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.

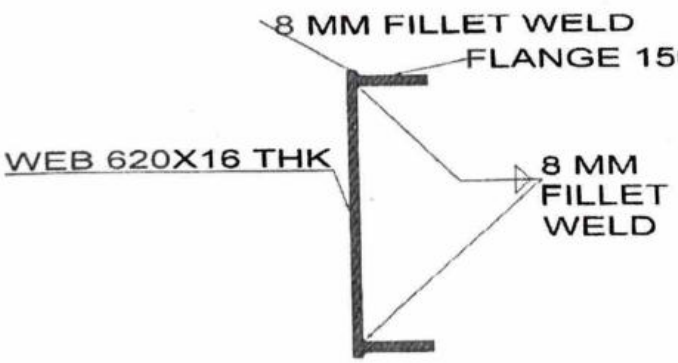
Model WPSS for
Railway OPEN WEB GIRDER
(25t Loading)

Railway Open Web Girder (25t loading)
91.4m clear span
MODEL WPSS No- RDSO/ Infra-II/ B&S/ RG/ OWG./ WPSS 91.4 series (43 nos)

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-01
1.	Drawing No.	:	RDSO/B-17184 (L0-L1-L2) DETAILS OF BOTTOM CHORD
2.	Weld joint description	:	WEB(16 MM) WITH FLANGE (12MM) FILLET WELD (8MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5	Welding position	:	Flat (1F)
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: F2 of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



सहायक अनुसंधान अधिकारी (खनि)
Assistant Research Officer (Met)

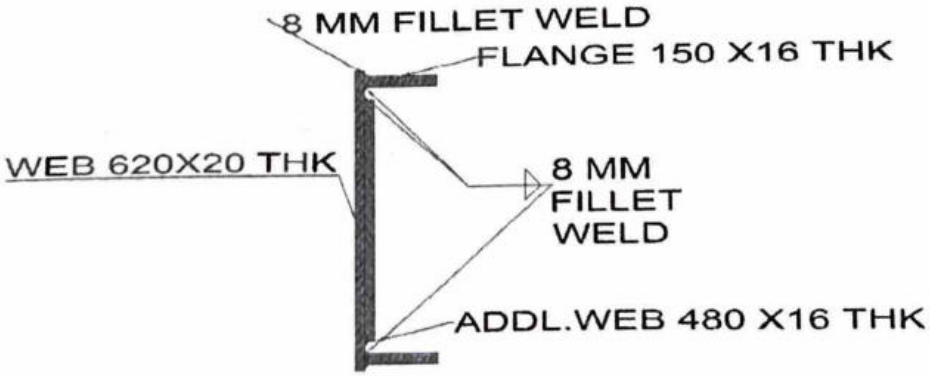
7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity: Reverse

Consultant Private Ltd. Authorised

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No. 02		:	MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-
1.	Drawing No.	:	RDSO/B-17184 (L2-L3-L4) DETAILS OF BOTTOM CHORD
2.	Weld joint description	:	WEB(20 MM) WITH FLANGE (16MM)FILLET WELD (8MM) WEB (20MM)WITH ADDITIONAL(16MM) PLATE (8 MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

91.4M OWG (25T LOADING)

8. Welding current : Type : DC
Polarity: Reverse

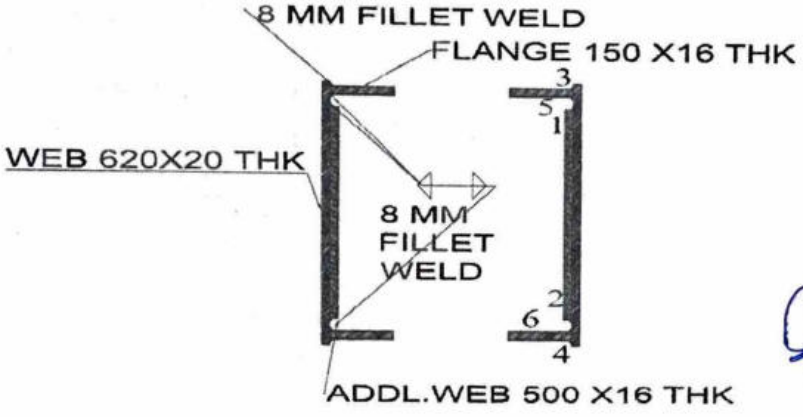
9. Welder qualification : First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-550	28-30	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

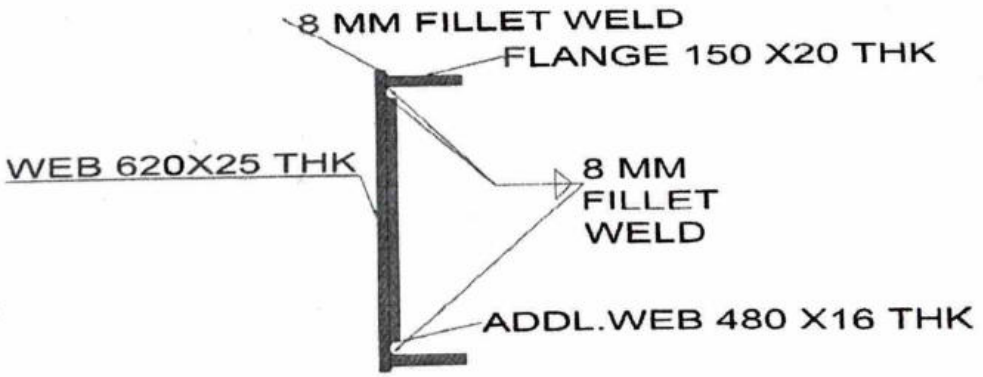
18. Inspection of weld : Visually, D.P.Test & Macro Etching

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
रेल मन्त्रालय लखनऊ-1

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-03
1.	Drawing No.	:	RDSO/B-17184 (L4-L5-L6) DETAILS OF BOTTOM CHORD
2.	Weld joint description	:	WEB(25 MM) WITH FLANGE (20 MM)FILLET WELD (8MM) WEB(25 MM) WITH ADD.(16 MM) FILLET WELD (8 MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250^0 C to 300^0 C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

11.06.21
सहायक अनुसंधान अधिकारी (सामु)
Assistant Research Officer (Met)
उत्तर मध्य रेल मुख्यालय प्रयागराज-11

91.4M OWG (25T LOADING)

8. Welding current : Type : DC
Polarity: Reverse

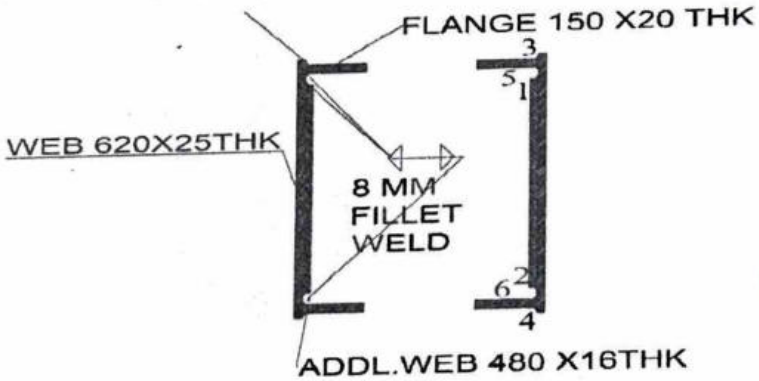
9. Welder qualification : First welder as perIS-7307(part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-500	28-30	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

11.06.21
Assistant Research Officer (Met)

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-03A
1.	Drawing No.	:	RDSO/B-17184 (L6-L7) DETAILS OF BOTTOM CHORD
2.	Weld joint description	:	WEB(25 MM) WITH FLANGE (25 MM)FILLET WELD (8MM) WEB(25 MM) WITH ADD.(25 MM) FILLET WELD (8 MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.

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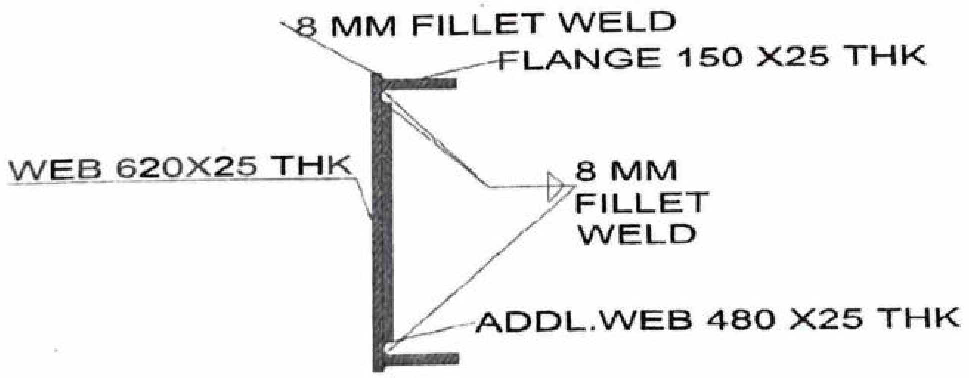
Assistant Research Officer (Met)

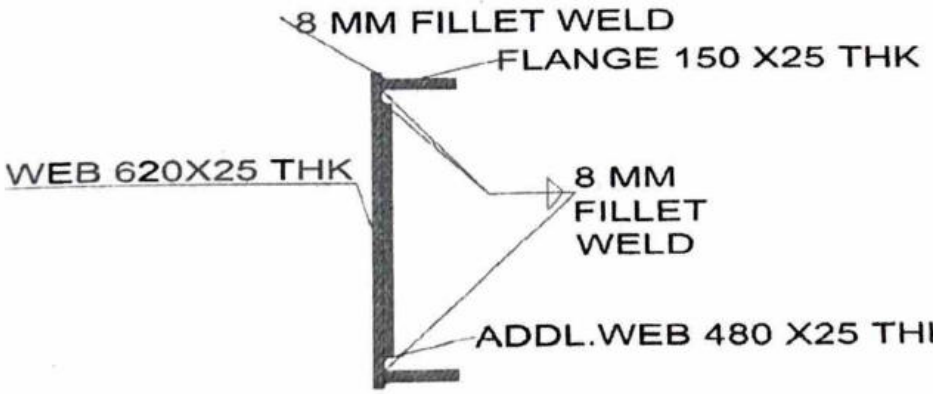


7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-03A
1.	Drawing No.	:	RDSO/B-17184 (L6-L7) DETAILS OF BOTTOM CHORD
2.	Weld joint description	:	WEB(25 MM) WITH FLANGE (25 MM)FILLET WELD (8MM) WEB(25 MM) WITH ADD.(25 MM) FILLET WELD (8 MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia. 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3. & WBC - 2001

सहायक अनुसंधान अधिकारी (धातु)
11.06.21
Assistant Research Officer (Met)
रेल मंत्रालय (भारत सरकार)

91.4M OWG (25T LOADING)

8. Welding current : Type : DC
Polarity: Reverse

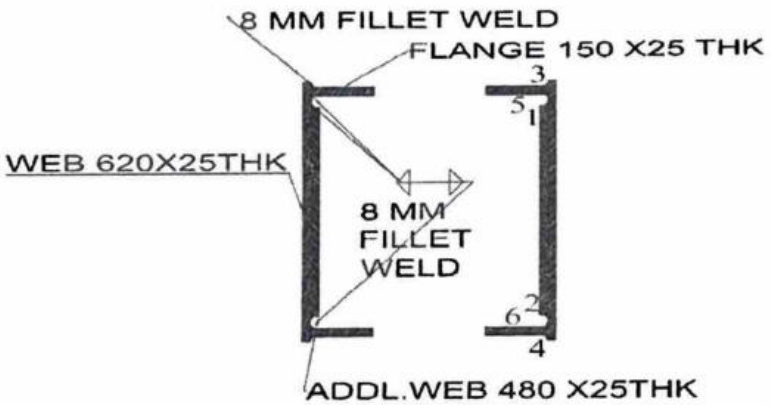
9. Welder qualification : First welder as perIS-7307(part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-550	28-30	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18. Inspection of weld : Visually, D P Test & Macro Etching

सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
रेल मन्त्रालय लखनऊ-11

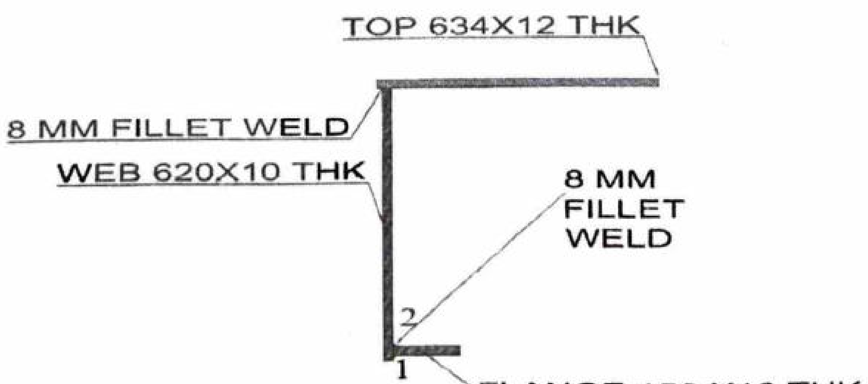
7/21

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator	:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-04
1. Drawing No.	:	RDSO/B-17184 (U0-U1-U2) DETAILS OF TOP CHORD
2. Weld joint description	:	WEB (10MM) WITH FLANGE (16MM) FILLET WELD (8MM) WEB(10 MM) WITH TOP PLATE(12MM) OUTER SIDE (8MM)
3. Base metal	:	IS:2062 : 2011 E 350 Quality-B0
4. Welding process	:	Submerged Arc Welding (SAW)
5. Welding position	:	Flat
6. Welding consumables	:	
6.1 Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2 Flux		Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3 Shielding gas	:	N.A
7.0 Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1 Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.

सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
11.06.21



7.2 Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

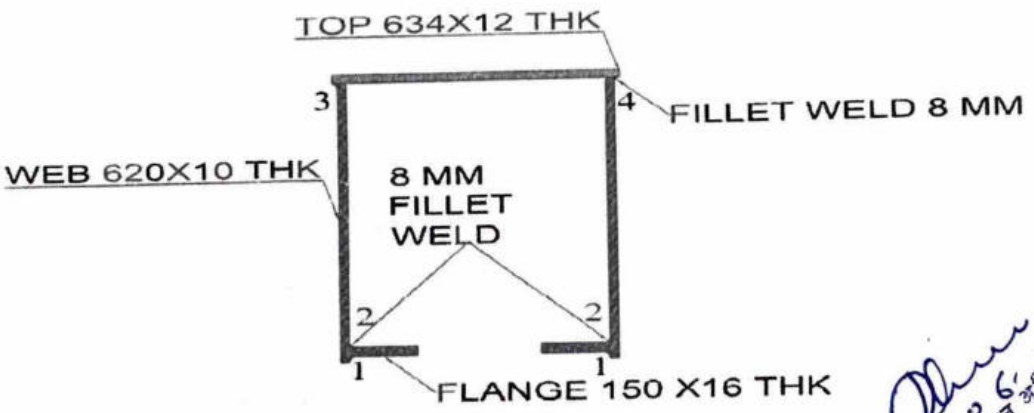
7/22

91.4M OWG (25T LOADING)

8.	Welding current	:	Type : DC Polarity: Reverse
9	Welder qualification	:	First welder as per IS-7307(part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974
10.	Welding parameters and technique	:	
10.1	Welding parameter	:	

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-550	28-30	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



11.	Provision of running & run off tabs	:	yes
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 & interpass temperature	:	Min-150^{0}C , Interpass Max- 250^{0}C
15.	Peening	:	N.A
16.	Post weld treatment	:	N.A.
17.	Rectification of weld defects	:	By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.
18.	Inspection of weld	:	Visually, D.P.Test & Macro Etching

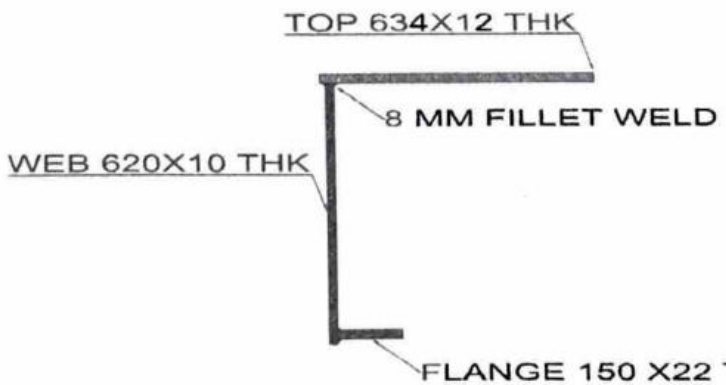
सहायक अनुसंधान अधिकारी (यांत्रिक)
Assistant Research Officer (Mel,

7/23

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/GMAW/WPSS-05
1.	Drawing No.	:	RDSO/B-17184 (U2-U3-U4) DETAILS OF TOP CHORD
2.	Weld joint description	:	WEB(10 MM) WITH TOP PLATE (12MM) INNER SIDE (8MM)
3.	Base metal	:	IS.2062 : 2011 E 350 Quality B0
4.	Welding process	:	GMAW
5.	Welding position	:	horizontal
6.	**Welding consumables**	:	
6.1	Electrode/wire – Electrode	:	Class: Class 1 of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux		Class: N.A. Type: : N.A Drying Method: N.A.
6.3	Shielding gas	:	CO_2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8	Welding current	:	Type : DC Polarity: Reverse

Assistant Research Officer (Met)

91.4M OWG (25T LOADING)

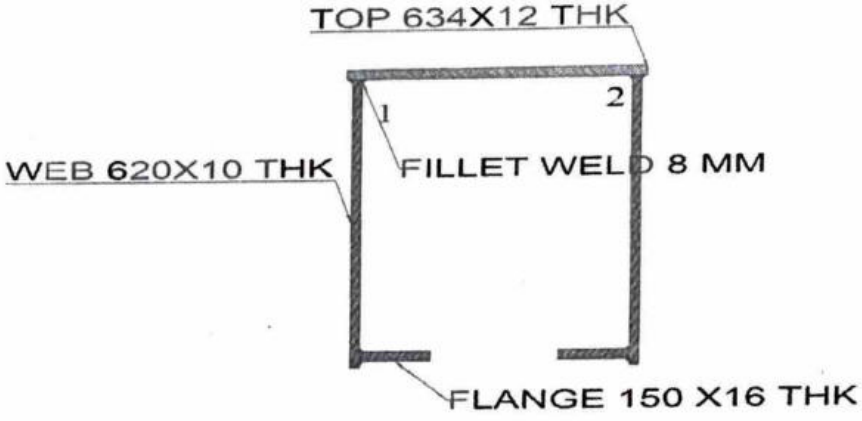
9. Welder qualification : First welder as per IS-7307(part-I)First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2	180-220	22-26	Controlled by current	N.A.	12-15	15-18

10.2 Welding sequence :



11. Provision of running & run off tabs : yes

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 & interpass temperature : Min-75^{0}C , Interpass Max- 250^{0}C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M 28-12 after conducting D P test.

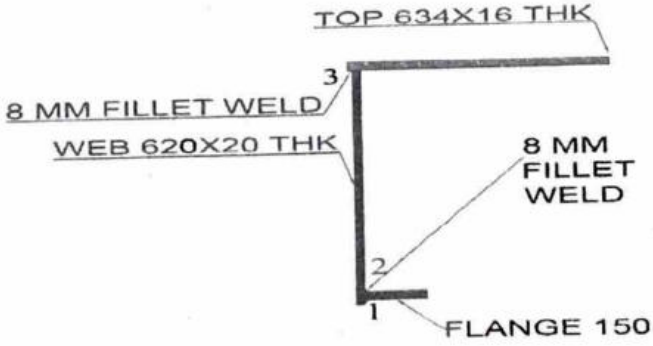
18. Inspection of weld : Visually, D.P.Test & Macro Etching

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
लखनऊ/Lko रेल अनुसंधान संगठन-1

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		:	MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-06
1.	Drawing No.	:	RDSO/B-17184 (U2-U3-U4) DETAILS OF TOP CHORD
2.	Weld joint description	:	WEB (20 MM) WITH FLANGE (16MM) FILLET WELD (8MM) WEB(20 MM) WITH TOP PLATE(16MM) OUTER SIDE (8MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux		Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity: Reverse

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Assistant Research Officer (Met)
रेल मंत्रालय (अनुसंधान अभिकल्प एवं मानक संगठन)
Ministry of Railways (RDSO)

7/21

91.4M OWG (25T LOADING)

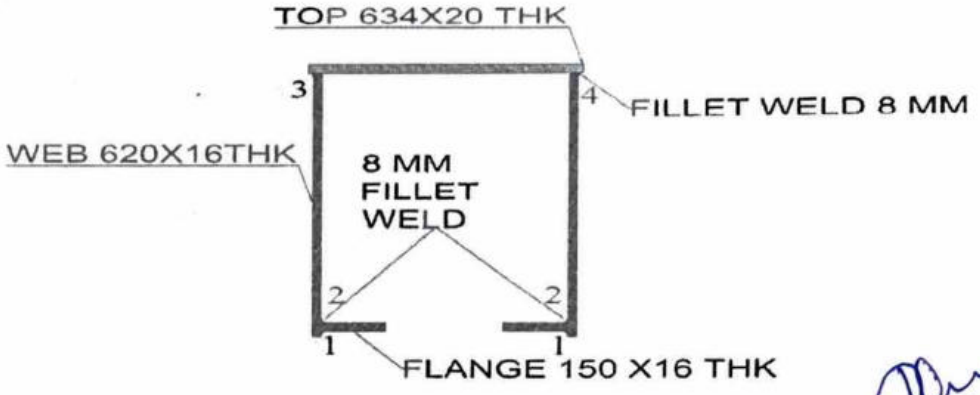
9. Welder qualification : First welder as per IS-7307 (part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-550	28-30	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

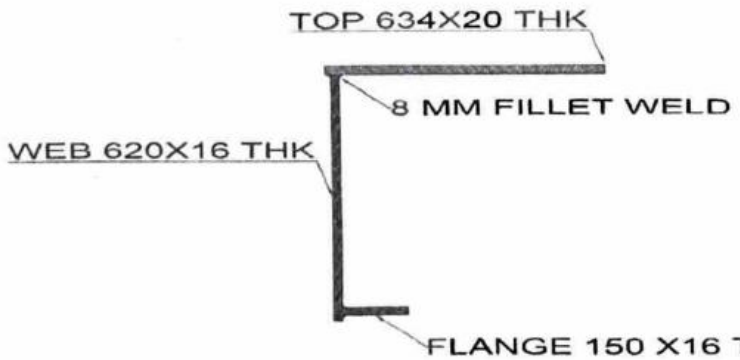
18. Inspection of weld : Visually, D.P.Test & Macro Etching

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/GMAW/WPSS-07
1.	Drawing No.	:	RDSO/B-17184 (U2-U3-U4) DETAILS OF TOP CHORD
2.	Weld joint description	:	WEB(20 MM) WITH TOP PLATE(16MM) INNER SIDE (8MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality- B0
4.	Welding process	:	GMAW
5.	Welding position	:	horizontal
6.	**Welding consumables**	:	
6.1	Electrode/wire – Electrode	:	Class: Class 1 of IRS M.46 Type: Copper coated solid wire Dia. 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux		Class: N.A. Type: : N.A Drying Method: N.A.
6.3	Shielding gas	:	CO_2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity: Reverse
9.	Welder qualification		First Welder as per IS-7307(part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

11.6.21

सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
मोटर वाहन अनुसंधान प्रयोगशाला

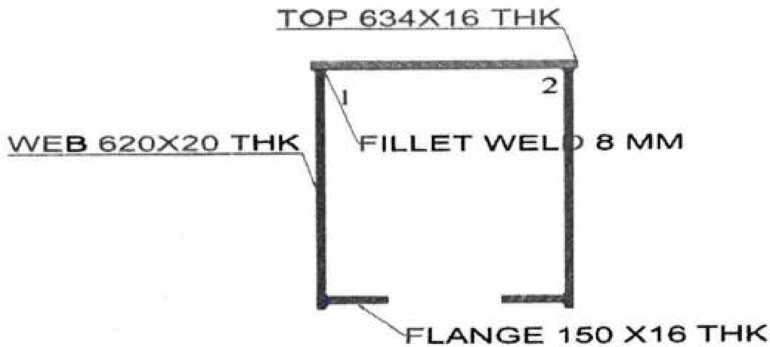
91.4M OWG (25T LOADING)

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2	180-220	22-26	Controlled by Current	N.A.	12-15	15-18

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-75⁰C , Interpass Max- 250⁰C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

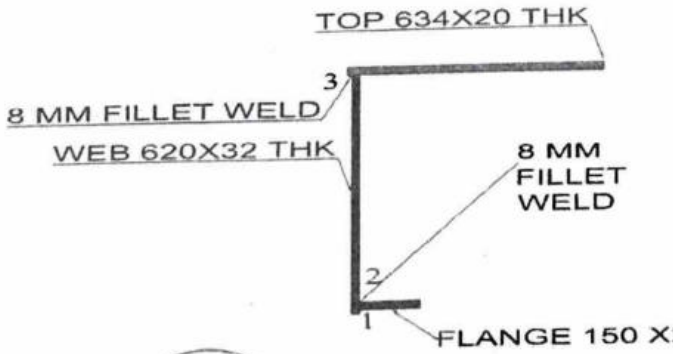
18. Inspection of weld : Visually, D.P.Test & Macro Etching

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met.)
अ०अ०मा०सं० रेल मंत्रालय लखनऊ-11

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-08
1.	Drawing No.	:	RDSO/B-17184 (U4-U5-U6) DETAILS OF TOP CHORD
2.	Weld joint description	:	WEB (32 MM) WITH FLANGE (20MM) FILLET WELD (8MM) WEB(32 MM) WITH TOP PLATE(20MM) OUTER SIDE (8MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



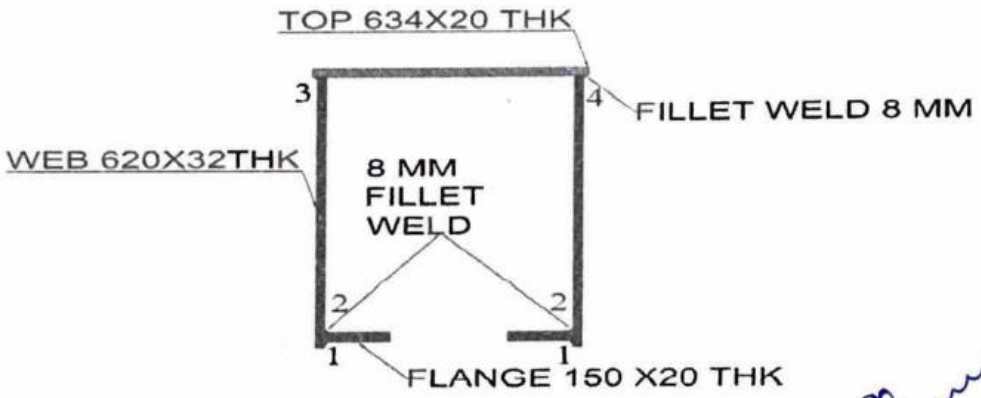
7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

91.4M OWG (25T LOADING)

8.	Welding current	:	Type : DC Polarity: Reverse
9.	Welder qualification	:	First welder as per IS-7307 (part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974
10.	Welding parameters and technique	:	
10.1	Welding parameter	:	

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-550	28-30	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



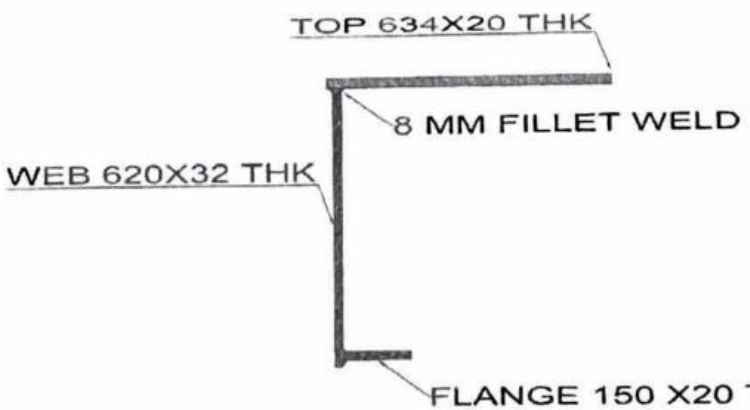
11.	Provision of running & run off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	N.A.
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating & interpass temperature	:	Min-150^{0}C , Interpass Max- 250^{0}C
15.	Peening	:	N.A
16.	Post weld treatment	:	N.A.
17.	Rectification of weld defects	:	By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.
18.	Inspection of weld	:	Visually, D.P.Test & Macro Etching

11.6.21
सहायक अनुसंधान अधिकारी (यां.)
Assistant Research Officer (Mel.)
उत्तर मध्य रेल मुख्यालय प्रयागराज-1

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/GMAW/WPSS-09
1.	Drawing No.	:	RDSO/B-17184 (U4-U5-U6) DETAILS OF TOP CHORD
2.	Weld joint description	:	WEB(20 MM) WITH TOP PLATE(16MM) INNER SIDE (8MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality- B0
4.	Welding process	:	GMAW
5.	Welding position	:	horizontal
6	**Welding consumables**	:	
6.1	Electrode/wire – Electrode	:	Class: Class 1 of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: N.A. Type: : N.A Drying Method: N.A.
6.3	Shielding gas	:	CO_2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity: Reverse
9.	Welder qualification	:	First Welder as per IS-7307(part-I) First welder at all test

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Assistant Research Officer (Met.)
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11.06.21

91.4M OWG (25T LOADING)

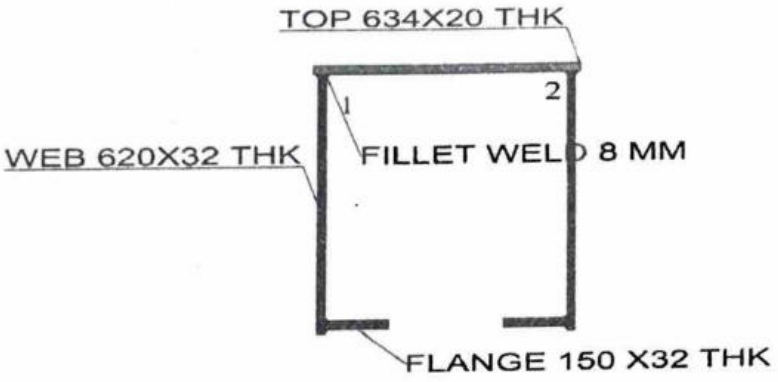
then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2	180-220	22-26	Controlled by Current	N.A.	12-15	15-18

10.2 Welding sequence :



11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met

11. Provision of running & run off tabs : Yes

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 & interpass temperature : 150°C

15. Peening : N.A

16. Post weld treatment : N.A.

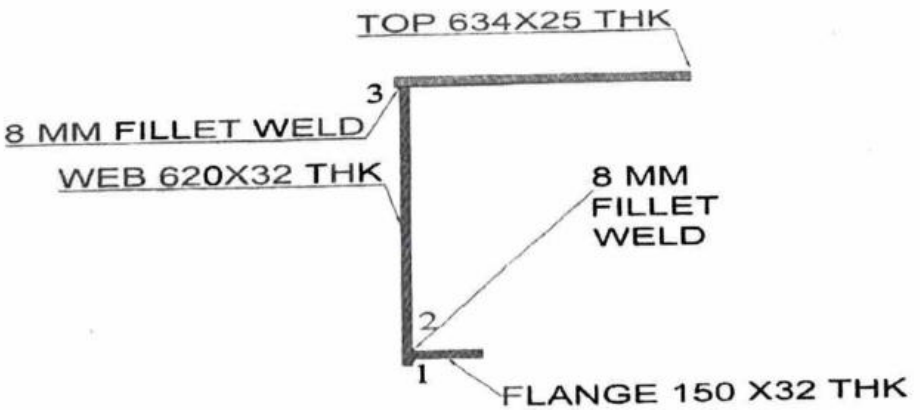
17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-10
1.	Drawing No.	:	RDSO/B-17184 (U6-U7) DETAILS OF TOP CHORD
2.	Weld joint description	:	WEB (32 MM) WITH FLANGE (32MM) FILLET WELD (8MM) WEB(32 MM) WITH TOP PLATE(25MM) OUTER SIDE (8MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

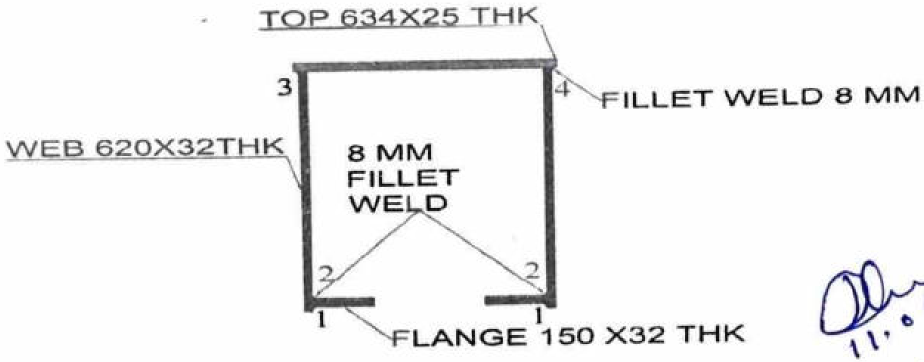
11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)

91.4M OWG (25T LOADING)

8.	Welding current	:	Type: DC Polarity: Reverse
9.	Welder qualification	:	First welder as per IS-7307 (part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974
10.	Welding parameters and technique	:	
10.1	Welding parameter	:	

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-550	28-30	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



11.06.21

सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
अ०अ०मा०सं० रेल मंत्रालय लखनऊ-11

11.	Provision of running & run off tabs	:	Yes
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 & interpass temperature	:	Min-150^{0}C , Interpass Max- 250^{0}C
15.	Peening	:	N.A
16.	Post weld treatment	:	N.A.
17.	Rectification of weld defects	:	By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.
18.	Inspection of weld	:	Visually, D.P.Test & Macro Etching

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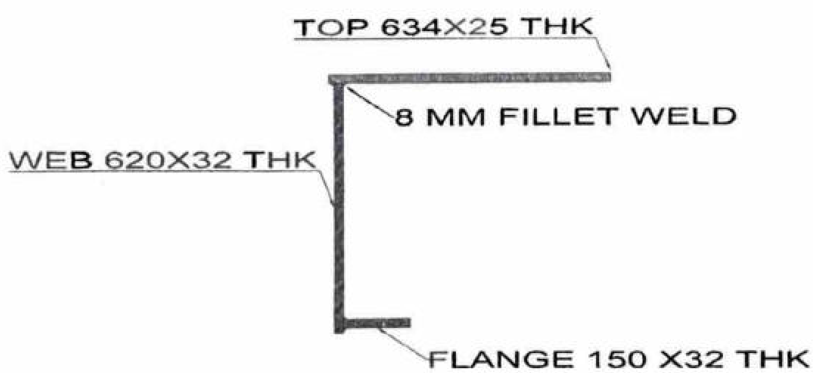
91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator	:	M/s M.G Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/GMAW/WPSS-11
1. Drawing No.	:	RDSO/B-17184 (U6-U7) DETAILS OF TOP CHORD
2. Weld joint description	:	WEB(20 MM) WITH TOP PLATE(16MM) INNER SIDE (8MM)
3. Base metal	:	IS 2062 : 2011 E 350 Quality- B0
4. Welding process	:	GMAW
5. Welding position	:	horizontal
6. **Welding consumables**	:	
6.1 Electrode/wire – Electrode	:	Class: Class 1 of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2 Flux		Class: N.A. Type: : N.A Drying Method: N.A.
6.3 Shielding gas	:	CO_2
7.0 Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1 Joint design details	:	Sketch showing arrangements of parts, weld details, weld passes & their sequence etc.

11.6.21
Assistant Research Officer (Met)



7.2 Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8. Welding current	:	Type: DC Polarity: Reverse
9. Welder qualification	:	First Welder as per IS-7307(part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

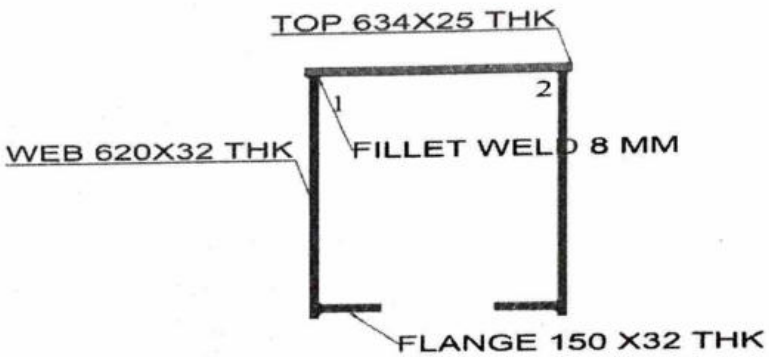
91.4M OWG (25T LOADING)

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2	180-220	22-26	Controlled by Current	N.A.	12-15	15-18

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-75^{0}C , Interpass Max- 250^{0}C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

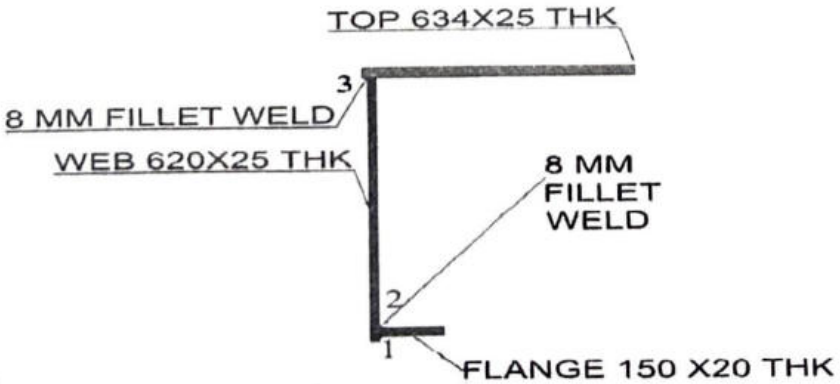
18. Inspection of weld : Visually, D.P.Test & Macro Etching

17.06.21
सहायक अनुसंधान अधिकारी (यांत्रि.)
Assistant Research Officer (Mel)
दक्षिण मध्य रेल्वे मध्यवर्ती कार्यशाला

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		:	MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-012
1.	Drawing No.	:	RDSO/B-17184 (L0-M0 & M0-L0) DETAILS OF END RAKER
2.	Weld joint description	:	WEB (25 MM) WITH FLANGE (20MM) FILLET WELD (8MM) WEB(25MM) WITH TOP PLATE(25MM) OUTER SIDE (8MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality - B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux		Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity: Reverse

Assistant Research Officer (Met)

91.4M OWG (25T LOADING)

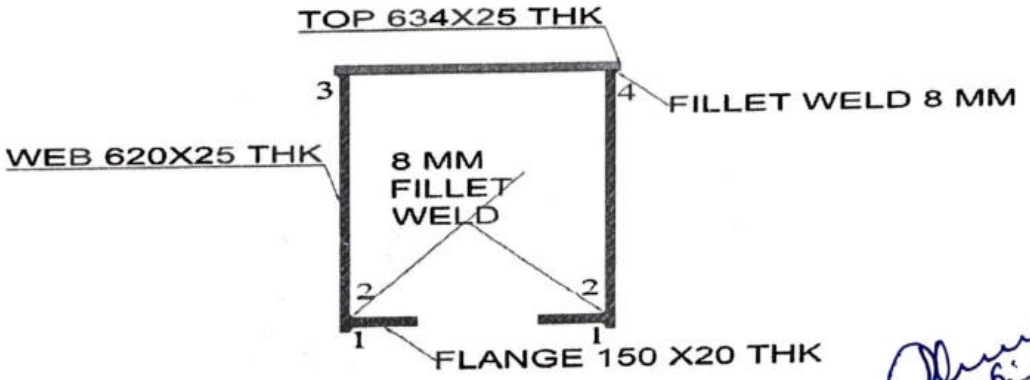
9. Welder qualification : First welder as per IS-7307(part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-550	28-30	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150^{0}C , Interpass Max- 250^{0}C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M 28-12 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

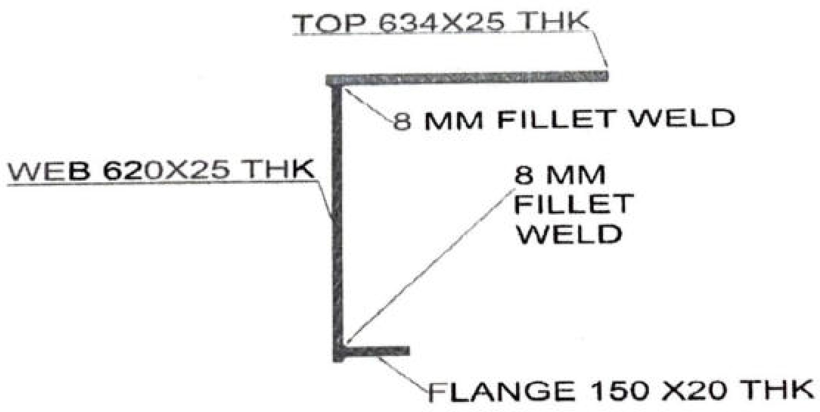
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
उत्तर मध्य रेल्वे प्रयागराज मुख्यालय-11

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

	Name and Address of Fabricator	: M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
	Welding procedure specification No.	MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/GMAW/WPSS-013
1.	Drawing No.	: RDSO/B-17184 (L0-M0 & M0-L0) DETAILS OF END RAKER
2.	Weld joint description	: WEB(28 MM) WITH TOP PLATE(28MM) INNER SIDE (8MM)
3.	Base metal	: IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	: GMAW
5.	Welding position	: horizontal
6.	**Welding consumables**	:
6.1	Electrode/wire – Electrode	: Class: Class 1 of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	: Class: N.A. Type: : N.A Drying Method: N.A.
6.3	Shielding gas	: CO_2
7.0	Base metal preparation	: Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	: Sketch showing arrangements of parts, weld details, weld passes & their sequence etc.

Stamp: सहायक अनुसंधान अधिकारी (धातु) Assistant Research Officer (Met) अ.अ.मा.सं. रेल मंत्रालय लखनऊ-11 (signed, 11.06)



7.2	Joint preparation	: As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	: Type : DC Polarity: Reverse
9.	Welder qualification	: First welder as per IS-7307(part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

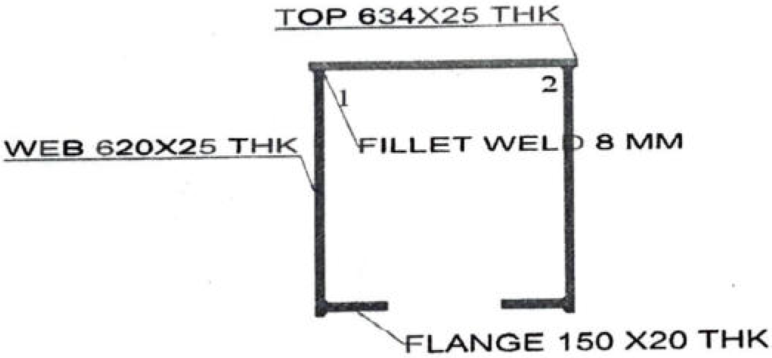
91.4M OWG (25T LOADING)

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2	200-220	24-26	4-5	N.A.	12-15	15-18

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-75⁰C , Interpass Max- 250⁰C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

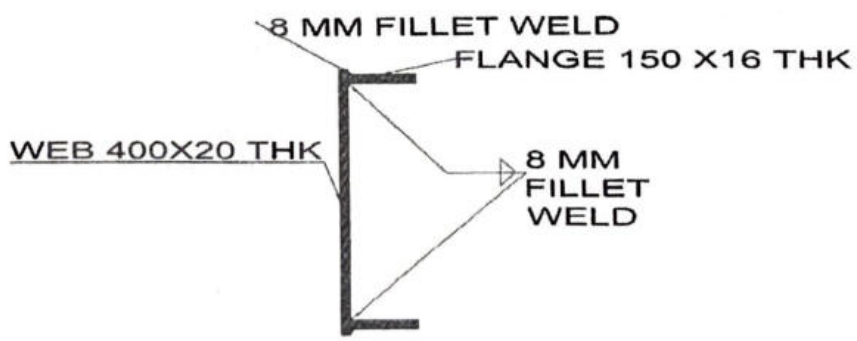
18. Inspection of weld : Visually, D.P.Test & Macro Etching

Assistant Research Officer (Met)

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-14
1.	Drawing No.	:	RDSO/B-17184 (M0-U1, M0-L1) DETAILS OF DIAGONALS
2.	Weld joint description	:	WEB(20 MM) WITH FLANGE (16MM)FILLET WELD (8MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux		Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
उप मुख्य परियोजना प्रबंधक

91.4M OWG (25T LOADING)

8. Welding current : Type : DC
Polarity: Reverse

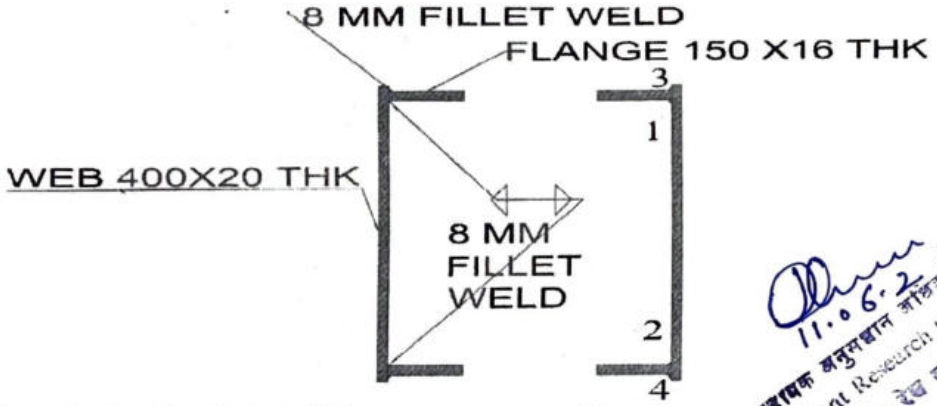
9. Welder qualification : First welder as per IS-7307(part –I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-550	28-30	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

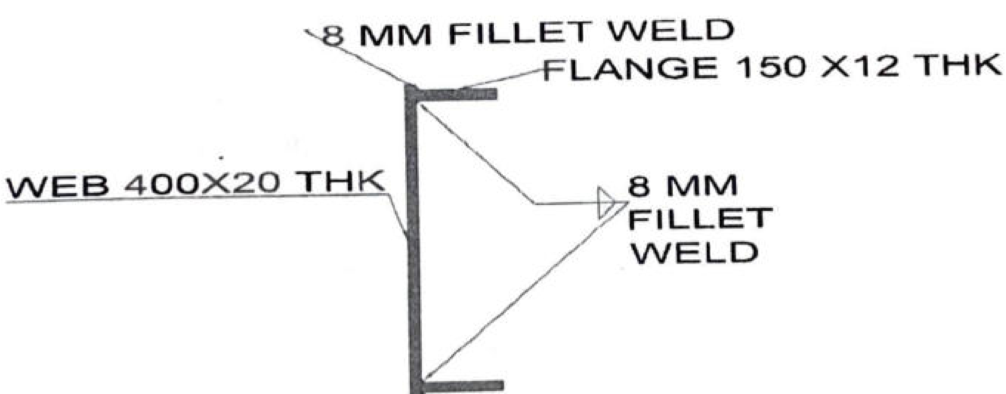
11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
दक्षिण मध्य रेल अनुसंधान संगठन

7/43

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator	:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-15
1. Drawing No.	:	RDSO/B-17184 (M1-U2) DETAILS OF DIAGONALS
2. Weld joint description	:	WEB(20 MM) WITH FLANGE (12MM)FILLET WELD (8MM)
3. Base metal	:	IS:2062 : 2011 E 350 Quality-B0
4. Welding process	:	Submerged Arc Welding (SAW)
5. Welding position	:	Flat
6. Welding consumables	:	
6.1 Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2 Flux	:	Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3 Shielding gas	:	N.A
7.0 Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1 Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2 Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8. Welding current		Type: DC Polarity: Reverse

91.4M OWG (25T LOADING)

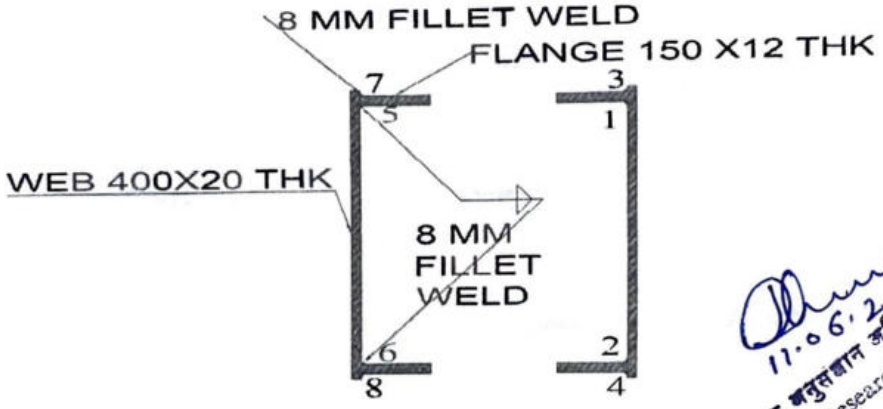
9. Welder qualification : First welder as per IS-7307(part-I) first welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-550	28-30.	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



11.06.21
वरिष्ठ अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
रेल मंत्रालय लखनऊ-11

11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150^{0}C , Interpass Max- 250^{0}C

15. Peening : N.A

16. Post weld treatment : N.A.

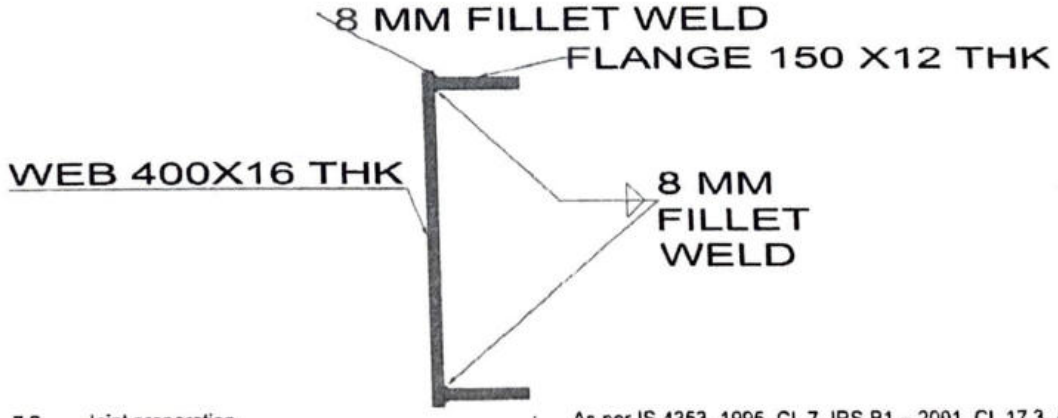
17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18 Inspection of weld : Visually, D.P.Test & Macro Etching

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-16
1.	Drawing No.	:	RDSO/B-17184 (M1-L2) DETAILS OF DIAGONALS
2.	Weld joint description	:	WEB(16 MM) WITH FLANGE (12MM)FILLET WELD (8MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current		Type: DC Polarity: Reverse

Assistant Research Officer (Met)

Consultant Private

91.4M OWG (25T LOADING)

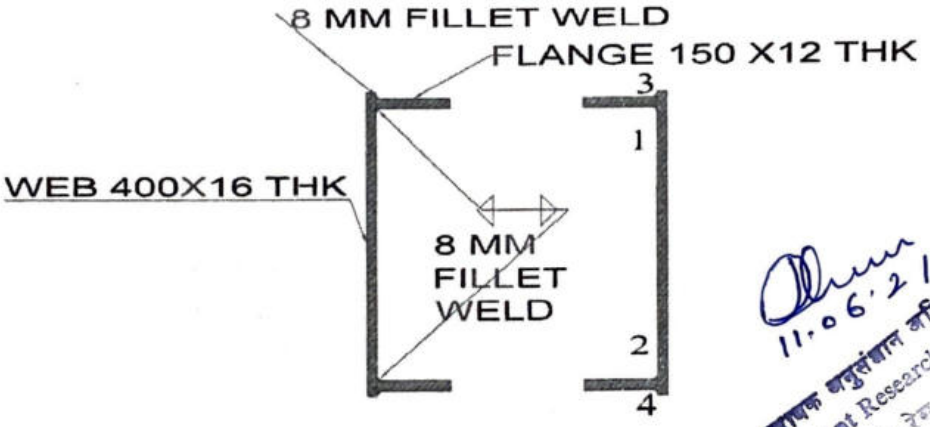
9. Welder qualification : First welder as per IS-7307 (part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-550	28-30	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150^{0}C , Interpass Max- 250^{0}C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

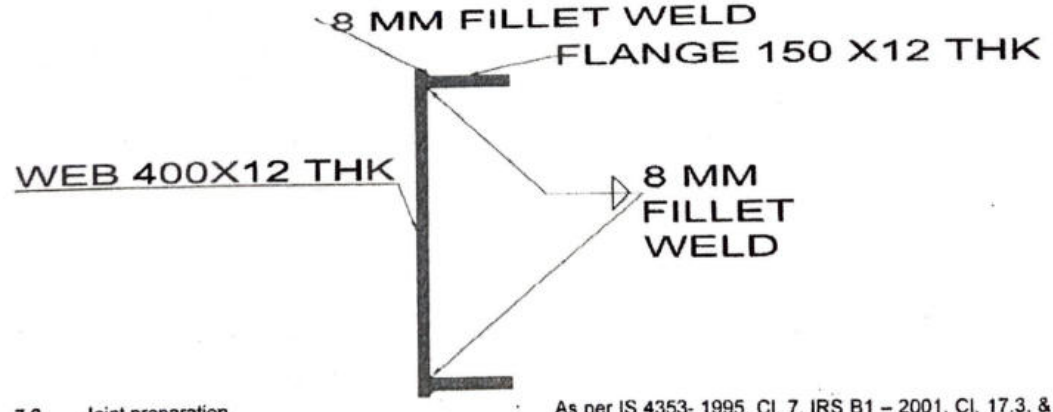
18. Inspection of weld : Visually, D.P.Test & Macro Etching

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		:	MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-17
1.	Drawing No.	:	RDSO/B-17184 (M2-U3, M2-L3, M3-U4, M3-L4, M6-U7 & M6-L7) DETAILS OF DIAGONALS
2.	Weld joint description	:	WEB(12 MM) WITH FLANGE (12MM)FILLET WELD (8MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type: DC Polarity: Reverse

Assistant Research Officer (Met)

Consultant Private Limited

मुख्य परियोजना प्रबंधक
Chief Project Manager

91.4M OWG (25T LOADING)

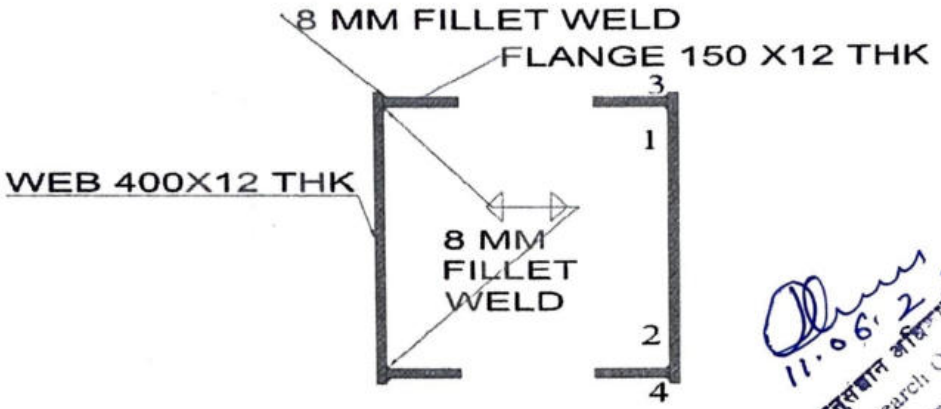
9. Welder qualification : First welder as per IS-7307 (part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-550	28-30	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A.

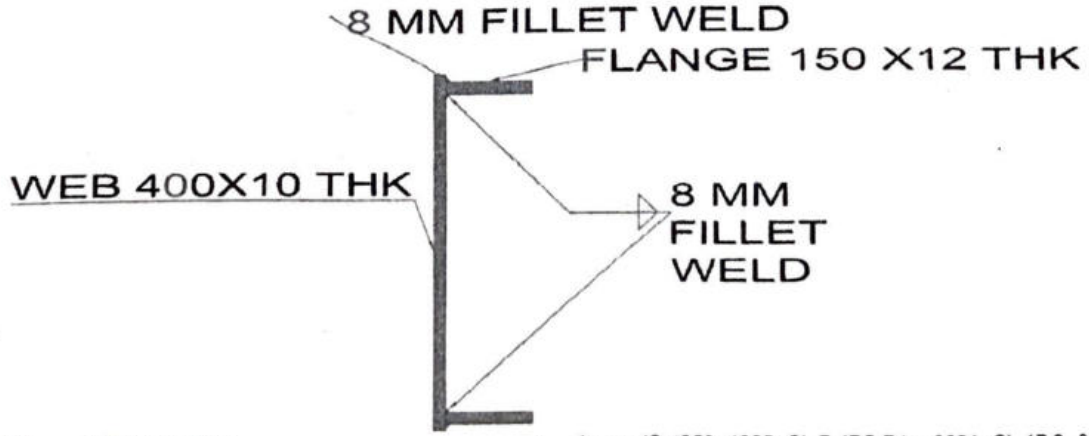
17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-18
1.	Drawing No.	:	RDSO/B-17184 (M4-U5, M4-L5, M5-U6 & M5-L6) DETAILS OF DIAGONALS
2.	Weld joint description	:	WEB(10 MM) WITH FLANGE (12MM)FILLET WELD (8MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia. 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250^0 C to 300^0 C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity Reverse

11.06.21
अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
अनुसंधान एवं मानक संगठन-II

91.4M OWG (25T LOADING)

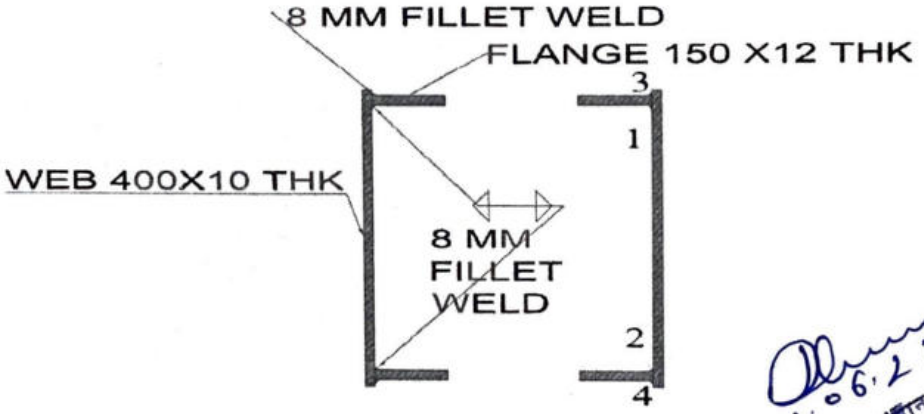
9. Welder qualification : First welder as per IS-7307 (part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-550	28-30	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

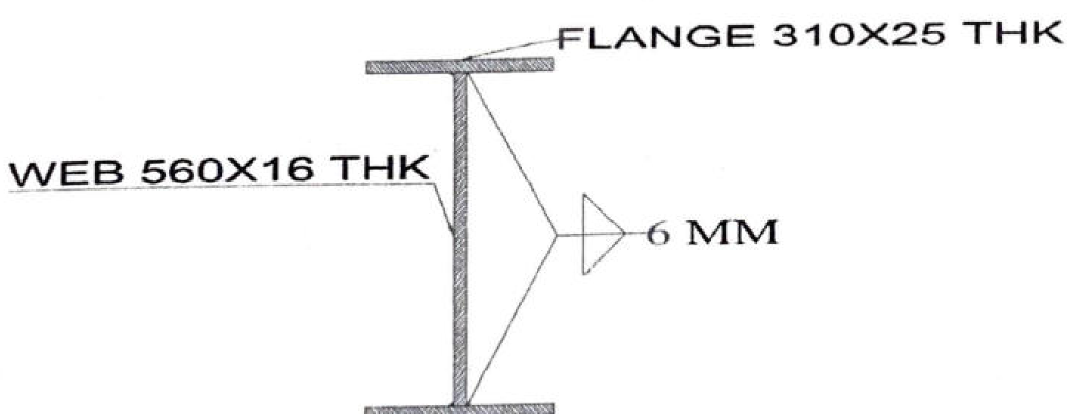
Name and Address of Fabricator : M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City. Mullana, Ambala (HR) 133104

Welding procedure specification No. MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-19

1.	Drawing No.	:	RDSO/B-17184 (M1-U1 & M1-L1) DETAILS OF VERTICALS
2.	Weld joint description	:	WEB(16 MM) WITH FLANGE (25MM)FILLET WELD (6MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux		Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.

11.6.21

Assistant Research Officer



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type: DC Polarity: Reverse

Consultant Private

91.4M OWG (25T LOADING)

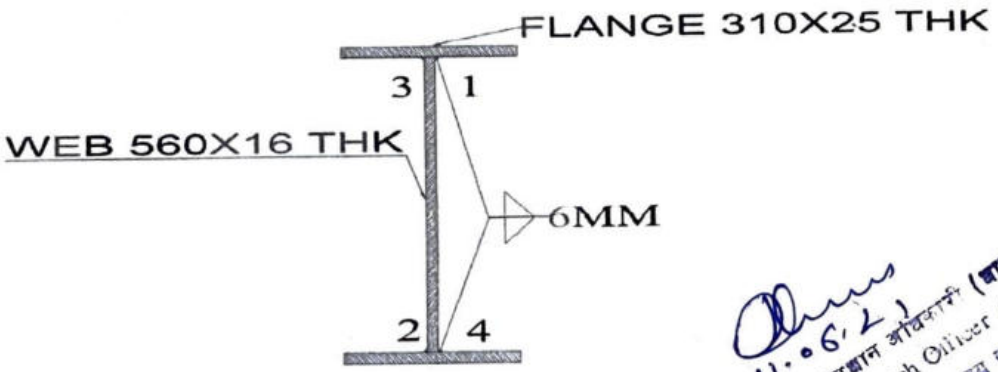
9. Welder qualification : First welder as per IS-7307(part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-500	28-30	controlled by current	0.50-0.55	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test

18. Inspection of weld : Visually, D.P.Test & Macro Etching

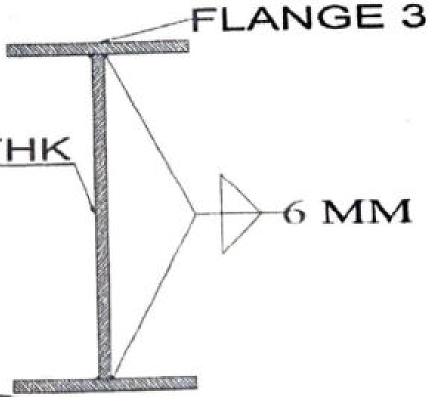
11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
सहायक अनुसंधान अधिकारी (धातु)

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

	Name and Address of Fabricator	:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
	Welding procedure specification No.		MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-20
1.	Drawing No.	:	RDSO/B-17184 (M2-U2 & M2-L2) DETAILS OF VERTICALS
2.	Weld joint description	:	WEB(16 MM) WITH FLANGE (16MM)FILLET WELD (6MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux		Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250° C to 300° C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.

सहायक अनुसंधान अधिकारी (धातु) Assistant Research Officer (Met) अनुसंधान अभिकल्प एवं मानक संगठन, रेल मंत्रालय लखनऊ-11
11.6.21



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

Consultant Private Li...

उप मुख्य परियोजना प्रबंधक

91.4M OWG (25T LOADING)

8. Welding current : Type : DC
Polarity: Reverse

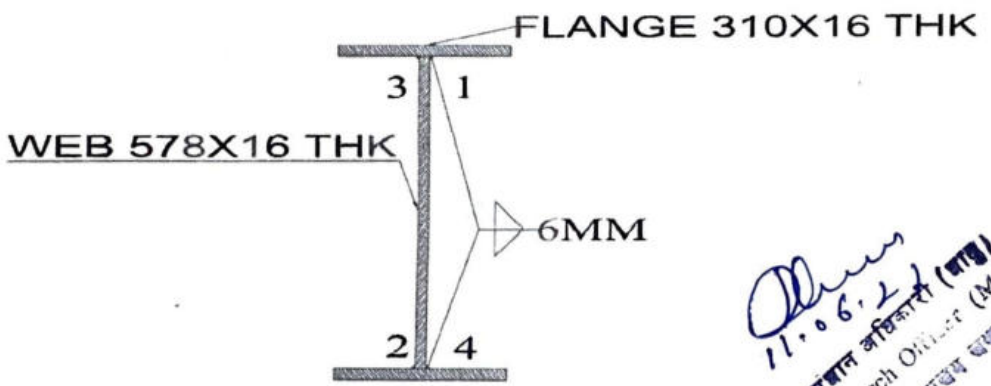
9. Welder qualification : First welder as per IS-7307(part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-500	28-30	controlled by current	0.50-0.55	15-20	N.A

10.2 Welding sequence



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

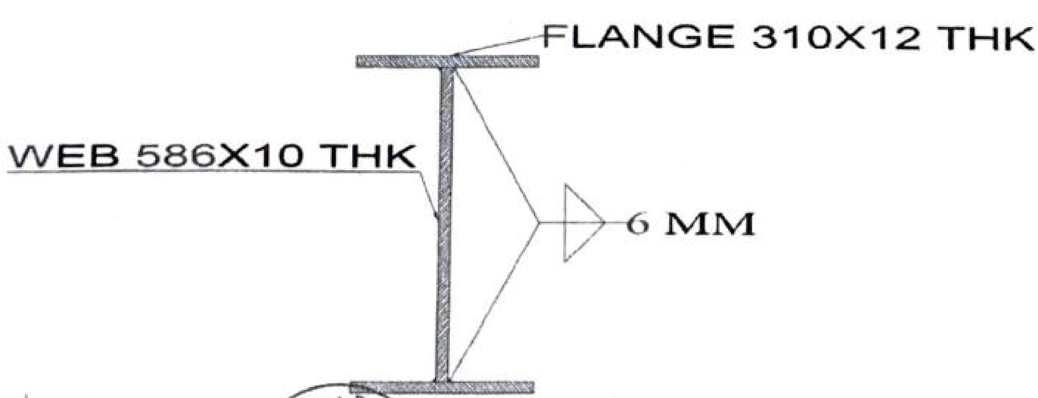
7|55

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator	:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-21
1. Drawing No.	:	RDSO/B-17184 (M3-U3, M3-L3, M4-U4, M4-L4, M5-U5, M5-L5, M6-U6, M6-L6 & U7-L7) DETAILS OF VERTICALS
2. Weld joint description	:	WEB(10 MM) WITH FLANGE (12MM)FILLET WELD (6MM)
3. Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4. Welding process	:	Submerged Arc Welding (SAW)
5. Welding position	:	Flat
6. Welding consumables	:	
6.1 Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2 Flux	:	Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250⁰ C to 300⁰ C for two hour before use.
6.3 Shielding gas	:	N.A
7.0 Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1 Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.

11.06.21 सहायक अनुसंधान अधिकारी (धातु) Assistant Research Officer (Met)



7.2 Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

91.4M OWG (25T LOADING)

8. Welding current : Type : DC
Polarity: Reverse

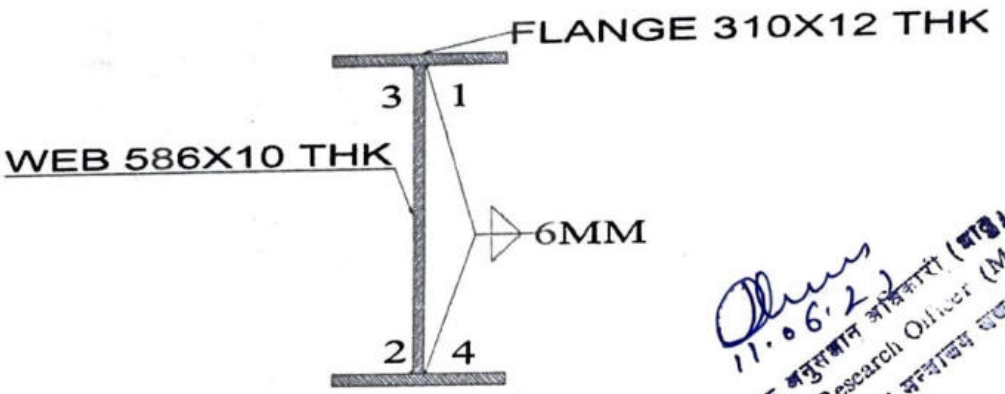
9. Welder qualification : First welder as per IS-7307(part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-500	28-30	controlled by current	0.45-0.50	15-20	N.A

10.2 Welding sequence :



11.06.24
सहायक अनुसंधान अधिकारी (मात्रा)
Assistant Research Officer (Met)
उत्तर मध्य रेल मनोरंजन संगठन-II

11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator : M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104

Welding procedure specification No. MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-22

1. Drawing No. : RDSO/B-17184 DETAILS OF CROSS GIRDERS

2. Weld joint description : WEB(16 MM) WITH FLANGE (40 MM)FILLET WELD (12 MM)

3. Base metal : IS:2062 : 2011 E 350 Quality- B0

4. Welding process : Submerged Arc Welding (SAW)

5. Welding position : Flat

6. Welding consumables :

6.1 Electrode/wire – Electrode :
Class: W2 of IRS M.39
Type: Copper coated solid wire
Dia: 4.0 mm (copper coated)
Drying Method: N.A

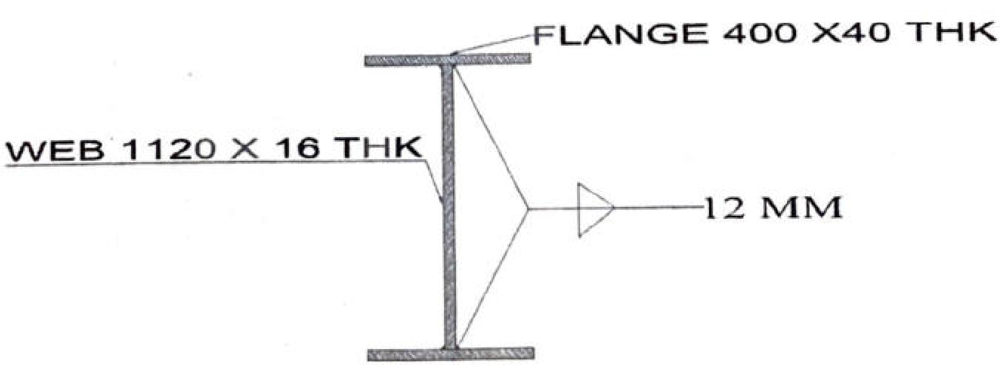
6.2 Flux
Class: F2of IRS M.39
Type: : Agglomerated
Drying Method: 250⁰ C to 300⁰ C for two hour before use.

Assistant Research Officer (Met) 11.06.21

6.3 Shielding gas : N.A

7.0 Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.

7.1 Joint design details : Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2 Joint preparation : As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

8. Welding current : Type: DC
Polarity. Reverse

91.4M OWG (25T LOADING)

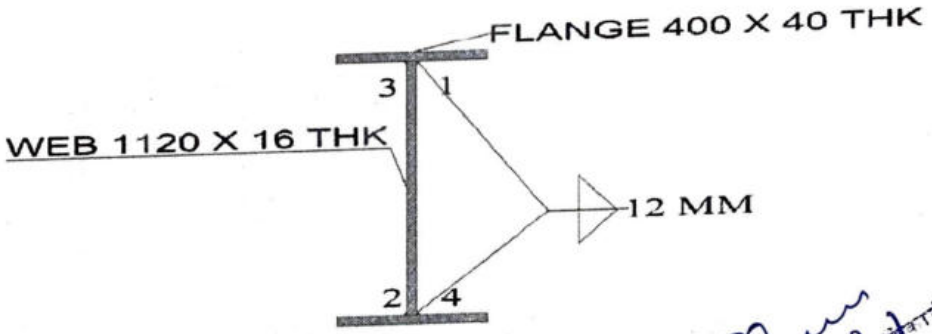
9. Welder qualification : First welder as per IS-7307(part-I)First wlder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-500	28-30	controlled by current	0.35-0.40	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150^{0}C , Interpass Max- 250^{0}C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28 after conducting D P test.

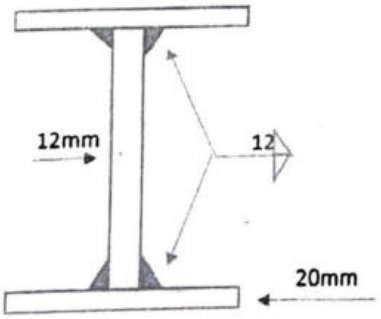
18. Inspection of weld : Visually, D.P.Test & Macro Etching

सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
उत्तर मध्य रेल्वे प्रयागराज-11

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City. Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-23
1.	Drawing No.	:	RDSO/B-17184 DETAILS OF STRINGERS
2.	Weld joint description	:	WEB(12 MM) WITH FLANGE (20 MM)FILLET WELD (12 MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250^0 C to 300^0 C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current		Type : DC Polarity: Reverse

Assistant Research Officer (Met)

91.4M OWG (25T LOADING)

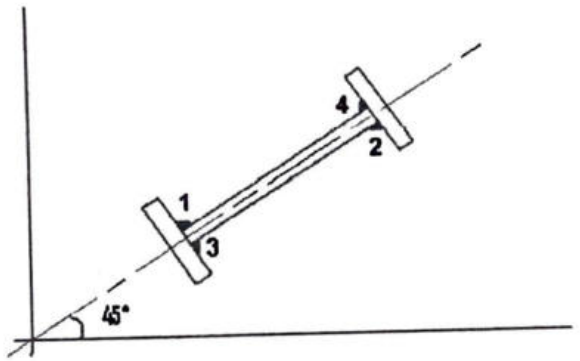
9. Welder qualification : First welder As per IS-7307(part-I) first welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-500	28-30	controlled by current	0.35-0.40	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

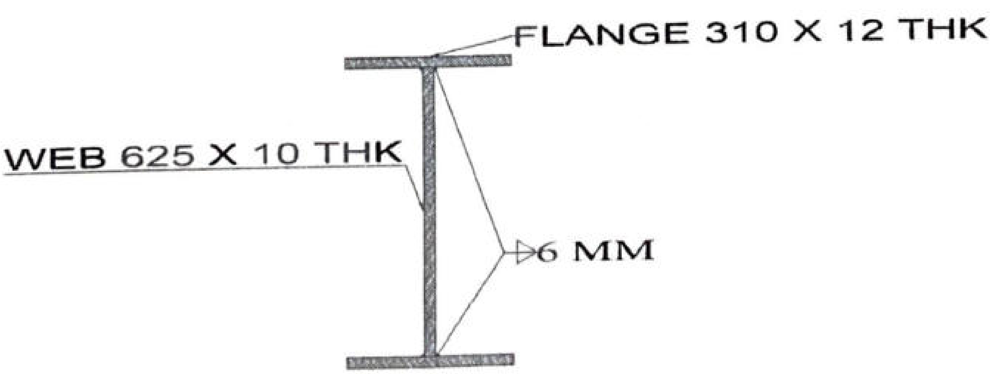
18. Inspection of weld : Visually, D.P.Test & Macro Etching

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator	:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-24
1. Drawing No.	:	RDSO/B-17184 DETAILS OF PORTAL GIRDER
2. Weld joint description	:	WEB(15 MM) WITH FLANGE (15 MM)FILLET WELD (6 MM)
3. Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4. Welding process	:	Submerged Arc Welding (SAW)
5. Welding position	:	Flat
6. Welding consumables	:	
6.1 Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2 Flux	:	Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250⁰ C to 300⁰ C for two hour before use.
6.3 Shielding gas	:	N.A
7.0 Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1 Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.

Assistant Research Officer (Met)
11.06.21



7.2 Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8. Welding current		Type : DC Polarity: Reverse

91.4M OWG (25T LOADING)

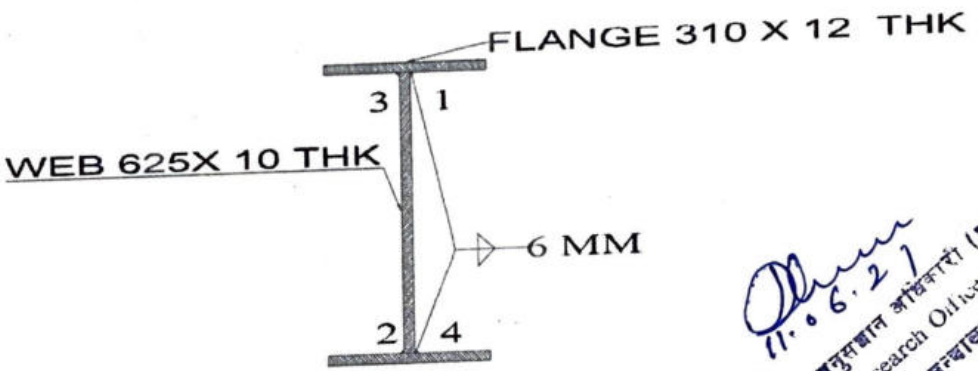
9. Welder qualification : First welder As per IS-7307(part-I) first welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-500	28-30	controlled by current	0.50-0.55	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

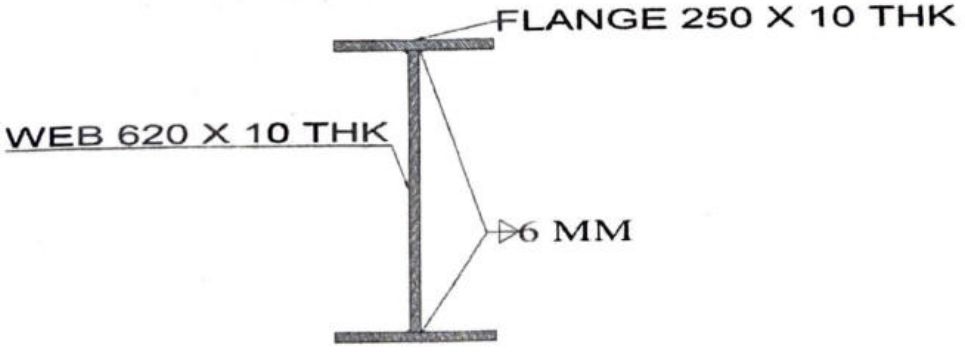
11.06.21
सहायक अनुसंधान अधिकारी (यांत्रि.)
Assistant Research Officer (Mel)
दक्षिण मध्य रेल मुख्यालय सिकन्दराबाद-11

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-25
1.	Drawing No.	:	RDSO/B-17184 DETAILS OF SWAY GIRDER
2.	Weld joint description	:	WEB(10 MM) WITH FLANGE (10 MM)FILLET WELD (6 MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	Submerged Arc Welding (SAW)
5.	Welding position	:	Flat
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: W2 of IRS M.39 Type: Copper coated solid wire Dia: 4.0 mm (copper coated) Drying Method: N.A
6.2	Flux		Class: F2of IRS M.39 Type: : Agglomerated Drying Method: 250^0 C to 300^0 C for two hour before use.
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
केन्द्रीय मृदा एवं सामग्री अनुसंधान केन्द्र



7.2	Joint preparation	:	As per IS 4353- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

Consultant Private

मुख्य परियोजना प्रबंधक
Chief Project Manager

91.4M OWG (25T LOADING)

8. Welding current : Type : DC
Polarity: Reverse

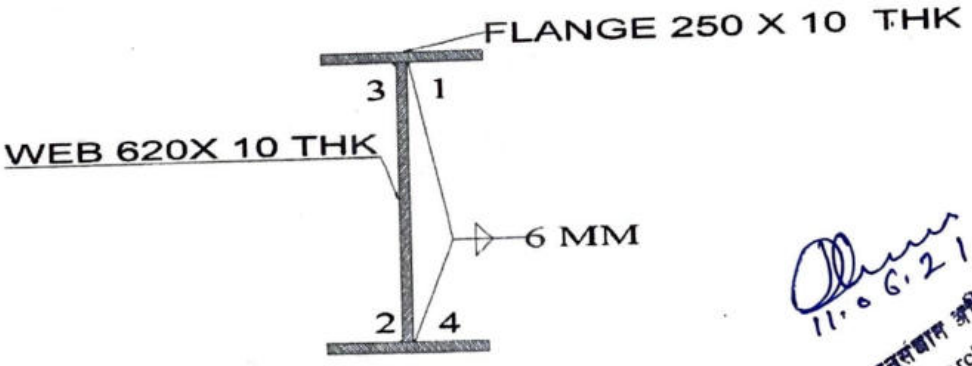
9. Welder qualification : First welder As per IS-7307(part-I) first welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	4	450-500	28-30	controlled by current	0.50-0.55	15-20	N.A

10.2 Welding sequence :



11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-150^{0}C , Interpass Max- 250^{0}C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

11.6.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
दक्षिण मध्य रेल मुख्यालय सिकंदराबाद-11

7/65

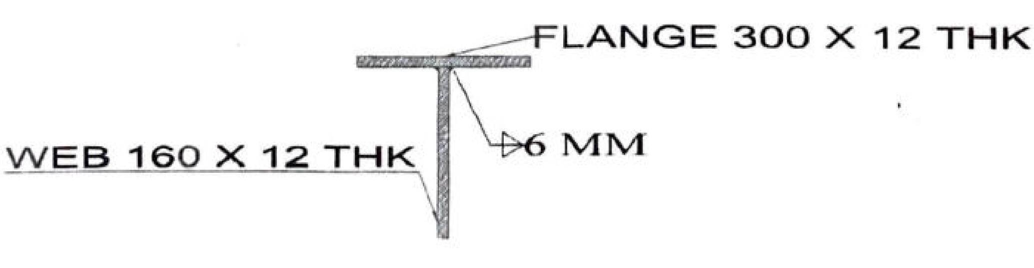
91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/GMAW/WPSS-25
1.	Drawing No.	:	RDSO/B-17184 DETAILS OF TOP LAT. BRACING
2.	Weld joint description	:	WEB(12 MM) WITH FLANGE (12 MM)FILLET WELD (6 MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	~~GMAW~~ SAW
5.	Welding position	:	Horizontal-Vertical , FLAT
6	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: ~~CLASS-1 of IRS M 46~~ W2 of IRS:M-39 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux		Class: ~~NA~~ F2 of IRS:M-39 Type: : ~~NA~~ Agglomerated Drying Method: N.A. 250-300° for 2 hours.
6.3	Shielding gas	:	CO2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.

11.6.21

सहायक अनुसंधान अधिकारी (धातु) Assistant Research Officer (Met) अनु.अ.मा.सं. रेल मंत्रालय लखनऊ



7.2	Joint preparation		As per IS 10178- 1995, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

91.4M OWG (25T LOADING)

8. Welding current : Type : DC
Polarity: Reverse

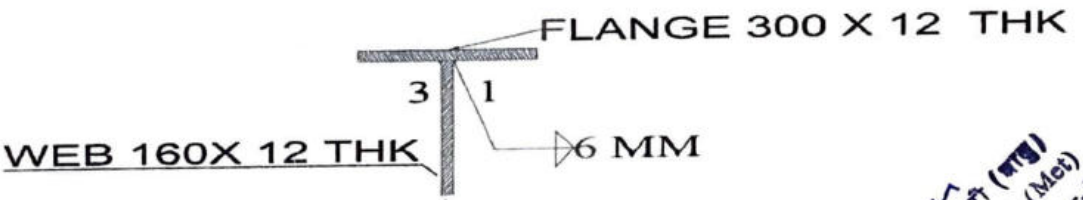
9. Welder qualification : First welder As per IS-7307(part-I) first welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
single	single	~~4.0~~ 4.0	~~180-220~~ 450-500	~~22-26~~ 28-30	controlled by current	~~N.A.~~ 0.50-0.55	~~12-15~~ 15-20	~~15-20~~ N.A

10.2 Welding sequence :



11.6.16
सहायक अनुसंधान अधिकारी (मेट)
Assistant Research Officer (Met)
दक्षिण मध्य रेल मुख्यालय सिकन्दराबाद-11

11. Provision of running & run off tabs : Yes

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 & interpass temperature : Min-75^{0}C , Interpass Max- 250^{0}C

15. Peening : N.A

16. Post weld treatment : N.A.

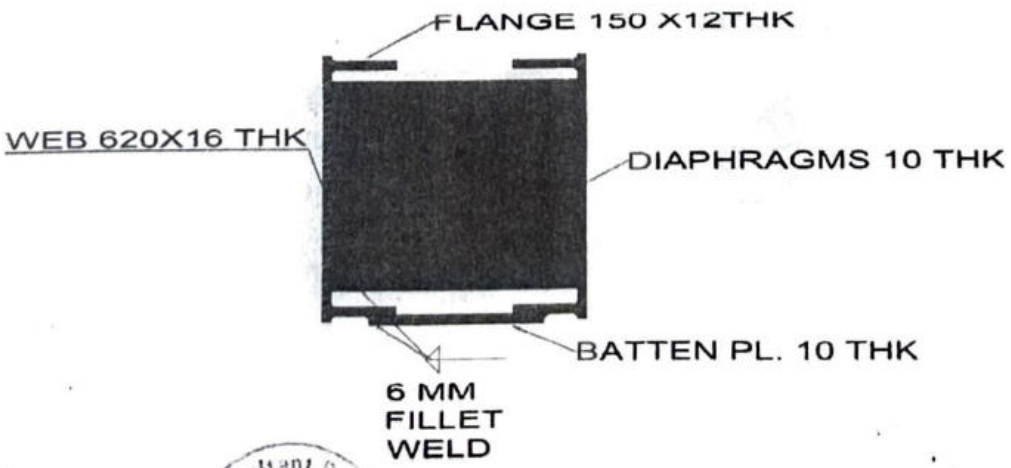
17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-027
1.	Drawing No.	:	RDSO/B-17184/4/1 (L0-L1-L2) BATTEN & DIAPHARGAM WELDING OF BOTTOM CHORD
2.	Weld joint description	:	L0-L1-L2 WEB(16 MM) + DIAPHRAGM PLATE (10MM) FLANGE (12MM) +BATTEN PLATE(10MM)
3	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	GMAW
5.	Welding position	:	Horizontal-Vertical
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: N.A. Type: : N.A. Drying Method: N.A.
6.3	Shielding gas	:	CO2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

11.06.21
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Assistant Research Officer (Met)
उप मुख्य परियोजना प्रबंधक

91.4M OWG (25T LOADING)

8.	Welding current	:	Type : DC Polarity: Reverse
9.	Welder qualification	:	First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974
10.	Welding parameters and technique	:	
10.1	Welding parameter	:	

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11.06.21

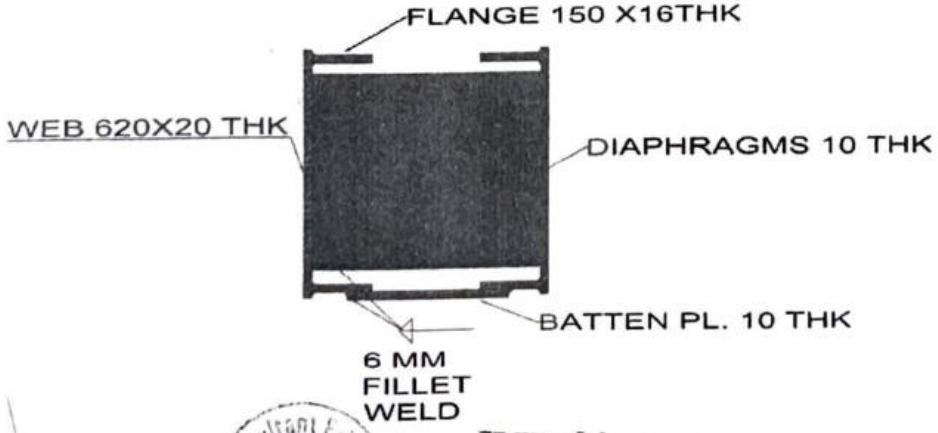
Assistant Research Officer (Met)

11.	Provision of running & 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 & interpass temperature	:	Min-75°C , Interpass Max- 250°C
15.	Peening	:	N.A
16.	Post weld treatment	:	N.A.
17.	Rectification of weld defects	:	By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.
18.	Inspection of weld	:	Visually, D.P.Test & Macro Etching

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-028
1.	Drawing No.	:	RDSO/B-17184/4/1 (L2-L3-L4) BATTEN & DIAPHARGAM WELDING OF BOTTOM CHORD
2.	Weld joint description	:	L2-L3-L4 WEB(20 MM) + DIAPHRAGM PLATE (10MM) FLANGE (16MM) +BATTEN PLATE(10MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	GMAW
5.	Welding position	:	Horizontal-Vertical
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class. N.A. Type: : N.A. Drying Method: N.A.
6.3	Shielding gas	:	CO2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
उप मुख्य परियोजना प्रबंधक
Dy. Chief Project Manager

91.4M OWG (25T LOADING)

8. Welding current : Type : DC
Polarity: Reverse

9. Welder qualification : First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11. Provision of running & 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 & interpass temperature : Min-75^{0}C , Interpass Max- 250^{0}C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

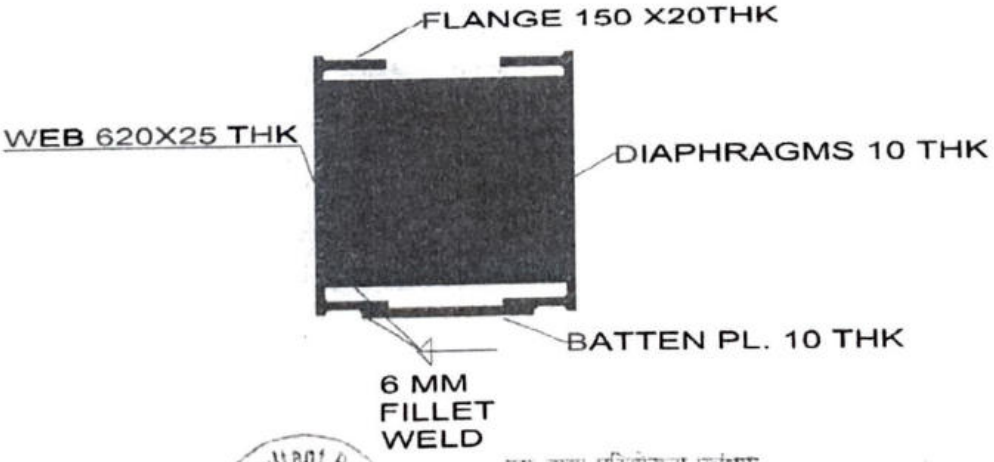
11.6.21

सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
दक्षिण मध्य रेल वरावाद डिवीजन-11

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		:	MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-029
1.	Drawing No.	:	RDSO/B-17184/4/2 (L4-L5-L6) BATTEN & DIAPHARGAM WELDING OF BOTTOM CHORD
2.	Weld joint description	:	L4-L5-L6 WEB(25 MM) + DIAPHRAGM PLATE (10MM) FLANGE (20MM) +BATTEN PLATE(10MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	GMAW
5.	Welding position	:	Horizontal-Vertical
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux		Class: N.A. Type: : N.A. Drying Method: N.A.
6.3	Shielding gas	:	CO2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
उत्तर मध्य रेल मुख्यालय प्रयागराज-1

उप मुख्य परियोजना प्रबंधक
Dy. Chief Project Manager

7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

91.4M OWG (25T LOADING)

8. Welding current : Type : DC
Polarity: Reverse

9. Welder qualification : First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11. Provision of running & 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 & interpass temperature : Min-75^{0}C , Interpass Max- 250^{0}C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

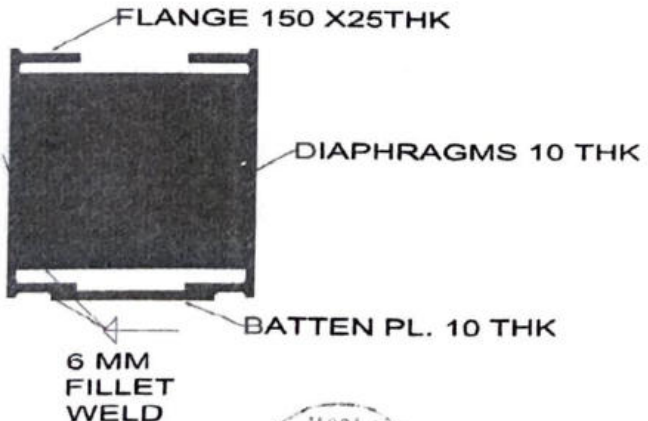
11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
रेल मंत्रालय

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-030
1.	Drawing No.	:	RDSO/B-17184/4/2 (L6-L7) BATTEN & DIAPHARGAM WELDING OF BOTTOM CHORD
2.	Weld joint description	:	L6-L7 WEB(25 MM) + DIAPHRAGM PLATE (10MM) FLANGE (25MM) +BATTEN PLATE(10MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	GMAW
5.	Welding position	:	Horizontal-Vertical
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: N.A. Type: : N.A. Drying Method. N.A.
6.3	Shielding gas	:	CO2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc

11.06.21
सहायक अनुसंधान अधिकारी (धातु),
Assistant Research Officer (Met)



7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 - 2001, Cl. 17.3, & WBC - 2001

91.4M OWG (25T LOADING)

8. Welding current : Type : DC
Polarity: Reverse

9. Welder qualification : First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
अनुसंधान एवं मानक संगठन-II

11. Provision of running & 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 & interpass temperature : Min-75°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

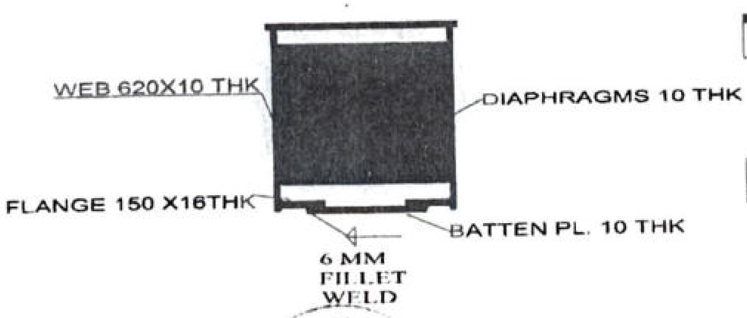
18. Inspection of weld : Visually, D.P.Test & Macro Etching

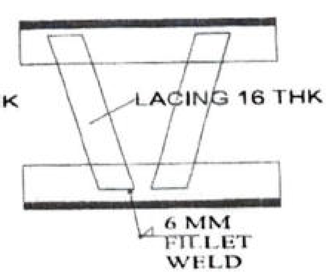
91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		: M/s M.G Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104	
Welding procedure specification No.		MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-031	
1.	Drawing No.	: RDSO/B-17184/5/1 LACING ,BATTEN & DIAPHARGAM WELDING OF TOP CHORD	
2.	Weld joint description	: U0-U1-U2 WEB(10 MM) + DIAPHRAGM PLATE (10MM) FLANGE (16MM) +BATTEN PLATE(10MM) FLANGE (16MM)+LACING PLATE (16MM)	
3.	Base metal	: IS:2062 : 2011 E 350 Quality -B0	
4.	Welding process	: GMAW	
5.	Welding position	: Horizontal-Vertical	
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	: Class:	Class-I of IRS M.46
		Type:	Copper coated solid wire
		Dia:	1.2 mm (copper coated)
		Drying Method:	N.A
6.2	Flux	Class: N.A.	
		Type: : N.A.	
		Drying Method: N.A.	
6.3	Shielding gas	: CO_2	
7.0	Base metal preparation	: Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.	
7.1	Joint design details	: Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.	

11.06.21
Assistant Research Officer (Mech)





91.4M OWG (25T LOADING)

7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity: Reverse
9.	Welder qualification	:	First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974
10.	Welding parameters and technique	:	
10.1	Welding parameter	:	

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
अ.अ.मा.सं. रेल मंत्रालय लखनऊ-11

11.	Provision of running & 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 & interpass temperature	:	Min-75^{0}C , Interpass Max- 250^{0}C
15.	Peening	:	N.A
16.	Post weld treatment	:	N.A.
17.	Rectification of weld defects	:	By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28 after conducting D P test.
18.	Inspection of weld	:	Visually, D.P.Test & Macro Etching

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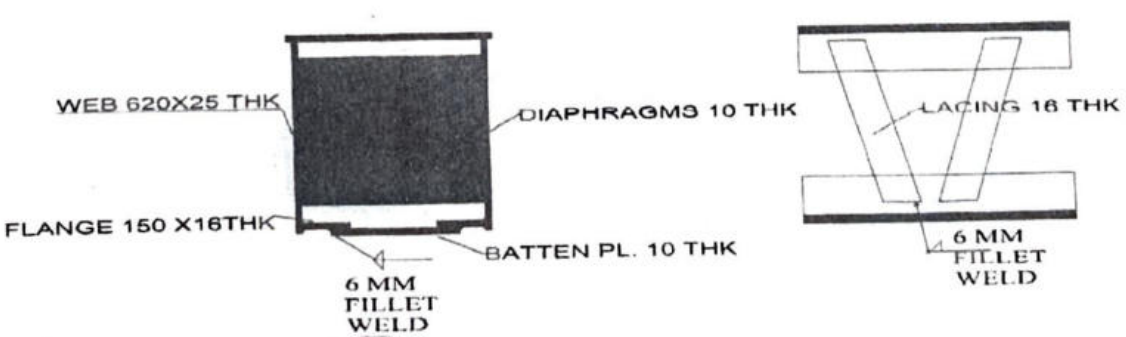
91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator	:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-032
1. Drawing No.	:	RDSO/B-17184/5/1 LACING ,BATTEN & DIAPHARGAM WELDING OF TOP CHORD
2. Weld joint description	:	U2-U3-U4 WEB(25 MM) + DIAPHRAGM PLATE (10MM) FLANGE (16MM) +BATTEN PLATE(10MM) FLANGE (16MM)+LACING PLATE (16MM)
3. Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4. Welding process	:	GMAW
5. Welding position	:	Horizontal-Vertical
6. Welding consumables	:	
6.1 Electrode/wire – Electrode	:	Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2 Flux		Class: N.A. Type: : N.A. Drying Method: N.A.
6.3 Shielding gas	:	CO2
7.0 Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1 Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
राष्ट्रीय रेल अनुसंधान संस्थान-11



Consultant

91.4M OWG (25T LOADING)

7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity: Reverse
9.	Welder qualification	:	First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974
10.	Welding parameters and technique	:	
10.1	Welding parameter	:	

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11.06.21

सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
दक्षिण मध्य रेल मनमाड-11

11.	Provision of running & 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 & interpass temperature	:	Min-75^{0}C , Interpass Max- 250^{0}C
15.	Peening	:	N.A
16.	Post weld treatment	:	N.A.
17	Rectification of weld defects	:	By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28 after conducting D P test.
18.	Inspection of weld	:	Visually, D.P.Test & Macro Etching

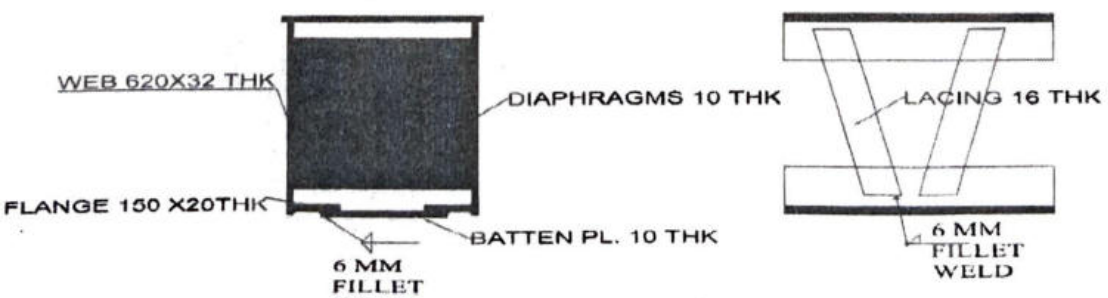
7/29

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-033
1.	Drawing No.	:	RDSO/B-17184/5/2 LACING ,BATTEN & DIAPHARGAM WELDING OF TOP CHORD
2.	Weld joint description	:	U4-U5-U6 WEB(32 MM) + DIAPHRAGM PLATE (10MM) FLANGE (20MM) +BATTEN PLATE(10MM) FLANGE (20MM)+LACING PLATE (16MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	GMAW
5.	Welding position	:	Horizontal-Vertical
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: Class-I of IRS M 46 Type. Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux		Class: N.A. Type: : N.A. Drying Method: N.A.
6.3	Shielding gas	:	CO2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)



91.4M OWG (25T LOADING)

7.2 Joint preparation : As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

8. Welding current : Type : DC
Polarity: Reverse

9. Welder qualification : First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11. Provision of running & 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 & interpass temperature : Min-75^{0}C , Interpass Max- 250^{0}C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

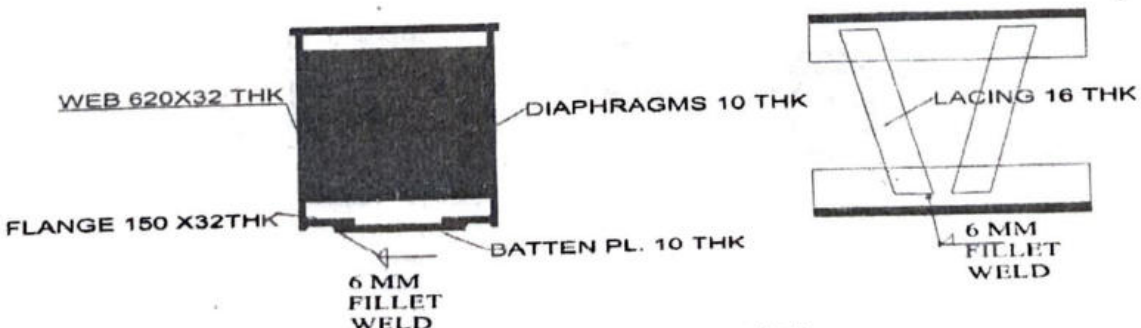
11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
अ०अ०मा०सं० रेल मंत्रालय लखनऊ-11

7/81

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-034
1.	Drawing No.	:	RDSO/B-17184/5/2 LACING ,BATTEN & DIAPHARGAM WELDING OF TOP CHORD
2.	Weld joint description	:	U6-U7 WEB(32 MM) + DIAPHRAGM PLATE (10MM) FLANGE (32MM) +BATTEN PLATE(10MM) FLANGE (32MM)+LACING PLATE (16MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	GMAW
5.	Welding position	:	Horizontal-Vertical
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode		Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: N.A. Type: : N.A. Drying Method: N.A.
6.3	Shielding gas	:	CO2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



सहायक अनुसंधान अधिकारी (सामु.)
Assistant Research Officer (Met)
उत्तर मध्य रेल मुख्यालय प्रयागराज

7/82

91.4M OWG (25T LOADING)

7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity: Reverse
9.	Welder qualification	:	First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974
10.	Welding parameters and technique	:	
10.1	Welding parameter	:	

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11.06.21
अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)

11.	Provision of running & 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 & interpass temperature	:	Min-75^{0}C , Interpass Max- 250^{0}C
15.	Peening	:	N.A
16.	Post weld treatment	:	N.A.
17.	Rectification of weld defects	:	By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.
18.	Inspection of weld	:	Visually, D.P.Test & Macro Etching

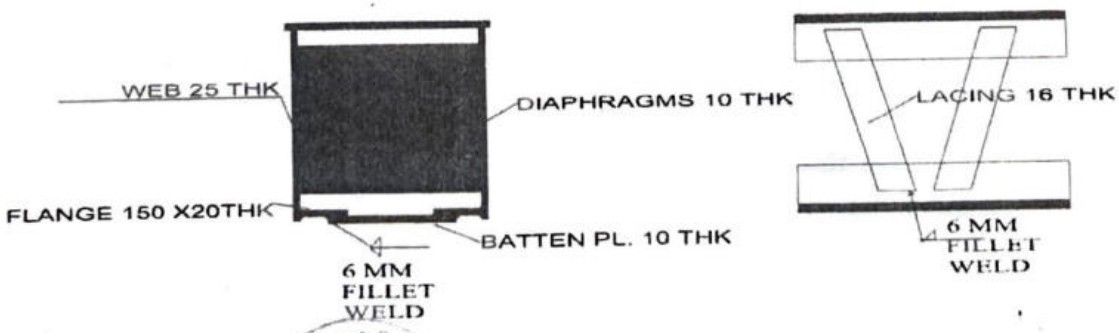
7/83

91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-035
1.	Drawing No.	:	RDSO/B-17184/6 LACING ,BATTEN & DIAPHARGAM WELDING OF END RAKER
2.	Weld joint description	:	L0-M0-U0 WEB(25 MM) + DIAPHRAGM PLATE (10MM) FLANGE (20MM) +BATTEN PLATE(10MM) FLANGE (20MM)+LACING PLATE (16MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	GMAW
5.	Welding position	:	Horizontal-Vertical
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: N.A. Type: : N.A. Drying Method: N.A.
6.3	Shielding gas	:	CO2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)



उप मुख्य परियोजना प्रबंधक
Dy. Chief Project Manager

91.4M OWG (25T LOADING)

7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity: Reverse
9.	Welder qualification	:	First welder as per IS-7307(Part-I) First welder at all test the other welder As per IS 7310 (Part I) – 1974
10.	Welding parameters and technique	:	
10.1	Welding parameter	:	

Weld Pass		Electrodes/ Wire dia (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

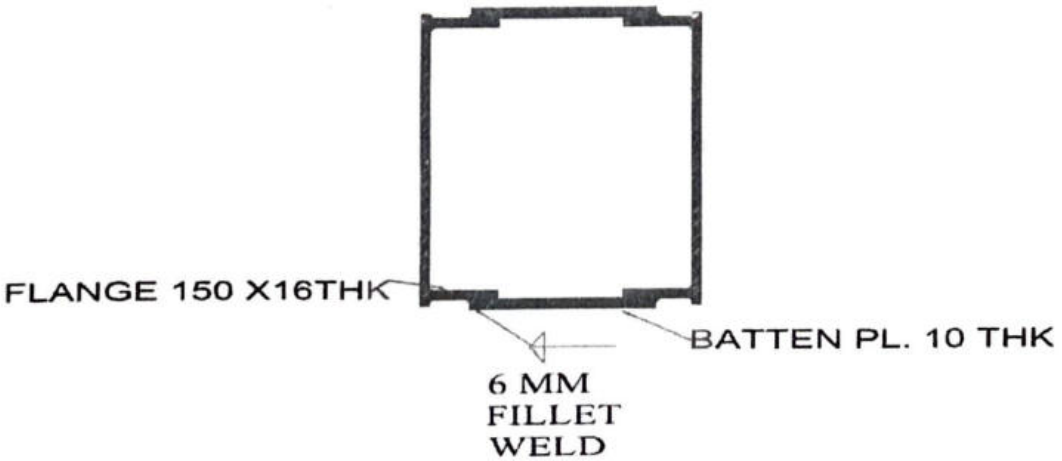
10.2 Welding sequence :

11.06.21
वरिष्ठ अनुसंधान अधिकारी (मृदा)
Assistant Research Officer (Met)
केन्द्रीय मृदा यांत्रिकी अनुसंधान केन्द्र-1

11.	Provision of running & 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 & interpass temperature	:	Min-75^{0}C , Interpass Max- 250^{0}C
15.	Peening	:	N.A
16.	Post weld treatment	:	N.A.
17.	Rectification of weld defects	:	By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28 after conducting D P test.
18.	Inspection of weld	:	Visually, D.P.Test & Macro Etching

91.4M OWG (25T LOADING)

Name and Address of Fabricator		:	M/s M.G Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		:	MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-036
1.	Drawing No.	:	RDSO/B-17184/1 TO 17184/18 BATTEN WELDING OF DIAGONALS
2.	Weld joint description	:	M0-L1, M0-U1 FLANGE (16MM) +BATTEN PLATE(10MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	GMAW
5.	Welding position	:	Horizontal-Vertical
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: N.A. Type: : N.A. Drying Method: N.A.
6.3	Shielding gas	:	CO2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3. & WBC - 2001

91.4M OWG (25T LOADING)

8.	Welding current	:	Type : DC Polarity: Reverse
9.	Welder qualification	:	First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974
10.	Welding parameters and technique	:	
10.1	Welding parameter	:	

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11.6.21

सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
अ.अ.मा.सं. रेल मंत्रालय लखनऊ-11

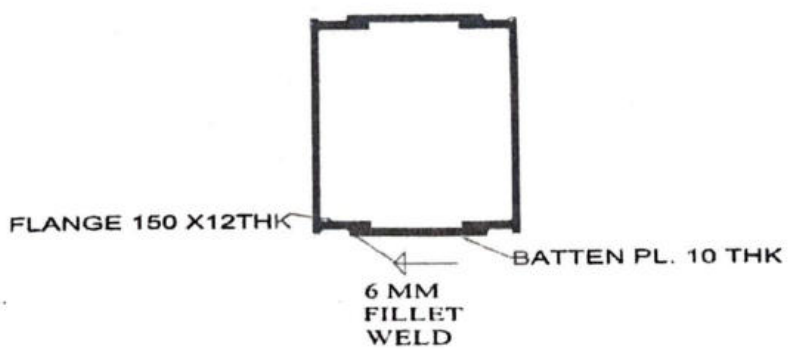
11.	Provision of running & run off tabs	:	N.A.
12.	Cleaning of weld bead before laying next weld bead	:	N.A.
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating & interpass temperature	:	Min-75^{0}C , Interpass Max- 250^{0}C
15.	Peening	:	N.A
16.	Post weld treatment	:	N.A.
17.	Rectification of weld defects	:	By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M 28 after conducting D P test.
18.	Inspection of weld	:	Visually, D.P.Test & Macro Etching

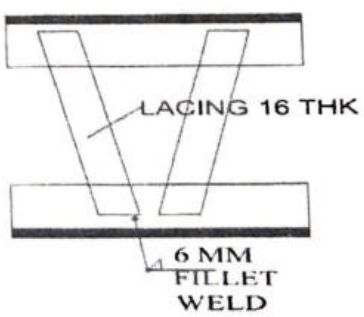
7/87

91.4M OWG (25T LOADING)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		:	MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-037
1.	Drawing No.	:	RDSO/B-17184/1 TO 17184/18 BATTEN & LACING WELDING OF DIAGONALS
2.	Weld joint description	:	M1-L2, M2-L3, M3-L4, M4-L5, M5-L6, M6-L7, M1-U2, M2-U3, M3-U4, M4-U5, M5-U6 & M6-U7 FLANGE (12MM) +BATTEN PLATE(10MM) FLANGE (12MM) +LACING PLATE(16MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	GMAW
5.	Welding position	:	Horizontal-Vertical
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: N.A. Type: : N.A. Drying Method: N.A.
6.3	Shielding gas	:	CO2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)





91.4M OWG (25T LOADING)

7.2 Joint preparation : As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

8. Welding current : Type : DC
Polarity: Reverse

9. Welder qualification : First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11. Provision of running & 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 & interpass temperature : Min-75⁰C , Interpass Max- 250⁰C

15. Peening : N.A

16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

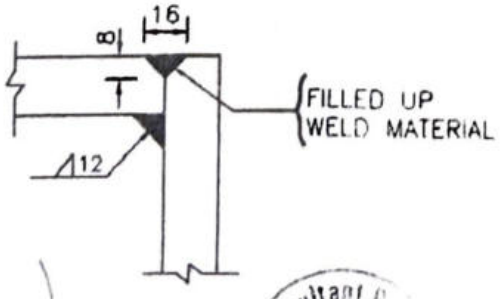
11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
अ.अ.मा.सं. रेल मंत्रालय लखनऊ-11

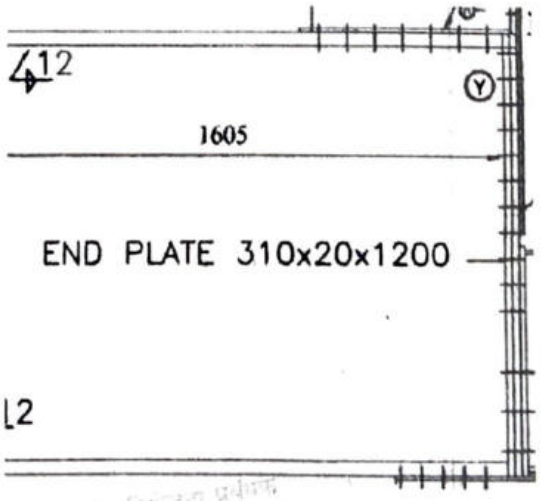
7/89

91.4M OWG (25T LOADING)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.			MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-038
1.	Drawing No.	:	RDSO/B-17184/12 END PLATE OF CROSS GIRDER WITH WEB & FLANGE OF CROSS GIRDER
2.	Weld joint description	:	WEB (16MM) +END PLATE (20MM) WELDING -12MM FLANGE (40MM) +END PLATE(20MM)- WELDING -12MM
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	GMAW
5.	Welding position	:	Horizontal-Vertical
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: N.A. Type: : N.A. Drying Method: N.A.
6.3	Shielding gas	:	CO2
7 0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.

सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
सहायक अनुसंधान अधिकारी (धातु)





7/90

91.4M OWG (25T LOADING)

7.2 Joint preparation : As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

8. Welding current : Type : DC
Polarity: Reverse

9. Welder qualification : First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single +	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11.06.21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
अ.अ.मा.सं. रेल मंत्रालय लखनऊ-11

11. Provision of running & run off tabs : N.A.

12. Cleaning of weld bead before laying next weld bead : ~~N.A.~~ YES

13. Root preparation before welding other side of groove weld : N.A.

14. Preheating & interpass temperature : Min-75°C , Interpass Max- 250°C

15. Peening : N.A

16. Post weld treatment : N.A.

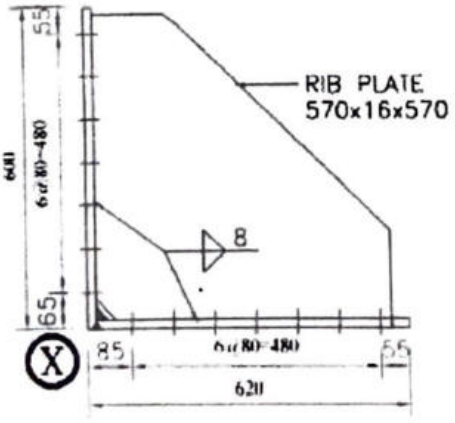
17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18 Inspection of weld : Visually, D.P.Test & Macro Etching

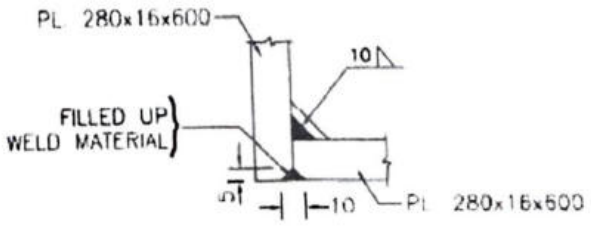
7/91

91.4M OWG (25T LOADING)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		:	MGCPL/20-21/DFCCIL/SSM-RFO/91 4M/SAW/WPSS-039
1.	Drawing No.	:	RDSO/B-17184/12 END CLEAT OF CROSS-GIRDER
2.	Weld joint description	:	WEB (16MM) +FLANGE (16MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	GMAW
5.	Welding position	:	Horizontal-Vertical
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: N.A. Type: : N.A. Drying Method: N.A.
6.3	Shielding gas	:	CO2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



DETAIL AT 'H'



DETAIL AT 'X'

91.4M OWG (25T LOADING)

7.2 Joint preparation : As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001

8. Welding current : Type : DC
Polarity: Reverse

9. Welder qualification : First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974

10. Welding parameters and technique :

10.1 Welding parameter :

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11/06/21
सहायक अनुसंधान अधिकारी (धातु)
Assistant Research Officer (Met)
अ.अ.मा.सं. रेल मंत्रालय लखनऊ-11

11. Provision of running & 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 & interpass temperature : Min-75°C , Interpass Max- 250°C

15. Peening : N.A

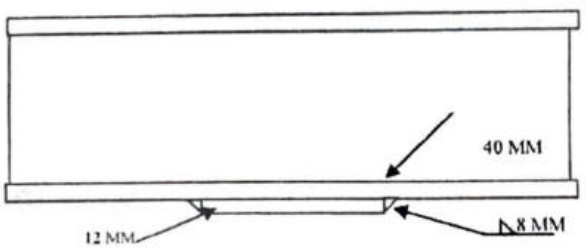
16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

91.4M OWG (25T LOADING)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		:	MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-040
1	Drawing No.	:	RDSO/B-17184/12 PAD PLATE OF END CROSS GIRDER
2.	Weld joint description	:	WEB (16MM) +FLANGE (16MM) WELDING -8MM
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	GMAW
5.	Welding position	:	Horizontal-Vertical
6	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: N.A. Type: : N.A. Drying Method: N.A.
6.3	Shielding gas	:	CO2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



11.06.21
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Assistant Research Officer (Met)
उत्तर मध्य रेल अनुसंधान प्रकोष्ठ प्रयागराज-11

7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity: Reverse
9.	Welder qualification	:	First welder as per IS-7307(Part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974
10.	Welding parameters and technique	:	
10.1	Welding parameter		

उप मुख्य परियोजना प्रबंधक
Dy. Chief Project Manager

7/94

91.4M OWG (25T LOADING)

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11. Provision of running & 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 & interpass temperature : Min-75°C , Interpass Max- 250°C

15. Peening : N.A

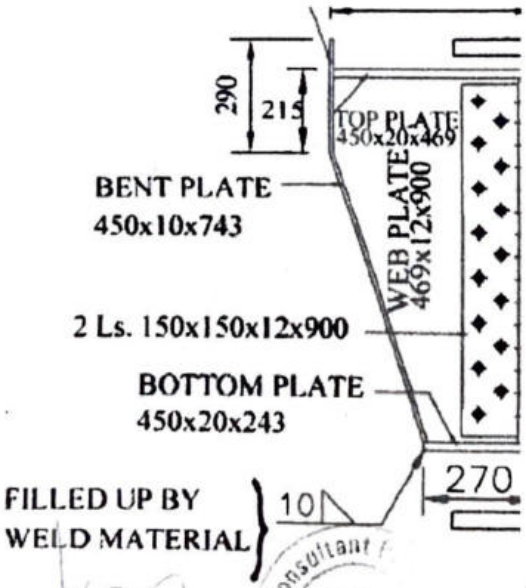
16. Post weld treatment : N.A.

17. Rectification of weld defects : By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.

18. Inspection of weld : Visually, D.P.Test & Macro Etching

91.4M OWG (25T LOADING)

Name and Address of Fabricator		:	M/s M.G.Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		:	MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-041
1.	Drawing No.	:	RDSO/B-17184/13/1 END STRINGER BRACKET
2.	Weld joint description	:	WEB (16MM) +FLANGE (16MM)
3.	Base metal	:	IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	:	GMAW
5.	Welding position	:	Horizontal-Vertical
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	:	Class: N.A. Type: : N.A. Drying Method: N.A.
6.3	Shielding gas	:	CO2
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	:	Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



11.06.21

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Assistant Research Officer (Met)
उत्तर मध्य रेल मुख्यालय प्रयागराज-11

7/96

91.4M OWG (25T LOADING)

7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity: Reverse
9.	Welder qualification	:	First welder as per IS-7307(Part-I) First welder at all test the other welder As per IS 7310 (Part I) – 1974
10.	Welding parameters and technique	:	
10.1	Welding parameter	:	

Weld Pass		Electrodes/ Wire dia (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single +	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11.06.12

वरिष्ठ अनुसंधान अधिकारी (मेट)
Assistant Research Officer (Met)

11.	Provision of running & run off tabs	:	N.A.
12.	Cleaning of weld bead before laying next weld bead	:	YES
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating & interpass temperature	:	Min-75^{0}C , Interpass Max- 250^{0}C
15.	Peening	:	N.A
16.	Post weld treatment	:	N.A.
17.	Rectification of weld defects	:	By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28-12 after conducting D P test.
18.	Inspection of weld	:	Visually, D.P.Test & Macro Etching

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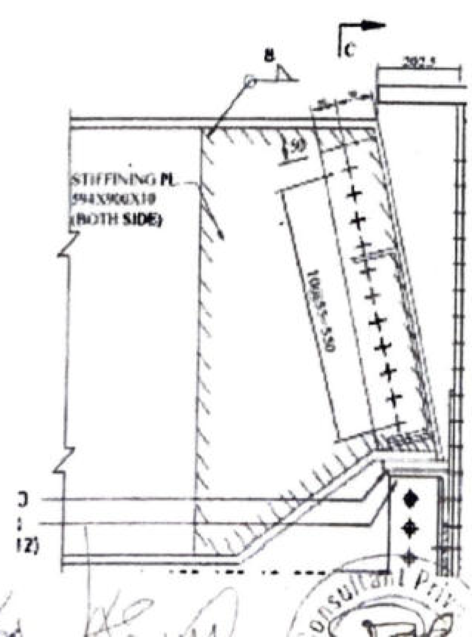
91.4M OWG (25T LOADING)

Name and Address of Fabricator		: M/s M.G Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/SAW/WPSS-042
1.	Drawing No.	: RDSO/B-17184/13/2 Stiffening plate with Stringer Web
2.	Weld joint description	: WEB (12MM) +SF PLATE (10MM) WELDING -8MM
3.	Base metal	: IS:2062 : 2011 E 350 Quality -B0
4.	Welding process	: GMAW
5.	Welding position	: Horizontal-Vertical
6.	Welding consumables	:
6.1	Electrode/wire – Electrode	: Class: Class-I of IRS M.46 Type: Copper coated solid wire Dia: 1.2 mm (copper coated) Drying Method: N.A
6.2	Flux	: Class: N.A. Type: : N.A. Drying Method: N.A.
6.3	Shielding gas	: CO_2
7.0	Base metal preparation	: Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details	: Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.



11.06.21
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Assistant Research Officer (Met)

उप मुख्य परियोजना प्रबंधक
Chief Project Manager

7/98

91.4M OWG (25T LOADING)

7.2	Joint preparation	:	As per IS 10178, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity: Reverse
9.	Welder qualification	:	First welder as per IS-7307(Part-I) First welder at all test ther other welder As per IS 7310 (Part I) – 1974
10.	Welding parameters and technique	:	
10.1	Welding parameter	:	

Weld Pass		Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
Front side	Back Side							
	single	1.2MM	180-220	22-26	controlled by current	N.A.	12-15	15-20

10.2 Welding sequence :

11.06.21

अनुसंधान अधिकारी (सा.)
Assistant Research Officer (Met)
दक्षिण मध्य रेलवे, रेल मंत्रालय सकंदराबाद-11

11.	Provision of running & 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 & interpass temperature	:	Min-75°C , Interpass Max- 250°C
15.	Peening	:	N.A
16.	Post weld treatment	:	N.A.
17.	Rectification of weld defects	:	By grinding of the defective weld & rectifying the weld as per Cl 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M 28 after conducting D P test.
18.	Inspection of weld	:	Visually, D.P.Test & Macro Etching

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91.4M OWG (25T LOADING)

Welding Procedure Specification Sheet (WPSS)

Name and Address of Fabricator		:	M/s M.G Contractors Pvt. Ltd., Vill- Gola, Kalpi-Naraingarh Road, Opposite E-max Education City, Mullana, Ambala (HR) 133104
Welding procedure specification No.		:	MGCPL/20-21/DFCCIL/SSM-RFO/91.4M/MMAW/WPSS-43
1.	Drawing No.	:	All relevant drawings.
2.	Weld joint description	:	5 mm Tack welds on all joints.
3.	Base metal	:	IS:2062 : 2006 E 350 Quality-B0
4.	Welding process	:	MMAW
5.	Welding position	:	Horizontal-Vertical
6.	Welding consumables	:	
6.1	Electrode/wire – Electrode	:	Class: B1/B2 class of electrodes of IRS M.28 Type: Medium coated Dia: 3.15 mm Drying Method: As recommended by the electrode manufacturer.
6.2	Flux	:	Class: N.A Type: N.A Drying Method: N.A
6.3	Shielding gas	:	N.A
7.0	Base metal preparation	:	Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc., which might affect weld quality.
7.1	Joint design details (Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.)	:	Length of Tack weld 50 mm, Gap between two Tack welds 300 mm.
7.2	Joint preparation	:	As per IS 9595, Cl. 7, IRS B1 – 2001, Cl. 17.3, & WBC - 2001
8.	Welding current	:	Type : DC Polarity: Reverse
9.	Welder qualification	:	First welder as per IS-7303(part-I) First welder at all test then other welder As per IS 7310 (Part I) – 1974
10.	Welding parameters and technique	:	
10.1	Welding parameter	:	

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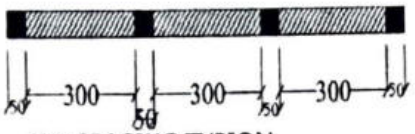
91.4M OWG (25T LOADING)

10.2 Welding sequence



ALL SPACING TYPICAL

Weld Pass	Electrodes/ Wire dia. (mm)	Current Amp.	Arc Voltage (volt)	Wire feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas flow (l/min)
1st.	4	120-160	20-26	N.A	N.A	N.A	N.A

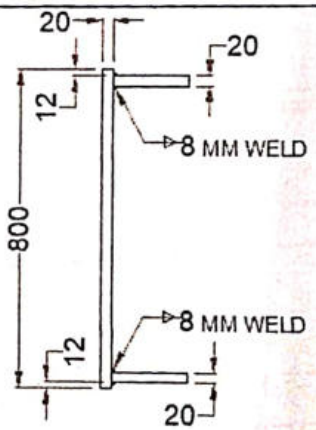
11.	Provision of running & run off tabs	:	N.A.
12.	Cleaning of weld bead before laying next weld bead	:	N.A.
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating & interpass temperature	:	N.A
15.	Peening	:	N.A
16.	Post weld treatment	:	N.A
17.	Rectification of weld defects	:	By grinding of the defective weld & rectifying the weld as per C I - 32.2 of IS 9595-96, using A3 class of electrodes of specn IRS M.28 after conducting D P test.
18	Inspection of weld	:	Visually

11.06.21
Assistant Research Officer (Met)

Railway Open Web Girder (25t loading)
106.7m clear span
MODEL WPSS No- RDSO/ Infra-II/ B&S/ RG/ OWG./ WPSS 106.7 series (30 nos)

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

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/01 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat , weld passes & their sequence etc.,) 1. Bottom Chord L0 –L1– L2		 L0-L1-L2
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	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

सहायक अनुसंधान अधिकारी (सा
Assistant Research Officer (M)

ROYAL-ITL (JV)

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

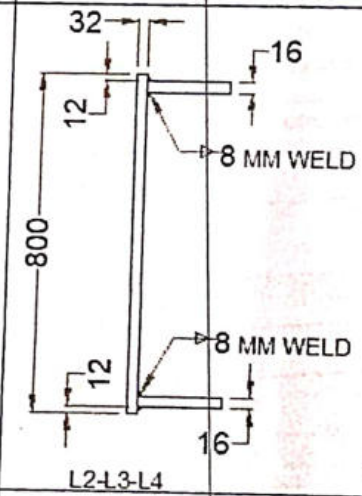
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	550 – 600	28 – 32	1.4 – 1.8	0.35 – 0.50	15 – 20	N.A.

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

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	:	N.A. 110-150°C
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 B1 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.

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

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/02 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class	:	W2 of IRS M.39-2001.
	Type	:	Copper coated Solid Wire.
	Drying Method	:	N.A.
6.2	Flux		
	Class	:	F2 of IRS M.39 – 2001
	Type	:	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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat, weld passes & their sequence etc.,) Component :- Bottom Chord L2 - L3 – L4 Flange with Web		 L2-L3-L4
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	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

Assistant Research Officer (M)

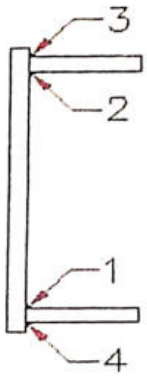
ROYAL -ITL (JV)

Praseniit Purkayastha

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.

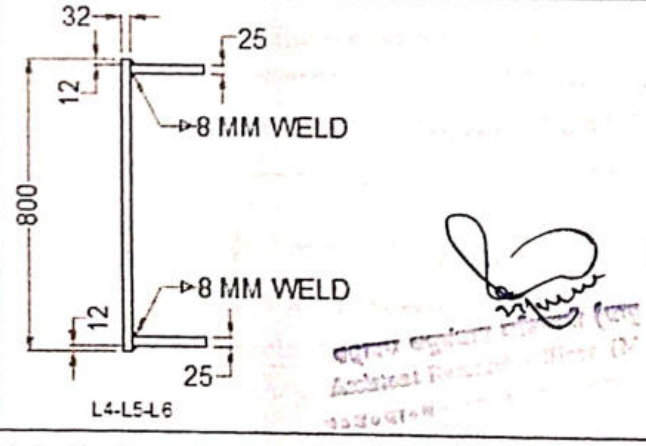
10.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.



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	:	~~N.A.~~ (110-150°C)
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 B1 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 – L4

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

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/03 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux Class Type Drying Method	: : :	 F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat, weld passes & their sequence etc.,) Component :- Bottom Chord L4 –L5-L6 Flange with Web		
7.2	Joint preparation	:	As Per IS: 4353 – 1995, Cl.7, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

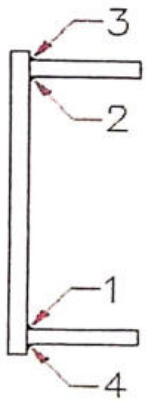
Prasenjit Purkayastha

ROYAL -ITL (JV)

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

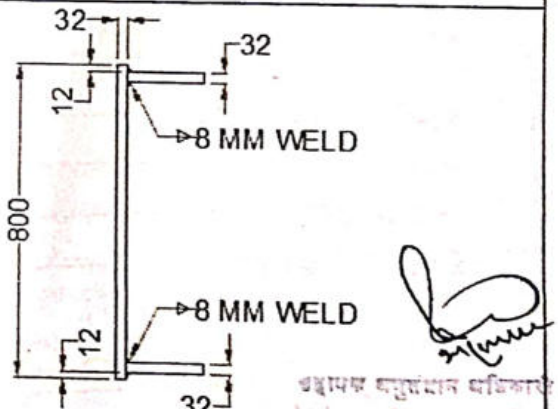


11.	Provision of run-on / run-off tabs	:	Yes
12.	Cleaning of weld bead before laying next weld bead	:	By brush cleaning & grinding
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating and inter pass temperature	:	~~N.A.~~ (110°-150°C)
15.	Peening	:	N.A.
16.	Post Weld treatment	:	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 B1 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-L6

सहायक कार्यालय अधिकारी (अनु
Assistant Personal Officer

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

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/04 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux Class Type Drying Method	: : :	 F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat, weld passes & their sequence etc.,) Component: - Bottom Chord L6-L7-L8 & L8-L9 Flange with Web		 L6-L7-L8 & L8-L9
7.2	Joint preparation	:	As Per IS: 4353 – 1995, Cl.7, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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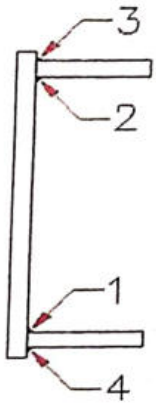
ROYAL -ITL (JV)

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.

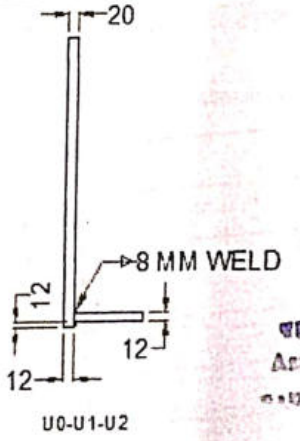
10.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.



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	:	~~N.A.~~ 110°C – 150°C
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 B1 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 L6-L7-L8 & L8-L9

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

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/05 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat, weld passes & their sequence etc.,) Component: - Top Chord U0- U1 – U2 Web with Flange		 U0-U1-U2
7.2	Joint preparation	:	As Per IS: 4353 – 1995, Cl.7, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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Assistant Research Officer (M

Prasenjit Purkayastha
General Manager / PH-Sivok-II

ROYAL -ITL (JV)

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

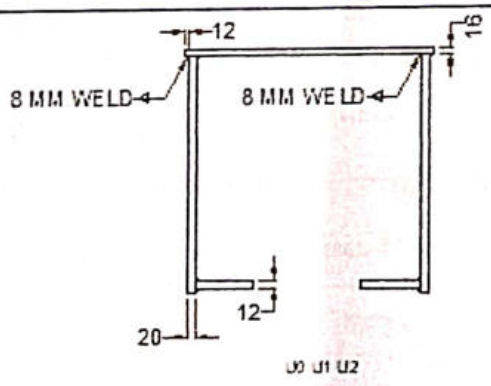
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	530 – 560	28 – 30	1.4 – 1.8	0.35 – 0.50	15 – 20	N.A.

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

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	:	~~N.A.~~ (110°C - 150°C)
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 B1 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 Top Chord U0- U1 – U2

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

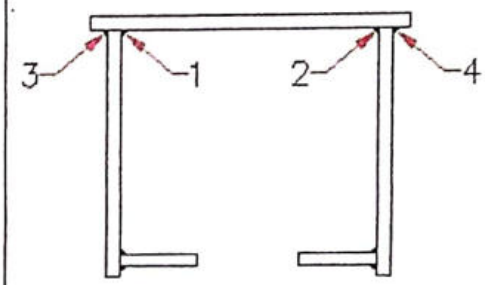
Welding Procedure Specification Sheet for 106.7 m. Span Open Web Girder (Welded through type) 25 T Loading – 2008

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/106.7/06 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat, weld passes & their sequence etc.,) Component :- Top Chord U0 – U1- U2 Web with Top flange		
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	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

ROYAL -ITL (JV)

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

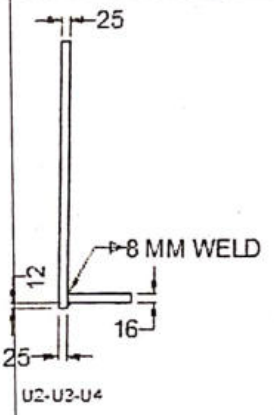
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	540 – 570	28 – 32	1.4 – 1.8	0.35 – 0.50	15 – 20	N.A.

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

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	:	~~N.A~~ (110°C – 150°C)
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 B1 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 U0 – U1- U2

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

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/07 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Top Chord U2- U3 – U4 Web with Flange		
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	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

Prasenjit Purkayast...

सहायक अनुसंधान अधिकारी (मा...
Assistant Research Officer (M...
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Appendix-V (Ref Cl.26 of BI-2001)

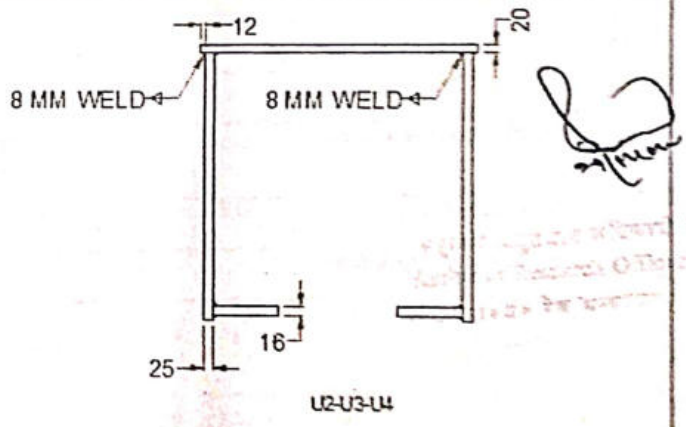
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (l/min.)
1	4	530 – 570	28 – 32	1.4 – 1.8	0.35 – 0.50	15 – 20	N.A.

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

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	:	~~N.A.~~ 110°C – 150°C
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 B1 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 U2- U3 – U4

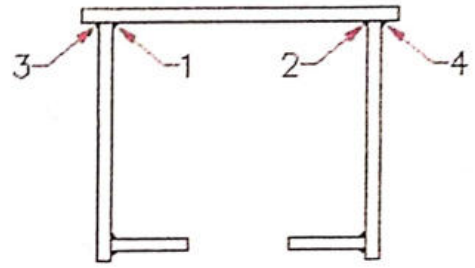
Appendix-V (Ref.Cl.26 of B I-2001).

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/08 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2of 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Top Chord U2 – U3- U4 Web with Top flange		
7.2	Joint preparation	:	As Per IS:4353 – 1995, Cl.7, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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

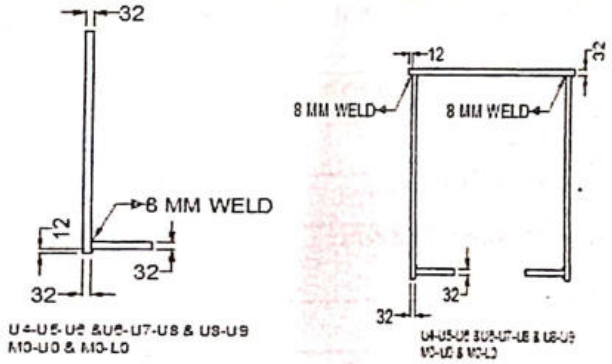
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (l/min.)
1	4	530 – 570	28 – 32	1.4 – 1.8	0.35 – 0.50	15 – 20	N.A.

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

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	:	~~N.A.~~ 110°C - 150°C
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 B1 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 U2 – U3- U4

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

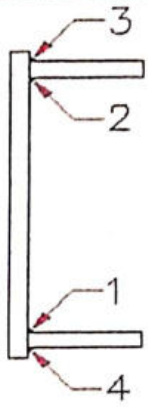
Welding Procedure Specification Sheet for 106.7 m. Span Open Web Girder (Welded through type) 25 T Loading – 2008

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/106.7/09 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Top Chord U4 – U5- U6 & U6-U7-U8 & U8-U9 End Raker – M0-UO & M0-L0 Web with Top flange Web With flange		
7.2	Joint preparation	:	As Per IS:4353 – 1995, Cl.7, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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.

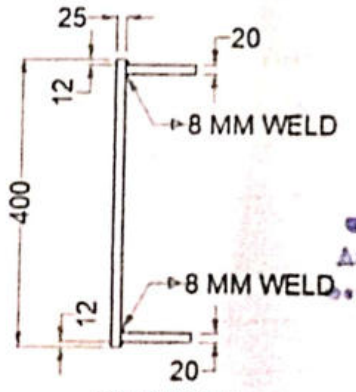
10.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.



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	:	~~N.A.~~ 110° – 150°C
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 B1 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 & End Raker

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

Welding Procedure Specification Sheet for 106.7 m. Span Open 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-RAIGPO/106.7/10 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Diagonal-M0-U1 & M0-L1 Web With Flange		 M0-U1 & M0-L1
7.2	Joint preparation	:	As Per IS: 4353 – 1995, Cl.7, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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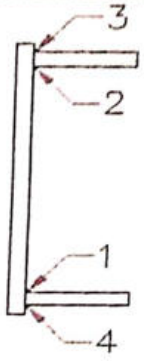
Appendix-V (Ref.Cl.26 of BI-2001)

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 (l/min.)
1	4	530 – 570	28 – 32	1.4 – 1.8	0.35 – 0.50	15 – 20	N.A.

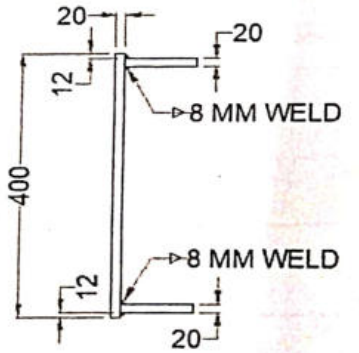
10.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.



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	:	~~N.A.~~ 110°C – 150°C
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 B1 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- M0-U1 & M0-L1

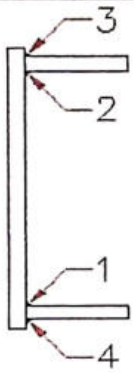
Appendix-V (Ref.CI.26 of B I-2001).

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/11 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Diagonal-M1-U2 & M1-L2 Web With Flange		 M1-U2 & M1-L2
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	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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

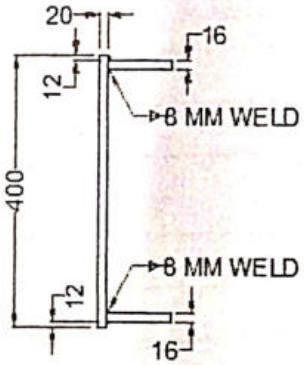
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	530 – 570	28 – 32	1.4 – 1.8	0.35 – 0.50	15 – 20	N.A.

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

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	:	~~N.A.~~ 110°C - 150°C
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 B1 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-M1-U2 & M1-L2

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

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/12 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Diagonal-M2-U3 , M2-L3 & M3-U4, M3-L4 & M4-U5,M4-L5 Web With Flange		 M2-U3 , M2-L3 & M3-U4, M3-L4 & M4-U5,M4-L5
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	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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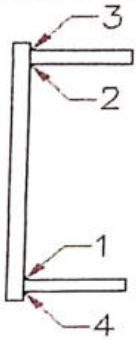
Appendix-V (Ref.Cl.26 of BI-2001)

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

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	:	~~N.A.~~ 110°C – 150°C
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 B1 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-M2-U3 , M2-L3 & M3-U4, M3-L4 & M4-U5,M4-L5

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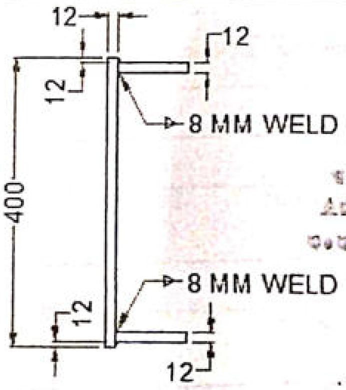
Welding Procedure Specification Sheet for 106.7 m. Span Open Web Girder (Welded through type) 25 T Loading – 2008

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/106.7/13 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class	:	W2 of IRS M.39-2001.
	Type	:	Copper coated Solid Wire.
	Drying Method	:	N.A.
6.2	Flux		
	Class	:	F2of IRS M.39 – 2001
	Type	:	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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Diagonal-M5-U6 , M5-L6 & M6-U7, M6-L7 & M7-U8,M7-L8,M8-U9,M8-L9 Web With Flange		 M5-U6 , M5-L6 & M6-U7, M6-L7 & M7-U8,M7-L8 & M8-U9, M8-L9
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	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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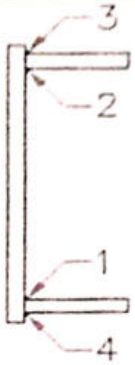
Appendix-V (Ref.Cl.26 of BI-2001)

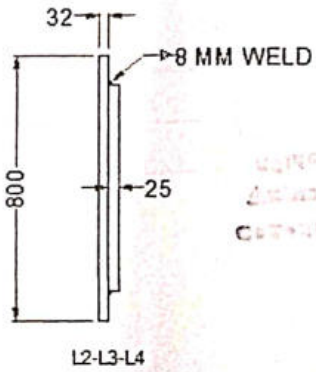
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (l/min.)
1	4	530 – 570	28 – 32	1.4 – 1.8	0.35 – 0.50	15 – 20	N.A.

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

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	:	~~N.A.~~ 118°C – 150°C
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 B1 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-M5-U6 , M5-L6 & M6-U7, M6-L7 & M7-U8,M7-L8,M8-U9,M8-L9

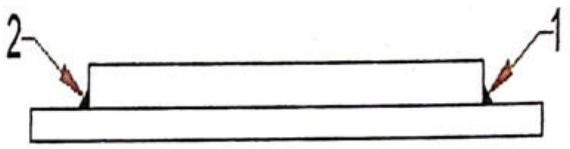
Appendix-V (Ref.CI.26 of B I-2001).

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/14 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected 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		 L2-L3-L4
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	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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	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.
			

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	:	~~N.A.~~ 110°C – 150°C
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 B1 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 & L 3-L4 Additional Plate

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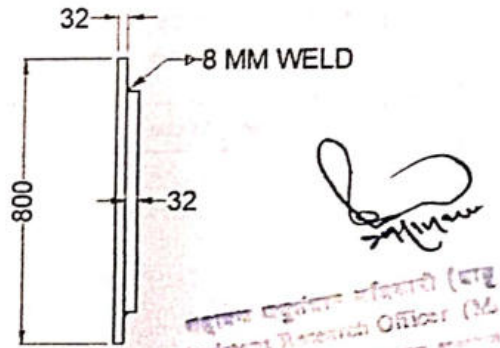
Welding Procedure Specification Sheet for 106.7 m. Span Open Web Girder (Welded through type) 25 T Loading – 2008

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/106.7/15 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Bottom Chord- L4-L5-L6 & L6-L7-L8 & L8 –L9 Web With Additional Plate		 L4-L5-L6 & L6-L7-L8 & L8-L9
7.2	Joint preparation	:	As Per IS: 4353 – 1995, Cl.7, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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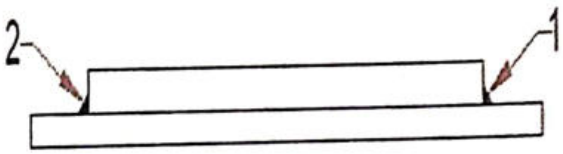
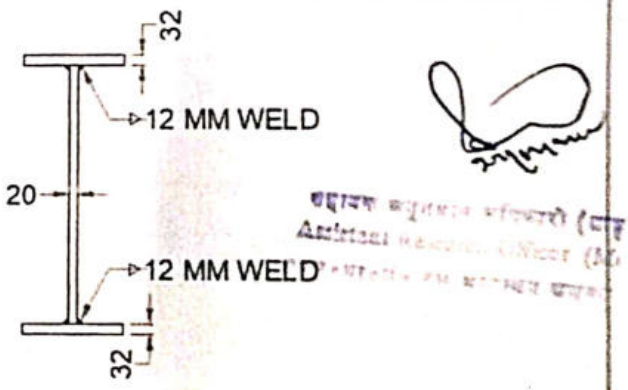
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	560 - 600	28 - 32	2.3 - 3.2	0.22 - 0.32	15 - 20	N.A.

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

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	:	~~N.A.~~ 110°C - 150°C
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 B1 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-L6 & L6-L7-L8 & L8 –L9 Additional Plate

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

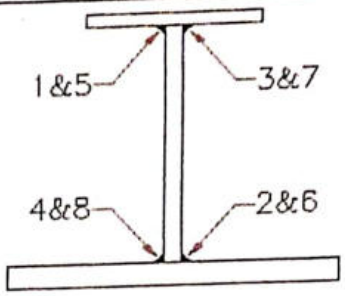
Welding Procedure Specification Sheet for 106.7 m. Span Open Web Girder (Welded through type) 25 T Loading – 2008

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/106.7/16 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 12mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class	:	W2 of IRS M.39-2001.
	Type	:	Copper coated Solid Wire.
	Drying Method	:	N.A.
6.2	Flux		
	Class	:	F2 of IRS M.39 – 2001
	Type	:	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 affected 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		 CROSS GIRDER
7.2	Joint preparation	:	As Per IS: 4353 – 1995, Cl.7, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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	26 – 30	1.4 – 1.8	0.35 – 0.50	15 – 20	N.A.
2	4	530 – 560	26 – 30	1.4 – 1.8	0.35 – 0.50	15 – 20	N.A.

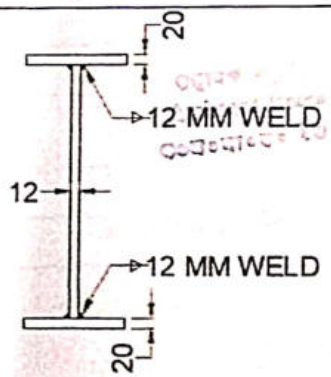
10.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.



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	:	~~N.A.~~ 110°C – 150°C
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 B1 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	:	Cross Girder

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

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/17 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 12mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Stringer Web with Flange.		 STRINGER
7.2	Joint preparation	:	As Per IS: 4353 – 1995, Cl.7, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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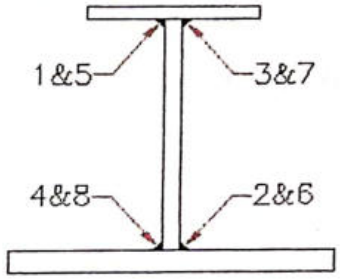
Appendix-V (Ref.Cl.26 of BI-2001)

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	540 - 580	28 - 32	2.0 - 2.8	0.24 - 0.35	15 - 20	N.A.
2	4	540 - 580	28 - 32	2.0 - 2.8	0.24 - 0.35	15 - 20	N.A.

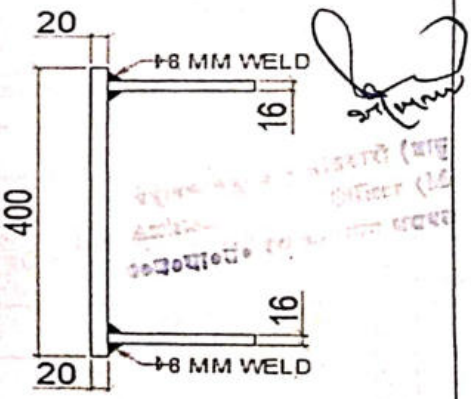
10.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.



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	:	~~N.A.~~ 110°C – 150°C
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 B1 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.

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

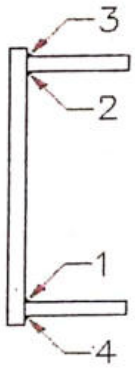
Welding Procedure Specification Sheet for 106.7 m. Span Open Web Girder (Welded through type) 25 T Loading – 2008

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/106.7/18 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 08mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- All Vertical Web with Flange.		 L-1-M-1-U-1 TO L9-M9-U9 VERTICAL
7.2	Joint preparation	:	As Per IS: 4353 – 1995, Cl.7, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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 (l/min.)
1	4	540 - 580	28 - 32	2.0 - 2.8	0.24 - 0.35	15 - 20	N.A.

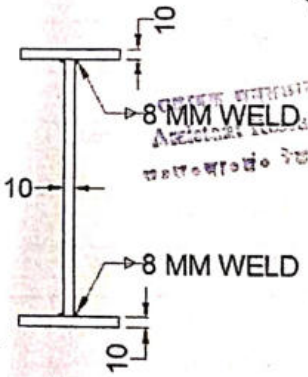
10.2	Welding Sequence and technique	:	Welding from run on to run off tabs at the free ends.



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	:	~~N.A.~~ 110°C - 150°C
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 B1 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	:	Vertical Web with Flange.

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

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/19 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 08mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Sway Girder Web with Flange.		 SWAY GIRDER
7.2	Joint preparation	:	As Per IS: 4353 – 1995, Cl.7, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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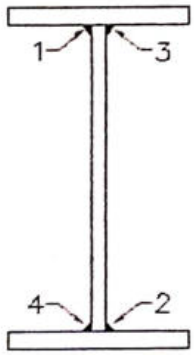
Appendix-V (Ref.Cl.26 of BI-2001)

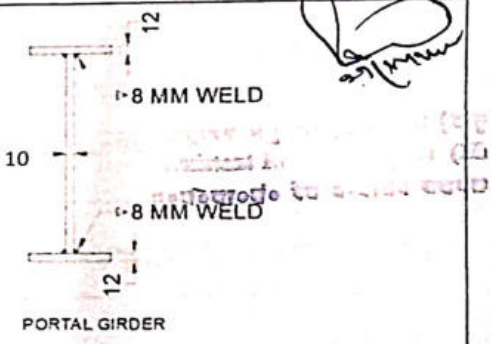
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (l/min.)
1	4	540 - 580	28 - 32	2.0 - 2.8	0.24 - 0.35	15 - 20	N.A.

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

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	:	~~N.A.~~ 110°C - 180°C
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 B1 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	:	Sway Girder Web with Flange.

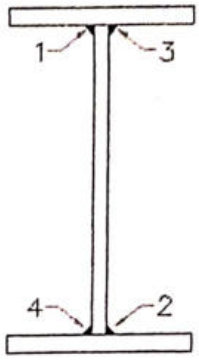
Appendix-V (Ref.Cl.26 of B I-2001).

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/20 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 08mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Portal Web with Flange.		 PORTAL GIRDER
7.2	Joint preparation	:	As Per IS: 4353 – 1995, Cl.7, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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

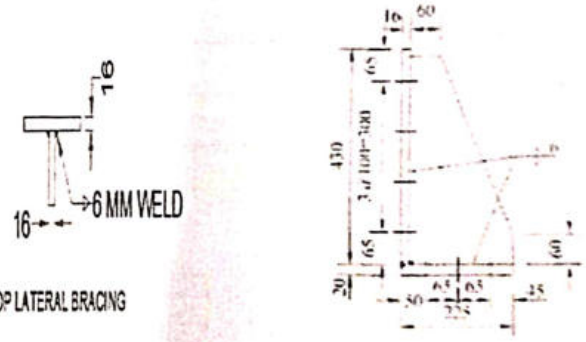
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	4	540 - 580	28 - 32	2.0 - 2.8	0.24 - 0.35	15 - 20	N.A.

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

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	:	~~N.A.~~ 110°C ~ 150°C
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 B1 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	:	Portal Web with Flange.

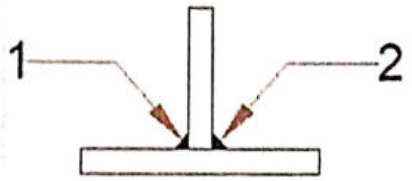
Appendix-V (Ref.Cl.26 of B I-2001).

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/21 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 06mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	S.A.W.
05.	Welding Position.	:	Flat
06.	Welding Consumable.		
6.1	Electrode/Wire Class Type Drying Method	: : :	 W2 of IRS M.39-2001. Copper coated Solid Wire. N.A.
6.2	Flux		
	Class Type Drying Method	: : :	F2 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Top Lateral Bracing L0 Joint Bracket		
7.2	Joint preparation	:	As Per IS: 4353 – 1995, Cl.7, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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

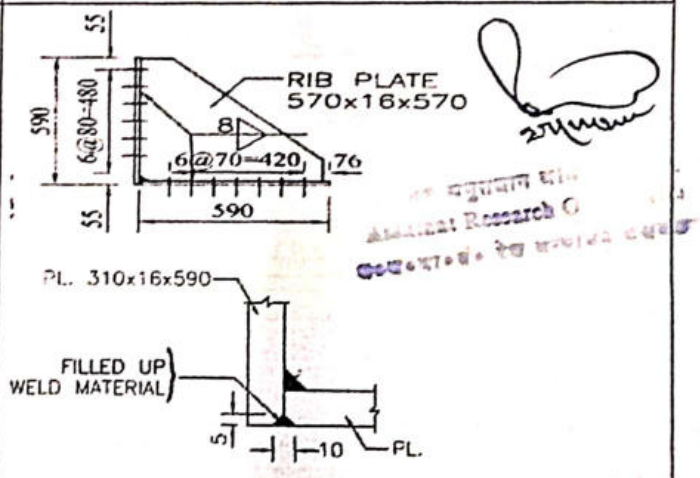
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (l/min.)
1	4	540 - 580	28 - 32	2.0 - 2.8	0.24 - 0.35	15 - 20	N.A.

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

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	:	~~N.A.~~ 110°C - 150°C
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 B1 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 Lateral Bracing

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

Welding Procedure Specification Sheet for 106.7 m. Span Open Web Girder (Welded through type) 25 T Loading – 2008

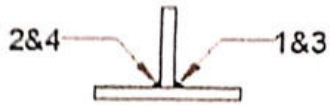
Name and address of Fabricator		:	M/s. Royal Infraconstru Ltd., Urla Industrial Growth Centre, Raipur – 493221 (C.G.)
Welding Procedure specification No.		:	ROYAL/SIVOK-RANGPO/106.7/22 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	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		
	Class Type Drying Method	: : :	N.A. N.A 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 affected 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.		
7.2	Joint preparation	:	As Per IS: 10178 – 1995, CL.9, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

ROYAL-ITL (JV)

Prasenjit Purkayastha

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

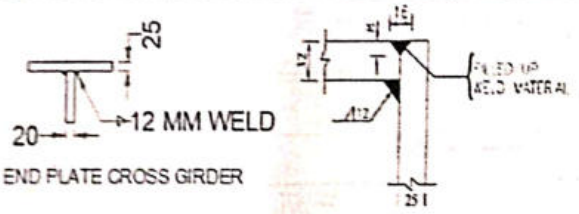
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (l/min.)
1	1.2	180 - 220	24 - 28	1.4 - 2.2	N.A.	13 - 18	15 - 20
2	1.2	180 - 220	24 - 28	1.4 - 2.2	N.A.	13 - 18	15 - 20

10.2	Welding Sequence and technique	:	
			

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.
14.	Preheating and inter pass temperature	:	~~N.A.~~ 110°C - 150°C
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 B1 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

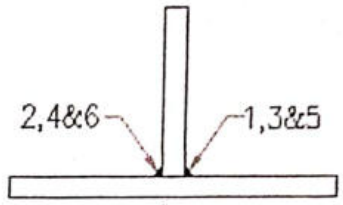
Appendix-V (Ref.Cl.26 of B I-2001).

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/SMOK-RANGPO/106.7/23 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 12mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	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		
	Class Type Drying Method	: : :	N.A. N.A 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 affected weld quality.
7.1	Joint design Details	:	
	(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.		
7.2	Joint preparation	:	As Per IS: 10178 – 1995, CL.9, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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

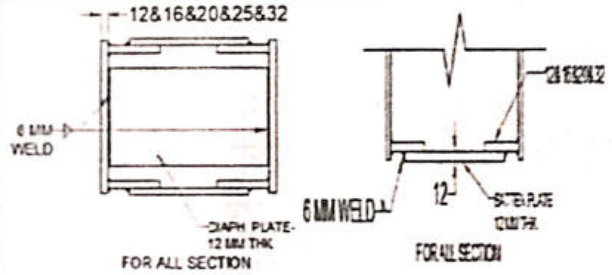
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	1.2	180 - 220	24 – 28	1.4 – 2.2	N.A.	13 - 18	15 - 20
2	1.2	200 – 220	24 – 28	1.6 – 2.4	N.A.	13 - 18	15 - 20
3	1.2	180 - 220	24 – 28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

10.2	Welding Sequence and technique	:	
			

11.	Provision of run-on / run-off tabs	:	N.A.
12.	Cleaning of weld bead before laying next weld bead	:	Yes
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating and inter pass temperature	:	~~N.A.~~ 110°C - 150°C
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 B1 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.

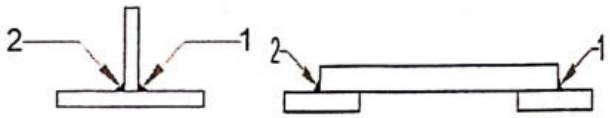
Appendix-V (Ref.Cl.26 of B I-2001).

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/24 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 6mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	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		
	Class Type Drying Method	: : :	N.A. N.A 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Batten Plate With Flange Diaph. Plate With Web		
7.2	Joint preparation	:	As Per IS: 10178 – 1995, CL.9, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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

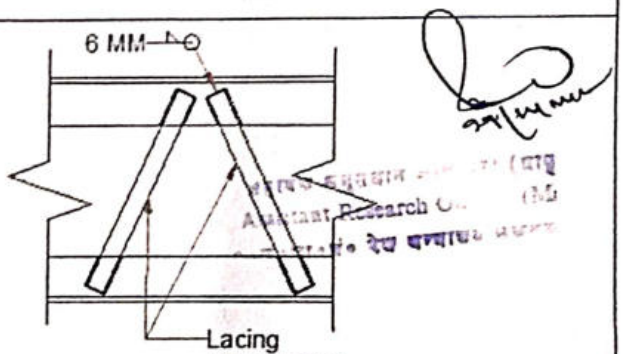
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (l/min.)
1	1.2	180 - 220	24 – 28	1.4 – 2.2	N.A.	13 - 18	15 - 20

10.2	Welding Sequence and technique	:	
			

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.
14.	Preheating and inter pass temperature	:	~~N.A.~~ 110°C ~ 150°C
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 B1 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.

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

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/25 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 6mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	GMAW
05.	Welding Position.	:	Horizontal
06.	Welding Consumable.		
6.1	Electrode/Wire Class	:	I of IRS M 46-2013.
	Type	:	Copper coated Solid Wire.
	Drying Method	:	N.A.
6.2	Flux		
	Class	:	N.A.
	Type	:	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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- Lacing (Flat-20x80) With Flange of Top Chord & End Raker Lacing (Flat-16x80) With Flange of Diagonal Lacing (Flat-16x80) With Flange of Vertical		
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
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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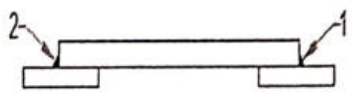
Appendix-V (Ref.Cl.26 of BI-2001)

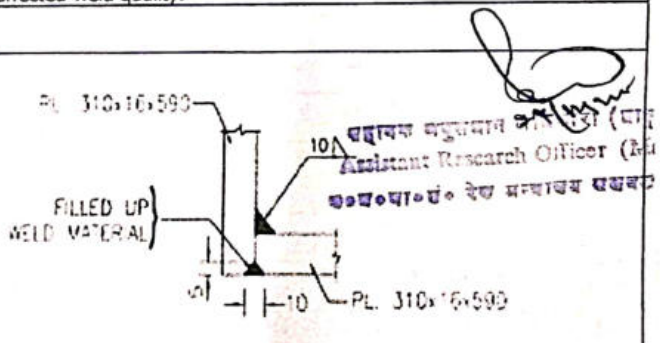
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	1.2	180 - 220	24 – 28	1.4 – 2.2	N.A.	13 - 18	15 - 20

10.2	Welding Sequence and technique	:	
			

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.
14.	Preheating and inter pass temperature	:	~~N.A.~~ 110°C – 150°C
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 B1 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	:	Lacing

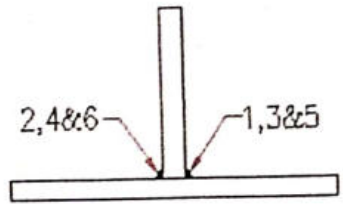
Appendix-V (Ref.CI.26 of B I-2001).

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/26 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 10mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	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		
	Class Type Drying Method	: : :	N.A. N.A 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 affected 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.		
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
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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

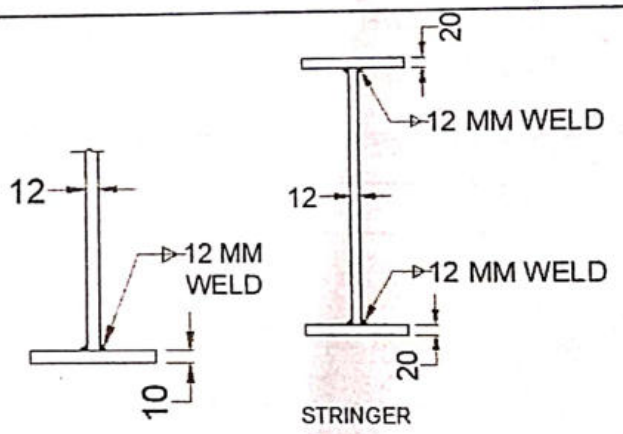
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	1.2	180 - 220	24 – 28	1.4 – 2.2	N.A.	13 - 18	15 - 20
2	1.2	200 – 220	24 – 28	1.6 – 2.4	N.A.	13 - 18	15 - 20
3	1.2	180 - 220	24 – 28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

10.2	Welding Sequence and technique	:	
			

11.	Provision of run-on / run-off tabs	:	N.A.
12.	Cleaning of weld bead before laying next weld bead	:	Yes
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating and inter pass temperature	:	~~N.A.~~ 110 °C - 150°C
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 B1 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

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

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/27 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 12mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	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 Class Type Drying Method	: : :	 N.A. N.A 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 affected 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.		
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
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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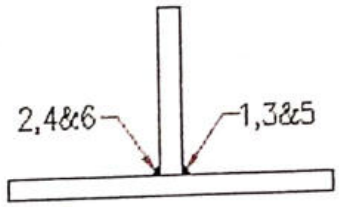
Appendix-V (Ref.Cl.26 of BI-2001)

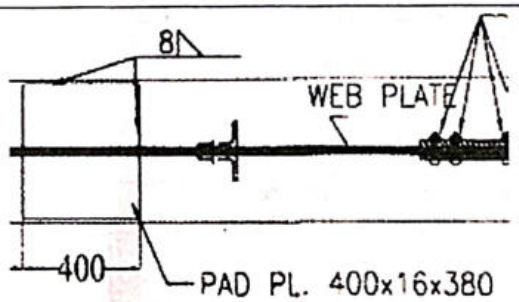
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (I/min.)
1	1.2	180 - 220	24 – 28	1.4 – 2.2	N.A.	13 - 18	15 - 20
2	1.2	200 – 220	24 – 28	1.6 – 2.4	N.A.	13 - 18	15 - 20
3	1.2	180 - 220	24 – 28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

10.2	Welding Sequence and technique	:	

11.	Provision of run-on / run-off tabs	:	N.A.
12.	Cleaning of weld bead before laying next weld bead	:	Yes
13.	Root preparation before welding other side of groove weld	:	N.A.
14.	Preheating and inter pass temperature	:	~~N.A.~~ 110°C - 150°C
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 B1 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

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

Welding Procedure Specification Sheet for 106.7 m. Span Open 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/106.7/28 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	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		
	Class Type Drying Method	: : :	N.A. N.A 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 affected 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		
7.2	Joint preparation	:	As Per IS: 10178 – 1995, CL.9, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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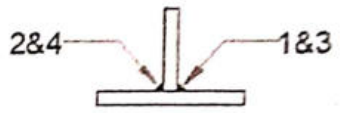
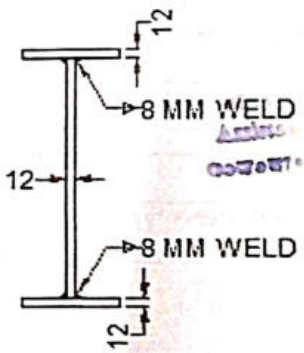
Weld Sequence No.	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrical Stick out (mm)	Gas Flow (l/min.)
1	1.2	180 - 220	24 – 28	1.4 – 2.2	N.A.	13 - 18	15 - 20
2	1.2	180 - 220	24 – 28	1.4 – 2.2	N.A.	13 - 18	15 - 20

10.2	Welding Sequence and technique	:	
			

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.
14.	Preheating and inter pass temperature	:	~~N.A.~~ 110°C – 150°C
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 B1 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	:	Pad Plate of End Cross Girder

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

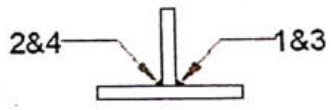
Welding Procedure Specification Sheet for 106.7 m. Span Open Web Girder (Welded through type) 25 T Loading – 2008

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/106.7/29 dated 5/8/2022
01.	Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 8 mm
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	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		
	Class Type Drying Method	: : :	N.A. N.A 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 affected weld quality.
7.1	Joint design Details	:	
	(Sketch showing arrangements of parts, weld beat weld passes & their sequence etc.,) Component :- End Diaphragm of L0 Joint.		
7.2	Joint preparation	:	As Per IS: 10178 – 1995, CL.9, IRS B1-2001, Cl.17.3 & WBC – 2001.
08.	Welding Current	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310/7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

ROYAL -ITL (JV)

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 (l/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

10.2	Welding Sequence and technique	:	
			

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.
14.	Preheating and inter pass temperature	:	~~N.A.~~ 110°C ~ 150°C
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 B1 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 Diaphragm

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

Welding Procedure Specification Sheet for 106.7 m. Span Open Web Girder (Welded through type) 25 T Loading – 2008

Name and address of Fabricator		:	M/s. Royal Infraconstru Ltd. Urla Industrial Growth Centre, Raipur – 492003 (C.G.)
Welding Procedure specification No.		:	ROYAL/SIVOK-RANGPO/106.7/30 dated 5/8/2022
01.	RDSO Drawing No.	:	RDSO/B-17185/R (G.A.)
02.	Welding Joint Description.	:	Fillet 5 mm Tack Weld
03.	Base Metal.	:	IS: 2062:2011 E-350 C.
04.	Welding Process	:	GMAW (GMAW machine with CO2 Gas Cylinder.)
05.	Welding Position.	:	Horizontal / Vertical
06.	Welding Consumable.		
6.1	Electrode/Wire		
	Class	:	I of IRS M 46-2013.
	Type	:	Copper coated Solid Wire.
	Drying Method	:	N.A.
6.2	Flux		
	Class	:	N.A.
	Type	:	N.A..
	Drying Method	:	N.A.
6.3	Shielding Gas	:	CO_2
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 affected weld quality.
7.1	Joint design Details	:	
	(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	:	
	Type	:	DC
	Polarity	:	Reverse
09.	Welder qualification	:	As per IS: 7310 /7307 (Part-I) – 1974
10.	Welding Parameters and technique	:	
10.1	Welding Parameters	:	

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

Weld Pass 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 – 200	24 – 26	1.6 – 2.0	N.A.	13 – 16	16-18

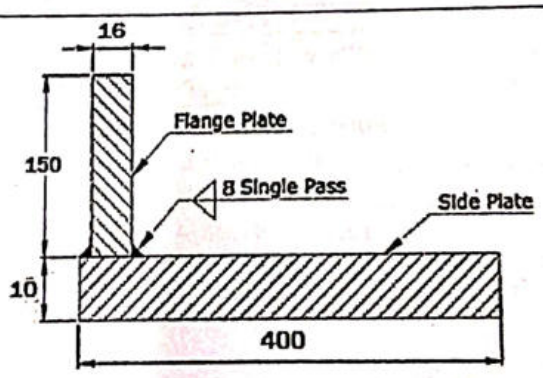
10.2	Welding Sequence and technique	:	
			Length of tack Weld 50mm Gap between two tack Weld appr.300mm Weld Size-5 mm

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	:	~~N.A.~~ 110°C - 150°C
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.

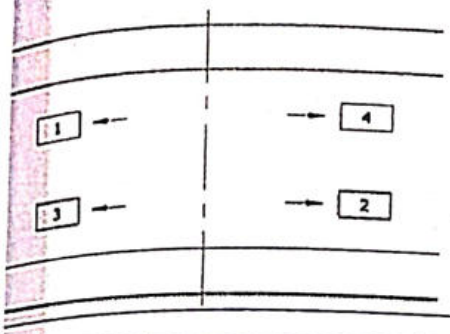
Assistant Research Officer (E

Railway Open Web Girder (25t loading)
30.5 m clear span (under slung)
MODEL WPSS No- RDSO/ Infra-II/ B&S/ RG/ OWG./ WPSS / 30.5 US series (12 nos)

Welding Procedure Specification Sheet for 30.5 Mtr. (Underslung) Open Web Girder

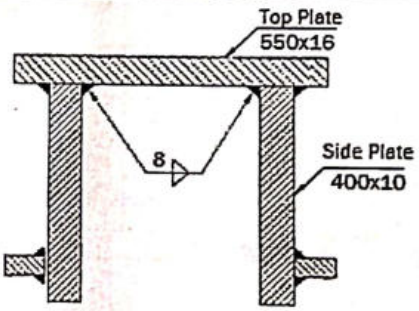
Name and address of Signature of PEC	:	M/s. PRECISION ENGINEERING CORPORATION. Plot No.- 139-C&F, Light Industrial Area, Bhilai – 490026 (C.G.)
Welding Procedure specification No.	:	PEC/RVNL-PUNE/US(30.5)/WPSS/01
Drawing No.	:	RDSO/B-17146 # Top Chord Flange & Side Plate on Section A-A
Welding Joint Description.	:	Fillet
Base Metal.	:	IS: 2062 – 2011 Gr. E250 BO
Welding Process	:	S.A.W
Welding Position.	:	Flat
Welding Consumable.		
Electrode/Wire		
Class	:	W1 of IRS M:39-2001
Type	:	Copper Coated Mild Steel Wire
Drying Method	:	N.A.
Flux		
Class	:	F1 of IRS M:39 - 2001
Type	:	Agglomerated
Drying Method	:	As recommended by Manufacturer
Shielding Gas	:	N.A.
Base Metal Preparation	:	Material to be cut straight & square by controlled gas cutting. Fusion faces and adjacent surfaces are cleaned and made free from Cracks Notches, Mill Scale, Grease Paint, Rust etc. which may affect Weld Quality.
Joint design Details	:	Part sketch shown.
(Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.)		 Flange Plate 16mm to Side Plate Thk. 10mm of Top Chord
Joint preparation	:	As Per IRS B1-2001 Cl. 17.3, IRS WBC-2001, IS 4353-1995 Cl.7
Welding Current	:	
Type	:	DC
Polarity	:	Reverse
Welder qualification	:	As per IS: 7310 (Part 1) 1974, & IS 7307

Welding Parameters and technique:						
Welding Parameters						
Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas Flow (L/min.)
4.00	450-500	25-29	1.0-1.2	0.45-0.50	15-20	N.A.

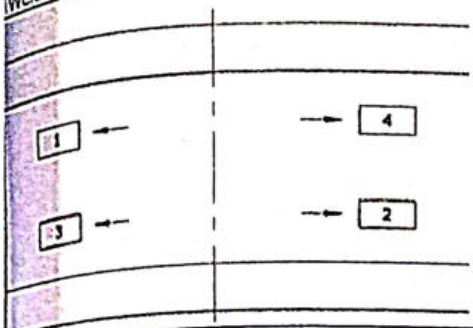
Welding Sequence and technique	:	
		Welding from Run – on – off tabs

Provision of run-on / run-off tabs	:	Yes
Cleaning of weld bead before laying next weld bead	:	N.A.
Root preparation before welding other side of groove weld	:	N.A.
Preheating and inter pass temperature	:	N.A.
Peening	:	Not Required
Post Weld treatment	:	Not Required
Rectification of weld defect	:	By re-welding after complete removal of defect by grinding as per IS 9595-96 Cl. 32.2, using A2 Class of electrodes of Specn. IRS M.28-02, after conducting D.P. Test.
Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
Any other relevant Details with acceptance level	:	IRS-B1 , IRC-24,IS-7307,IS-7310,IS-9595,IS 816

Welding Procedure Specification Sheet for 30.5 Mtr. (Underslung) Open Web Girder

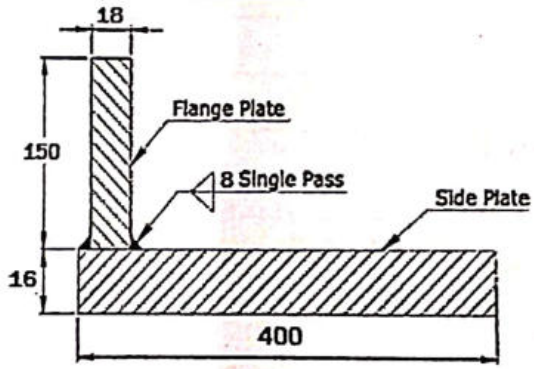
ddress of Signature of PEC	:	M/s. PRECISION ENGINEERING CORPORATION. Plot No.- 139-C&F, Light Industrial Area, Bhilai – 490026 (C.G.)
ocedure specification No.	:	PEC/RVNL-PUNE/US(30.5)/WPSS/02
wing No.	:	RDSO/B-17146 # Top Chord Top Plate & Side Plate on Section A-A
lding Joint Description.	:	Fillet
se Metal.	:	IS: 2062 – 2011 Gr. E250 BO
lding Process	:	S.A.W
lding Position.	:	Flat
lding Consumable.		
ctrode/Wire		
Class	:	W1 of IRS M:39-2001
Type	:	Copper Coated Mild Steel Wire
Drying Method	:	N.A.
ux		
Class	:	F1 of IRS M:39 - 2001
Type	:	Agglomerated
Drying Method	:	As recommended by Manufacturer
hielding Gas	:	N.A.
ase Metal Preparation	:	Material to be cut straight & square by controlled gas cutting. Fusion faces and adjacent surfaces are cleaned and made free from Cracks Notches, Mill Scale, Grease Paint, Rust etc. which may affect Weld Quality.
oint design Details	:	Part sketch shown.
(Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.)		 Top Plate Thk. 16 mm to Side Plate 10 of Top Chord
Joint preparation	:	As Per IRS B1-2001 Cl. 17.3, IRS WBC-2001, IS 4353-1995 Cl.7
Welding Current	:	
Type	:	DC
Polarity	:	Reverse
Welder qualification	:	As per IS: 7310 (Part 1) 1974, & IS 7307

Welding Parameters and technique:						
Welding Parameters						
Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas Flow (L/min.)
4.00	450-500	25-29	1.0-1.2	0.45-0.50	15-20	N.A.

Welding Sequence and technique	:	
		Welding from Run – on – off tabs

Provision of run-on / run-off tabs	:	Yes
Cleaning of weld bead before laying next weld bead	:	N.A.
Root preparation before welding other side of groove weld	:	N.A.
Preheating and inter pass temperature	:	N.A.
Peening	:	Not Required
Post Weld treatment	:	Not Required
Rectification of weld defect	:	By re-welding after complete removal of defect by grinding as per IS 9595-96 Cl. 32.2, using A2 Class of electrodes of Specn. IRS M.28-02, after conducting D.P. Test.
Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
Any other relevant Details with acceptance level	:	IRS-B1 , IRC-24,IS-7307,IS-7310,IS-9595,IS 816

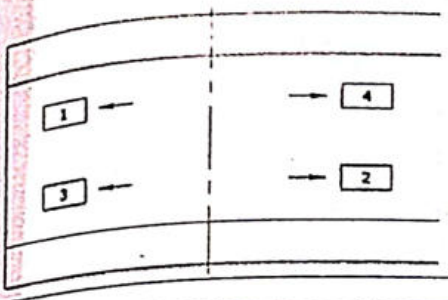
Welding Procedure Specification Sheet for 30.5 Mtr. (Underslung) Open Web Girder

Name and address of Signature of PEC	:	M/s. PRECISION ENGINEERING CORPORATION. Plot No.- 139-C&F, Light Industrial Area, Bhilai – 490026 (C.G.)
Welding Procedure specification No.	:	PEC/RVNL-PUNE/US(30.5)/WPSS/03
Drawing No.	:	RDSO/B-17146 # Top Chord Flange & Side Plate on Section B-B & C-C
Welding Joint Description.	:	Fillet
Base Metal.	:	IS: 2062 – 2011 Gr. E250 BO
Welding Process	:	S.A.W
Welding Position.	:	Flat
Welding Consumable.		
Electrode/Wire		
Class	:	W1 of IRS M:39-2001
Type	:	Copper Coated Mild Steel Wire
Drying Method	:	N.A.
Flux		
Class	:	F1 of IRS M:39 - 2001
Type	:	Agglomerated
Drying Method	:	As recommended by Manufacturer
Shielding Gas	:	N.A.
Base Metal Preparation	:	Material to be cut straight & square by controlled gas cutting. Fusion faces and adjacent surfaces are cleaned and made free from Cracks Notches, Mill Scale, Grease Paint, Rust etc. which may affect Weld Quality.
Joint design Details	:	Part sketch shown.
(Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.)		 Flange Plate 18mm to Side Plate Thk. 16mm of Top Chord
Joint preparation	:	As Per IRS B1-2001 Cl. 17.3, IRS WBC-2001, IS 4353-1995 Cl.7
Welding Current	:	
Type	:	DC
Polarity	:	Reverse
Welder qualification	:	As per IS: 7310 (Part 1) 1974, & IS 7307

Welding Parameters and technique:

Weld Sequence No.	Welding Parameters						
	Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas Flow (L/min.)
1 – 4 (5mm)	4.00	450-500	25-29	1.0-1.2	0.45-0.50	15-20	N.A.

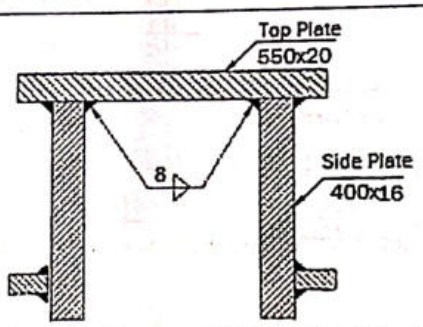
L2 Welding Sequence and technique :



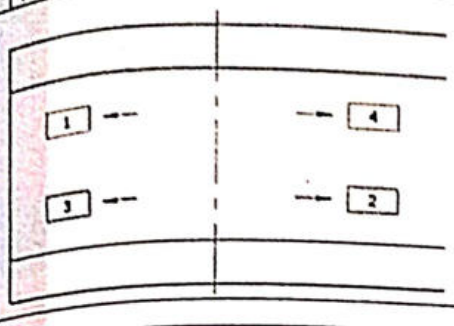
Welding from Run – on – off tabs

Provision of run-on / run-off tabs	:	Yes
Cleaning of weld bead before laying next weld bead	:	N.A.
Root preparation before welding other side of groove weld	:	N.A.
Preheating and inter pass temperature	:	N.A.
Peening	:	Not Required
Post Weld treatment	:	Not Required
Rectification of weld defect	:	By re-welding after complete removal of defect by grinding as per IS 9595-96 Cl. 32.2, using A2 Class of electrodes of Specn. IRS M.28-02, after conducting D.P. Test.
Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
Any other relevant Details with acceptance level	:	IRS-B1 , IRC-24,IS-7307,IS-7310,IS-9595,IS 816

Welding Procedure Specification Sheet for 30.5 Mtr. (Underslung) Open Web Girder

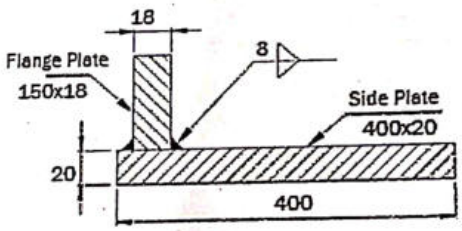
e and address of Signature of PEC	:	M/s. PRECISION ENGINEERING CORPORATION. Plot No.- 139-C&F, Light Industrial Area, Bhilai – 490026 (C.G.)
ding Procedure specification No.	:	PEC/RVNL-PUNE/US(30.5)/WPSS/04
Drawing No.	:	RDSO/B-17146 # Top Chord Top Plate & Side Plate on Section B-B & C-C
Welding Joint Description.	:	Fillet
Base Metal.	:	IS: 2062 – 2011 Gr. E250 BO
Welding Process	:	S.A.W
Welding Position.	:	Flat
Welding Consumable.		
Electrode/Wire		
Class	:	W1 of IRS M:39-2001
Type	:	Copper Coated Mild Steel Wire
Drying Method	:	N.A.
Flux		
Class	:	F1 of IRS M:39 - 2001
Type	:	Agglomerated
Drying Method	:	As recommended by Manufacturer
Shielding Gas	:	N.A.
Base Metal Preparation	:	Material to be cut straight & square by controlled gas cutting. Fusion faces and adjacent surfaces are cleaned and made free from Cracks Notches, Mill Scale, Grease Paint, Rust etc. which may affect Weld Quality.
Joint design Details	:	Part sketch shown.
(Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.)		 Top Plate Thk. 20 mm to Side Plate 16 of Top Chord
Joint preparation	:	As Per IRS B1-2001 Cl. 17.3, IRS WBC-2001, IS 4353-1995 Cl.7
Welding Current	:	
Type	:	DC
Polarity	:	Reverse
Welder qualification	:	As per IS: 7310 (Part 1) 1974, & IS 7307

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)	Electrode Stick out (mm)	Gas Flow (L/min.)
1 – 4 (8mm)	4.00	450-500	25-29	1.0-1.2	0.45-0.50	15-20	N.A.

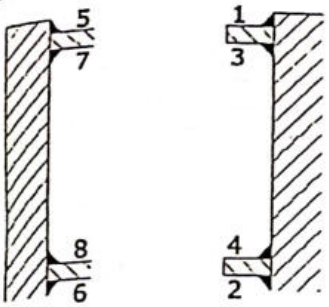
10.2	Welding Sequence and technique	:	
			Welding from Run – on – off tabs

1.	Provision of run-on / run-off tabs	:	Yes
2.	Cleaning of weld bead before laying next weld bead	:	N.A.
3.	Root preparation before welding other side of groove weld	:	N.A.
4.	Preheating and inter pass temperature	:	N.A.
5.	Peening	:	Not Required
6.	Post Weld treatment	:	Not Required
7.	Rectification of weld defect	:	By re-welding after complete removal of defect by grinding as per IS 9595-96 Cl. 32.2, using A2 Class of electrodes of Specn. IRS M.28-02, after conducting D.P. Test.
8.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
9.	Any other relevant Details with acceptance level	:	IRS-B1 , IRC-24,IS-7307,IS-7310,IS-9595,IS 816

Welding Procedure Specification Sheet for 30.5 Mtr. (Underslung) Open Web Girder

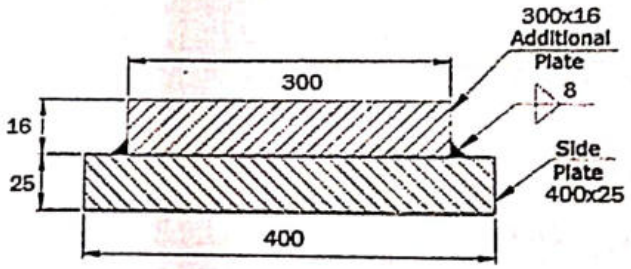
e and address of Signature of PEC	:	M/s. PRECISION ENGINEERING CORPORATION, Plot No.- 139-C&F, Light Industrial Area, Bhilai – 490026 (C.G.)
ding Procedure specification No.	:	PEC/RVNL-PUNE/US(30.5)/WPSS/05
Drawing No.	:	RDSO/B-17145 # Bottom Chord (L1-L2-L3) Flange Plate to Side Plate on Section A-A
Welding Joint Description.	:	Fillet
Base Metal.	:	IS: 2062 – 2011 Gr. E250 BO
Welding Process	:	S.A.W
Welding Position.	:	Flat
Welding Consumable.		
Electrode/Wire		
Class	:	W1 of IRS M:39-2001
Type	:	Copper Coated Mild Steel Wire
Drying Method	:	N.A.
Flux		
Class	:	F1 of IRS M:39 - 2001
Type	:	Agglomerated
Drying Method	:	As recommended by Manufacturer
Shielding Gas	:	N.A.
Base Metal Preparation	:	Material to be cut straight & square by controlled gas cutting. Fusion faces and adjacent surfaces are cleaned and made free from Cracks Notches, Mill Scale, Grease Paint, Rust etc. which may affect Weld Quality.
Joint design Details	:	Part sketch shown.
(Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.)		 Flange Plate Thk. 18 mm to Side Plate 20 of Bottom Chord L1-L2-L3
Joint preparation	:	As Per IRS B1-2001, Cl. 17.3, IRS WBC-2001, IS 10178 -1995 Cl.9
Welding Current	:	
Type	:	DC
Polarity	:	Reverse
Welder qualification	:	As per IS: 7310 (Part 1) 1974& IS 7307

	Welding Parameters and technique:						
1.1	Welding Parameters						
Weld Sequence No.	Electrode/ wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas Flow (L/min.)
1 to 8 (8mm)	4.00	450-500	25-29	1.0-1.2	0.45-0.50	15-20	N.A.

1.2	Welding Sequence and technique	:	 Welding from Run – on – off tabs

1.	Provision of run-on / run-off tabs	:	N.A.
2.	Cleaning of weld bead before laying next weld bead	:	N.A.
3.	Root preparation before welding other side of groove weld	:	N.A.
4.	Preheating and inter pass temperature	:	N.A.
5.	Peening	:	Not Required
6.	Post Weld treatment	:	Not Required
7.	Rectification of weld defect	:	By re-welding after complete removal of defect by grinding as per IS 9595-96 Cl. 32.2, using A2 Class of electrodes of Specn. IRS M.28-02, after conducting D.P. Test.
8.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
9.	Any other relevant Details with acceptance level	:	IRS-B1 , IRC-24,IS-7307,IS-7310,IS-9595,IS 816

Welding Procedure Specification Sheet for 30.5 Mtr. (Underslung) Open Web Girder

e and address of Signature of PEC	:	M/s. PRECISION ENGINEERING CORPORATION, Plot No.- 139-C&F, Light Industrial Area, Bhilai – 490026 (C.G.)
ding Procedure specification No.	:	PEC/RVNL-PUNE/US(30.5)/WPSS/06
Drawing No.	:	RDSO/B-17145 # Bottom Chord (L3-L4-L5) Additional Plate to Side Plate Section B-B
Welding Joint Description.	:	Fillet
Base Metal.	:	IS: 2062 – 2011 Gr. E250 BO
Welding Process	:	S.A.W
Welding Position.	:	Flat
Welding Consumable.		
Electrode/Wire		
Class	:	W1 of IRS M:39-2001
Type	:	Copper Coated Mild Steel Wire
Drying Method	:	N.A.
Flux		
Class	:	F1 of IRS M:39 - 2001
Type	:	Agglomerated
Drying Method	:	As recommended by Manufacturer
Shielding Gas	:	N.A.
Base Metal Preparation	:	Material to be cut straight & square by controlled gas cutting. Fusion faces and adjacent surfaces are cleaned and made free from Cracks Notches, Mill Scale, Grease Paint, Rust etc. which may affect Weld Quality.
Joint design Details	:	Part sketch shown.
(Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.)		 Addl. Plate Thk. 16 mm to Side Plate 25mm of Bottom Chord L3-L4-L5
Joint preparation	:	As Per IRS B1-2001, Cl. 17.3, IRS WBC-2001, IS 10178 -1995 Cl.9
Welding Current	:	
Type	:	DC
Polarity	:	Reverse
Welder qualification	:	As per IS: 7310 (Part 1) 1974& IS 7307

Q.	Welding Parameters and technique:						
Q.1	Welding Parameters						
Weld Sequence No.	Electrode/ wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas Flow (L/min.)
	4.00	450-500	25-29	1.0-1.2	0.45-0.50	15-20	N.A.

Q.2	Welding Sequence and technique	:	Welding from Run – on – off tabs
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	:	N.A.
15.	Peening	:	Not Required
16.	Post Weld treatment	:	Not Required
17.	Rectification of weld defect	:	By re-welding after complete removal of defect by grinding as per IS 9595-96 Cl. 32.2, using A2 Class of electrodes of Specn. IRS M.28-02, after conducting D.P. Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details with acceptance level	:	IRS-B1 , IRC-24,IS-7307,IS-7310,IS-9595,IS 816

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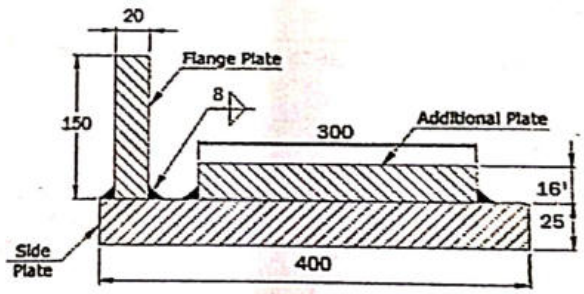
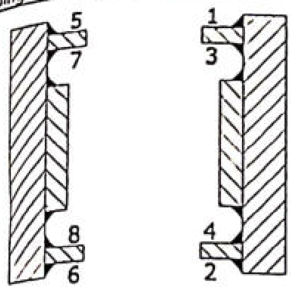
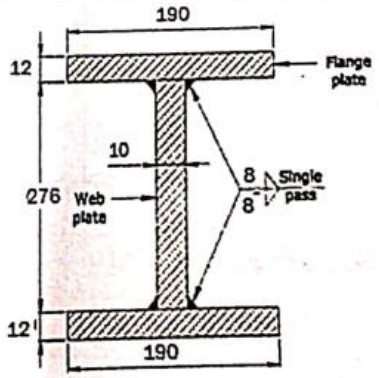
Welding Procedure Specification Sheet for 30.5 Mtr. (Underslung) Open Web Girder

e and address of Signature of PEC	:	M/s. PRECISION ENGINEERING CORPORATION, Plot No.- 139-C&F, Light Industrial Area, Bhilai – 490026 (C.G.)
ing Procedure specification No.	:	PEC/RVNL-PUNE/US(30.5)/WPSS/07
Drawing No.	:	RDSO/B-17145 # Bottom Chord (L3-L4-L5) Flange Plate to Side Plate Section B-B
Welding Joint Description.	:	Fillet
Base Metal.	:	IS: 2062 – 2011 Gr. E250 BO
Welding Process	:	S.A.W
Welding Position.	:	Flat
Welding Consumable.		
Electrode/Wire		
Class	:	W1 of IRS M:39-2001
Type	:	Copper Coated Mild Steel Wire
Drying Method	:	N.A.
Flux		
Class	:	F1 of IRS M:39 - 2001
Type	:	Agglomerated
Drying Method	:	As recommended by Manufacturer
Shielding Gas	:	N.A.
Base Metal Preparation	:	Material to be cut straight & square by controlled gas cutting. Fusion faces and adjacent surfaces are cleaned and made free from Cracks Notches, Mill Scale, Grease Paint, Rust etc. which may affect Weld Quality.
Joint design Details	:	Part sketch shown.
(Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.)		 Flange Plate Thk. 20 mm to Side Plate 25mm of Bottom Chord L3-L4-L5
Joint preparation	:	As Per IRS B1-2001, Cl. 17.3, IRS WBC-2001, IS 10178 -1995 Cl.9
Welding Current	:	
Type	:	DC
Polarity	:	Reverse
Welder qualification	:	As per IS: 7310 (Part 1) 1974& IS 7307

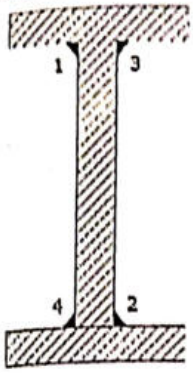
Weld Sequence No.	Welding Parameters and technique: Welding Parameters Electrode/ wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas Flow (L/min.)
1 – 8 (8mm)	4.00	450-500	25-29	1.0-1.2	0.45-0.50	15-20	N.A.

10.2	Welding Sequence and technique 	:	Welding from Run – on – off tabs
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	:	N.A.
15.	Peening	:	Not Required
16.	Post Weld treatment	:	Not Required
17.	Rectification of weld defect	:	By re-welding after complete removal of defect by grinding as per IS 9595-96 Cl. 32.2, using A2 Class of electrodes of Specn. IRS M.28-02, after conducting D.P. Test.
18.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
19.	Any other relevant Details with acceptance level	:	IRS-B1 , IRC-24,IS-7307,IS-7310,IS-9595,IS 816

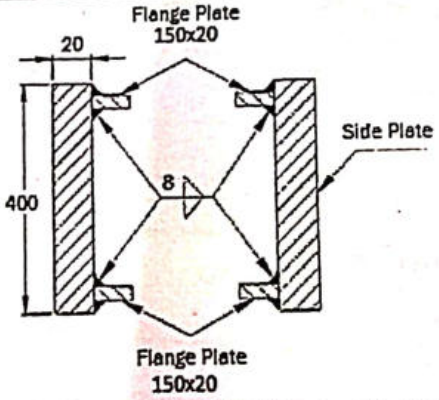
Welding Procedure Specification Sheet for 30.5 Mtr. (Underslung) Open Web Girder

e and address of Signature of PEC	:	M/s. PRECISION ENGINEERING CORPORATION, Plot No.- 139-C&F, Light Industrial Area, Bhilai – 490026 (C.G.)
ing Procedure specification No.	:	PEC/RVNL-PUNE/US(30.5)/WPSS/08
Drawing No.	:	RDSO/B-17147 # Verticals Flange Plate to Web Plate
Welding Joint Description.	:	Fillet
Base Metal.	:	IS: 2062 – 2011 Gr. E250 BO
Welding Process	:	S.A.W
Welding Position.	:	Flat
Welding Consumable.		
Electrode/Wire		
Class	:	W1 of IRS M:39-2001
Type	:	Copper Coated Mild Steel Wire
Drying Method	:	N.A.
Flux		
Class	:	F1 of IRS M:39 - 2001
Type	:	Agglomerated
Drying Method	:	As recommended by Manufacturer
Shielding Gas	:	N.A.
Base Metal Preparation	:	Material to be cut straight & square by controlled gas cutting. Fusion faces and adjacent surfaces are cleaned and made free from Cracks Notches, Mill Scale, Grease Paint, Rust etc. which may affect Weld Quality.
Joint design Details	:	Part sketch shown.
(Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.)		 Flange Plate Thk. 12 mm to Web Plate 10mm of Verticals
Joint preparation	:	As Per IRS B1-2001, Cl. 17.3, IRS WBC-2001, IS 10178 -1995 Cl.9
Welding Current	:	
Type	:	DC
Polarity	:	Reverse
Welder qualification	:	As per IS: 7310 (Part 1) 1974& IS 7307

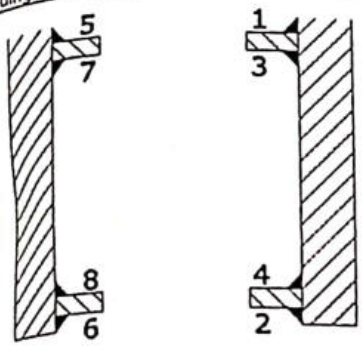
Weld Sequence No.	Welding Parameters and technique: Welding Parameters						
	Electrode/ wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas Flow (L/min.)
1-4 (8mm)	4.00	450-500	25-29	1.0-1.2	0.45-0.50	15-20	N.A.

12	Welding Sequence and technique	:	 Welding from Run – on – off tabs
13	Provision of run-on / run-off tabs	:	N.A.
14	Cleaning of weld bead before laying next weld bead	:	N.A.
15	Root preparation before welding other side of groove weld	:	N.A.
16	Preheating and inter pass temperature	:	N.A.
17	Peening	:	Not Required
18	Post Weld treatment	:	Not Required
19	Rectification of weld defect	:	By re-welding after complete removal of defect by grinding as per IS 9595-96 Cl. 32.2, using A2 Class of electrodes of Specn. IRS M.28-02, after conducting D.P. Test.
20	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
21	Any other relevant Details with acceptance level	:	IRS-B1 , IRC-24,IS-7307,IS-7310,IS-9595,IS 816

Welding Procedure Specification Sheet for 30.5 Mtr. (Underslung) Open Web Girder

e and address of Signature of PEC	:	M/s. PRECISION ENGINEERING CORPORATION, Plot No.- 139-C&F, Light Industrial Area, Bhilai – 490026 (C.G.)
ing Procedure specification No.	:	PEC/RVNL-PUNE/US(30.5)/WPSS/09
Drawing No.	:	RDSO/B-17148 # End Raker (U0-L1 & U10-L9) Flange Plate to Side Plate on Section A-A
Welding Joint Description.	:	Fillet
Base Metal.	:	IS: 2062 – 2011 Gr. E250 BO
Welding Process	:	S.A.W
Welding Position.	:	Flat
Welding Consumable.		
Electrode/Wire		
Class	:	W1 of IRS M:39-2001
Type	:	Copper Coated Mild Steel Wire
Drying Method	:	N.A.
Flux		
Class	:	F1 of IRS M:39 - 2001
Type	:	Agglomerated
Drying Method	:	As recommended by Manufacturer
Shielding Gas	:	N.A.
Base Metal Preparation	:	Material to be cut straight & square by controlled gas cutting. Fusion faces and adjacent surfaces are cleaned and made free from Cracks Notches, Mill Scale, Grease Paint, Rust etc. which may affect Weld Quality.
Joint design Details	:	Part sketch shown.
(Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.)		 Flange Plate Thk. 20 mm to Side Plate 20 mm of End Raker
Joint preparation	:	As Per IRS B1-2001, Cl. 17.3, IRS WBC-2001, IS 10178 -1995 Cl.9
Welding Current	:	
Type	:	DC
Polarity	:	Reverse
Welder qualification	:	As per IS: 7310 (Part 1) 1974& IS 7307

1 Weld quence No.	Welding Parameters and technique: Welding Parameters Electrode/ wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas Flow (L/min.)
= 8 (8mm)	4.00	450-500	25-29	1.0-1.2	0.45-0.50	15-20	N.A.

2	Welding Sequence and technique	:	 Welding from Run – on – off tabs
	Provision of run-on / run-off tabs	:	N.A.
	Cleaning of weld bead before laying next weld bead	:	N.A.
	Root preparation before welding other side of groove weld	:	N.A.
	Preheating and inter pass temperature	:	N.A.
	Peening	:	Not Required
	Post Weld treatment	:	Not Required
	Rectification of weld defect	:	By re-welding after complete removal of defect by grinding as per IS 9595-96 Cl. 32.2, using A2 Class of electrodes of Specn. IRS M.28-02, after conducting D.P. Test.
	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
		:	IRS-B1 , IRC-24,IS-7307,IS-7310,IS-9595,IS 816

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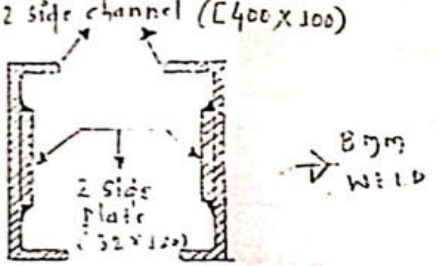
Welding Procedure Specification Sheet for 30.5 Mtr. (Underslung) Open Web Girder

Name & Address of Signature of PEC	:	M/s. PRECISION ENGINEERING CORPORATION, Plot No.- 139-C&F, Light Industrial Area, Bhilai – 490026 (C.G.)
Structure specification No.	:	PEC/RVNL-PUNE/US(30.5)/WPSS/10
Drawing No.	:	RDSO/B-17149 # Diagonal (U2-L3 & U8-L7) Channel to Side Plate on Section B-B
Welding Joint Description.	:	Fillet
Base Metal	:	IS: 2062 – 2011 Gr. E250 BO
Welding Process	:	S.A.W
Welding Position	:	Flat
Welding Consumable.		
Electrode/Wire		
Class	:	W1 of IRS M:39-2001
Type	:	Copper Coated Mild Steel Wire
Drying Method	:	N.A.
Flux		
Class	:	F1 of IRS M:39 - 2001
Type	:	Agglomerated
Drying Method	:	As recommended by Manufacturer
Shielding Gas	:	N.A.
Base Metal Preparation	:	Material to be cut straight & square by controlled gas cutting. Fusion faces and adjacent surfaces are cleaned and made free from Cracks Notches, Mill Scale, Grease Paint, Rust etc. which may affect Weld Quality.
Joint design Details	:	Part sketch shown.
Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.)		 Side Channel (400x100) mm to Side Plate 32 mm of Diagonal
Joint preparation	:	As Per IRS B1-2001, Cl. 17.3, IRS WBC-2001, IS 10178 -1995 Cl.9
Welding Current	:	
Type	:	DC
Polarity	:	Reverse
Welder qualification	:	As per IS: 7310 (Part 1) 1974& IS 7307

Welding Parameters and technique:

Weld Sequence No.	Welding Parameters: Electrode/ wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas Flow (L/min.)
B (8mm)	4.00	450-500	25-29	1.0-1.2	0.45-0.50	15-20	N.A.

Welding Sequence and technique	:	Welding from Run – on – off tabs
Provision of run-on / run-off tabs	:	N.A.
Cleaning of weld bead before laying next weld bead	:	N.A.
Root preparation before welding other side of groove weld	:	N.A.
Preheating and inter pass temperature	:	N.A.
Peening	:	Not Required
Post Weld treatment	:	Not Required
Rectification of weld defect	:	By re-welding after complete removal of defect by grinding as per IS 9595-96 Cl. 32.2, using A2 Class of electrodes of Specn. IRS M.28-02, after conducting D.P. Test.
Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
	:	IRS-B1, IRC-24,IS-7307,IS-7310,IS-9595,IS 816

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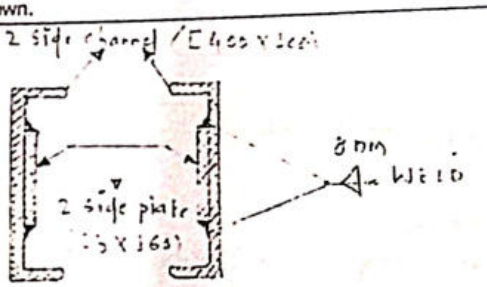
Welding Procedure Specification Sheet for 30.5 Mtr. (Underslung) Open Web Girder

Name and address of Signature of PEC	:	M/s. PRECISION ENGINEERING CORPORATION, Plot No.- 139-C&F, Light Industrial Area, Bhilai – 490026 (C.G.)
Procedure specification No.	:	PEC/RVNL-PUNE/US(30.5)/WPSS/11
Drawing No.	:	RDSO/B-17149/1 # Diagonal (U4-L3 & U6-L7) & (U4-L5 & U6-L5) Channel to Side Plate on Section C-C & D-D
Welding Joint Description.	:	Fillet
Base Metal.	:	IS: 2062 – 2011 Gr. E250 BO
Welding Process	:	S.A.W
Welding Position.	:	Flat
Welding Consumable.		
Electrode/Wire		
Class	:	W1 of IRS M:39-2001
Type	:	Copper Coated Mild Steel Wire
Drying Method	:	N.A.
Flux		
Class	:	F1 of IRS M:39 - 2001
Type	:	Agglomerated
Drying Method	:	As recommended by Manufacturer
Shielding Gas	:	N.A.
Base Metal Preparation	:	Material to be cut straight & square by controlled gas cutting. Fusion faces and adjacent surfaces are cleaned and made free from Cracks Notches, Mill Scale, Grease Paint, Rust etc. which may affect Weld Quality.
Joint design Details	:	Part sketch shown.
(Sketch showing arrangements of parts, weld groove details, weld passes & their sequence etc.)		 Side Channel (400x100) mm to Side Plate 25 mm of Diagonal
Joint preparation	:	As Per IRS B1-2001, Cl. 17.3, IRS WBC-2001, IS 10178 -1995 Cl.9
Welding Current	:	
Type	:	DC
Polarity	:	Reverse
Welder qualification	:	As per IS: 7310 (Part 1) 1974& IS 7307

Welding Parameters and technique:							
	Welding Parameters						
Weld Sequence No.	Electrode/ wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas Flow (L/min.)
1 & (Smm)	4.00	450-500	25-29	1.0-1.2	0.45-0.50	15-20	N.A.

2	Welding Sequence and technique	:	Welding from Run – on – off tabs
11.	Provision of run-on / run-off tabs	:	N.A.
2.	Cleaning of weld bead before laying next weld bead	:	N.A.
3	Root preparation before welding other side of groove weld	:	N.A.
4.	Preheating and inter pass temperature	:	N.A.
5.	Peening	:	Not Required
6.	Post Weld treatment	:	Not Required
7.	Rectification of weld defect	:	By re-welding after complete removal of defect by grinding as per IS 9595-96 Cl. 32.2, using A2 Class of electrodes of Specn. IRS M.28-02, after conducting D.P. Test.
8.	Inspection of Weld	:	Visual, D.P. Test & Macro Etching.
9.	Any other relevant Details with acceptance level	:	IRS-B1 , IRC-24,IS-7307,IS-7310,IS-9595,IS 816

Welding Procedure Specification Sheet for 30.5 Mtr. (Underslung) Open Web Girder

e and address of Signature of PEC	:	M/s. PRECISION ENGINEERING CORPORATION, Plot No.- 139-C&F, Light Industrial Area, Bhilai – 490026 (C.G.)
ding Procedure specification No.	:	PEC/RVNL-PUNE/US(30.5)/WPSS/12
Drawing No.	:	RDSO/B-17141 (Series) # All Components, Where required
Welding Joint Description.	:	5mm Tack Weld on all fillet joints
Base Metal.	:	IS: 2062 – 2011 Gr. E250 BO
Welding Process	:	M.M.A.W.
Welding Position.	:	Horizontal - Vertical
Welding Consumable.		
Electrode/Wire — Class	:	A3 of IRS M:28-2008 with Amendment 1 of 2003
Type	:	Rutile Coating
Drying Method	:	N.A.
Flux		
Class	:	N.A.
Type	:	N.A.
Drying Method	:	N.A.
Shielding Gas	:	N.A.
Base Metal Preparation	:	Material to be cut straight & square by controlled gas cutting. Fusion faces and adjacent surfaces are cleaned and made free from Cracks Notches, Mill Scale, Grease Paint, Rust etc. which may affect Weld Quality.
Joint design Details	:	N.A.
Joint preparation	:	As Per IRS B1-2001 Cl. 17.3, IRS WBC-2001, IS 9595-1996 Cl.3
Welding Current	:	
Type	:	DC
Polarity	:	Reverse
Welder qualification	:	As per IS: 7310 (Part 1) 1974, & IS 7307

Welding Parameters and technique:

Sequence No.	Welding Parameters: Electrodes wire dia. (mm)	Current (Amps)	Arc Voltage (Volt)	Wire Feed Speed (m/min)	Travel Speed (m/min)	Electrode Stick out (mm)	Gas Flow (L/min.)
1	3.15	140-180	24-26	N.A.	N.A.	N.A.	N.A.

Provision of run-on / run-off tabs	:	N.A.
Cleaning of weld bead before laying next weld bead	:	N.A.
Root preparation before welding other side of groove weld	:	N.A.
Preheating and inter pass temperature	:	N.A.
Peening	:	Not Required
Post Weld treatment	:	Not Required
Rectification of weld defect	:	By re-welding after complete removal of defect by grinding as per IS 9595-96 Cl. 32.2, using A2 Class of electrodes of Specn. IRS M.28-02, after conducting D.P. Test.
Inspection of Weld	:	Visual.
Any other relevant Details with acceptance level	:	IRS-B1 , IRC-24,IS-7307,IS-7310,IS-9595,IS 816