br No:570/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and Launching of open web through type welded steel girder of clear span 61.00m, supplying, fabrication & fixing of galvanised H-Beam type steel channel sleepers, Execution of earth works for approaches of ROR with COE, SQ2, blanketing to GE.14 Specification of RDSO and other protective works between Khandwa and Mordar stations

odici pi	rotective works between Khandwa and Morda	ır sta	tions.
	nd address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
Welding	Procedure specification No.	:	SEE/SCR/61.00m/WPSS/004
1	Drawing No.	:	RDSO/B-17182/R; (Section of U1 - U2 & U2 - U3) / TOP CHORD RDSO/B-17182/5R; SECTION ON A - A
2	Weld Joint description	:	8mm, Fillet weld (Flange Plate to Side Plate (Inside/Outside Location)
3	Base Metal	:	IS:2062:2011, Gr E250B0, Fully Killed & Fully Normalized & Base metal thickness (12mm X 16mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position	:	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire	1745 4 74	
	Class	:	W1 of IRS M. 39/2001
	Dia	:	4 MM
	Drying Method	:	NA
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	: .	- NA
7	Base metal preparation		Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Bott Fing.Pit 1 Pass on either side 520 Side Pit.
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. 17 & WBC - 2001 & IS 9595-2003

DC

Reverse

:

Type

Polarity

Welding Current

8

10	Welding	parameters and	technique		no per ioni				
11.1	1.1 Wolding		teemique	\div	as below				
Weld			: as below Arc Voltage (Volt)		Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)	
	1 4 mm 475 - 525				27 - 32	1.2 -1.4	0.45 - 0.50	10 - 15	N.A.
		E CONTRACTOR OF THE PARTY OF TH							
11.2	Welding	Sequence and t	echnique	:					
					2				
12		ion of run-on / r	5 T 25 T	:	Yes				
13	next w	eld bead	before laying of	:	NA				
14		reparation before groove welds	re welding other	;	NA				*
1	5 Prehe	ating and inter p	ass temperature	١;	100°C -	1500€	The second second		
1	6 Peeni	ng		1:	NA				***************
1	7 Post v	veld treatment		١:		J:	lata waw arral af d	-6	CI 22.2
1	Rectif	fication of weld d	lefect		IS 9595-2		lete removal of de ectrode of IRS M:		
1	19 Inspe	ction of weld		1	Visual, D.	P. Test, Macro E	tching Test.		
	20 Any o	ther relevant de	etail		None.		0		

As per IS:7310 (Part-I) - 1974

Welder Qualification

	and address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
eldin	g Procedure specification No.	:	SEE/SCR/61.00m/WPSS/005
1	Drawing No.	:	RDSO/B-17182/R; (Section of U1 - U2 & U2 - U3) / TOP CHORD RDSO/B-17182/5R; SECTION ON A - A
2	Weld Joint description	:	8mm, Fillet weld (Top Plate to Side Plate (Outside Location)
3	Base Metal	. :	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (16mm X 12mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position	:	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	W1 of IRS M. 39/2001
	Dia	:	4 MM
	Drying Method	:	NA .
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA .
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality
7.1	Joint design details	: '	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)	(¥	8 12 12 12 88 8 Side Plt
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	:	Reverse

_									Page-010		
9	Welder Q	ualification		•	As per IS:73	10 (Part-I) - 19		penaix-v (Ref	.CI.26 of BI-2001)		
10	Welding parameters and technique			;	130 per 10.75	10 (1 al t-1) - 15	774				
11.1	Welding	parameters		;	as below						
Weld	ing Pass	Electrodes wire dia. (mm)	Current (Amps)		rc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)		
_	1	4 mm	475 - 525		27 - 32	1.2 -1.4	0.45 - 0.50	10 - 15	N.A.		
11.2	Welding	Sequence and t	echnique	:							
12	Provision	on of run-on / ru		:	Yes						
13	Cleaning	g of weld bead b		i i	NA NA						
14	Root pr		e welding other	:	NA			9	(60)		
15	Preheat	ing and inter pa	ass temperature		100°C -	1000					
16	Peening	3		:	NA						
17	Post we	eld treatment		:	NA Bu no wold	ing after compl	ete removal of de	fective weld	es per CL 32.2 of		
18	Rectification of weld defect			:		By re-welding after complete removal of defective weld as per CL.32.2 of IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. Test.					
19	Inspect	ion of weld		:	Visual, D.P	. Test, Macro Et	ching Test.				
20	Any oth	er relevant det	ail] :	None.		0				

NAME OF WORK: Akola - Kandwa Section: Conversion of track from MG to BG between Khandwa - Amalkhurd stations - Proposed Re-Construction ROR (Rail Over Rail) Br No:570/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and Launching of open web through type welded steel girder of clear span 61.00m, supplying, fabrication & fixing of GE.14 Specification of RDSO and other protective works between Khandwa and Mordar stations.

ame a	opecification of RDSO and other protective wor	;	M/s. SHAKTHI ENGINEERING EQUIPMENTS
elding	Procedure specification No.		SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA SEE/SCR/61.00m/WPSS/006
1	Drawing No.	·	RDSO/B-17182/R; (Section of U1 - U2 & U2 - U3) / TOP CHORD RDSO/B-17182/SR; SECTION ON A - A
2	Weld Joint description	,	8mm, Fillet weld (Top Plate to Side Plate (Inside Location)
3	Base Metal	·	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (16mm X 12mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position	:	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	W1 of IRS M. 39/2001
	Dia	:	4 MM
	Drying Method	:	NA .
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	Manufacturer.
6.3	Shielding Gas	:	NA
7	Base metal preparation	. :	Fusion faces & adjacent surface are cleaned and made free from cracks notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Side Ph. 12 1 Pass V 8 91 Top Plt.
7.2	Joint preparation	:	As per IS 4353 -1995, Cl.7, IRS B1 – 2001, Cl. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		

9	Wolder	110					Ap	pendix-V (Ref.	Cl.26 of BI-2001)
	Welding parameters and technique		: /	As per IS:73	10 (Part-I) - 19	74			
			: [ľ	
	welding	parameters		:	as below				
Weldi	Pelding Pass		Ar	c Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)	
1 4 mm 475 - 525					27 - 32	1.2 -1.4	0.45 - 0.50	10 - 15	N.A.
11.2	Walding	C							
	weiding	Sequence and t	echnique	:					
				<u> </u>					
12		on of run-on / r		:	YES				
13	next we		before laying of	:	NA				
14		eparation befor groove welds	re welding other	: NA					
15	Preheat	ing and inter p	ass temperature	<u> </u>	1000€ -	15100			
16	Peening	<u> </u>		:	NA				
17	Post we	eld treatment		<u> </u> :					
18	Rectific	ation of weld d	efect		IS 9595-2				d as per CL.32.2 er conducting D.
19	Inspect	ion of weld		<u> </u>	Visual, D.	P. Test, Macro I	Etching Test.		
20	Any oth	er relevant det	tail		None.				

	and other protective works bety	veen	Khandwa and Mordar stations.
	d address of Fabricator	.]	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR,AMEENPUR, SANGAREDDY-TELANGANA
Welding	Procedure specification No.		SEE/SCR/61.00m/WPSS/007
1	Drawing No.		RDSO/B-17182/R; (Section of U3 - U4 / TOP CHORD RDSO/B-17182/5R; SECTION B -B
2	Weld Joint description		8mm, Fillet weld (Flange Plate to Side Plate (Inside / Outside Location)
3	Base Metal		IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (16mm X 20mm)
4	Welding Process		SAW (Submerged Arc Welding)
5	Welding Position		1F,2F
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	W1 of IRS M. 39/2001
	Dia	:	4 MM
	Drying Method	:	NA .
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA .
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Bott Fing.Pit 1 Pass on either side 620 Side Pit.
7.2	Joint preparation	:	As per IS 4353 -1995, Cl.7, IRS B1 - 2001, Cl. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
-	Туре	:	DC
-	Polarity	:	Reverse

9	Welder (ualification		_	1		A	ppendix-V (Ref	Page-014 [Cl.26 of BI-2001]
10	Welding parameters and to all a				As per IS:73	10 (Part-I) - 19	974	pponum + (ne	.Cl.20 01 B1-2001
11.1	Welding	parameters	technique	╀					
Weld	/elding Pass Electrodes wire dia. (Amps)		: as below Arc Voltage (Volt)		Wire Feed Speed	Travel Speed	Electrical Stick out	Gas Flow Rate	
	i	4 mm	475 - 525	 	27 - 32	(m/min)	(m/min)	(mm)	(I/min) N.A.
			.,0 323		Er-36	1.2 -1.4	0.45 - 0.50	10 - 15	
11.2	Welding :	Sequence and to	echnique	T :					
			0	2					
12	Provision	of run-on / rui	n-off tabs		Yes				
13	Cleaning of weld bead before laying of next weld bead				NA				
14	Root prep side of gr	oaration before oove welds	welding other	:	NA				
15	Preheatin	g and inter pas	s temperature	Ι.	: 100°C - 150°C				•

Peening 16

: NA 17 Post weld treatment NA By re-welding after complete removal of defective weld as per CL32.2 of IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. Rectification of weld defect Test. 18

Visual, D.P. Test, Macro Etching Test. Inspection of weld 19 Any other relevant detail None. 20

NAME OF WORK: Akola - Kandwa Section: Conversion of track from MG to BG between Khandwa - Amalkhurd stations -Proposed Re-Construction of ROR (Rail Over Rail) Br No:570/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and Launching of open web through type welded steel girder of clear span 61.00m, supplying, fabrication & fixing of galvanised H-

	Type steel channel sleepers, Execution of earth cation of RDSO and other protective works be	wee	of clear span 61.00m, supplying, fabrication & fixing of galvanised Hess for approaches of ROR with COE, SQ2, blanketing to GE.14 Khandwa and Mordar stations.
Name a	and address of Fabricator		The state of the s
Weldin	g Dec.	:	M/s_SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANBUR AMERINAN SANSA
· Cidili	g Procedure specification No.	:	SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
1			SEE/SCR/61.00m/WPSS/008
2	Drawing No.	:	RDSO/B-17182/R; (Section of U3 - U4 / TOP CHORD RDSO/B-17182/5R; SECTION ON B - B
	Weld Joint description	:	8mm, Fillet weld (Top Plate to Side Plate (Inside Location)
3	Base Metal		IS: ZU6Z: ZU11, Gr E250 Bû, Fully Killed & Fully Normalized &
4	Welding Process	•	Base metal thickness (20mm X 16mm)
5	Welding Position	:	SAW (Submerged Arc Welding)
6		:	1F,2F
6.1	Welding Consumable		
4.1	Electrode/Wire		
	Class	:	W1 of IRS M. 39/2001
	Dia	_	4 MM
6.2	Drying Method	:	NA
0.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA Paramataca.c.
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
,	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Side Pl. Side Pl. 1 Pass 8
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
		100	

DC

Reverse

Type Polarity

(I/min)

N.A.

Appendix-V (Ref.Cl.26 of BI-2001)

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As per IS:7310 (Part-I) - 1974

1

9

10

11.1

12

Welder Qualification

Welding parameters and technique

Provision of run-on / run-off tabs

YES

Cleaning of weld bead before laying of NA 13 next weld bead Root preparation before welding other NA side of groove welds 14 100°C - 150°C 15 Preheating and inter pass temperature Peening NA 16

17 Post weld treatment NA : By re-welding after complete removal of defective weld as per CL.32.2 of IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. Rectification of weld defect Test. 18

Visual, D.P. Test, Macro Etching Test. Inspection of weld 19 Any other relevant detail : None. 20

NAME OF WORK: Akola - Kandwa Section: Conversion of track from MG to BG between Khandwa - Amalkhurd stations - Proposed Re-Construction of ROR (Rail Over Rail) Br No:570/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and Launching of open web through type welded steel girder of clear span 61.00m, supplying, fabrication & fixing of galvanised H-Specification of RDSO and other protective works between Khandwa and Mordar stations.

anie ai	nd address of Fabricator		M/s. SHAKTHI ENGINEERING FOUIDMENTS
velding	Procedure specification No.	2	51NO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
		<u>:</u>	SEE/SCR/61.00m/WPSS/009
2	Drawing No.	:	RDSO/B-17182/R; (Section of U3 - U4 / TOP CHORD
	Weld Joint description	:	RDSO/B-17182/5R; SECTION ON B - B
3	Base Metal		8mm, Fillet weld (Top Plate to Side Plate (Outside Location) IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized &
4	Welding Process		base metal thickness (20mm X 16mm)
5	Welding Position	:	SAW (Submerged Arc Welding)
6	Welding Consumable	:	1F,2F
6.1	Electrode/Wire		
	Class	:	W1 of IRS M. 39/2001
	Dia	;	4 MM
	Drying Method	:	NA
6.2	Flux	•	
	Class	;	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	;	NA PS Manadaturer.
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Side Pit. Side Pit. 678 Top Pit.
7.2	Joint preparation	:	As per IS 4353 -1995, Cl.7, IRS B1 – 2001, Cl. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	:	Reverse

							A	ppendix-V (Ref.	CI.26 of BI-2001)
9	Welder Q	ualification			As ner IS-73	10 (Part-I) - 19		ppenan , (no.	
		parameters and	technique	:	' per 15.75	10 (1 a1 t-1) - 12	,,,,		
11.1	Welding	parameters	- sommque	i :	as below				
	ing Pass	Electrodes wire dia. (mm)	Current (Amps)		arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)
	1	· 4mm	475 - 525		27 -32	1.2 -1.4	0.45 - 0.50	10-15	N.A.
11.2	Welding	Sequence and t	echnique	:	1				
				<u></u>			2		
12	Provisio	n of run-on / ru	ın-off tabs		Yes				
13	Cleaning next we	g of weld bead b ld bead	pefore laying of		NA				
14		eparation befor proove welds	e welding other	:	NA				
15	Preheat	ing and inter pa	ass temperature		100°C -\	some			
16	Peening			ļ.	NA				
17	Post we	ld treatment			NA				
18	Rectification of weld defect :			By re-welding after complete removal of defective weld as per CL.32.2 of IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. Test.					
19	Inspecti	on of weld			Visual, D.P. 7	Гest, Macro Etcl	hing Test.		
20	Any oth	er relevant deta	ail		None.				

NAME OF WORK: Akola - Kandwa Section: Conversion of track from MG to BG between Khandwa - Amalkhurd stations - Proposed Re-Constructionof ROR (Rail Over Rail) Br No:570/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and Launching of open web through type welded steel girder of clear span 61.00m, supplying, fabrication & fixing of galvanised H-Beam type steel other protective works between Khandwa and Mordar stations.

	nd address of Fabricator	: 5	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR,AMEENPUR, SANGAREDDY-TELANGANA
elding Procedure specification No.			SEE/SCR/61.00m/WPSS/010
1	Drawing No.	. 1	RDSO/B-17182/R ; (Section of U1 - L2 / DIAGONAL) RDSO/E
2	Weld Joint description	. 1	Smm Inside Fillet weld (Flange Plate to Side Plate (Inside Location)
3	Base Metal	. 1	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized &
4	Welding Process		Base metal thickness (20mm X 12mm)
5	Welding Position		SAW (Submerged Arc Welding)
6	Welding Consumable	:	1F,2F
6.1	Electrode/Wire	-	
	Class	-	W1 of IDS M 20 /2004
	Dia		W1 of IRS M. 39/2001 4 MM
	Drying Method		NA
6.2	Flux	_	NA .
	Class	:	F1 of IRS M. 39-2001
	Туре		Agglomerated
	Drying Method		250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Top/Bott Fing,Pit
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	_	DC
	Polarity	1 :5	Reverse

,	Welder Q	ualification		:	A		A	ppendix-V (Ref.	CI.26 of BI-2001)
10	Welding	parameters and	technique	_	As per IS:73	10 (Part-I) - 19	74		
11.1	Welding	parameters	technique	<u>:</u>	and the second				
Weldi	ing Pass	Electrodes wire dia. (mm)	Current (Amps)	_: A	as below arc Voltage (Volt)	Wire Feed Speed	Travel Speed (m/min)	Electrical Stick out	Gas Flow Rate
	I	4 mm	475 - 525		27 - 32	(m/min)	Tell sam recessor.	(mm)	(I/min)
					27 32	1.2 -1.4	0.45 - 0.50°	10- 15	· N.A.
11.2	Welding	Sequence and t	technique						
			13	•					
			1		, i				·
12		n of run-on / ru			Yes				
13	next wel	d bead	efore laying of		NA				
14	Root pro	paration befor roove welds	e welding other	:	NA		+1		
15	Preheati	ing and inter pa	ass temperature	:	100°C - V	50°C			(*)
16	Peening			:	NA				
17	Post wel	d treatment		[:	NA				
18	Rectifica	ation of weld de	efect	:	By re-welding IS 9595-200 Test.	ng after comple 3 using A3 elec	te removal of de trode of IRS M:2	fective weld as 8-2017 after co	per CL.32.2 of enducting D.P.
19	Inspecti	on of weld		:	Visual, D.P.	Test, Macro Etcl	ning Test.		
20	Any other	er relevant deta	ail	:	None.				

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NAME OF WORK: Akola - Kandwa Section: Conversion of track from MG to BG between Khandwa - Amalkhurd stations - Proposed Re-Constructionof ROR (Rail Over Rail) Br No:570/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and Launching of open web through type welded steel girder of clear span 61.00m, supplying, fabrication & fixing of galvanised H-Beam type steel channel sleepers, Execution of earth works for approaches of ROR with COE, SQ2, blanketing to GE.14 Specification of RDSO and other protective works between Khandwa and Mordar stations.

Specifi	ype steel channel sleepers, Execution of earth cation of RDSO and other protective works bet	work	ks for approaches of ROR with COE, SQ2, blanketing to GE.14 n Khandwa and Mordar stations.
	and address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
Weldin	Procedure specification No.	:	SEE/SCR/61.00m/WPSS/011
1	Drawing No.	:	RDSO/B-17182/R ; (Section of U1 - L2 / DIAGONAL) RDSO/B-17182/8R ; SECTION ON A - A
2	Weld Joint description	:	6mm Fillet weld (Flange Plate to Side Plate (Outside Location)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (20mm X 12mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position	:	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:.	W1 of IRS M. 39/2001
	Dia	:	4 MM
	Drying Method	:	NA
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
,,,	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Top/Bott Fing.Pit 1 Pass 1 Pass 8 Side Pit.
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. 17 & WBC - 2001 & IS 9595-2003

DC

Reverse

Type Polarity

Welding Current

8

							3	11 11 (D)	
9	Welder Q	ualification		Τ.	As per IS.72	10 (Part-I) - 19		Appendix-V (Rei	f.CI.26 of BI-200
10	Welding parameters and technique			1		10 (Part-1) - 1	9/4		
II.I	Welding	parameters	teemique						
Weld	Electrodes wire dia. (Amps)		-	as below Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rat	
	1 4 mm -475 - 525				27 - 32	1.2 -1.4	0.45 - 0.50	10 - 15	N.A.
11.2	Welding	Sequence and t	echnique	· ·					
			<u>a</u>			2000 (12) 12)			
12		of run-on / ru		:	Yes				
13	Cleaning next weld	of weld bead be l bead	efore laying of	,	NA				
14		oaration before oove welds	welding other	:	NA				
15	Preheatin	g and inter pas	s temperature	:	100°C -\5	10°C			
16	Peening			:	NA				
17	Post weld	treatment		:	NA				
18	Rectificati	on of weld defe	ct	:	By re-welding IS 9595-2003 Test.	g after complete using A3 electi	e removal of defe rode of IRS M:28	ctive weld as p -2017 after co	per CL.32.2 of inducting D.P.
19	Inspection	of weld		;	Visual, D.P. Te	st, Macro Etchi	ng Test.		
20	Any other	relevant detail		:	None.				
					A .				

NAME OF WORK: Akola - Kandwa Section: Conversion of track from MG to BG between Khandwa - Amalkhurd stations - Proposed Re-Construction ROR (Rail Over Rail) Br No:570/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and Launching of open web through type welded steel girder of clear span 61.00m, supplying, fabrication & fixing of galvanised H-Beam type steel channel sleepers, Execution of earth works for approaches of ROR with COE, SQ2, blanketing to GE.14 Specification of RDSO and other protective works between Khandwa and Mordar stations.

Specific	pe steel channel sleepers, Execution of earth a ation of RDSO and other protective works bet	work wee	ks for approaches of ROR with COE, SQ2, blanketing to GE.14 n Khandwa and Mordar stations.
	nd address of Fabricator	: -	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
Welding	Procedure specification No.	:	SEE/SCR/61.00m/WPSS/012
1	Drawing No.	:	RDSO/B-17182/R; (Section of L2 - U3 / DIAGONAL) RDSO/B-17182/8R; SECTION ON B - B
2	Weld Joint description	:	6mm, Fillet weld (Flange Plate to Side Plate (Inside / Outside Location)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (12mm X 12mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position	:	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire		v.
	Class	:	W1 of IRS M. 39/2001
Ì	Dia		1 华 內的
	Drying Method	:	NA NA
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA .
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Top:Bott Fing.Pit 12 6 6 12 Side Pit.
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		

DC

Reverse

Type : Polarity :

9	Welder Qualification		:	As per IS:7310 (Part-I) - 1974						
10	Welding parameters and technique		:							
11.1	Welding parameters		:	as below						
Weldi	Welding Pass Electrodes wire dia. (Amps)		Arc Voltage (Volt)		Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)		
	1	4 mm	425 - 500		27 - 32	1.2 -1.4	0.45 - 0.50	10-15	N.A.	
11.2	Welding	Sequence and t	technique	:						
			⑤		EZ	1 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4				
12		n of run-on / ru	un-off tabs before laying of	:	Yes				8	
13	next wel	d bead	1.00	:	NA					
14	Root pre	paration befor e roove welds	e welding other	:	NA					
15	Preheati	ng and inter pa	ass temperature	:	100°C ~ 450°C					
16	Peening			:	NA					
17	·	d treatment		:	NA					
18	Rectification of weld defect			;			te removal of del trode of IRS M:2			
	Inspection	on of weld		:	Visual, D.P. T	est, Macro Etch	ning Test.			
20		er relevant deta	il	:	None.	0				

	and address of Fabricator		M/s. SHAKTHI ENGINEERING EQUIPMENTS			
Welding Procedure specification No.			SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA			
	Specification No.	:	SEE/SCR/61.00m/WPSS/U13			
1	Drawing No.	:	RDSO/B-17182/R; (Section of U3 - L4 / DIAGONAL) RDSO/B-17182/8R; SECTION ON C - C			
2	Weld Joint description	:	6mm, Fillet weld (Flange Plate to Side Plate (Inside / Outside Location)			
3	Base Metal		IS:2062:2011, Gr E350 BO, Fully Killed & Fully Normalized &			
4	Welding Process		Base metal thickness (12mm X 12mm)			
5	Welding Position	:	SAW (Submerged Arc Welding)			
6	Welding Consumable	:	1F,2F			
6.1	Electrode/Wire					
	Class	:	W1 of IRS M. 39/2001			
	Dia	:	4 MM			
6.2	Drying Method Flux	:	NA .			
0.2						
	Class	:	F1 of IRS M. 39-2001			
	Туре	:	Agglomerated			
6.3	Drying Method	_:_	250°C for One hour before use or Recommendation as per Manufacturer.			
0.5	Shielding Gas	:	NA			
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.			
7.1	Joint design details	:				
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Top-Bott Fing Ptt 12 6 6 6 4 12			
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003			
8	Welding Current					
	Туре	:	DC			
	Polarity	:	Reverse			

									Page-026
	9 Welder Qualification 10 Welding parameters and the least of the leas				As per IS:73	10 (Part-I) - 19	A A	Appendix-V (Ref.	Cl.26 of BI-2001)
weiding parameters and technique		1	per 10.75	10 (Fait-1) - 15	7/4		-		
11.1	11.1 Welding parameters		1	as below					
Wei	ding Pass	Electrodes wire dia. (mm)	Current (Amps)		Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)
<u> </u>	1	4 mm	425 - 500		27 - 32	1.2 -1.4	0.45 - 0.50	10 - 15	N.A.
-							0.10 0.50	10 - 13	IV.A.
11.2	Welding	Sequence and t	echnique	:					
			5 7 8			3			
12	Provision	of run-on / run	-off tabs	:	Yes				
13	Cleaning o	f weld bead be bead	fore laying of	:	NA				
14	Root prepa side of gro	aration before v ove welds	welding other	:	NA				
15	Preheating	and inter pass	temperature	:	100°C -15	000	***		
16	Peening			:	NA				
17	Post weld t	reatment		:	NA		***		
18	Rectificatio	n of weld defec	t				removal of defe ode of IRS M:28-		
19	Inspection	of weld		:	Visual, D.P. Tes	st, Macro Etchin	ng Test.		
20	Any other r	elevant detail		:	None.	b es Q	~~~		

Name and address of Fabricator Welding Procedure specification No.		:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR,AMEENPUR, SANGAREDDY-TELANGANA
		:	SEE/SCR/61.00m/WPSS/014
1	Drawing No.	:	RDSO/B-17182/R; (Section of LO - U1 / END RACKER) RDSO/B-17182/6R; SECTION ON B - B
2	Weld Joint description	:	8mm, Fillet weld (Side Plate to Flange Plate (Inside / Outside Location)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (20mm X 12mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position	٠:	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	W1 of IRS M. 39/2001
	Dia	:	4 MM
	Drying Method	:	NA .
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA
7	Base metal preparation		Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Bott Fing. Pit
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	:	Reverse

									Page-028
9	Welder Q	ualification		T :	As per IS.72	10 (Dant D. 44		Appendix-V (Ref	Cl.26 of BI-2001)
10	Welding	parameters and	d technique	1	713 per 13:73	10 (Part-I) - 19	974		
11.1	Welding	parameters	1	÷	as below				
Weld	ing Pass	Electrodes wire dia. (mm)	Current (Amps)		Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)
	1	4 mm	475 - 525		27 - 32	1.2 -1.4	0.45 - 0.50	10 - 15	N.A.
11.2	Welding	Sequence and t	technique	:			0.43 - 0.50	10- 15	N.A.
				2					ti di
12	100000	n of run-on / ru	nn-off tabs before laying of	:	Yes	511			
13	next wel			:	NA				
14		paration before roove welds	e welding other	:	NA				
15	Preheati	ng and inter pa	ss temperature	:	100°C -\S	2000			
16	Peening			:	NA		*		
17	Post wel	d treatment		:	NA				
18	Rectificat	tion of weld de	fect		By re-weldir IS 9595-200 Test.	ng after complet 3 using A3 elect	te removal of de trode of IRS M:2	fective weld as 8-2017 after co	per CL.32.2 of onducting D.P.
19	Inspectio	n of weld		:	Visual, D.P. T	est, Macro Etch	ning Test.		
20	Any othe	r relevant deta	il	:	None.		04		

8	Welding Current	_	10 70 70 2000
7.2	Joint preparation	:	As per IS 4353 -1995, Cl.7, IRS B1 – 2001, Cl. 17 & WBC - 2001 & IS 9595-2003
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Side Plt. Pass Pass Tog Plt.
7.1	Joint design details	:	
7	Base metal preparation	;	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
6.3	Shielding Gas	:	NA ·
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
	Туре	÷	Agglomerated
6.2	Flux	•	F1 of IRS M. 39-2001
	Drying Method	<u>:</u>	NA I
	Dia	:	4 MM
	Class	:	W1 of IRS M. 39/2001
6.1	Electrode/Wire		
6	Welding Consumable		
5	Welding Position	:	1F,2F
4	Welding Process	:	SAW (Submerged Arc Welding)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (16mm X 20mm)
2	Weld Joint description		8mm, Fillet weld (Top Plate to Side Plate (Inside Location)
1	Drawing No.	:	RDSO/B-17182/R; (Section of LO - U1 / END RACKER RDSO/B-17182/6R; SECTION ON B - B
eldin	g Procedure specification No.	:	SEE/SCR/61.00m/WPSS/015
Name and address of Fabricator			M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA

							A	ppendix-V (Ref	.CI.26 of BI-2001)		
9	Welder Qualification			:	As per IS:73	10 (Part-I) - 19	974				
10	parameters and technique		٠;					,			
11.1	Welding	parameters		:	as below						
Weld	ing Pass	Electrodes wire dia. (mm)	Current (Amps)	A	arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)		
	1	4 mm	475 525.		27 - 32	1.2 -1.4	0.45 - 0.50	10 - 15	N.A.		
11.2	Welding	Sequence and t		:							
				S	_	2					
12	Provision	n of run-on / ru	ın-off tabs		NA-YOS						
13	Cleaning next wel		efore laying of		NA						
14		paration before roove welds	e welding other	:	NA	NA					
15	Preheati	ng and inter pa	ss temperature	ļ.	100°C ~	15000					
16	Peening			<u> </u> :	NA	NA					
17	Post wel	d treatment		ļ :							
18	Rectifica	tion of weld de	fect		IS 9595-20	By re-welding after complete removal of defective weld as per CL.32.2 of IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. Test.					
19	Inspection	on of weld		<u> </u> :	Visual, D.P.	Test 4 m) er	n eflingtest	8			
20	Any othe	r relevant deta	úl .	<u> </u>	None.						

Specific	ation of RDSO and other protective works be	twe	en Khandwa and Mordar stations.
	nd address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
Welding	Procedure specification No.	:	SEE/SCR/61.00m/WPSS/016
1	Drawing No.	:	RDSO/B-17182/R; (Section of LO - U1 / END RACKER) RDSO/B-17182/6R; SECTION ON B - B
Z	Weld Joint description		omm, Fillet weld (Side Plate to Top Plate (Outside Location)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (16mm X 20mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position	:	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	W1 of IRS M. 39/2001
	Dia	:	4 MM
	Drying Method	:	NA
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA .
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence).		Side Pit. 1 Pass 6 T
7.2	Joint preparation	:	As per IS 4353 -1995, Cl.7, IRS B1 – 2001, Cl. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	:	Reverse

	Section Field								Page-032
9		ualification		;	As per IS-73	10 (Part-I) - 19	Α	ppendix-V (Ref	.CI.26 of BI-2001)
10	weiding	parameters and	t technique	÷	1.0 per 15.75	10 (Part-1) - 19	7/4		
11.1	Welding	parameters		÷	as below				
Weldi	ng Pass	Electrodes wire dia. (mm)	Current (Amps)		rc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out	Gas Flow Rate (I/min)
	1	4 mm	425 - 500		27 - 32	1.2 -1.4	0.45 0.50	(mm)	
					02	1.2 -1.4	0.45 - 0.50	10 - 15	N.A.
11.2	Welding	Sequence and t	technique	:					
			1		2	[2	1		
12		n of run-on / r		:	Yes				
13	Cleaning next wel	g of weld bead b d bead	pefore laying of		NA				
14	Root pre side of g	paration befor roove welds	e welding other	;	NA				
15	Preheati	ing and inter pa	ass temperature	:	100°C - \	5000			
16	Peening			:	NA				
17	Post wel	d treatment		·	NA				
18	Rectifica	ition of weld de	efect	:	By re-weldi	ng after comple)3 using A3 elec	ete removal of de etrode of IRS M:2	fective weld a 8-2017 after o	s per CL.32.2 of conducting D.P.
19	Inspecti	on of weld		:	Visual, D.P.	Test, Macro Etc	hing Test.		
20	Any oth	er relevant det	ail	:	None.		0		

	The state of the s	ween	Khandwa and Mordar Stations.
	nd address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR,AMEENPUR, SANGAREDDY-TELANGANA
Welding	Procedure specification No.		SEE/SCR/61.00m/WPSS/017
1	Drawing No.	:	RDSO/B-17182/R; (Section of U1 - U1' / PORTAL GIRDER
2	Weld Joint description	:	6mm, Fillet weld (Top & Bottom Flange Plate to Web Plate)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (10mm X 10mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position	:	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	W1 of IRS M. 39/2001
	Dia	:	3.15 MM
	Drying Method	:	NA ·
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated .
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		200
7.2	Joint preparation	:	As per IS 4353 -1995, Cl.7, IRS B1 - 2001, Cl. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		/
	Туре	:	DC
	Polarity	:	Reverse

							A	ppendix-V (Ref.	CI.26 of BI-2001)		
9		ualification		:	As per IS:73	10 (Part-I) - 19	74				
10	Welding	parameters an	d technique	:							
11.1	Welding	parameters		:	as below						
Weld	ing Pass	Electrodes wire dia. (mm)	Current (Amps)	A	rc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)		
	1	3.15 mm	425 - 500		24 - 32	1.0 - 2.5	0.40 - 0.50	10 - 15	N.A.		
									•		
11.2	Welding	Sequence and	technique	:.							
						T					
			N Sec.	No. 77-	a	2 1			n 1 2		
12		n of run-on / r		:	Yes						
13	next we	ld bead	before laying of	:	NA		2				
14		eparation befor proove welds	e welding other	:	ŇÀ	NA					
15	Preheat	ing and inter pa	ass temperature		100°C -\	که ور					
16	Peening			;	NA						
17	Post we	ld treatment		:	NA				G. 00.0		
18	Rectifica	ation of weld de	efect	By re-welding after complete removal of defective weld as per CL.32.2 of IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. : Test.							
19	Inspecti	on of weld		:	Visual, D.P.	Test, Macro Etc	hing Test.				
20	Any oth	er relevant det	ail	:	None.	/\ D					
-		ta , No.	174		171111111111111111111111111111111111111	<i>V</i>	- A H V A				

	and address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS
Velding	g Procedure specification No.	-	SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
	, and a direction	<u>:</u>	SEE/SCR/61.00m/WPSS/018
1	Drawing No.	:	RDSO/B-17182/R; (Section of ALL VERTICALS (U1 - L1TOU9 - L9) and RDSO/B-17182/7
2	Weld Joint description	٠ :	6mm, Fillet weld (Top & Bottom Flange Plate to Web Plate)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized &
4	Welding Process		Base metal thickness (10mm X 10mm) SAW (Submerged Arc Welding)
5	Welding Position	<u>:</u>	The state of the s
6	Welding Consumable	·	1F,2F
6.1	Electrode/Wire		
	Class	;	W1 of IRS M. 39/2001
	Dia	:	3.15 MM
	Drying Method	:	NA NA
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
20.59	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA
7	Base metal preparation		Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		250 10 -
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		20
	Туре	-	DC
	Polarity		Reverse

Appendix-V (Ref.Cl.26 of BI-2001)

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Gas Flow Rate

(I/min)

N.A.

11.1 Welding parameters Electrodes **Welding Pass** Current wire dia. (Amps) (mm) 1 3.15 mm 425 - 500

Provision of run-on / run-off tabs

next weld bead

Peening

side of groove welds

Post weld treatment

Inspection of weld

Any other relevant detail

Rectification of weld defect

Cleaning of weld bead before laying of

Welding parameters and technique

Welder Qualification

9

10

11.2

12

13

14

15

16

17

18

19

20

Welding Sequence and technique

24 - 32

4

1

Yes

NA

NA

NA

NA

Test.

None.

10

100°C

as below

Arc Voltage

(Volt)

:

1.0 - 2.521

3

Visual, D.P. Test, Macro Etching Test.

Wire Feed

Speed

(m/min)

As per IS:7310 (Part-I) - 1974

0.40 - 0.50

Travel Speed

(m/min)

Electrical

Stick out

(mm)

10 - 15

By re-welding after complete removal of defective weld as per CL.32.2 of IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P.

Root preparation before welding other Preheating and inter pass temperature

NAME OF WORK: Akola - Kandwa Section: Conversion of track from MG to BG between Khandwa - Amalkhurd stations - Proposed Re-Constructionof ROR (Rail Over Rail) Br No:570/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and Launching of open web through type welded steel girder of clear span 61.00m, supplying, fabrication & fixing of galvanised H-Beam type steel other protective works between Khandwa and Mordar stations.

	ind address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS
Weldin	Procedure specification No.	:	SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
1	Drawing No.	÷	SEE/SCR/61.00m/WPSS/019
2	Weld Joint description		RDSO/B-17182/R;(Section of ALLCROSSGIRDER (LO-LO' TO L9-L9')
	, esta description	:	12mm, Fillet weld (Top & Bottom Flange Plate to Web Plate)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized &
4	Welding Process	-	Base metal thickness (25mm X 12mm) SAW (Submerged Arc Welding)
5	Welding Position	:	1F.2F
6	Welding Consumable		11,61
6.1	Electrode/Wire		
	Class	:	W1 of IRS M. 39/2001
	Dia	:	4 MM
	Drying Method	:	NA.
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	. :	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		12
7.2	Joint preparation	:	As per IS 4353 -1995, Cl.7, IRS B1 – 2001, Cl. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	:	Reverse

									. 46- 000
9	Welder Q	ualification			A 10 70	10.77	A	ppendix-V (Ref.	CI.26 of BI-2001)
10		parameters and	Ttechnique	<u>:</u>	As per 15:73	10 (Part-I) - 19	074		
11.1	Welding	parameters	cedinque	<u>:</u>	an hala				
	ing Pass	Electrodes wire dia. (mm)	Current (Amps)	: A	rc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)
	1	4 mm	475 - 525		27 - 32	1.2 -1.4	0.45 - 0.50	10 - 15	N.A.
							0.10 0.50	10 15	11.0.
11.2	Welding	Sequence and t	echnique	;					
			207		(a)	3	26		
12	Cleaning	n of run-on / ru		:	Yes NA				
13			e welding other	<u>:</u> `;	NA				
15			ss temperature	:	100°C -15	2000			
16	Peening			:	NA				
17	Post wel	d treatment		· :	NA			<u> </u>	
18	Rectifica	tion of weld def	fect	:			te removal of de trode of IRS M:2		
19	Inspection	on of weld		:	Visual, D.P. 7	Геst, Macro Etc	hing Test.		
20	Any othe	r relevant deta	il	:	None.				

In a al

		* 1622 1	retween khannwa and Mordar stations
	and address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
Velding	g Procedure specification No.	:	SEE/SCR/61.00m/WPSS/020
1	Drawing No.	:	RDSO/B-17182/11; (ELEVATION FOR END CROSS GIRDER)
2_	Weld Joint description	:	12mm, Fillet weld (End Plate to Cross Girder Web Plate)
3	Base Metal	:	IS:2062:2011, Gr E 250 B0, Fully Killed & Fully Normalized & Base metal thickness (20mm X 12mm)
4	Welding Process	:	GMAW (Gas Metal Arc Welding)
5	Welding Position	:	Horizontal
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	1 of IRS M-46-2013
	Dia	:	1.2 MM
	Drying Method	:	NA
6.2	Flux		
	Class	:	NA
	Туре	;	NA .
	Drying Method	:	NA
6.3	Shielding Gas	:	CO2
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		End Plate 12 12 Cross Girder Web Plt.
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	•	Reverse

9	Welder Q	ualification		T	T		A	Appendix-V (DA	Page-04 f.CI.26 of BI-200:
10	weiding	parameters and	rechnisms	╀		10 (Part-I) - 1	974	Theman (Ke	
11.1	Welding	parameters	ecumque	+:					
		Electrodes		╀	as below				
Weld	elding Pass wire dia. (Amps)			Arc Voltage (Volt)	Wire Feed Speed	Travel Speed (m/min)	Electrical Stick out	Gas Flow Ra	
	1	1.2 mm	180 - 270	\top	24 - 32	(m/min) 2.0 - 5.0		(mm)	(I/min)
	2	1.2 mm	18U - 2/U	†	24-32	Z.U - 5.U	NA	12 - 15	16 - 20
	3	1.2 mm	180 - 270	\top	24 - 32	2.0 - 5.0	N'A	17 - 15	16 - 20
11.2	T			•	DATE OF THE PARTY	2.0-3.0	NA	12 - 15	16 - 20
11.2	Welding	Sequence and t	echnique	1					
12	Provision	n of run-on / ru]	T				
13		of weld bead be		: NA YES					
14	Root pre	paration before oove welds	welding other	:	NA				
15	Preheatir	ng and inter pas	s temperature	:	100°C -\	2000			
16	Peening			:	NA				
17	Post weld	l treatment		;	NA				
18	Rectificat	ion of weld defe	ect		By re-welding IS 9595-2003 Test.	g after complete using A3 electr	removal of defe rode of IRS M:28-	ctive weld as p 2017 after con	per CL.32.2 of iducting D.P.
19	Inspection	n of weld		;	Visual, D.P. Te	est.			
20	Any other	relevant detail		:	None.	/\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	0		

Name a	and address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
Velding	g Procedure specification No.	;	SEE/SCR/61.00m/WPSS/021
1	Drawing No.	:	RDSO/B-17182/11; (CROSS GIRDER BRACKET, DETAIL H)
2	Weld Joint description	. :	6mm, Fillet weld
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (10mm X 10mm)
4	Welding Process	;	GMAW (Gas Metal Arc Welding)
5	Welding Position	:	Horizontal
6	Welding Consumable		
6 .1	Electrode/Wire		,
	Class	:	1 of IRS M-46-2013
	Dia	:	1.2MM
	Drying Method	:	NA NA
6.2	Flux		
	Class	:	NA
	Туре	:	NA NA
	Drying Method	:	NA NA
6.3	Shielding Gas	:	CO2
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from crack notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	;	
	110	•	Rib Plate 250x10x250
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, Cl. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	_	DC
	Polarity	:	Reverse

9	W-14 0	110					A	ppendix-V (Ref	.CI.26 of BI-2001)
-		ualification		:	As per IS:73	10 (Part-I) - 19]
10	Welding	parameters and	l technique	:					
11.1	Welding	parameters			as below				
Weldi	ing Pass	Electrodes wire dia. (mm)	Current (Amps)	A	arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)
	1	1.2 mm	180 - 270		24 - 32	2:0 - 5.0	NA NA	12 - 15	16-20
44.5									
11.2	Welding	Sequence and t	echnique	:	NA				***
12	Provisio	n of run-on / ru	n-off tabs	:	NA				
13	Cleaning of weld bead before laying of		efore laying of	:	ŇÁ				
14	Root pre side of g	eparation before roove welds	e welding other	:	NA				
15	Preheati	ing and inter pa	ss temperature		100°C-1	صی ح			
16	Peening			<u> </u>	NA				
17	Post we	ld treatment			NA				
18	Rectifica	ation of weld de	efect	:	By re-weld IS 9595-20 Test.	ing after compl 03 using A3 ele	ete removal of de ectrode of IRS M:	efective weld a 28-2017 after	as per CL.32.2 of conducting D.P.
19	Inspecti	on of weld		:	Visual, D.P.	Test.			
20	Any oth	er relevant deta	ail		None.		2		

Name a	and address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR,AMEENPUR, SANGAREDDY-TELANGANA
Welding	g Procedure specification No.	:	SEE/SCR/G1.00m/WPSE/022
1	Drawing No.	:	RDSO/B-17182/R; (Section of ALL STRINGERS (L0 - L1 ,L1 -L2, L2 - L3,L3-L4) & RDSO/B-17182/12/1 IN ELEVATION
2	Weld Joint description	:	12mm, Fillet weld (Top & Bottom Flange Plate to Web Plate)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (25mm X 12mm)
4	Welding Process	;	SAW (Submerged Arc Welding)
5	Welding Position	: -	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire		,
	Class	:	W1 of IRS M. 39/2001
	Dia	:	
	Drying Method	:	NA .
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		12-12-12-12-12-12-12-12-12-12-12-12-12-1
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		DC
	Type		IDC

ppendix-V (Ref.Cl 26 of RI-2001)

							Δ	nnondiv-V (Dof	CI 26 of BL 2001
9	Welder Q	Qualification		:	As ner IS:73	10 (Part-I) - 19		ppenuix-v (kei	CI.26 of BI-2001
10	Welding	parameters and	d technique		PER 10.75	10 (1 al t-1) - 15	7/4		785
11.1		parameters	. cominque	÷	as below				
Weld	ing Pass	Electrodes wire dia. (mm)	Current (Amps)	A	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)
2	ŀ	· 4 mm	475 - 525		27 - 32	1.2 -1.4	0:45 - 0:50°	10- 15	N.A.
11.2	Welding	Sequence and t	echnique	:					
					4	[2]			
12		n of run-on / ru		:	Yes				
13	next wel			:	NA				
. 14		eparation before roove welds	welding other	:	NA				u ž
15	Preheati	ng and inter pas	ss temperature	:	100°C ~\S	٥٥٥			
16	Peening			:	NA				
17	Post wel	d treatment		:	NA				
18	Rectifica	ition of weld def	fect		By re-weldin IS 9595-200 Test.	g after complet 3 using A3 elect	te removal of def trode of IRS M:28	ective weld as 3-2017 after co	per CL.32.2 of onducting D.P.
19	Inspectio	on of weld			Visual, D.P. T	est, Macro Etch	ning Test.		
20	Any othe	r relevant detai	a	:	None.		.0		
V 625	A CONTRACTOR OF THE PARTY OF TH	The state of the s			// \	D _ P	2		

ame a	nd address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR,AMEENPUR, SANGAREDDY-TELANGANA
/elding	Procedure specification No.	;	SEE/SCR/61.00m/WPSS/023
1	Drawing No.	:	RDSO/B-17182/12/1; (END BRACKET IN ELEVATION)
2	Weld Joint description	:	12mm, Fillet weld (Top & Bottom Flange Plate to Web Plate)
3	Base Metal	;	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (25mm X 12mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position	:	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	W1 of IRS M. 39/2001
	Dia	;	4 MM
	Drying Method	:	NA NA
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated .
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacture
6.3	Shielding Gas	:	NA
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
			PL.290x10x390 450 PL.414x25x450 2 La. 150x150x12x890 PL.390x10x747 BOTTOM FL. 226x20x450 25
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	s :	Reverse

Page-046 Appendix-V (Ref.Cl.26 of BI-2001) 9 Welder Qualification As per IS:7310 (Part-I) - 1974 10 Welding parameters and technique 11.1 Welding parameters : as below **Electrodes** Wire Feed Electrical Arc Voltage Current **Welding Pass** Travel Speed Gas Flow Rate wire dia. Speed Stick out (Amps) (Volt) (m/min) (I/min) (mm) (m/min) (mm) 1 4 mm 475 - 525 27 - 32 1.2 -1.4 0.45 - 0.5010 - 15 N.A. 11.2 Welding Sequence and technique 2 11 12 Provision of run-on / run-off tabs YES Cleaning of weld bead before laying of NA 13 next weld bead Root preparation before welding other ÍNA side of groove welds 14 100°C -150°C 15 Preheating and inter pass temperature 16 Peening NA : NA Post weld treatment 17 By re-welding after complete removal of defective weld as per CL.32.2 of Rectification of weld defect IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. Test. : 18 Visual, D.P. Test, Macro Etching Test. Inspection of weld 19 Any other relevant detail None.

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Name	and address of Fabricator	Τ;	M/s. SHAKTHI ENGINEERING EQUIPMENTS
Weldir	g Procedure specification No.	+.	SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
1	Drawing No.	+:	SEE/SCR/61.00m/WPSS/024
2	Weld Joint description	+:	RDSO/B-17182/13; (SWAY BRACING)
	Weld Joint description	+:	6mm, Fillet weld (Top & Bottom Flange Plate to Web Plate)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (10mm X 10mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position	1:	1F,2F
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	W1 of IRS M. 39/2001
	Dia	:	3.15 MM
	Drying Method	:	NA
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	: .	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA
7	Base metal preparation	;	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		WEB PL. 620x10 FL. PL. 160x10 SWAY GIRDER (U ₂ U' ₂ ,U ₃ U' ₃ ,U ₄ -U' ₄)
7.2	Joint preparation		As per IS 4353 -1995, Cl.7, IRS B1 – 2001, Cl. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	: 1	Reverse

Page-048 Welder Qualification Appendix-V (Ref.Cl.26 of BI-2001) As per IS:7310 (Part-I) - 1974 10 Welding parameters and technique Welding parameters 11.1 as below Electrodes **Welding Pass** Wire Feed Current Arc Voltage wire dia. Electrical Travel Speed Gas Flow Rate Speed (Amps) (Volt) Stick out (mm) (m/min) (I/min) (m/min) 1 (mm) 3.15 mm 425 - 500 24-32 1.0 - 2.50.40 - 0.5010 - 15 N.A. 11.2 Welding Sequence and technique 4 2 7 3 12 Provision of run-on / run-off tabs Yes Cleaning of weld bead before laying of NA next weld bead 13 Root preparation before welding other NA side of groove welds 14 100°C -150°C Preheating and inter pass temperature 15 NA Peening 16 NA Post weld treatment 17 By re-welding after complete removal of defective weld as per CL.32.2 of IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. Rectification of weld defect Test. 18 Visual, D.P. Test, Macro Etching Test. Inspection of weld 19 : None. Any other relevant detail

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T GIRT Engineering Contractors

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	and address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR,AMEENPUR, SANGAREDDY-TELANGANA
Velding	Procedure specification No.	:	SEE/SCR/61.00m/WPSS/025
1	Drawing No.	:	RDSO/B-17182/15 ; (TOP LATERAL BRACING) T JOINT
2	Weld Joint description	•	6mm, Fillet weld (Top Flange Plate to Web Plate)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (10mm X 10mm)
4	Welding Process	:	SAW (Submerged Arc Welding)
5	Welding Position		1F,2F
6	Welding Consumable		22,00
6.1	Electrode/Wire		
	Class Dia	:	W1 of IRS M. 39/2001 3.15 MM
	Drying Method	:	NA
6.2	Flux		
	Class	:	F1 of IRS M. 39-2001
	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA .
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		TOP FL. PL. 250x10 WEB PL. 150x10 TOP LAT: BRACINGS (U ₁ -U ₂ ,U ₂ -U ₃ ,U ₃ -U ₄)
7.2	Joint preparation	:	As per IS 4353 -1995, Cl.7, IRS B1 – 2001, Cl. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре		DC
	Polarity	:	Reverse

12 Provision of run-on / run-off tabs Yes Cleaning of weld bead before laying of NA 13 next weld bead

Root preparation before welding other NA side of groove welds 14 15 Preheating and inter pass temperature 100°C -150°C 16 Peening NA 17 Post weld treatment NA

By re-welding after complete removal of defective weld as per CL.32.2 of Rectification of weld defect IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. 18 Test. Visual, D.P. Test, Macro Etching Test. 19 Inspection of weld

None.

Any other relevant detail

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	md address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS			
Welding	Procedure specification No.		SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA			
	1	-	SEE/SCR/61.00m/WPSS/026			
1	Drawing No.	:	RDSO/B-17182/4/R; BOTTOM CHORD; SECTION ON A - A (BATTEN PLATE)			
2	Weld Joint description	:	6mm, Fillet weld (Top & Bottom Flange Plates to Battern Plate , Outside Location)			
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (16mm X 10mm)			
4	Welding Process	·:	GMAW (Gas Metal Arc Welding)			
5	Welding Position	:	Horizontal			
6	Welding Consumable					
6.1	Electrode/Wire					
	Class	:	1 of IRS M-46-2013			
	Dia	:	1.2 MM			
	Drying Method	;	NA			
6.2	Flux					
	Class	:	NA			
	Туре	:	Î _{NA}			
	Drying Method	:	l _{NA}			
6.3	Shielding Gas	:	CO2			
7	Base metal preparation	. :	Fusion faces & adjacent surface are cleaned and made free from cracks notches, mill scales, paints, grease, rust etc. which may affect weld quality:			
7.1	Joint design details	:				
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Side.Plt 16 Top/Bott Fing.Plt Batten,Plt			
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003			
8	Welding Current					
	Туре	:	DC			
	Polarity	:	Reverse			

		•							Page-052
9	Welder Q	ualification		:	As ner IS.72	10 (Port I) 10		ppendix-V (Ref.	Cl.26 of BI-2001)
10		parameters and	technique	÷	As per 13:73	10 (Part-I) - 19	974		
11.1		parameters	cominque	÷	as below				
Weld	ing Pass	Electrodes wire dia. (mm)	Current (Amps)		Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)
	1	1.2 mm	180 - 270		24 - 32	2.0 - 5.0	NA NA	12 - 15	16 - 20
11.2	Welding :	Sequence and te	chnique	:					
			2				[3]		
12	Provision	n of run-on / rur	n-off tabs		NA				
13		of weld bead be			NA				
14		paration before oove welds	welding other	:	NA				
15	Preheatii	ng and inter pas	s temperature	:	100°C -\x	به <i>د</i>			
16	Peening			:	NA				
17	Post weld	d treatment		:	NA				
18	Rectificat	tion of weld defe	ect	;	By re-welding IS 9595-200 Test.	ng after comple 3 using A3 elec	ete removal of de ctrode of IRS M:2	efective weld a 28-2017 after	s per CL.32.2 of conducting D.P.
19	Inspectio	n of weld		:	Visual, D.P.	Гest.			

: None.

20 Any other relevant detail

lame a	and address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR,AMEENPUR, SANGAREDDY-TELANGANA
Veldin	Procedure specification No.		SEE/SCR/61.00m/WPSS/027
1	Drawing No.	;	RDSO/B-17182/4/R ;BOTTOM CHORD ; SECTION ON B - B (BATTEN PLATE)
2	Weld Joint description	;	6mm, Fillet weld (Top & Bottom Flange Plates to Battern Plate, Outside Location)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (20mm X 10mm)
4	Welding Process	:	GMAW (Gas Metal Arc Welding)
5	Welding Position	:	Horizontal
6	Welding Consumable		
6.1	Electrode/Wire		ľ
	Class	.:	1 of IRS M-46-2013
	Dia	:	1.2 MM
	Drying Method	:	NA NA
6.2	Flux		
	Class	:	NA
	Туре	:	NA
	Drying Method	:	NA
6.3	Shielding Gas	:	CO2
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quali
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)	×	Side.Pit Top/Bott Fing.Pit 10 Batten.Pit 540
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity		Reverse

	rage-034
Appendix-V	(Ref.CI.26 of BI-2001)

9	Welder Q	ualification			Ac non 15.72	10 (D + D + 10		ppendix-V (Ref	.CI.26 of BI-2001
10		parameters and	technique	<u>:</u>	As per 15:73	10 (Part-I) - 19	7/4		
11.1	Welding	parameters	technique	_:_					
	ing Pass	Electrodes wire dia. (mm)	Current (Amps)	: 	as below rc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)
	1	1.2 mm	180 - 270		24 - 32	2.0 - 5.0	NA	12 - 15	16 - 20
11.2	Welding	Sequence and t	technique	:					
		ı	2		2	C. C.	3		<i>2</i> 1
12	Provisio	on of run-on / ru	un-off tabs	:	NA				
13	Cleaning next we		before laying of	:	NA				
14		eparation befor groove welds	e welding other	;	NA				
15	Preheat	ing and inter pa	ass temperature	:	100°C -\\	20°C			
16	Peening	5			NA				
17	Post we	eld treatment			NA				
18	1	ation of weld de	efect	:			te removal of del tr ode of IRS M.2		
19	Inspect	ion of weld		;	Visual, D.P.	l'est.			
20	Any oth	er relevant det	ail	:	None.)		

	and address of Fabricator	.:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
Veldin	g Procedure specification No.	:	SEE/SCR/61.00m/WPSS/028
1	Drawing No.	:	RDSO/B-17182/5/R ;TOP CHORD; SECTION ON A - A (BATTEN PLATE)
2	Weld Joint description	:	6mm, Fillet weld (Top & Bottom Flange Plates to Battern Plate , Outside Location)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (16mm X 10mm)
4	Welding Process	:	GMAW (Gas Metal Arc Welding)
5	Welding Position	:	Horizontal
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	1 of IRS M-46-2013
	Dia	:	1.2 MM
	Drying Method	:	NA
6.2	Flux		
	Class	:	NA
	Туре	::	NA
	Drying Method	:	NA
6.3	Shielding Gas	:	CO2
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality
7.1	Joint design details	:	
-	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Side.Plt Top/Bott Fing.Plt 10 Batten.Plt 530
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	:	Reverse

9	Welder Q	ualification		700	Τ.	1	A	ppendix-V (Ref	Page-056 CI.26 of BI-2001
10			technique	<u>:</u> :	As per IS:73	10 (Part-I) - 19	974		U.20 01 D1-2001
11.1	Welding parameters and technique Welding parameters							Y.	
Weld	ing Pass	Electrodes wire dia. (mm)	Current (Amps)	:	as below Arc Voltage (Volt)	Wire Feed Speed	Travel Speed (m/min)	Electrical Stick out	Gas Flow Rat
	1	1.2 mm	180 - 270	_	24 - 32	(m/min) 2.0 - 5.0	NA NA	(mm)	
11.2	Welding	Sequence and t	echnique	-		2.0 - 3.0	NA NA	12 - 15	16 - 20
			2	7 2		<u> </u>			
12		n of run-on / ru		:	NA				
13	next we		pefore laying of	:	NA				
14		eparation befor proove welds	e welding other	:	NA				7.
15	Preheat	ing and inter pa	ass temperature	:	100°C -	1500			
16	Peening			:	NA				
17	Post we	ld treatment		:	NA By re-weldi	ng after comple	ete removal of de	fective weld as	per CL.32.2 of
18	Rectific	ation of weld de	efect	:	IS 9595-200	3 using A3 elec	ctrode of IRS M:2	8-2017 after c	onducting D.P.
19	Inspecti	on of weld		:	Visual, D.P.	Test.			
20	Any oth	er relevant det	ail		None.	D. ~(1)	0		

	nd address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS
Welding	Procedure specification No.		SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
1	Drawing No.	:	SEE/SCR/61.00m/WPSS/029
2	Weld Joint description	;	RDSO/B-17182/5/R; TOP CHORD; SECTION ON B - B (BATTERN PLATE) 6mm, Fillet weld (Top & Bottom Flange Plates to Battern Plate, Outside Location)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (20mm X 10mm)
4	Welding Process	:	GMAW (Gas Metal Arc Welding)
5	Welding Position	:	Horizontal
6	Welding Consumable		TOT ZOTEGI
6.1	Electrode/Wire		
	Class	:	1 of IRS M-46-2013
	Dia		1.2 MM
	Drying Method	:	NA NA
6.2	Flux		
	Class	:	NA -
	Туре	:	NA ·
	Drying Method	:	NA .
6.3	Shielding Gas	:	CO2
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Side.Plt Top/Bott Fing.Plt 20 10 Batten.Pt 530
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	:	Reverse

9	Wolder	l:C						ppendix-V (Ref.	.Cl.26 of BI-2001)
10		ualification		:	As per IS:73	10 (Part-I) - 19	74		
	welding	parameters and	d technique	:					
11.1	.1 Welding parameters			:	as below				
Weld	Welding Pass Electrodes wire dia. (Amps)		A	arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)	
	1 1.2 mm 180 - 270				24 - 32	2.0 - 5.0	NA	12 - 15	16 - 20
110					ı				
11.2	Welding	Sequence and t	echnique	:					
12	Provision	n of run-on / ru	n-off tabs		NA				
13	Cleaning next wel	of weld bead b d bead	efore laying of		NA				
14		paration before roove welds	e welding other	:	NA				
15	Preheati	ng and inter pa	ss temperature	:	100°C -\S	مەد			
16	Peening			:	NA				
17	Post wel	d treatment		:	NA				*
18	Rectifica	tion of weld de	fect	:	By re-welding 1S 9595-200 Test.	ng after comple 33 using A3 elec	te removal of de trode of IRS M:2	fective weld as 8-2017 after o	s per CL.32.2 of conducting D.P.
19	Inspectio	n of weld		:	Visual, D.P.	Γest.			
20	Any other	r relevant detai	il	:	None.		0		

Procedure specification No. 1 Drawing No. 2 Weld Joint description 3 Base Metal 4 Welding Process 5 Welding Position 6 Welding Consumable 6.1 Electrode/Wire Class Drying Method 6.2 Flux Class Type Drying Method 6.3 Shielding Gas 7 Base metal preparation Class In NA Base metal preparation Class In NA Class In Orl In State, paints, grease, rust etc. when quality. Class In NA Class In Orl In State, paints, grease, rust etc. when quality. Class In Orl In State, paints, grease, rust etc. when quality. Class In	ne and address of Fabricator		:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA			
Drawing No. PLATE Section Common	ling Procedure specification No.		. :				
2 Weld Joint description 3 Base Metal 4 Welding Process 5 Welding Position 6 Welding Consumable 6.1 Electrode/Wire Class Dia Drying Method 6.2 Flux Class Type Drying Method 6.3 Shielding Gas 7 Base metal preparation 6 Base metal preparation Class indicates a diagram of parts, weld details, weld passes & their sequence) Side, Plt Top/Bott Fing, Plt Top/Bott Fing, Plt Side, Plt As per IS 4353 -1995, Cl.7, IRS B1 - 2001, Cl. II			:	RDSO/B-17182/6/R ;END RACKER; SECTION ON B - B (BATTERN			
Base Metal Welding Process Melding Position Welding Consumable 6.1 Electrode/Wire Class Dia Drying Method Drying Method Class Type Drying Method Class NA Drying Method Class NA Drying Method Class Shielding Gas To Base metal preparation Class Shielding Gas To Joint design details (Sketch showing arrangements of parts, weld details, weld passes & their sequence) List preparation Sido,Plt Top/Bott Fing,Plt Sido,Plt	Weld Joint description		:	6mm, Fillet weld (Flange Plates to Battern Plate , Outside Location)			
4 Welding Process : GMAW (Gas Metal Arc Welding) 5 Welding Position : Horizontal 6 Welding Consumable 6.1 Electrode/Wire Class : 1 of IRS M-46-2013 1.2 MM Drying Method : NA 6.2 Flux Class : NA Type Drying Method : NA 6.3 Shielding Gas 7 Base metal preparation Base metal preparation Class : NA Type Drying Method : NA Class : NA Shielding Gas CO2 Fusion faces & adjacent surface are cleaned and notches, mill scales, paints, grease, rust etc. whe quality. 7.1 Joint design details (Sketch showing arrangements of parts, weld details, weld passes & their sequence) As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. II.	Base Metal		:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized &			
5 Welding Position 6 Welding Consumable 6.1 Electrode/Wire Class : 1 of IRS M-46-2013 1.2 MM Drying Method : NA 6.2 Flux Class : NA Type : NA NA 6.3 Shielding Gas 7 Base metal preparation Base metal preparation (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. II.	Tracting 110ccss	ľ	:	GMAW (Gas Metal Arc Welding)			
6.1 Electrode/Wire Class Dia Drying Method Class Type CO2 Fusion faces & adjacent surface are cleaned and notches, mill scales, paints, grease, rust etc. whe quality. Class Type Top/Bott Fing.Plt Control Plant Preparation As per IS 4353 -1995, Cl.7, IRS B1 - 2001, Cl. 1	Welding Position		:				
Class Dia Drying Method Drying	Welding Consumable						
Dia : 1.2 MM Drying Method : NA 6.2 Flux Class Type : NA Type Drying Method : NA 6.3 Shielding Gas : CO2 7 Base metal preparation : NA Toint design details : Sketch showing arrangements of parts, weld details, weld passes & their sequence) Class Type : NA NA Class Type : NA NA Shielding Gas : CO2 Fusion faces & adjacent surface are cleaned and notches, mill scales, paints, grease, rust etc. whe quality. 7.1 Joint design details : Side.Plt Side.Plt As per IS 4353 -1995, CL7, IRS B1 – 2001, CL 1	.1 Electrode/Wire						
Drying Method : NA Class : NA Type : NA Drying Method : NA 6.3 Shielding Gas : CO2 Fusion faces & adjacent surface are cleaned and notches, mill scales, paints, grease, rust etc. who quality. 7.1 Joint design details : (Sketch showing arrangements of parts, weld details, weld passes & their sequence) Top/Bott Fing.Pit As per IS 4353 -1995, Cl.7, IRS B1 - 2001, Cl. 1		Class	:	1 of IRS M-46-2013			
Class : NA Type Drying Method : NA 6.3 Shielding Gas : CO2 Fusion faces & adjacent surface are cleaned and notches, mill scales, paints, grease, rust etc. who quality. 7.1 Joint design details : (Sketch showing arrangements of parts, weld details, weld passes & their sequence) Top/Bott Fing.Pit Batten.Pit As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. 1		Dia	:	1.2 MM			
Class Type NA Type NA Drying Method NA 6.3 Shielding Gas CO2 Fusion faces & adjacent surface are cleaned and notches, mill scales, paints, grease, rust etc. who quality. 7.1 Joint design details (Sketch showing arrangements of parts, weld details, weld passes & their sequence) Top/Bott Fing.Pit Side.Pit As per IS 4353 -1995, Cl.7, IRS B1 - 2001, Cl. 1	Dryi	ing Method	:	NA			
Type Drying Method : NA 6.3 Shielding Gas : CO2 Tusion faces & adjacent surface are cleaned and notches, mill scales, paints, grease, rust etc. who quality. 7.1 Joint design details : (Sketch showing arrangements of parts, weld details, weld passes & their sequence) Top/Bott Fing.Pit Top/Bott Fing.Pit As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. 1	.2 Flux						
Drying Method : NA 6.3 Shielding Gas : CO2 7 Base metal preparation : Fusion faces & adjacent surface are cleaned and notches, mill scales, paints, grease, rust etc. who quality. 7.1 Joint design details : Side.Plt (Sketch showing arrangements of parts, weld details, weld passes & their sequence) Top/Bott Fing.Plt Batten.Plt 540 As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. 1		Class	:	NA			
6.3 Shielding Gas 7 Base metal preparation 1 Fusion faces & adjacent surface are cleaned and notches, mill scales, paints, grease, rust etc. who quality. 7.1 Joint design details (Sketch showing arrangements of parts, weld details, weld passes & their sequence) Top/Bott Fing.Pit Batten.Pit 540 As per IS 4353 -1995, Cl.7, IRS B1 - 2001, Cl. 1	1	Type	:	NA			
Fusion faces & adjacent surface are cleaned and notches, mill scales, paints, grease, rust etc. wh quality. 7.1 Joint design details (Sketch showing arrangements of parts, weld details, weld passes & their sequence) Top/Bott Fing.Pit Side,Pit As per IS 4353 -1995, Cl.7, IRS B1 - 2001, Cl. 1	Dryi	ing Method	:	NA			
7.1 Joint design details (Sketch showing arrangements of parts, weld details, weld passes & their sequence) Top/Bott Fing.Plt Top/Bott Fing.Plt As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. 1	.3 Shielding Gas		:	CO2			
(Sketch showing arrangements of parts, weld details, weld passes & their sequence) Top/Bott Fing.Plt Top/Bott Fing.Plt Batten.Plt Side,Plt As per IS 4353 -1995, Cl.7, IRS B1 - 2001, Cl. 1	7 Base metal preparation			Fusion faces & adjacent surface are cleaned and made free from crack notches, mill scales, paints, grease, rust etc. which may affect weld quality.			
details, weld passes & their sequence) Top/Bott Fing.Plt 12 10 Batten.Plt 540 As per IS 4353 -1995, Cl.7, IRS B1 - 2001, Cl. 1	.1 Joint design details		:				
	(Sketch showing arrangements of par details, weld passes & their sequence	rts, weld		Top/Bott Fing.Pit 12 10 Betten,Pit 16			
	.2 Joint preparation		:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003			
8 Welding Current	3 Welding Current						
Type : DC Polarity : Reverse			:				

Appendix-V (Ref.Cl.26 of BI-2001)

	T			_			A	ppendix-V (Ref.	Cl.26 of BI-2001)
9		ualification		:	As per IS:73	10 (Part-I) - 19	74		
10	Welding parameters and technique								
11.1	11.1 Welding parameters				as below				
Weld	Welding Pass Electrodes wire dia. (Amps)		A	arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)	
	1	1.2 mm	180 - 270		24 - 32	2.0 - 5.0	NA	12 - 15	16 - 20
11.2	Welding	Sequence and t	echnique	:					
			2			1			
12		of run-on / ru		:	NA				
13	Cleaning next weld	of weld bead b d bead	efore laying of		NA				
14		paration before coove welds	welding other	:	NA				
15	Preheatii	ng and inter pas	ss temperature	:	100°C - \x	we.			
16	Peening			:	NA				
17	Post weld	l treatment		;	NA				
. 18	Rectificat	ion of weld def	ect		By re-weldin IS 9595-200 Test.	g after complet 3 using A3 elect	e removal of def trode of IRS M:20	ective weld as 3-2017 after co	per CL.32.2 of onducting D.P.
19	Inspection	n of weld		:	Visual, D.P. T	est.			
20	Any other	relevant detai	l	:	None.		. 0		

		KS DE	etween Knandwa and Mordar Stations.
	nd address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
Welding	Procedure specification No.	;	SEE/SCR/61.00m/WPSS/031
1	Drawing No.	:	RDSO/B-17182/8/R ;DIAGONAL; SECTION ON A - A (BATTERN PLATE)
2	Weld Joint description	:	6mm, Fillet weld (Flange Plates to Battern Plate, Outside Location)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (12mm X 10mm)
4	Welding Process	· :	GMAW (Gas Metal Arc Welding)
5	Welding Position	:	Horizontal
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	1 of IRS M-46-2013
	Dia	:	1.2 MM
	Drying Method	:	NA
6.2	Flux		
	Class	:	NA
	Туре	:	NA .
	. Drying Method	:	NA .
6.3	Shielding Gas	·:	CO2
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Side.Plt 20 Top/Bott Fing.Plt 12 10 150 Batten.Plt 550
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	:	Reverse

- 4	Welder Q	ualification			A 10		A	ppenaix-v (Ref	.CI.26 of BI-2001)
10	Welding parameters and technique			As per IS:73	10 (Part-I) - 19	74			
11.1	Welding	parameters	centique	-:-					
Weld	ing Pass	Electrodes wire dia. (mm)	Current (Amps)	: A	as below Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)
	1	1.2 mm	180 - 270		24-32	2.0-5.0	. NA	12 - 15	16 - 20
11.2	Welding	Sequence and t	technique				inter.	, 12-15	10-20
				·					
			2]	71					
	4					[3]			
12	Provisio	n of run-on / ru	ın-off tabs	:	NA				
13	Cleaning next wel		efore laying of		NA				
14		paration before roove welds	e welding other	:	NA				
15	Preheati	ng and inter pa	ss temperature	:	100°C - \	800C			
16	Peening				NA				
17	Post wel	d treatment		:	NA				
18	Rectifica	tion of weld de	fect	:	By re-welding 15 9595-200 Test.	ng after comple 13 using A3 elec	te removal of de trode of IRS M:2	fective weld as 8-2017 after o	s per CL.32.2 of conducting D.P.
19	Inspection	on of weld		:	Visual, D.P.	Γest.			
20	Any othe	r relevant deta	il		None.		0		

	and address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
Velding	Procedure specification No.	:	SEE/SCR/61.00m/WPSS/032
1	Drawing No.	:	RDSO/B-17182/8/R ;DIAGONAL; SECTION ON B - B (BATTERN PLATE)
2	Weld Joint description	:	6mm, Fillet weld (Flange Plates to Battern Plate , Outside Location)
3	Base Metal	:	15:2062:2011, Gr E250 E0, Fully Killed & Fully Normalized & Base metal thickness (12mm X 10mm)
4	Welding Process	:	GMAW (Gas Metal Arc Welding)
5	Welding Position	:	Horizontal
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	1 of IRS M-46-2013
	Dia	:	1.2 MM
	Drying Method	:	NA
6.2	Flux	,	
	Class	:	NA
	Туре	·:	NA .
	Drying Method	:	NA
6.3	Shielding Gas	:	CO2
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Side.Plt 12 Top/Bott Fing.Plt 12 10 150 Batten.Plt 562
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
84	Polarity	:	Reverse

									Page-064
9	Welder Q	ualification		. 1			Ar	pendix-V (Ref.	Cl.26 of BI-2001)
10	Welding	Welding parameters and technique			As per IS:73	l0 (Part-I) - 19	74		2001)
11.1	Welding	parameters	technique	: [
		Electrodes		:	as below				
	ng Pass	wire dia. (mm)	Current (Amps)	A	rc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out	Gas Flow Rate (I/min)
	¥	. 1.2 mm	180 - 270		24 - 32	2.0 - 5.0	NA	(mm)	
11.2	Waldi						1 100	12 - 15	16 - 20
	weiding	Sequence and t	technique	;					
			41.	7		[1]			
12	Provisio	on of run-on / r	un-off tabs	:	NA				
13	next we	ld bead	before laying of		NA				
14	Root proside of g	eparation befor groove welds	re welding other	:	NA.				
15	Preheat	ing and inter p	ass temperature	:	100°C~	Soc			
16	Peening	g			NA				
17	Post we	eld treatment		,					
18	Rectific	ation of weld d	lefect		By re-wel IS 9595-2 Test.	ding after com 003 using A3 e	plete removal of lectrode of IRS M	defective wel 1:28-2017 aft	d as per CL.32.2 er conducting D.
19	Inspect	ion of weld			: Visual, D.	P. Test.			
20	Any oth	er relevant de	tail		: None.		0		

Second		production of RDSO and other protective wor	KS DE	etween Knandwa and Mordar stations.
Nelding Procedure specification No. SEE/SCR/61.00m/WPSS/033		en de esta de la companya del companya de la companya del companya de la companya del la companya de la company	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR,AMEENPUR, SANGAREDDY-TELANGANA
Weld Joint description Substitute Subs	Welding	Procedure specification No.	:	
Seed to the content of the content			:	RDSO/B-17182/8/R ;DIAGONAL; SECTION ON C - C (BATTERN PLATE
Size Metal Size Metal Size Metal Size Meding Process GMAW (Gas Metal Arc Welding)	2	Weld Joint description	:	6mm, Fillet weld (Flange Plates to Battern Plate , Outside Location)
Welding Process Welding Process Welding Process Welding Consumable 6.1 Electrode/Wire Class Dia Drying Method Drying Method Class : 1 of IRS M-46-2013 1.2 MM NA Class : NA Type : NA Drying Method : NA Shielding Gas Class : NA Type : NA Drying Method : NA Shielding Gas Class : NA Type : NA Drying Method : NA Class : NA Type : NA Drying Method : NA Class : NA Type : NA Drying Method : NA Co2 Fusion faces & adjacent surface are cleaned and made free from cracke notches, mill scales, paints, grease, rust etc. which may affect weld quality. T.1 Joint design details (Sketch showing arrangements of parts, weld details, weld passes & their sequence) Top/Bott Fing.Pit Top/Bott Fing.Pit Sede.Pit Document Palarity : Reverse	25/33		:	IS:2062:2011, Gr 250 B0, Fully Killed & Fully Normalized &
6 Welding Consumable 6.1 Electrode/Wire Class Dia Drying Method Drying		,	:	
6.1 Electrode/Wire Class Dia Drying Method 6.2 Flux Class Type Drying Method 6.3 Shielding Gas Class NA Base metal preparation Class NA Close NA Shielding Gas Shielding Gas Close NA Shielding Gas Shieldi	1007			Horizontal .
Class Dia Drying Method : 1.2 MM Drying Method : NA Class Type Drying Method : NA 6.2 Flux Class Type Drying Method : NA 6.3 Shielding Gas : CO2 7 Base metal preparation : Pusion faces & adjacent surface are cleaned and made free from cracks notches, mill scales, paints, grease, rust etc. which may affect weld quality. 7.1 Joint design details : Side.Plt (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) As per IS 4353 - 1995, Cl.7, IRS B1 – 2001, Cl. 17 & WBC - 2001 & IS 9595-2003 8 Welding Current Type : DC Polarity : Reverse				
Dia 1.2 MM NA 6.2 Flux Class NA Type NA Drying Method NA 6.3 Shielding Gas Co2 Fusion faces & adjacent surface are cleaned and made free from cracks notches, mill scales, paints, grease, rust etc. which may affect weld quality. 7.1 Joint design details Co2 (Sketch showing arrangements of parts, weld details, weld passes & their sequence) Co2 (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements of parts, weld details, weld passes & their sequence) (Sketch showing arrangements	6.1	Electrode/Wire		
Drying Method : NA Class : NA Type Drying Method : NA Class Type Drying Method : NA 6.3 Shielding Gas : CO2 7 Base metal preparation : NA 7.1 Joint design details : Sketch showing arrangements of parts, weld details, weld passes & their sequence) 7.2 Joint preparation : As per IS 4353 -1995, CL7, IRS B1 – 2001, CL 17 & WBC - 2001 & IS 9595-2003 8 Welding Current : Reverse		Class	:	1 of IRS M-46-2013
Class Type NA Drying Method NA 6.3 Shielding Gas CO2 7 Base metal preparation Fusion faces & adjacent surface are cleaned and made free from cracks notches, mill scales, paints, grease, rust etc. which may affect weld quality. 7.1 Joint design details Signer of parts, weld details, weld passes & their sequence) 7.2 Joint preparation Side.Plt 6 Batten,Plt 6 Batten,Plt 7.2 Joint preparation 7.3 Sayer IS 4353 -1995, Cl.7, IRS B1 – 2001, Cl. 17 & WBC - 2001 & IS 9595-2003 8 Welding Current 7 Speerse		Dia	:	1.2 MM
Class Type : NA Type Drying Method : NA 6.3 Shielding Gas : CO2 7 Base metal preparation : Fusion faces & adjacent surface are cleaned and made free from cracks notches, mill scales, paints, grease, rust etc. which may affect weld quality. 7.1 Joint design details : (Sketch showing arrangements of parts, weld details, weld passes & their sequence) 7.2 Joint preparation : As per IS 4353 -1995, CL7, IRS B1 - 2001, CL 17 & WBC - 2001 & IS 9595-2003 8 Welding Current Type : DC			:	NA
Type Drying Method : NA 6.3 Shielding Gas : CO2 7 Base metal preparation : Fusion faces & adjacent surface are cleaned and made free from cracks notches, mill scales, paints, grease, rust etc. which may affect weld quality. 7.1 Joint design details : Sketch showing arrangements of parts, weld details, weld passes & their sequence) 7.2 Joint preparation : As per IS 4353 -1995, CL7, IRS B1 – 2001, CL 17 & WBC - 2001 & IS 9595-2003 8 Welding Current Type : DC	6.2	Flux		
Drying Method : NA 6.3 Shielding Gas : CO2 7 Base metal preparation : Fusion faces & adjacent surface are cleaned and made free from cracks notches, mill scales, paints, grease, rust etc. which may affect weld quality. 7.1 Joint design details : Side.Plt (Sketch showing arrangements of parts, weld details, weld passes & their sequence) 7.2 Joint preparation : As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. 17 & WBC - 2001 & IS 9595-2003 8 Welding Current Type : DC		Class	:	NA
6.3 Shielding Gas : CO2 7 Base metal preparation : Fusion faces & adjacent surface are cleaned and made free from cracks notches, mill scales, paints, grease, rust etc. which may affect weld quality. 7.1 Joint design details : (Sketch showing arrangements of parts, weld details, weld passes & their sequence) 7.2 Joint preparation : As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003 8 Welding Current : Reverse		Туре	:	NA NA
Fusion faces & adjacent surface are cleaned and made free from cracks notches, mill scales, paints, grease, rust etc. which may affect weld quality. 7.1 Joint design details (Sketch showing arrangements of parts, weld details, weld passes & their sequence) Side.Plt Side.Plt Batten,Plt See IS 4353-1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003 Welding Current Type DC Polarity Reverse		The state of the s	:	NA .
7.1 Joint design details (Sketch showing arrangements of parts, weld details, weld passes & their sequence) 7.2 Joint preparation (Sketch showing arrangements of parts, weld details, weld passes & their sequence) 7.2 Joint preparation (As per IS 4353 -1995, Cl.7, IRS B1 – 2001, Cl. 17 & WBC - 2001 & IS 9595-2003 8 Welding Current Type: DC Polarity: Reverse	6.3	Shielding Gas	:	CO2
(Sketch showing arrangements of parts, weld details, weld passes & their sequence) Fig. Plt Side.Plt 12	7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
details, weld passes & their sequence)	7.1	Joint design details	:	
8 Welding Current Type : DC Polarity : Reverse				Top/Bott Fing.Pit 12 Top/Bott Fing.Pit 150 Batten,Pit 16
Type : DC Polarity : Reverse	7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
Polarity : Reverse	8	Welding Current		
Polarity : Reverse		Туре	:	DC
		Polarity		Reverse

								ppondiv V (D. 6	Page-066
. 9		Qualification		:	As per IS:73	10 (Part-I) - 19	774	ppendix-v (Ker	.CI.26 of BI-2001)
10	Welding	parameters and	l technique	:			•		
11.1	Welding	parameters		:	as below				
Weld	ling Pass	Electrodes wire dia. (mm)	Current (Amps)	A	arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)
	1	1.2 mm	180 - 270	-	24 - 32	2.0-5.0	NA.	12 - 15	16 - 20
							7275	12-13	10-20
11.2	Welding S	Sequence and t	echnique	:					
			2	<i>73</i>		[1]			** 21
12		of run-on / ru		:	NA			-	
13	Cleaning next weld	of weld bead be l bead	efore laying of		NA				
14		oaration before oove welds	welding other	:	'NA				
15	Preheatin	g and inter pas	s temperature	:	100°C ~\8	2000		×	
16	Peening	34.5		:	NA				
17	Post weld	treatment			NA .				
18	Rectificat	ion of weld defe	ect		By re-weldin	g after complete B using A3 elect	e removal of def rode of IRS M:28	ective weld as 3-2017 after co	per CL.32.2 of onducting D.P.
19	Inspection	n of weld		:	Visual, D.P. T	est.			
20	Any other	relevant detail		:	None.	0			

Vame a	nd address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS
veiding	Procedure specification No.		SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
1	Drawing No.		SEE/SCR/61.00m/WPSS/034
2	NAME OF THE PROPERTY OF THE PR	-	RDSO/B-17182/5/R ;TOP CHORDS ; DETAILS OF LACING
	Weld Joint description	-	6mm, Fillet weld (Flange Plates to Lacing Angle , Outside Location)
			IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & IS:2062:2011, Gr E250 B0
3	Base Metal		Base metal thickness (16mm X ISA 100 X 100 X 10mm)
4	Welding Process		GMAW (Gas Metal Arc Welding)
5	Welding Position	:	Horizontal
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	1 of IRS M-46-2013
	Dia		1.2 MW
()	Drying Method	:	NA
6.2	Flux		
	Class		NA
	Туре		NA -
6.3	Drying Method Shielding Gas	:	NA .
0.5	Smelding Gas	-:-	CO2
7	Base metal preparation		Fusion faces & adjacent surface are cleaned and made free from cracks
1.82)		notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	1	
	(Sketch showing arrangements of parts, weld		- L. A.C.
	details, weld passes & their sequence)		
			650
			TOUR LOOK TO SELL LONG.
			DETAIL OF LACING
7.2	Joint preparation	1	As per IS 4353 -1995, Cl.7, IRS B1 - 2001, Cl. 17 & WBC - 2001 &
		١.	IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	:	Reverse

Appendix-V (Ref.Cl.26 of BI-2001)

9	Welder Q	ualification		:	As per IS:731	0 (Part-I) - 19	74					
		parameters and	l technique	:								
		parameters		:	as below		, , , ,					
Weldi	Welding Pass Electrodes wire dia. (Amps)		A	rc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)				
	1	1.2 mm	180 - 270		24 - 32	2.0 - 5.0	NA	12 - 15	16 - 20			
11.2	Welding	Sequence and	technique	-	NA							
12	1	n of run-on / ru			NA							
13		Cleaning of weld bead before laying of next weld bead		:	NA							
14	10.00	eparation befor groove welds	re welding other	:	NA	NA						
15	Preheat	ting and inter p	ass temperature	<u> </u> :	100°C -\	5000						
16	Peening	g		:	NA							
17	Post w	eld treatment		:	NA							
18		cation of weld o	lefect	;		By re-welding after complete removal of defective weld as per CL.32.2 of IS 9595-2003 using A3 electrode of IRS M-28-2017 after conducting D.P. Test.						
19	9 Inspec	tion of weld		<u> </u>	Visual, D.P.	Test.	······································					
20	0 Any of	ther relevant de	etail	L	: None.							

GE.14	Specification of RDSO and other protective wo	rks l	petween Khandwa and Mordar stations.
Name :	and address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
Weldin	g Procedure specification No.	:	SEE/SCR/61.00m/WPSS/035
1	Drawing No.	:	RDSO/B-17182/5/R ;TOP CHORDS ; DETAILS OF LACING
2	Weld Joint description	1	6mm, Fillet weld (Flange Plates to Lacing Angle , Outside Location)
. <u>3</u>	Base Metal	;	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & IS:2062:2011, Gr E250 B0 Base metal thickness (20mm X ISA 100 X 100 X 10mm)
4	Welding Process	:	GMAW (Gas Metal Arc Welding)
5	Welding Position	:	Horizontal
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	;	1 of IRS M-46-2013
***	Dia	:	1.2 MM
	Drying Method	:	NA
6.2	Flux		
	Class	:	NA
	Туре	:	NA .
	Drying Method	:	NA.
6.3	Shielding Gas	:	CO2
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)	3 0 3	DETAIL OF LACING DETAIL OF LACING
7.2	Joint preparation	:	As per IS 4353 -1995, Cl.7, IRS B1 – 2001, Cl. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	:	Reverse

Appendix-V (Ref.Cl.26 of BI-2001)

9	147-14	110						ppenaix-v (Ker.	C1.20 01 B1-2001)		
		alification		:	As per IS:731	l0 (Part-I) - 19	74				
	Welding p	arameters and	technique	:							
11.1	Welding p	arameters		:	as below						
Weldi	ing Pass	Electrodes wire dia. (mm)	Current (Amps)	A:	rc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)		
	1	1.2 mm	180 - 270		24 - 32	2.0 - 5.0	NA	12 - 15	16 - 20		
11.2	Welding	Sequence and t	echnique	:	NA						
12 Provision of run-on / run-off tabs			:	NA							
13	Cleaning of weld bead before laying of next weld bead		:	NA	NA						
14	Root preparation before welding other side of groove welds			:	NA	NA .					
15	Preheati	ng and inter pa	ss temperature	:	100°C -\	100°C -180°C					
16	Peening	7		:	NA	NA					
17	Post we	d treatment		:	NA						
18	Rectification of weld defect		<u> </u>	By re-weldi IS 9595-20 Test.	By re-welding after complete removal of defective weld as per CL.32.2 of IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. Test.						
19	Inspecti	on of weld			Visual, D.P.	Test.					
20		er relevant det	ail		None.		0				
-	The state of the s				Ao	A	X				

WELDING PROCEDURE SPECIFICATION SHEET OPEN WEB GIRDER 61.00m SPAN

NAME OF WORK: Akola - Kandwa Section: Conversion of track from MG to BG between Khandwa - Amalkhurd stations - Proposed Re-Construction from ROR (Rail Over Rail) Br No:570/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and Launching of open web through type welded steel girder of clear span 61.00m, supplying, fabrication & fixing of galvanised H-Beam type steel channel sleepers, Execution of earth works for approaches of ROR with COE, SQ2, blanketing to GE.14 Specification of RDSO and other protective works between Khandwa and Mordar stations.

GE.14 S	pecification of RDSO and other protective wor	rks b	etween Khandwa and Mordar stations.
Name a	nd address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
Welding	Procedure specification No.	-;	SEE/SCR/61.00m/WPSS/036
_ 1	Drawing No.	:	RDSO/B-17182/6/R ;END RACKER ; DETAILS OF LACING
2	Weld Joint description	:	6mm, Fillet weld (Flange Plates to Lacing Angle , Outside Location)
. 3	Base Metal	:	15:2062:2011, Gr E250 D0, Fully Killed & Fully Normalized & Base metal thickness (12mm X 16mm)
4	Welding Process	:	GMAW (Gas Metal Arc Welding)
5	Welding Position	:	Horizontal
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	1 of IRS M-46-2013
	Dia	;	1.2 MM
	Drying Method	;	NA
6.2	Flux		
	Class	:	NA
	Туре	:	TNA
	Drying Method	:	NA .
6.3	Shielding Gas	;	CO2
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		DETAIL OF LACING FLAT 65x16x591
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 - 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC

Polarity :

Reverse

. 9	Welder O	ualification		Γ.	As non IS.72	110 (D . D . 1	A	ppendix-V (Ref	.CI.26 of BI-2001
10		parameters and	l technique	+	As per 15:73	10 (Part-I) - 19	074		
11.1		parameters	ceemique	 	as below				
Weld	Welding Pass Electrodes wire dia. (Amps)		1	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)	
	1 1.2 mm 180 - 270		180 - 27 0		24 - 32	2.0-5.0	NA.	12 - 15	16 - 20
11.2	11.2 Welding Sequence and technique				NA				
12	Totalon of tun-on / tun-on tabs			:	NA NA				
13	Cleaning of weld bead before laying of next weld bead			:	NA				
14	Root preparation before welding other side of groove welds		welding other	:	NA				
15	Preheatii	ng and inter pa	ss temperature	:	100°C~\	000			
16	Peening			<u> </u>	NA NA				*
17	Post weld	l treatment		:	NA				
. 18	Rectification of weld defect		ect	:	By re-welding after complete removal of defective weld as per CL.32.2 of IS 9595-2003 using A3 electrode of IRS M:28-2017 after conducting D.P. Test.				
19	Inspectio	n of weld		:	Visual, D.P. T	est.			
20	Any other	relevant detai	1	:	None.				

WELDING PROCEDURE SPECIFICATION SHEET OPEN WEB GIRDER 61.00m SPAN

NAME OF WORK: Akola - Kandwa Section: Conversion of track from MG to BG between Khandwa - Amalkhurd stations - Proposed Re-Construction ROR (Rail Over Rail) Br No:570/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and Launching of open web through type welded steel girder of clear span 61.00m, supplying, fabrication & fixing of galvanised H-Beam type steel channel sleepers, Execution of earth works for approaches of ROR with COE, SQ2, blanketing to GE.14 Specification of RDSO and other protective works between Khandwa and Mordar stations.

I	and other protective work		
	nd address of Fabricator	:	M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR,AMEENPUR, SANGAREDDY-TELANGANA
Velding	Procedure specification No.	(A-107-1	SEE/SCR/61.00m/WPSS/037
1	Drawing No.	:	RDSO/B-17182/8/R ;DIAGONAL ; DETAILS OF LACING
2	Weld Joint description	:	6mm, Fillet weld (Flange Plates to Lacing Angle, Outside Location)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & Base metal thickness (12mm X 16mm)
4	Welding Process	:	GMAW (Gas Metal Arc Welding)
5	Welding Position	:	Horizontal
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	1 of IRS M-46-2013
	Dia	:	1.2 MM
	Drying Method	:	NA .
6.2	Flux		
	Class	:	NA
1	Туре	:	NA .
1	Drying Method	:	NA
6.3	Shielding Gas	:	CO2
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	.:	
7.1	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		DETAIL OF LACING FLAT 65x16x591
7.2	Joint preparation	:	As per IS 4353 -1995, Cl.7, IRS B1 – 2001, Cl. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current	-	DC
-	Type		Reverse A

									Page-074	
9	Welder (ualification		Τ.	As per IS. 72	210 (Post I) 10		appendix-V (Ref	CI.26 of BI-2001)	
10		parameters and	d technique	+:	AS PEL 13:73	10 (Part-I) - 19	974			
11.1	Welding	parameters	- totalique	†:	as below					
Welding Pass Wire dia. Cu		Current (Amps)	<u> </u>	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)		
	1	1.2 mm	180 - 270		24 - 32	2.0 - 5.0	NA	12 - 15	16 - 20	
11.2	Welding	Sequence and to	echnique	:	NA					
12	Provision	of run-on / rui	n-off tabs		NA					
13	Cleaning of weld bead before laying of next weld bead		:	ÑÀ						
14	Root preparation before welding other		welding other	:	NA					
15	Preheatin	g and inter pas	s temperature		100°C ~\S	NoC				
16	Peening			<u>.</u>	NA NA				*	
17	Post weld	treatment		:	NA					
18	Rectificati	on of weld defe	ct .	- 1		And the second s	e removal of defe rode of IRS M:28		The same of the sa	
	Inspection	of weld		:	Visual, D.P. Te	est				
20	Any other	relevant detail			None.) a	· fartiti			

WELDING PROCEDURE SPECIFICATION SHEET

OPEN WEB GIRDER 61.00m SPAN NAME OF WORK: Akola - Kandwa Section: Conversion of track from MG to BG between Khandwa - Amalkhurd stations -Proposed Re-Construction of ROR (Rail Over Rail) Br No:570/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and Launching of open web through type welded steel girder of clear span 61.00m, supplying, fabrication & fixing of galvanised H-Beam type steel channel sleepers, Execution of earth works for approaches of ROR with COE, SQ2, blanketing to GE.14 Specification of RDSO and other protective works between Khandwa and Mordar stations. Name and address of Fabricator M/s. SHAKTHI ENGINEERING EQUIPMENTS SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA Welding Procedure specification No. SEE/SCR/61.00m/WPSS/038 1 Drawing No. RDSO/B-17182/11; (CROSS BRACKET TAPPERED PLATE, DETAIL X) 2 Weld Joint description 12mm, Fillet weld (Corner Tappered Plate) IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized & 3 Base Metal Base metal thickness (10mm X 10mm) 4 **Welding Process** SAW (Submerged Arc Welding) 5 **Welding Position** 1F,2F 6 **Welding Consumable** 6.1 Electrode/Wire Class : WI of IRS M. 39/2001 Dia 3.15 MM **Drying Method** NA 6.2 Flux

	Class		F1 of IRS M. 39-2001
	Туре		Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.

ł .	Туре	:	Agglomerated
	Drying Method	:	250°C for One hour before use or Recommendation as per Manufacturer.
6.3	Shielding Gas	:	NA
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from cracks, notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		TAPPERED PL 260a 10a/250 TO 200 AT TOP WELD MATRIAL DETAIL AT 'X'
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
-	Welding Current		
8	Type	;	DC
	Polarity	:	Reverse

9	Welder O	ualification		T				Appendix-V (Re	f.CI.26 of BI-200
10				:	As per IS:73	310 (Part-I) - 19	974		
11.1	Welding	parameters and	technique	:					
-1.1	weiding	parameters		:	as below				
Welding Pass Wire dia. (Amps)		,	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out	Gas Flow Rat		
	1	3.15 mm	425 - 500		24-32	1.0 -2.5	0.40 - 0.50	(mm)	. N.A.
11.2	Welding :	Sequence and te	echnique	:			0.10 0.50	10 20	, viva
				Z:	1				£
12		of run-on / rur		:	Yes				
13	next weld	of weld bead be I bead	fore laying of		NA				
14		paration hefore oove welds	welding other	:	ŇÁ			#	
15	Preheatin	ng and inter pass	s temperature	:	100°C ~\8	,00C			
16	Peening			:	NA				
17	Post weld	l treatment			NA				
18	Rectificat	ion of weld defe	ct	:	By re-welding IS 9595-2003 Test.	g after complete Busing A3 electr	removal of defe rode of IRS M:28-	ctive weld as p 2017 after con	er CL.32.2 of ducting D.P.
19	Inspection	n of weld		:	Visual, D.P. Te	est, Macro Etchi	ng Test.		
20	Any other	relevant detail		:	None.		0		

WELDING PROCEDURE SPECIFICATION SHEET OPEN WEB GIRDER 61.00m SPAN

NAME OF WORK: Akola - Kandwa Section: Conversion of track from MG to BG between Khandwa - Amalkhurd stations - Proposed Re-Construction ROR (Rail Over Rail) Br No:570/2 at Ch: 570696.084m in place of Exg. ROR- Supply, Fabrication and Launching of open web through type welded steel girder of clear span 61.00m, supplying, fabrication & fixing of galvanised H-Beam type steel channel sleepers, Execution of earth works for approaches of ROR with COE, SQ2, blanketing to GE.14 Specification of RDSO and other protective works between Khandwa and Mordar stations.

Name	and address of Fabricator		M/s. SHAKTHI ENGINEERING EQUIPMENTS
Weldir	ng Procedure specification No.		SYNO-452, SULTANPUR, AMEENPUR, SANGAREDDY-TELANGANA
1		;	SEE/SCR/61.00m/WPSS/039
	Drawing No.	:	RDSO/B-17182/R SERIES
2	Weld Joint description	:	4mm, Tack weld on all Fillet joints (50mm length)
3	Base Metal	:	IS:2062:2011, Gr E250 B0, Fully Killed & Fully Normalized
4	Welding Process	:	GMAW (Gas Metal Arc Welding)
5	Welding Position	٠:	Horizontal
6	Welding Consumable		
6.1	Electrode/Wire		
	Class	:	1 of IRS M-46-2013
	Туре	:	1.2 MM
	Drying Method	:	NA
6.2	Flux		
	Class	:	NA .
	Туре	:	NA
	Drying Method	:	NA
6.3	Shielding Gas	:	CO2
7	Base metal preparation	:	Fusion faces & adjacent surface are cleaned and made free from crack notches, mill scales, paints, grease, rust etc. which may affect weld quality.
7.1	Joint design details	:	
712	(Sketch showing arrangements of parts, weld details, weld passes & their sequence)		Length of Tack Weld - 50mm; Gap between Tack Weld - 300mm
7.2	Joint preparation	:	As per IS 4353 -1995, CI.7, IRS B1 – 2001, CI. 17 & WBC - 2001 & IS 9595-2003
8	Welding Current		
	Туре	:	DC
	Polarity	:	Reverse

9	lur v v						Α	ppendix-V (Ref	Page-078 CI.26 of BI-2001)	
-	Control of the state of the sta	ualification		:	As per IS:73	10 (Part-I) - 19	974	ppenan v (ner	di.20 01 B1-2001)	
10	Welding	parameters and	l technique	1:			-			
11.1	Welding	parameters		:	as below					
Weld	Welding Pass Electrodes wire dia. (Amps)			rc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow Rate (I/min)		
	1	1.2 mm	120 - 240	-	24-32	2.0-5.0	NA .	12 - 15	16-20	
							<u></u>		1	
11.2	Welding	Sequence and t	echnique	:	NA					
12	Tall on / Tall on / Tall-on tabs		:	NA			8			
13	Cleaning of weld bead before laying of next weld bead				NA		Ŷ			
14	Root preparation before welding other side of groove welds		welding other	:	NA					
15	Preheatir	ng and inter pas	s temperature	:	NA '					
16	Peening			:	NA NA					
17	Post weld	l treatment		:	NA .					
18	Rectificat	ion of weld def	eet				te removal of del of IRS M-46-201		per CL 32.2 of	
19	Inspectio	n of weld		:	Visual					
20	Any other	relevant detai		:	None.	0				

Railway Open Web Girder (25t loading)
76.2m clear span
MODEL WPSS No- RDSO/ Infra-II/ B&S/ RG/
OWG./ WPSS 76.2 series (25 nos)

Appendix-V (Ref.CI.26 of B I-2001).

Welding Procedure Specification Sheet for 76.2 m. Span Opes Web Girder (Welded through type) 25 T Loading - 2008 Name and address of Fabricator M/s. Royal Infraconstru Ltd., Urla Industrial Growth Centre, Raipur – 493221 (C.G.) Welding Procedure specification No. ROYAL/SIVOK-RANGPO/76.2/01 dated 29.01.2022 Drawing No. 01. RDSO/B-17183/R (G.A.) 02. Welding Joint Description. Fillet 8 mm 03. Base Metal. IS: 2062:2011 E-250 C. 04. Welding Process A September of the sept S.A.W. 05. Welding Position. Flat 06. Welding Consumable. Electrode/Wire Class : W1 of IRS M.39-2001. 6.1 Type Copper coated Solid Wire. Drying Method N.A. 6.2 Flux Class F 1 of IRS M 39 - 2001 Type Agglomerated. Drying Method Recommendation as per manufacturer. Shielding Gas 6.3 : N.A. Base Metal Preparation Fusion Faces and adjacent surfaces are cleaned and made free from 07. Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality. Joint design Details 7.1 20 (Sketch showing arrangements of parts, weld beat, weld passes & their sequence etc.,) Bottom Chord L0 – L1 & L1 – L2 2. Diagonal U1-L2 WELD 3. End Raker L0-U1 WELD 620 D-B MM MM 8-MM 8-4 WELD WELD WELD 20 LO-L1 & L1-L2 U1-L2 L0-U1 Joint preparation 7.2 As Per IS: 4353 - 1995, CI.7, IRS B1-2001, CI.17.3 & WBC - 2001. 08. Welding Current Type DC Polarity Reverse Welder qualification 09. As per IS: 7310/7307 (Part-I) - 1974 Welding Parameters and technique 10. Welding Parameters 10.1

Page 2 of 50 Appendix-V (Ref.C1.26 of BI-2001)

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1 1	4	EE0 (00			-		
		550 - 600	28 - 32	1.4 - 1.8	0.35 - 0.50	15 – 20	N.A.

10.2	Welding Sequence and technique	:	Welding from run on to run off ta	bs at the free ends.
			-3	
			1	

11.	Provision of run-on / run-off tabs	:	Yes V. C.
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	1:	N.A. Vigorian & grinding
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	110°C (General preheating)
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	:	Bottom Chord L0 –L1 & L1 – L2, Diagonal U1–L2 & End Raker L0- U1

	and address of Fabricator	:	M/s. Royal Infraconstru Ltd., Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
	ng Procedure specification No.	1	ROYAL /SIVOK-RANGPO/76.2/02 dated 29.01.2022
01.	Drawing No.	1	RDSO/B-17183/R (G.A.)
02.	Welding Joint Description.	1	Fillet 8 mm
03.	Base Metal.	1	IS: 2062;2011 E-250 C.
04.	Welding Process	1:	S.A.W.
05.	Welding Position.	† ÷	Flat
06.	Welding Consumable.		1 Id.
	Electrode/Wire Class	:	W1 of IRS M.39-2001.
6.1	Туре	:	Copper coated Solid Wire.
	Drying Method	1 :	N.A.
6.2	Flux		
	Class Type Drying Method	:	F 1 of IRS M 39 – 2001 Agglomerated. Recommendation as per manufacturer.
6.3	Shielding Gas	:	N.A.
07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat, weld passes & their sequence etc.,) Component:- Bottom Chord L2 - L3 & L3 - L4 Flange with Web		32 - 25 - 8 MM WELD - 8 MM WEL
7.2	Joint preparation	:	As Per IS: 4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
08.	Welding Current	-:-	•
	Туре	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	Jet -
10.1	Welding Parameters	:	Prasenjit Purkayastha

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	530 - 570	28 - 32	1.4 - 1.8	0.35 - 0.50	15 - 20	N.A.

0.2	Welding Sequence and technique	1:	Welding from run on to run off tabs at the free ends.
			-3
	*		1 4

11.	Provision of run-on / run-off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	By brush cleaning & grinding N.A. 110°C (General preheating) N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	:	Bottom Chord L2 - L3 & L3 - L4

Name and address of Fabricator	:	M/s. Royal Infraconstru Ltd.,
Welding Procedure specification No.	-	Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
01. Drawing No.		ROYAL /SIVOK-RANGPO/76.2/03 dated 29.01.2022
02. Welding Joint Description.		RDSO/B-17183/R (G.A.)
03. Base Metal.	1:	Fillet 8 mm
04. Welding Process	:	IS: 2062:2011 E-250 C.
05. Welding Position.	:	S.A.W.
06. Welding Consumable.	:	Flat
Electrode/Wire		•
Class	:	W1 of IRS M.39-2001.
Туре	:	Copper coated Solid Wire.
6.2 Flux Drying Method	 :	N.A.
Class	:	F 1 of IRS M 39 – 2001
Туре	:	Agglomerated.
Drying Method Shielding Gas	:	Recommendation as per manufacturer.
0.3	:	N.A.
07. Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1 Joint design Details	:	
(Sketch showing arrangements of parts, weld beat, weld passes & their sequence etc.,) Component :- Bottom Chord L4 – L5 Flange with Web		32
7.2 Joint preparation	:	As Per IS: 4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
08. Welding Current	:	1
Туре	:	DC .
Polarity	;	Reverse // 1
09. Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10. Welding Parameters and technique	:	Prasenjit Purkayastha
10.1 Welding Parameters (JV)	:	General Månager / PH-Sivok-II Sivok-Rangpo New BG Rail Line Project
		Siliauri

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	530 - 570	28 - 32	1.4 - 1.8	0.35 - 0.50	15 - 20	N.A.

Seque	nce No.	wire dia. (mm)	(Amps)	(Volt)	Speed (m/min)	(m/min)	out (mm)	(1///////)
	1	4	530 - 570	28 – 32	1.4 - 1.8			N.A.
0.2	Welding	Sequence and t	technique	:	Welding from run	on to run off tabs	at the free ends.	
					,	3		
						-2) ·	
						1		
						4	1	

11.	Provision of run-on / run-on tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating)
14.	Preheating and inter pass temperature	:	
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.

Bottom Chord L4 - L5

18.

19.

Any other relevant Details

Nan	ne and address of Fabricator	:	M/s. Royal Infraconstru Ltd., Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
Weld	fing Procedure specification No.	:	ROYAL/SIVOK-RANGPO/76.2/04 dated 29.01.2022
01.		· :	RDSO/B-17183/R (G.A.)
02.		1:	Fillet 8mm
03.		1	IS: 2062:2011 E-250 C.
04.		:	S.A.W.
05.		:	Flat
06.	Welding Consumable.	1	
6.1	Electrode/Wire Class	:	W1 of IRS M.39-2001. Copper coated Solid Wire. N.A.
		·	NO.
6.2	Flux Class Type Drying Method	:	F 1 of IRS M 39 – 2001 Agglomerated. Recommendation as per manufacturer.
	Shielding Gas	:	N.A.
6.3 07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat, weld passes & their sequence etc.,) Component: - Top Chord U1 – U2 & U2 –U3, Web with Flange		DI-U2 & U2-U3
7.2	Joint preparation	:	As Per IS: 4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
08.	Welding Current	_i_	
	Туре	i	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974 Preseniit Purkayastha
10.	Welding Parameters and technique	:	Prasenjit Purkayastha General Manager / PH-Sivok-II
0.1	Welding Parameters	;	Sivok-Rangpo New BG Rail Line Project Siliguri

Page 8 of 50 Appendix-V (Ref.Cl.26 of BI-2001)

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	530 - 560	28 - 30	1.4 - 1.8	0.35 - 0.50	15 – 20	N.A.

0.2	Welding Sequence and technique	<u>:</u>	Welding from run on to run off tabs at the free ends.
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	*		
			1
		8	
			-2

11.	Provision of run-on / run-off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating) N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A. Statute R. C.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	1:	Top Chord U1 – U2 & U2 –U3.

Name	and address of Fabricator	:	M/s. Royal Infraconstru Ltd., Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
Weldin	g Procedure specification No.	-	ROYAL/SIVOK-RANGPO/76.2/05 dated 29.01.2022
01.	Drawing No.	\div	RDSO/B-17183/R (G.A.)
02.	Welding Joint Description.		Fillet 8mm
03.	Base Metal.	\div	IS: 2062;2011 E-250 C.
04.	Welding Process	-	S.A.W.
05.	Welding Position.	-	Flat
06.	Welding Consumable.	:	FidL
00.	Electrode/Wire	-	
6.1	Class	:	W1 of IRS M.39-2001. Copper coated Solid Wire.
	Type	:	N.A. ,
6.3	Prying Method Flux	:	N.A.
6.2	Class Type Drying Method	:	F 1 of IRS M 39 – 2001 Agglomerated. Recommendation as per manufacturer.
6.3	Shielding Gas	:	N.A.
07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1	Joint design Details	:	Treat quality?
	(Sketch showing arrangements of parts, weld beat, weld passes & their sequence etc.,) Component: - Top Chord U1 – U2 & U2 –U3. Web with Top Plate		8 MM WELD - 8 MM WELD - 8 MM WELD - 12 - 20 - 12 - 12 & U2-U3
7.2	Joint preparation	:	As Per IS: 4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
08.	Welding Current	:	
	Туре	:	DC
	Polarity	:	Reverse
09.	Welder qualification	;	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	Prasenjit Purkayastha General Manager / PH-Sivok-I

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	530 - 560	28 - 30	1.4 - 1.8	0.35 - 0.50	15 – 20	N.A.

0.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.
			THE TREE
			3-1 2-1 4

11.	Provision of run-on / run-off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating) N.A. N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	;	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	1	Top Chord U1 – U2 & U2 –U3.

Welding Procedure Specification Sheet for 76.2 n	n. S	Appendix-V (Ref.CI.26 of B I-200 pan Open Web Girder (Welded through type) 25 T Loading – 20
Name and address of Fabricator	:	M/s. Royal Infraconstru Ltd.,
		Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
Welding Procedure specification No.	:	ROYAL/SIVOK-RANGPO/76.2/06 dated 29.01.2022
01. Drawing No.	:	RDSO/B-17183/R (G.A.)
02. Welding Joint Description.	:	Fillet 8 mm
03. Base Metal.	:	IS: 2062:2011 E-250 C.
04. Welding Process	:	S.A.W.
05. Welding Position.	:	Flat
06. Welding Consumable.		
Electrode/Wire		
Class	:	W1 of IRS M.39-2001.
6.1		6
Туре	:	Copper coated Solid Wire.
Durian Mathed		
6.2 Flux Drying Method	÷	N.A.
6.2 Tiux		
SI		
Class	•	F 1 of IRS M 39 – 2001
Туре		Applemented
Туре	:	Agglomerated.
Drying Method		Recommendation as per manufacturer.
Chielding Cos	·	NOCH I
6.3 Sillefulling Gas	:	N.A.
Base Metal Preparation		Fusion Faces and adjacent surfaces are cleaned and made free from
07.	:	Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect
		weld quality.
7.1 Joint design Details	:	
7.1		
(State by the wife a suppose of parts, wold		25 S MM WELD 25 S
(Sketch showing arrangements of parts, weld beat, weld passes & their sequence etc.,)		
beat, weld passes a triell sequence etc.,)		. 1/
Component :- Top Chord U3 - U4 & U4-U5		2 2 7
Web with flange		AN X REAL
		M. S. M. S. C.
		Office of
		The state of the s
		8 MM WELD
		TEN THE SALE SEC. 34
		And Metable 40
		1 25-1
		25-1-
		U3-U4 & U4-U5
		2000 00 00 00 00 00 00 00 00 00 00 00 00
Joint preparation		As Per IS:4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
7.2 Joint preparation	٠	AS FEI 13.7333 - 1333, CL.7, 1K3 B1-2001, CL.17.3 & WBC - 2001.
08. Welding Current	:	
Type	.	DC
Polarity		Reverse
		Kereise
Walder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
09. Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
09. Welder qualification Welding Parameters and technique	:	As per IS: 7310/7307 (Part-I) – 1974
Walder qualification	:	As per IS: 7310/7307 (Part-I) – 1974

Prasenjit Purkayastha

Weld Sequence No.	Electrodes wire dia, (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	540 - 570	28 - 32	1.4 - 1.8	0.35 - 0.50	15 - 20	N.A.

0.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.
		LE.	*
	9		
			1

11.	Provision of run-on / run-off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating) N.A. N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the well as per Cl 37.2 of 18.0595.96, using 44 class of Electrodes of specin, IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	2	Top Chord U3 – U4 & U4-U5

Name and address of Fabricator	7	M/s Doubland
	1:	M/s. Royal Infraconstru Ltd.,
Welding Procedure specification No.	+.	Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
01. Drawing No.	· ·	ROYAL/SIVOK-RANGPO/76.2/07 dated 29.01.2022
02. Welding Joint Description.	1:	RDSO/B-17183/R (G.A.)
03. Base Metal.	1	Fillet 8 mm
04. Welding Process	l:	IS: 2062:2011 E-250 C.
05. Welding Position.	1:	S.A.W.
06. Welding Consumable.	-:	Flat
Electrode/Wire	1-	<u> </u>
Class	:	W1 of IRS M.39-2001.
6.1 Type	:	Copper coated Solid Wire.
Drying Method	;	N.A.
6.2 Flux		
Class	:	F 1 of IRS M 39 – 2001
Туре	:	Agglomerated.
Drying Method	:	Recommendation as per manufacturer.
6.3 Shielding Gas	:	N.A.
Base Metal Preparation 07.	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1 Joint design Details	:	
(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component:- Top Chord U3 – U4 & U4 - U5 Top Plate with Web		8 MM WELD 4 8 MM
		As Per IS:4353 - 1995, CL7, IRS R1-2001, CT 17 3 & WRC - 2001.
08. Welding Current Type	:	DC
Polarity		Reverse
9. Welder qualification :		As per IS: 7310//30/ (Part-1) - 19/4
Welding Parameters and rechnique		and the second
0.1 Welding Parameters :		Prasenjit Purkayastha General Manager / PH-Sivok-II

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	530 - 570	28 - 32	1.4 - 1.8	0.35 - 0.50	15 – 20	N.A.

0.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.
			3-1 2-4

11.	Provision of run-on / run-off tabs]:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	:	Top Chord U3 – U4 & U4 - U5

Nan	ne and address of Fabricator		
Ivali	le and address of Fabricator	:	M/s. Royal Infraconstru Ltd.,
Wel	ding Procedure specification No.	-	Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
01	Drawing No.	4:	
02.		+:	RDSO/B-17183/R (G.A.) Fillet 8 mm
03.	James a cochipaton.	+:	IS: 2062:2011 E-250 C.
04.		⊣ ÷	15. 2002.2011 E-250 C. S.A.W.
05			
06		+-	1100
6.1	Туре	:	Control Contro
6.2	Prying Method Flux	+:	N.A.
6.2	Class Type Drying Method	:	F 1 of IRS M 39 – 2001 Agglornerated. Recommendation as per manufacturer.
6.3	Chicking Cas	Ť.	N.A.
0.3		ļ:	
07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1	Joint design Details	1:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- End Raker-L0-U1 Top Plate with Web		8 MM WELD S MM W
7.2	Joint preparation	:,	As Per IS:4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
08.	Welding Current	:	
	Туре	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) — 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

Weld Sequence No.	Cullelle Ar		Arc Voltage (Volt)	Wire Feed Speed	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	F30 F70		(m/min)			
•		530 - 570	28 - 32	1.4 - 1.8	0.35 - 0.50	15 - 20	N.A.

10.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.
			3-1 2-4

11.	Provision of run-on / run-off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating) N.A. N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of delective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	:	End Raker-L0-U1

Name	and address of Fabricator	1.	M/s. Royal Infraconstru Ltd.,
		1.	Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
Weldin	g Procedure specification No.	1:	ROYAL/SIVOK-RANGPO/76.2/09 dated 29.01.2022
01.	Drawing No.	1	RDSO/B-17183/R (G.A.)
02.	Welding Joint Description.	·	Fillet 8 mm
03.	Base Metal.	1:	IS: 2062;2011 E-250 C.
04.	Welding Process	† ÷	S.A.W.
05.	Welding Position.	+ :-	Flat
06.	Welding Consumable.	+-	Tide
	Electrode/Wire	+	
6.1	Class	:	W1 of IRS M.39-2001.
0.1	Туре	:	Copper coated Solid Wire.
	Drying Method	1:	N.A.
6.2	Flux		1
	Class	:	F 1 of IRS M 39 – 2001
	Туре	:	Agglomerated.
	Drying Method	:	Recommendation as per manufacturer.
6.3	Shielding Gas	:	N.A.
07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1	Joint design Details	:	well quality.
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Diagonal- U3-L4 Web With Flange		16 NAMM WELD SELECTION OF LOS TO SELECTION OF
7.2	Joint preparation	:	As Per IS:4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
08.	Welding Current		
	Туре	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	Prasenjit Purkayastha
			Tradellit-Lullicit Collice
0.10	Welding Parameters (JV)	:	General Manager / PH-Sivok-II

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	530 - 570	28 - 32	1.4 - 1.8	0.35 - 0.50	15 - 20	N.A.

10.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.
			1 4
			•
11	Provision of run-on / run-off tabs		Voc

11.	Provision of fun-on / fun-on cabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	N.A. 110°C (General preheating) N.A.
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect		By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	:	Diagonal- U3-L4

Class : W1 of IRS M.39-2001. Type : Copper coated Solid Wire. Drying Method : N.A. Class : F1 of IRS M 39 - 2001 Type : Aggiomerated. Priving Method : N.A. Class : F1 of IRS M 39 - 2001 Type : Aggiomerated. Recommendation as per manufacturer. I N.A. Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality. (Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Diagonal-L2-U3 Web With Flange 2 Joint preparation : As Per IS: 4353 – 1995, CL7, IRS B1-2001, CL17.3 & WBC – 2001. Welding Current Type : DC Polarity : Reverse Welding Parameters and technique : Praseniii Purkawaetha			•
Welding Procedure specification No. Urbin Industrial Growth Centre, Ralpur - 493221 (C.G.)	Name and address of Fabricator	1:	M/s. Royal Infraconstru Ltd.,
Component Comp	Decadus specification M		Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
10. Welding Joint Description. 12. Welding Process 13. Sase Netal. 15. Ellet 8 mm 16. Welding Process 15. A.W. 16. Welding Process 15. A.W. 16. Welding Postion. 16. Welding Consumable. 17. Beschool Wire 17. Copper coated Solid Wire. 18. Drying Method 19. Copper coated Solid Wire. 20. Copper coated Solid W	A STATE OF THE PARTY OF THE PAR		ROYAL/SIVOK-RANGPO/76.2/10 dated 29.01.2022
1. See Metal. 1. Siz 2062;2011 E-250 C. 1. See Metal. 2. Siz 2062;2011 E-250 C. 3. A.W. 3. Siz 2062;2011 E-250 C. 3. A.W. 3. Siz 2062;2011 E-250 C. 3. See Metal. 3. Siz 2011 E-250 C. 3. See Metal. 3. Siz 2011 E-250 C. 3. See Metal. 3. Siz 2011 E-250 C. 3. Siz 2011 E-2		:	
13. Base Netfall, Process 15. A.W. 16. Welding Process 15. A.W. 16. Welding Postion. 16. Welding Consumable. 17. Beschied State of Proper Control of Process 15. A.W. 17. Copper coated Solid Wire. 18. Againmented. 19. Plux 19. Proving Method 20. Plux 20. Shielding Gas 21. Flux 21. Againmented. 22. Plux 23. Shielding Gas 24. Plus Preparation 25. N.A. 26. Plus Proper coated Solid Wire. 26. Plux 26. Plux 27. Pusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality. 28. Component: Diagonal-L2-U3 29. Dinit design Details 20. Di	The state of the s	:	
9.4. Welding Process 9. Welding Position. 9. Welding Consumable. 9. Bectrode/Wire 9. Class 1. Copper coated Solid Wire. 1. Copper coated Solid Wire. 1. N.A. 1. Class 1. P1 of IRS M.39-2001 1. Agglomerated. 1. Agglomerated. 1. Recommendation as per manufacturer. 1. N.A. 1. Dirit design Details 1. S.A.W. 1. Welding Gonsumable. 1. P1 of IRS M.39-2001 1. Agglomerated. 1. Recommendation as per manufacturer. 1. N.A. 1. Joint design Details 1. S.A.W. 1. Welding Gonsumable. 1. P1 of IRS M.39-2001 1. Agglomerated. 1. Recommendation as per manufacturer. 1. N.A. 1. Joint design Details 1. S.A.W. 1. Welding Gonsumable. 1. P1 of IRS M.39-2001 1. Agglomerated. 1. Recommendation as per manufacturer. 1. N.A. 1. Joint design Details 1. S.A.W. 1. Welding Gonsumable. 1. P1 of IRS M.39-2001 1. Agglomerated. 1. Recommendation as per manufacturer. 1. N.A. 1. Joint design Details 1. S.A.W. 1. Agglomerated. 1. Recommendation as per manufacturer. 1. N.A. 1. Joint design Details 1. S.A.W. 1. Agglomerated. 1. Recommendation as per manufacturer. 1. N.A. 1. Joint design Details 1. S.A.W. 1. Agglomerated. 1. Recommendation as per manufacturer. 1. N.A. 1. Joint design Details 1. S.A.W. 1. Agglomerated. 1. Recommendation as per manufacturer. 1. N.A. 1. Joint design Details 1. S.A.W. 1. Agglomerated. 1. Recommendation as per manufacturer. 1. N.A. 1. Dirit design Details 1. S.A.W. 1. Agglomerated. 1. Agglomerated. 1. N.A. 1. Agglomerated. 1. A		:	
6.1 Welding Poston. 6. Welding Poston. 6. Welding Consumable. 6.1 Class 6.1 Class 6.1 Copper coated Solid Wire. 6.2 Flux Class 6.2 Flux Class 6.3 Shielding Gas Drying Method 7.1 Joint design Details (Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component: - Diagonal-L2-U3 Web With Flange Diagonal L2-U3 Web With Flange 2 Joint preparation As Per IS: \$353 – 1995, CL7, IRS B1-2001, CL17.3 & WBC – 2001. Welding Current Type 1 DC Polarity 1 Reverse Welding Parameters and technique Praseniii Purk was etc.		1:	
Bectrode/Wire Class F 1 of IRS M.39-2001. Copper coated Solid Wire.		1	TOTAL CONTRACTOR OF THE CONTRA
Class Type Drying Method Class Type Drying Met			
Class Type Drying Method Class Type Drying Method Class Type Drying Method Flux Class Type Drying Method Drying Method Recommendation as per manufacturer. N.A. Flusion Faces and adjacent surfaces are deaned and made free from Cracks, Notches, Mill scale, Grease, Peint, Rust etc., which may affect weld quality. Component: Diagonal-L2-U3 Web With Flange Drying Method Recommendation as per manufacturer. As Per IS: 4353 – 1995, CI.7, IRS 81-2001, CI.17.3 & WBC – 2001. Welding Current Type DC Polarity Reverse Welding Parameters and technique PraSemilt Purkayancths Prasemilt Purkayancths Prasemilt Purkayancths	Electrode/Wire		
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Type Drying Method Type Type Drying Method Type Type Type Type Type Type Type Type	6.1		The state of the s
Class : F1 of IRS M 39 – 2001 Type : Agglomerated. Drying Method : Recommendation as per manufacturer. Agglomerated. Recommendation as per manufacturer. N.A. Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality. (Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Diagonal-L2-U3 Web With Flange 2 Joint preparation : As Per IS:4353 – 1995, CL7, IRS B1-2001, CL17.3 & WBC – 2001. Welding Current Type : DC Polarity : Reverse Welding Parameters and technique : Prasseniit Purkey and the	Type	: :	Copper coated Solid Wire.
Class : F1 of IRS M 39 – 2001 Type : Agglomerated. Recommendation as per manufacturer. 5.3 Shielding Gas : N.A. Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality. (Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Diagonal-L2-U3 Web With Flange 2 Joint preparation : As Per IS:4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001. Welding Current Type : DC Polarity : Reverse Welding Parameters and technique : Prasseniit Purkeyayasthe			
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Type Drying Method : Recommendation as per manufacturer. 8.3 Shielding Gas : N.A. 107. Base Metal Preparation : Pusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality. 108 (Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) 109 Component :- Diagonal-L2-U3 109 Web With Flange : As Per IS:4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001. 100 Velding Current : As Per IS:7310/7307 (Part-I) – 1974 100 Welding Parameters and technique : Praseniii Purkayaretha	6.2 Flux		
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weld quality. (Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Diagonal-L2-U3 Web With Flange Web With Flange As Per IS:4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001. Welding Current Type Polarity Reverse Welding Parameters and technique Welding Parameters and technique Welding Parameters and technique			
(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Diagonal-L2-U3 Web With Flange Joint preparation As Per IS:4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001. Welding Current Type DC Polarity Reverse Welding Parameters and technique Praseniit Purk avaseth of the sequence etc.,) Welding Parameters and technique		1.	
(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Diagonal-L2-U3 Web With Flange 2 Joint preparation As Per IS:4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001. Welding Current Type DC Polarity Reverse Welder qualification Welding Parameters and technique Praseniit Purkayasetho	Joint design Details		web quality.
beat weld passes & their sequence etc.,) Component :- Diagonal-L2-U3 Web With Flange Web With Flange As Per IS:4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001. Welding Current Type: DC Polarity: Reverse Welder qualification As per IS: 7310/7307 (Part-I) – 1974 Welding Parameters and technique	7.1 Solite design betails	:	
Welding Current Type : DC Polarity : Reverse Welder qualification : As per IS: 7310/7307 (Part-I) – 1974 Welding Parameters and technique : Praseniit Purkayaetha	beat weld passes & their sequence etc.,) Component :- Diagonal-L2-U3		8 MM WELD SETTENDED TO THE PROPERTY OF THE PRO
Type : DC Polarity : Reverse Welder qualification : As per IS: 7310/7307 (Part-I) – 1974 Welding Parameters and technique : Praseniit Purkayaetha			As Per IS:4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
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Polarity : Reverse Welder qualification : As per IS: 7310/7307 (Part-I) – 1974 Welding Parameters and technique : Praseniit Purkayaetha	Туре	: [oc .
Welder qualification : As per IS: 7310/7307 (Part-I) – 1974 Welding Parameters and technique : Praseniit Purkayaetha			
Welder qualification : As per IS: 7310/7307 (Part-I) – 1974 Welding Parameters and technique : Praseniit Purkayaetha	Polarity	: F	Reverse
Welding Parameters and technique : Praseniit Purkayaetha			
Welding Parameters and technique : Praseniit Purkayaetha	Welder qualification	: A	s per IS: 7310/7307 (Part-I) – 1974
Praseniit Purkayastha	. January		
Praseniit Purkayastha	Welding Parameters and technique	:	
Welding Parameters General Manager (DV 9)		-	Praseniit Purkayaatha
	1 For ROYAL-ITL (JV)	:	General Manager / PH-Sivok-II

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	F20 F70		(m/min)			
1	-	530 - 570	28 - 32	1.4 - 1.8	0.35 - 0.50	15 – 20	N.A.

0.2	Welding Sequence and technique	;	Welding from run on to run off tabs at the free ends.
			3
			1
			-4

11.	Provision of run-on / run-off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating) N.A. N.A. N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A. Addition of the
16.	Post Weld treatment	1:	
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn, IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	:	:- Diagonal-L2-U3

Name a	and address of Fabricator		M/s. Royal Infraconstru Ltd.,
			Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
Welding	Procedure specification No.	:	ROYAL/SIVOK-RANGPO/76.2/11 dated 29.01.2022
01.	Drawing No.	÷	RDSO/B-17183/R (G.A.)
02.	Welding Joint Description.	÷	Fillet 8 mm
03.	Base Metal.	÷	IS: 2062:2011 E-250 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	÷	Flat
06.	Welding Consumable.	·	lat
	Electrode/Wire		
	Class	:	W1 of IRS M.39-2001.
	51433		W1 01 11.07 11.07 2001.
6.1	Туре	:	Copper coated Solid Wire.
	.,,,-	100	
	Drying Method	:	N.A.
6.2	Flux		
	Class		F 1 of IRS M 39 – 2001
	Just		1 10 163 1133 2001
	Туре	:	Agglomerated.
	·/PC		7.33
	Drying Method	:	Recommendation as per manufacturer.
6.3	Shielding Gas	:	N.A.
0.5			
	Base Metal Preparation		Fusion Faces and adjacent surfaces are cleaned and made free from
07.	2 1		Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect
			weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Diagonal-L4-U5 Web With Flange		12 Des MM WELD Resident Recognition of the state of the
7.2	Joint preparation	:	As Per IS:4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
08.	Welding Current	:)
	Туре	:	DC .
	Polarity	1	Reverse / b
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	Prasenjit Purkayastha General Manager / PH-Sivok-
10.1	Welding Parameters	:	Sivok-Rangpo New BG Rail Line Pro
10.1	For ROYAL-ITL (JV)		Sivok-Rangpo New BO Rail Line 110

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	530 - 570	28 - 32	1.4 - 1.8	0.35 - 0.50	15 - 20	N.A.

0.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends
			3
			_2
			-4

11.	Provision of run-on / run-off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating and inter pass temperature	:	110 C (Ocheral preficulting)
15.	Peening	;	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	:	Diagonal-L4-U5

,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	and address of Fabricator	:	
Waldi	ng Procedure specification No.		Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
01.	Drawing No.	1:	
02.	Welding Joint Description.	1:	
03.	Base Metal.	1.	Fillet 8 mm
04.	Welding Process	1:	IS: 2062:2011 E-250 C.
05.	Welding Process Welding Position.	<u> </u>	S.A.W.
06.	Welding Consumable.	↓ .:	Flat
00.	Electrode/Wire	-	
6.1	Class	:	W1 of IRS M.39-2001. Copper coated Solid Wire.
	Drying Method		The state of the s
6.2	Flux	†÷	(NA)
	Class Type Drying Method	:	
6.3	Shielding Gas	:	N.A.
07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Bottom Chord- L2-L3 & L3-L4 Web With Additional Plate		16 L2-L3 & L3-L4
7.2	Joint preparation	:	As Per IS:4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
8.	Welding Current	:_	
	Туре	;	DC
	Polarity	:	Reverse
9.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
	Welding Parameters and technique	;	Prasenjit Purkayastha
	Welding Parameters	-	General Manager / PH-Sivok-I
.1			

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	530 - 570	28 - 32	1.4 - 1.8	0.35 - 0.50	15 - 20	N.A.

10.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.
			2
1			

11.	Provision of run-on / run-off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	:	Bottom Chord- L2-L3 & L3-L4

Name and address of Fabricator	:	M/s. Royal Infraconstru Ltd., Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
Nelding Procedure specification No.		ROYAL/SIVOK-RANGPO/76.2/13 dated 29.01.2022
01. Drawing No.	÷	RDSO/B-17183/R (G.A.)
02. Welding Joint Description.	1:	Fillet 8 mm
03. Base Metal.	1	IS: 2062;2011 E-250 C.
04. Welding Process	1:	S.A.W.
05. Welding Position.	1	Flat
06. Welding Consumable.	†÷	Tide
Electrode/Wire Class	:	W1 of IRS M.39-2001.
6.1 Туре	:	Copper coated Solid Wire.
Drying Method	1:	N.A.
6.2 Flux		
Class	:	F 1 of IRS M 39 – 2001 Agglomerated.
Drying Method	1	Recommendation as per manufacturer.
6.3 Shielding Gas	:	N.A.
Base Metal Preparation 07.	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1 Joint design Details	:	
(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Bottom Chord- L4-L5 Web With Additional Plate		32—8 MM WELD V X X X X X X X X X X X X X X X X X X
7.2 Joint preparation	:	As Per IS:4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
08. Welding Current Type		
Туре	:	DC
Polarity	:	Reverse
09. Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10. Welding Parameters and technique	:	Prasenjit Purkayastha General Manager / PH-Sivok
Welding Parameters	:	Sivok-Rangpo New BG Rail Line Pro
10.1 For ROXAL-ITL (JV)		Siliguri

Appendix-V (Ref.Cl.26 of BI-2001)

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	530 - 570	28 - 32	1.4 - 1.8	0.35 - 0.50	15 – 20	N.A.

10.2 Welding Sequer	nce and technique	:	Welding from run on to run off tabs at the free ends.
			2

11.	Provision of run-on / run-off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	:	Bottom Chord- L4-L5

Name and address of Fabricator	Τ.	M/s. Royal Infraconstru Ltd.,
		Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
Welding Procedure specification No.	1 :	ROYAL/SIVOK-RANGPO/76.2/14 dated 29.01.2022
01. Drawing No.		RDSO/B-17183/R (G.A.)
Welding Joint Description.		Fillet 6mm
03. Base Metal.	1:	IS: 2062:2011 E-250 C.
04. Welding Process	- t :	S.A.W.
05. Welding Position.	一 :	
06. Welding Consumable.	- ·	T TOC
Electrode/Wire	lass :	W1 of IRS M.39-2001.
6.1 T	ype :	Copper coated Solid Wire.
Drying Met	hod :	N.A.
6.2 Flux		
C	lass :	F 1 or IRS M 39 – 2001
Т	ype :	Agglomerated.
Drying Met	hod :	Recommendation as per manufacturer.
6.3 Shielding Gas	:	N.A.
07. Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1 Joint design Details	;	
(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- (a) Vertical,		VERTICALS, FORTAL, SWAY GIRDER
7.2 Joint preparation	:	As Per IS: 4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
08. Welding Current	me :	•
	rpe :	DC
Polar	rity :	Reverse
09. Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10. Welding Parameters and technique	:	Prasenjit-Purkayastha
10.1 Welding Parameters		General Manager / PH-Sivok-II
10.1 Welding Parameters		Sivok-Rangpo New BG Rail Line Project

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Appendix-V (Ref.Cl.26 of B1-2001)

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	530 - 560	26 - 30	1.4 - 1.8	0.35 - 0.50	15 - 20	N.A.

10.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.
			1-7-3
			42
			9

11.	Provision of run-on / run-off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	By brush cleaning & grinding N.A. 110°C (General preheating) N.A.
14.	Preheating and inter pass temperature	;	110°C (General preheating)
15.	Peening	1:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	:	(a)Vertical,. (b) Portal (c) Sway Girder

	Mama	and address of Fabricator		
	Name	and address or radificator		M/s. Royal Infraconstru Ltd.,
	Weldi	ng Procedure specification No.		Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
	01.	Drawing No.	:	ROYAL/SIVOK-RANGPO/76.2/15 dated 29.01.2022 RDSO/B-17183/R (G.A.)
	02.	Welding Joint Description.	:	Fillet 12mm
	03.	Base Metal.	:	IS: 2062:2011 E-250 C.
	04.	Welding Process	:	S.A.W.
	05.	Welding Position.	1	Flat
	06.	Welding Consumable.	Ť	,
	6.1	Electrode/Wire Class Type Drying Method	:	WL of IRS M.39-2001. Copper coated Solid Wire. N.A.
	6.2	Flux		
•		Class Type Drying Method	:	F 1 or IRS M 39 – 2001 Agglomerated. Recommendation as per manufacturer.
	_	Shielding Gas		
	6.3	Shielding Gas	:	N.A.
	07.	Base Metal Preparation	;	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
	7.1	Joint design Details	:	
		(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Cross Girder Web with Flange		12 MM WELD WILL A. 11 12 MM WELD REPRESENTATION OF THE PROPERTY OF THE PROPER
	7.2	Joint preparation	:	As Per IS: 4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
ŀ	08.	Welding Current	:	
-	00.	Type	:	DC
		Polarity	:	Reverse
-	09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
	10.	Welding Parameters and technique	:	LL .
	10.1	Welding Parameters	:	Prasenjit Purkayastha
-				General Manager / PH Study W

Appendix-V (Ref.CI.26 of BI-2001)

Weld Sequence No.	Electrodes Current wire dia. (Amps) (mm)		Arc Voltage (Volt)	Wire Feed Speed (m/mln)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)	
1	4	560 - 600	28 - 32	2.3 - 3.2	0.22 - 0.32	15 - 20	N.A.	
2	4	560 - 600	28 - 32	2.3 - 3.2	0.22 - 0.32	15 - 20	N.A.	

0.2 Welding Sequence	ce and technique	. :	Welding from run on to run off tabs at the free ends.
			1&5—3&7
		į	4&8

11.	Provision of run-on / run-off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating) N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	1;	Cross Girder.

Appendix-V (Ref.CI.26 of B I-2001).

Name a	and address of Fabricator	:	M/s. Royal Infraconstru Ltd., Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
	- Procedure specification No	\exists	ROYAL/SIVOK-RANGPO/76.2/16 dated 29.01.2022
	g Procedure specification No.	-	ROYAL/SIVON-RANGPO/70.2/10 dated 23:51:2522
01.	Drawing No.	:	RDSO/B-17183/R (G.A.)
02.	Welding Joint Description.	:	Fillet 6mm
03.	Base Metal.	:	IS: 2062:2011 E-250 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
	Electrode/Wire Class	:	W1 of IRS M.39-2001.
6.1	Туре	:	Copper coated Solid Wire.
6.3	Drying Method	:	N.A.
6.2	Class	:	F 1 or IRS M 39 – 2001
	Туре	:	Agglomerated.
	Drying Method	:	Recommendation as per manufacturer.
6.3	Shielding Gas	:	N.A.
07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- (a) Top Lateral Bracing		10—6 MMWELD TOP LATERAL BRACING
7.2	Joint preparation	:	As Per IS: 4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
08.	Welding Current	1:	
	Туре	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	Prasenjit Purkayastha
10.1	Welding Parameters	;	General Manager / PH-Sivok-II Sivok-Randon New RG Pail Line R.

Page 32 of 50 Appendix-V (Ref.C1.26 of BI-2001)

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	530 - 560	26 - 30	1.4 - 1.8	0.35 - 0.50	15 – 20	N.A.

0.2	Welding Sequence and technique		Welding from run on to run off tabs at the free ends.
			21
		1	

11.	Provision of run-on / run-off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating)
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A. N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	1:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details	:	Top Lat. Bracing

Γ	Name a	nd address of Fabricator	:	M/s. Royal Infraconstru Ltd.,
-	Wolding	Procedure specification No.	-	Urla Industrial Growth Centre, Raipur – 493221 (C.G.) ROYAL/SIVOK-RANGPO/76.2/17 dated 29.01.2022
H	01.	Drawing No.	<u>:</u>	RDSO/B-17183/R (G.A.)
+	02.	Welding Joint Description.		Fillet 12mm
F	03.	Base Metal.	:	IS: 2062:2011 E-250 C.
ŀ	04.	Welding Process	-	
1	05.	Welding Position.	:	S.A.W.
ŀ	06.	Welding Consumable.	:	Flat
ŀ	UO.	Electrode/Wire	-	
		Class	:	W1 of IRS M.39-2001.
	6.1	Туре	:	Copper coated Solid Wire.
		Drying Method	:	N.A.
1	6.2	Flux		
7	3.2	Class	:	F 1 or IRS M 39 – 2001
		Туре	:	Agglomerated.
		Drying Method		Recommendation as per manufacturer.
	-		† · · ·	
	6.3	Shielding Gas	:	N.A.
	07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
	7.1	Joint design Details	:	
	-1	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component: - Stringer Web with Flange.	Service Servic	12 MM WELD 12 MM WELD STRINGER
	7.2	Joint preparation	:_	As Per IS: 4353 – 1995, CI.7, IRS B1-2001, CI.17.3 & WBC – 2001.
	08.	Welding Current	_:_	
		Type	:	DC
		Polarity	:	Reverse
	09.	Welder qualification	el.	As per IS: 7310/7307 (Part-I) – 1974
	10.	Welding Parameters and technique	:	Prasenjit Purkayastha
	10.1	Welding Parameters For ROYAL-Wib (JV)		General Manager / PH-Sivok-II Sivok-Rangpo New BG Rait Line Project

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1+	4	540 - 580	28 - 32	2.0 - 2.8	0.24 - 0.35	15 - 20	N.A.

10.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.
			1_7
	¥		
			4-\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \

11.	Provision of run-on / run-off tabs	:	Yes V
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating)
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	;	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	- :	Visual, D.P. Test & Macro etching
19.	Any other relevant Details	:	Stringer Web with Flange.

iame a	and address of Fabricator	:	M/s. Royal Infraconstru Ltd.,
Velding	Procedure specification No.		Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
01.	Drawing No.	:	ROYAL/SIVOK-RANGPO/45.7/18 dated 29.01.2022
02.	Welding Joint Description.	:	RDSO/B-17183/R (G.A.)
03.	Base Metal.	:	Fillet 8 mm
04.	Welding Process	:	IS: 2062:2011 E-250 C.
	-	:	GMAW
05.	Welding Position.	:	Horizontal
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	:	I of IRS M 46-2013. Copper coated Solid Wire. N.A.
6.2	Flux	·	N.A.
	Class Type Drying Method	:	N.A. N.A. N.A. N.A. N.A. Pusion Faces and adjacent surfaces are cleaned and made free from
	Shielding Gas		N.A
6.3	Sinclaing das	:	CO2
07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Corner bracket Rib Plate for X Girder V type groove to be fill up by weld material in both plate.		RIS PLATE 570×16×570 FILLED UP WELD MATERIAL 1 -10 - PL 280×16×600
7.2		:	As Per IS: 10178 – 1995, CL.9, IRS B1-2001, CI.17.3 & WBC – 2001.
08.		;	
	Туре	:	DC
	Polarity	:	Reverse •
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	Lyt

Appendix-V (Ref.Cl.26 of Bl-2001;

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	1.2	180 - 220	24 - 28	1.4 - 2.2	N.A.	13 - 18	15 - 20
2	1.2	180 - 220	24 - 28	1.4 - 2.2	N.A.	13 - 18	15 - 20

0.2	Welding Sequence and technique	:	
			2&41&3
			2

11.	Provision of run-on / run-off tabs	:	N.A.
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating)
14.	Preheating and inter pass temperature	:	110°C (General preheating) N.A.
15.	Peening	:	N.A.
16.	Post Weld treatment	;	Pick
17.	Rectification of weld defect	;	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual & D.P. Test.
19.	Any other relevant Details	:	Rib of Corner Bracket

lame a	and address of Fabricator	:	M/s. Royal Infraconstru Ltd.,		
			Urla Industrial Growth Centre, Raipur – 493221 (C.G.)		
	g Procedure specification No.	:	ROYAL/SIVOK-RANGPO/76.2/19 dated 29.01.2022		
1.	Drawing No.	:	RDSO/B-17183/R (G.A.)		
2.	Welding Joint Description.	:	Fillet 12mm		
3.	Base Metal.	:	IS: 2062:2011 E-250 C.		
04.	Welding Process	:	GMAW		
05.	Welding Position.	:	Horizontal		
06.	Welding Consumable.				
6.1	Electrode/Wire Class	:	I of IRS M 46- 2013 Copper coated Solid Wire.		
	Туре	•			
	Drying Method	:	N.A.		
6.2	Flux	:	N.A. N.A. N.A. N.A. CO2		
	Туре	:	N.A		
	Drying Method		N.A		
6.3	Shielding Gas	:			
07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.		
7.1	Joint design Details	:			
2	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Cross Girder Web with End Plate & Flange V type groove to be fill up by weld material in flange & end plate.		12 MM WELD NATERIAL END PLATE OF X GIRDER		
7.2	2 Joint preparation	:	As Per IS: 10178 – 1995, CL.9, IRS B1-2001, CI.17.3 & WBC – 2001.		
08	. Welding Current	1:			
00	Туре	:	DC		
	Polarity	:	Reverse		
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974		
10.	Welding Parameters and technique	:	i i		
10.	Welding Parameters	:	. / 1		

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	1.2	180 - 220	24 28	1.4 – 2.2	N.A.	13 - 18	15 - 20
2	1.2	200 - 220	24 28	1.6 - 2.4	N.A.	13 - 18	15 - 20
3 +	1.2	180 - 220	24 28	1.4 - 2.2	N.A.	13 - 18	15 - 20

:	1
	П
	2,4&6
	N V

11.	Provision of run-on / run-off tabs		N.A.
12.	Cleaning of weld bead before laying next weld bead	:	Yes West Charles
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating) N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating) N.A.
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual & D.P. Test.
19.	Any other relevant Details	:	End Plate of Cross Girder.

vame a	nd address of Fabricator	;	M/s. Royal Infraconstru Ltd.,
1. 1.45	Procedure specification		Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
	Procedure specification No. Drawing No.	:	ROYAL/SIVOK-PANCPO/76 2/20 detect 20 01 2000
		:	ROYAL/SIVOK-RANGPO/76.2/20 dated 29.01.2022 RDSO/B-17183/R (G.A.)
	Welding Joint Description. Base Metal.	:	Fillet 6mm
03.	Welding Process	:	IS: 2062:2011 E-250 C.
04.		;	GMAW
05.	Welding Position.	:	Horizontal
06.	Welding Consumable.		, ronzontal
6.1	Electrode/Wire Class	:	I of IRS M 46-2013. Copper coated Solid Wire.
	Drying Method	,	
6.2	Flux Brying Mediod	-	N.A.
	Class	:	N.A. N.A. N.A. CO2 Fusion Faces and adjacent surfaces are cleaned and made free from Cracks.
	Drying Method Shielding Gas	:	N.A
6.3		:	502
07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1	Joint design Details	:	rooties, this scale, orease, training to see, which may affect well quality.
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Batten Plate With Flange Diaph. Plate With Web		10&12&16 20&25&32 DIAPH. PLATE- 10 THK FOR ALL SECTION 10&12&16 20&25&32 FOR ALL SECTION
7.2	Joint preparation	:	As Per IS: 10178 – 1995, CL.9, IRS B1-2001, CI.17.3 & WBC – 2001.
08.	Welding Current	:	
	Туре	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	A p
-	Welding Parameters		
0.1		:	Prasenjit Purkayastha

Appendix-V (Ref.Cl.26 of Bl-2001;

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)	
1	1.2	180 - 220	24 - 28	1.4 – 2.2	N.A.	13 - 18	15 - 20	

10.2	Welding Sequence and technique	:	
	•		2
11.	Provision of run-on / run-off tabs	T :	N.A.
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating) N.A. N.A. N.A. Ry re-welding after complete removal of defective weld & rectify
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	14-7-
17.	Rectification of weld defect	;	the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual & D.P. Test.
19.	Any other relevant Details	:	Batten Plate & End Diaph.

Name and address of Fabricator	:	M/s. Royal Infraconstru Ltd., Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
Welding Procedure specification No.	1:	ROYAL/SIVOK-RANGPO/76.2/21 dated 29.01.2022
01. Drawing No.	1:	RDSO/B-17183/R (G.A.)
02. Welding Joint Description.	1	Fillet 6mm
03. Base Metal.	1:	IS: 2062:2011 E-250 C.
04. Welding Process	1	GMAW
05. Welding Position.	1	Horizontal
Welding Consumable.	-	The second secon
6.1 Electrode/Wire Class Type Drying Method	:	I of IRS M 46-2013. Copper coated Solid Wire. N.A. N.A.
6.2 Flux	†÷	Office at
Class	:	N.A. N.A. N.A. N.A. N.A. N.A.
Druing Method		
Drying Method Shielding Gas	:	1,100
6.3 Shielding Gas	:	CO2
07. Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1 Joint design Details	:	
(Sketch showing arrangements of parts, weld heat weld passes & their sequence etc.,) Component:- Lacing (Flat-16x125) With Flange of Top Chord Lacing (flat-16x100) With Flange of End Raker Lacing (Flat-16x65) With Flange of Diagonal		Lacing FLAT-16X 125 FLAT-16X 100 FLAT-16X 65 FOR TOP CHORD, END RAKER & DIAGONAL
7.2 Joint preparation	:	As Per IS: 10178 – 1995, CL.9, IRS B1-2001, CI.17.3 & WBC – 2001.
08. Welding Current	:	
Туре	:	DC
Polarity	:	Reverse
09. Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10. Welding Parameters and technique	:	1/2
10.1 Welding Parameters		
FOR ROYAL ITL (JV)		Prasenjit Purkayastha

Weld Sequence No.	No wire dia Current Arc Volt		Arc Voltage (Volt)	Wire Feed Speed	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	1.2	180 - 220	24 – 28	(m/min) 1.4 – 2.2	N.A.	13 - 18	15 - 20

10.2	Welding Sequence and technique	:	
			2-
		1	

Provision of run-on / run-off tabs	:	N.A.
Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating).
Preheating and inter pass temperature	:	110°C (General preheating).
Peening	:	N.A.
Post Weld treatment	:	N.A.
Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
Inspection of Weld	:	Visual & D.P. Test.
Any other relevant Details	:	Lacing
	Cleaning of weld bead before laying next weld bead Root preparation before welding other side of groove weld Preheating and inter pass temperature Peening Post Weld treatment Rectification of weld defect Inspection of Weld	Cleaning of weld bead before laying next weld bead : Root preparation before welding other side of groove weld : Preheating and inter pass temperature : Peening : Rectification of weld defect : Inspection of Weld :

	and address of Fabricator	:	M/s. Royal Infraconstru Ltd.,
Velding	Procedure specification No.		Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
01.	Drawing No.	:	ROYAL/SIVOK-RANGPO/76.2/22 dated 29.01.2022
02.	Welding Joint Description.		RDSO/B-17183/R (G.A.)
03.	Base Metal.	÷	Fillet 10mm
04.	Welding Process	:	IS: 2062:2011 E-250 C.
05.	Welding Position.	:	GMAW
06.	Welding Consumable.		Horizontal
6.1	Electrode/Wire Class	:	Horizontal I of IRS M 46- 2013 Copper coated Solid Wire. N.A. N.A.
	Drying Method		N.A.
6.2	Flux	÷	A Marie Contract of the same o
	Class	:	N.A.
	Drying Method	:	N.A
6.3	Shielding Gas	:	CO2
07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1	Joint design Details	:	
)	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component:- Corner Bracket for X girder V type groove to be fill up by weld material in flange & end plate.		PL 280x16x600 FILLED UP WELD MATERIAL WI -10 PL. 280x16x600
7.2	Joint preparation	:	As Per IS: 10178 – 1995, CL.9, IRS B1-2001, CI.17.3 & WBC – 2001.
08.	Welding Current	:_	
	Туре	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	1.2 180 - 220		24 - 28	1.4 – 2.2	N.A.	13 - 18	15 - 20
2	1.2	200 - 220	24 - 28	1.6 – 2.4	N.A.	13 - 18	15 - 20
3	1.2	180 - 220	24 - 28	1.4 - 2.2	N.A.	13 - 18	15 - 20

10.2	Welding Sequence and technique	:	
			2,4&6

11.	Provision of run-on / run-off tabs	:	N.A.
12.	Cleaning of weld bead before laying next weld bead	:	Yes Duch (are)
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating) N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual & D.P. Test.
19.	Any other relevant Details	:	Corner Bracket for X girder

	and address of Fabricator	1:	M/s. Royal Infraconstru Ltd., Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
Weldi	ng Procedure specification No.	1:	
01.	Drawing No.	1	
02.	Welding Joint Description.	1:	
03.	Base Metal.	1:	
04.	Welding Process	1:	
05.	Welding Position.		
06.	Welding Consumable.	1:	Horizoniai
	Electrode/Wire	+-	
6.1	Class	:	I of IRS M 46- 2013
011	Туре		Copper coated Solid Wire.
	Drying Method	1:	N.A.
6.2	Flux		Man Re 20 20 m
	Class	;	I of IRS M 46- 2013 Copper coated Solid Wire. N.A. N.A. N.A.
	Туре	:	
	Drying Method	:	N.A
6.3	Shielding Gas		CO2
0.5		1.	
07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- End Bracket web with flange V type groove to be fill up by weld material in both plate.		12————————————————————————————————————
7.2	Joint preparation	:	As Per IS: 10178 – 1995, CL.9, IRS B1-2001, CI.17.3 & WBC – 2001.
08.	Welding Current Type	;	DC
	Polarity	:	Reverse
9.	Welder qualification	;	As per IS: 7310/7307 (Part-I) – 1974
	Welding Parameters and technique	:	1 de
	Welding Parameters	1	Prasenjit Purkayastha

Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	1.2	180 - 220	24 - 28		N.A	12 10	15 - 20
2	1.2	200 - 220	24 - 28	1.4 - 2.2	N.A.	13 - 18	15 - 20
3 +	1.2	180 - 220	24 - 28	1.6 - 2.4 1.4 - 2.2	N.A.	13 - 18 13 - 18	15 - 20

0.2 Welding Sequence and technique	:	<u> </u>
		2,4&6

11.	Provision of run-on / run-off tabs	:	N.A.
12.	Cleaning of weld bead before laying next weld bead	:	N.A. Yes N.A. 110°C (General preheating) N.A.
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	1:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual & D.P. Test.
19.	Any other relevant Details	:	End Bracket web with flange

Vame at	nd address of Fabricator	:	M/s. Royal Infraconstru Ltd., Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
Nelding	Procedure specification No.		ROYAL/SIVOK-RANGPO/76.2/24 dated 29.01.2022
	Drawing No.	· :	RDSO/B-17183/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.		IS: 2062:2011 E-250 C.
04.	Welding Process	+ ÷	GMAW
05.	Welding Position.	<u> </u>	Horizontal
06.	Welding Consumable.	•	Tionzonida
00.	Electrode/Wire	-	h >/
6.1	Class	:	I of IRS M 46-2013. Copper coated Solid Wire.
			NA ATTORIGET MAN
6.5	Drying Method	Ŀ	N.A.
6.2	Class	:	Horizontal I of IRS M 46-2013. Copper coated Solid Wire. N.A. N.A. N.A.
	Drying Method	:	N.A
6.3	Shielding Gas		CO2
	Base Metal Preparation	-	Fusion Faces and adjacent surfaces are cleaned and made free from
07.	base rietai rieparation	:	Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1	Joint design Details	:	
•	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Pad Plate girder with Bottom Flange of End Cross		350 PAD PL. 350x12x370
7.2	Joint preparation	:	As Per IS: 10178 – 1995, CL.9, IRS B1-2001, CI.17.3 & WBC – 2001.
08.	Welding Current	:	
	Туре	:	DC
	Polarity	;	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	11

Weld	Electrodes	Current	Arc Voltage	\A!: 5	1	Appendix-v (Ki	
equence No.	wire dia. (mm)	(Amps)	(Volt)	Wire Feed Speed	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	1.2	180 - 220	24 - 28	(m/min)			
2	1.2	100	21 20	1.4 – 2.2	N.A.	13 - 18	15 - 20
	1.2	180 - 220	24 - 28	1.4 - 2.2	N.A.	13 - 18	15 - 20

10.2	Welding Sequence and technique	:	
			2&4————————————————————————————————————

11.	Provision of run-on / run-off tabs	:	N.A.
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A. 110°C (General preheating) N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld & rectify the weld as per Cl.32.2 of IS 9595-96, using A4 class of Electrodes of specn. IRS M.28-2017 after conducting DP Test.
18.	Inspection of Weld	:	Visual & D.P. Test., Visual, DP & Wile Si
19.	Any other relevant Details	;	Pad Plate of End Cross Girder

Name	and address of Fabricator	:	M/s. Royal Infraconstru Ltd. Urla Industrial Growth Centre,
Weldir	ng Procedure specification No.	:	Raipur – 492003 (C.G.)
01.	RDSO Drawing No.	-	ROYAL/SIVOK-RANGPO/76.2/25 dated 29.01.2022
02.	Welding Joint Description.	1:	RDSO/B-17183/R (G.A.)
03.	Base Metal.	:	Fillet 5 mm Tack Weld
04.	Welding Process	!	IS: 2062:2011 E-250 C.
05.	Welding Position.	:	GMAW (GMAW machine with CO2 Gas Cylinder.)
06.	Welding Consumable.	:	Horizontal / Vertical
6.1	Electrode/Wire	-	
	Class	:	1 of IRS M 46-2013.
	Туре	:	Copper coated Solid Wire.
	Drying Method	:	N.A.
6.2	Flux		Work River
	Class	:	N.A. N.A. N.A. N.A. Pusion Faces and adjacent surfaces are cleaned and made free from
	Туре	:	N.A
	Drying Method		N.A.
6.3	Shielding Gas	:	CO2
07.	Base Metal Preparation	:	Fusion Faces and adjacent surfaces are cleaned and made free from Cracks, Notches, Mill scale, Grease, Paint, Rust etc., which may affect weld quality.
7.1	Joint design Details	:	werd quarry.
	(Sketch showing arrangements of parts, weld bead details, weld passes & their sequence etc.,)		Length of tack Weld 50mm Gap between two tack Weld appr.300mm Weld Size-5 mm
7.2	Joint preparation	:	As Per IS: 10178 – 1995, CL.9, IRS B1-2001, CI.17.3 & WBC – 2001.
08.	Welding Current	:	
	Туре	:	DC .
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310 /7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
		_	1
0.1	Welding Parameters	:	

Appendix-V (Ref.Cl.26 of BI-2001)

	<u>n)</u>		(m/min)	(m/min)	out (mm)	(I/min.)
1 1.2	2 180 – 200	24 – 26	(m/min) 1.6 – 2.0	N.A.	13 – 16	16-18

10.2	Welding Sequence and technique	;	
			Length of tack Weld 50mm Gap between two tack Weld appr.300mm Weld Size-5 mm

11.	Provision of run-on / run-off tabs	:	N.A.
12.	Cleaning of weld bead before laying next weld bead	:	N.A.
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating and inter pass temperature	:	110°C (General preheating)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	N.A.
17.	Rectification of weld defect	:	By re-welding after complete removal of defective weld.
18.	Inspection of Weld	:	Visual & D.P.Test.
19.	Any other relevant Details	:	Tack welds of all welded components.