

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 BOW STRING GIRDER
(with SV Loading and Congestion Factor)**

Railway BOW STRING GIRDER
(with SV Loading and Congestion Factor)
48.0m clear span 3 lane
Model WPSS No: RDSO/Infra-II/B&S/ROB/BSG/
WPSS/48.0series (52 Nos)



QUALITY ASSUARANCE PLAN (QAP)

WELDING PROCEDURE SPECIFICATION SHEET (WPSS)

**CONSTRUCTION OF ROB AND ITS APPROACHES IN LIEU
OF LEVEL CROSSING NO. 21/SPL/E AT KM 338.600 OF
NH-60 IN THE STATE OF WEST BENGAL**

Job No. NH-60/(WB)/(10)/15-16-020-S&R(B)

LOA MEMO No. 67/W-250 DATED 10-02-2021.

CLIENT:

**OFFICE OF THE SUPERINTENDING ENGINEER,
NH CIRCLE NO II, PUBLIC WORKS (ROADS) DIRECTORATE,
SARAK BHAWAN, LAMBODARPUR, SURI, BIRBHUM - 711101**

CONTRACTOR:

**S. S. CIVIL CONSTRUCTIONS PVT. LTD.
1/4 NRITYA GOPAL CHATTERJEE LANE, KOLKATA - 700037**

FABRICATOR:

**Bhartia Infra Projects Ltd.
JL 32, Mouza Barunda, PO Bagnan, Howrah - 711303.**

(WPSS)

WORKSHOP WELDING

2 X 48.0m BOW STRING STEEL GIRDER

**RDSO DRG. NO. RDSO/B - 10429 (SERIES) " CLASS - A AND 70R LOADING
SPECIAL CLASS 385 TONE"**

BHARTIA INFRA PROJECTS LTD
(WEST BENGAL)



22ND WPSS → WORKSHOP
WELDING
ONLY

WELDING PROCEDURE SPECIFICATION SHEET (WPSS)
(WORKSHOP WELDING)

2 X 48.0m BOW STRING STEEL GIRDER 3 LANE

RDSO DRG. NO. RDSO/B - 10429 (SERIES) " CLASS - A AND 70R LOADING AND SPECIAL CLASS
LOADING OF 385 TONE "



BHARTIA INFRA PROJECTS LTD
(WEST BENGAL)

NAME OF THE WORK : CONSTRUCTION OF PROPOSED ROB AND IT'S APPROACHES IN
REPLACEMENT OF EXISTING LEVEL CROSSING GATE NO. - 21 SPL/E
IN SURI AT KM. 338 OF NH-60 BETWEEN KACHUJARA - SURI
STATION.

NAME OF AGENCY : S.S. CIVIL CONSTRUCTION PVT. LTD, 1/4, NRITYA GOPAL
CHATTERJEE LANE, KOLKATA - 700037

CLIENT : SUPERINTENDING ENGINEER, NATIONAL HIGHWAY CIRCLE NO.
II, PW (ROADS) DIRECTORATE, GOVT. OF WEST BENGAL, SARAK
BHAWAN, LAMBODARPUR, SURI, BIRBHUM

LOA MEMO NO. : 67/W-250 DATED - 10.02.2021

RDSO. DRG. NO. : RDSO/B - 10429 (SERIES) BOW STRING STEEL GIRDER

NAME OF FABRICATOR : BHARTIA INFRA PROJECT LIMITED
JL-32, MOUZA BARUNDA, BAGNAN HOWRAH,
WEST BENGAL - 711303

PLACE OF INSPECTION : BHARTIA INFRA PROJECT LIMITED
JL-32, MOUZA BARUNDA, BAGNAN HOWRAH,
WEST BENGAL - 711303

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/01

1. Drawing No. : Drg. No. RDSO/B – 10429 (Series)
2. Weld joint description : 5 mm Tack Weld on all fillet Joints
3. Base Metal : IS 2062-2011, Gr. E 350 B0 for Plate section and E 250 B0 for Rolled Section
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal
6. Welding Consumable :
 - 6.1 Electrode/Wire : Class : I of IRS M:46 - 2020
Type : Flux Cored Mig welding filler wire with shield gas
Drying method : N.A
 - 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
 - 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.
- 7.1 Joint design details : Length of tack Weld – 50 mm
(Sketch showing arrangements of parts, weld groove details, Weld passes & their sequence etc.)
gap between two Tack welds – 300 mm

- 7.2 Joint preparation : As per IS 4353 – 1995, Cl.7, IS: 10178 Cl. 9, IRS B-2001 Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr/min)
1 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : N.A
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By re-Welding after complete removal of defective weld
18. Inspection of weld : Visual
19. Any other relevant detail : N.A

संजो अरि धातु एवं रसां
Asslt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०मा०सं०, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

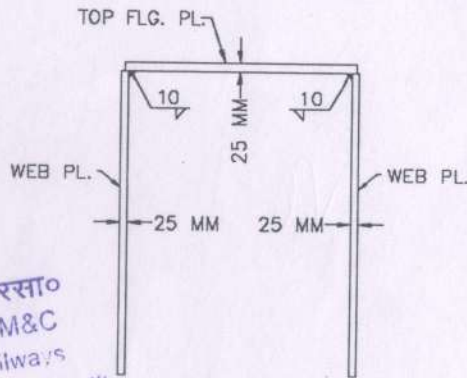
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/02

1. Drawing No. : Drg. No. RDSO/B – 10429/5 (Section K – K) & RDSO/B – 10429/8
Bottom Long Beam MKD. BC-1, & BC-1X (Box Type)
Web Pl. To Top Flg. Pl.
25mm/25mmTh.Pl. to 25mm Th. Pl.
2. Weld joint description : 10mm Fillet weld (In Side) Detail - 2
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : S.A.W
5. Welding Position : Flat
6. Welding Consumable :
6.1 Electrode/Wire : Class : II, Gr. W2 of IRS M: 39 - 2020
Type : Copper Coated mild steel wire
Drying method : N.A
- 6.2 Flux : Class : II, Gr. F2 of IRS M: 39 - 2020
Type : Agglomerated
Drying method : 250°C for one hour before use
- 6.3 Shielding Gas : N.A
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



सं०अ० अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
Ministry of Railways

SECTION K-K-DETAIL - 2
(WORKSHOP WELDING)

- 7.2 Joint preparation : As per IS 4353 – 1995, Cl.7 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Pass	4	500 - 550	28 - 30	1.2 - 1.4	0.30 - 0.35	15 - 20	N.A

- 10.2 Welding sequence and technique : Welding from Run-on to run off tabs
11. Provision of run – on/ Run - off tabs : Yes
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding , 150-250°C
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual, Macro Etching and D.P. test.
19. Any other relevant detail : Being similar this WPSS also covers the same for the following Bottom Long Beam : MKD. BC-2,BC-2X, BC-3, BC-3X, Drg. No. RDSO/B – 10429/5 & 10429/8

संजो अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

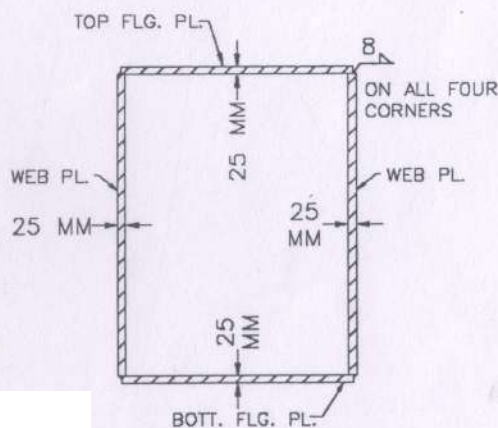
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/03

1. Drawing No. : Drg. No. RDSO/B – 10429/5 (Section K – K) & RDSO/B – 10429/8 Bottom Long Beam MKD. BC-1, & BC-1X (Box Type)
Web Pl. To Top/Bott. Flg. Pl.
25mm/25mmTh.Pl. to 25mm/25mm Th. Pl.
2. Weld joint description : 8mm Fillet weld (Outside on all four corners) Detail - 6
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : S.A.W
5. Welding Position : Flat
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : II, Gr. W2 of IRS M: 39 - 2020
Type : Copper Coated mild steel wire
Drying method : N.A
- 6.2 Flux : Class : II, Gr. F2 of IRS M: 39 - 2020
Type : Agglomerated
Drying method : 250°C for one hour before use
- 6.3 Shielding Gas : N.A
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION K-K-DETAIL - 6

(WORKSHOP WELDING)

संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
Ministry of Railways
Lucknow

- 7.2 Joint preparation : As per IS 4353 – 1995, Cl.7 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Pass	4	500 - 550	26 - 30	1.2 – 1.4	0.30 – 0.35	15 - 20	N.A

- 10.2 Welding sequence and technique : Welding from Run-on to run off tabs
11. Provision of run – on/ Run - off tabs : Yes
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding , 150-250°C
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual, Macro Etching and D.P. test.
19. Any other relevant detail : Being similar this WPSS also covers the same for the following Bottom Long Beam : MKD. BC-2,BC-2X, BC-3, BC-3X, Drg. No. RDSO/B – 10429/5 & 10429/8

संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
लखनऊ, लखनऊ / R.D.S.O., Lucknow

- 7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr/min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
2 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M.28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test
19. Any other relevant detail : N.A

सं.अ. अधि. धातु एवं रसा.
 Asstt. Research Officer/M&C
 रेल मंत्रालय / Ministry of Railways
 नखनक / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

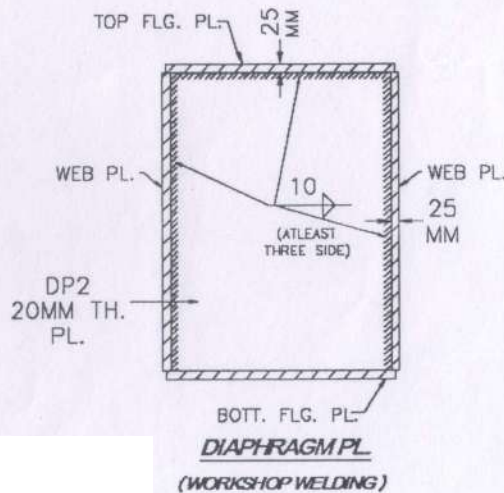
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/06

1. Drawing No. : **Drg. No. RDSO/B – 10429/5 (Section A – A)**
Diaphragm Pl. MKD. DP2 for BC-1, BC-1X (Bottom Long Beam)
Diaphragm Pl to Web Pl/Top/Bottom Flg. Pl.
20mm Th Pl. to 25mm/25mm/25mm Th Pl.
2. Weld joint description : 10mm Fillet weld (At least Three Sides)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W.**
5. Welding Position : Horizontal - Vertical
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : I of IRS M:46-2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc, which may affect weld quality.

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



संशोधन अधिकारी / धातु एवं रसायन
Research Officer/M&C
Railways

- 7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr/min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
2 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test
19. Any other relevant detail : Being similar this WPSS also covers the same for the following Bottom Long Beam : MKD. BC-2,BC-2X, BC-3, BC-3X Drg. No. RDSO/B – 10429/5 & 10429/8

संज्ञा अधीन/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

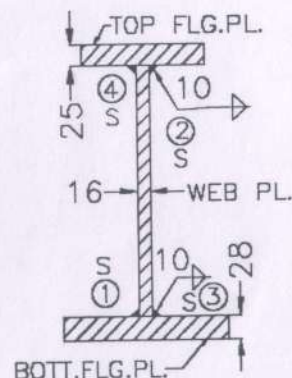
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/07

1. Drawing No. : **Drg. No. RDSO/B – 10429/6 (Section - 3 - 3 & 6 - 6)**
Bottom Cross Beam MKD. BCB-1 ('I' Type)
Web Pl. To Top/Bott. Flg. Pl.
16mmTh.Pl. to 25mm/28mm Th. Pl.
2. Weld joint description : 10mm Fillet weld (Both Side)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **S.A.W**
5. Welding Position : Flat
6. Welding Consumable :
6.1 Electrode/Wire : Class : II, Gr. W2 of IRS M: 39 - 2020
Type : Copper Coated mild steel wire
Drying method : N.A
- 6.2 Flux : Class : II, Gr. F2 of IRS M: 39 - 2020
Type : Agglomerated
Drying method : 250°C for one hour before use
- 6.3 Shielding Gas : N.A
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc, which may affect weld quality.

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



SECTION 3-3 & 6-6

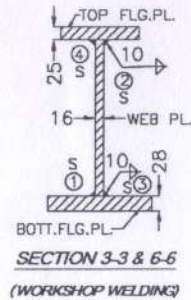
(WORKSHOP WELDING)

संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेलवे मंत्रालय/Ministry of Railways
R.D.S.O., Lucknow

- 7.2 Joint preparation : As per IS 4353 – 1995, Cl.7 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Pass	4	500 - 550	26 - 30	1.2 – 1.4	0.35 – 0.40	15 - 20	N.A

- 10.2 Welding sequence and technique : Welding from Run-on to run off tabs
11. Provision of run – on/ Run - off tabs : Yes
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 150° before welding, 150-250° C
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M.28/2020 after conducting D.P test.
18. Inspection of weld : Visual, Macro Etching and D.P. test.
19. Any other relevant detail : Being similar this WPSS also covers the same for the following Bottom Long Beam : MKD. BCB - 2, Drg. No. RDSO/B - 10429/6



सं० अ० अधि० / धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ० अ० मा० सं०, लखनऊ / R.D.S O., Lucknow

INDEX
(WORKSHOP WELDING)

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) “Class – A and 70R Loading and Special class loading of 385 Tone ”

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 Dated – 10.02.2021

Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Sl. No.	Component	Joint description	Weld Size/ Process	RDSO Drg. No.	WPSS No.	Page Mark
01	All Component	Tack Weld All Fillet Joint	5 mm Fillet (FCAW)	RDSO/B – 10429 (Series)	SSG/WORKSHOP/LC- 21 SPL/E/SURI/48M BSG/WPSS/01	1/1 – 1/2
02	Bottom Long Beam (Inside)	Web Pl. (25mm) To Top Flg. Pl. (25 mm)	10 mm Fillet In side (SAW)	RDSO/B – 10429/5	SSG/WORKSHOP/LC- 21 SPL/E/SURI/48M BSG/WPSS/02	2/1 – 2/2
03	Bottom Long Beam (Outside)	Web Pl. (25mm) To Top/Bott. Flg. Pl. (25mm/25mm)	8 mm Fillet Outside (SAW)	RDSO/B – 10429/5	SSG/WORKSHOP/LC- 21 SPL/E/SURI/48M BSG/WPSS/03	3/1 – 3/2
04	Diaphragm Pl. (DP1) Bottom Long. Beam L0	Diaphragm Pl. (25mm) to Web/Top/ Bott. Pl. (25mm/25mm/ 25mm)	10 mm Fillet (FCAW)	RDSO/B – 10429/5	SSG/WORKSHOP/LC- 21 SPL/E/SURI/48M BSG/WPSS/04	4/1 – 4/2
05	Diaphragm Pl. (DP1) Bottom Long. Beam	Diaphragm Pl. (16mm) to Web/Top/Bott. Pl. (25mm/25mm 25mm)	10 mm Fillet (FCAW)	RDSO/B – 10429/5	SSG/WORKSHOP/LC- 21 SPL/E/SURI/48M BSG/WPSS/05	5/1 – 5/2
06	Diaphragm Pl. (DP2) Bottom Long. Beam	Diaphragm Pl. (20mm) to Web/Top/Bott. Pl. (25mm/25mm/ 25mm)	10 mm Fillet (FCAW)	RDSO/B – 10429/5	SSG/WORKSHOP/LC- 21 SPL/E/SURI/48M BSG/WPSS/06	6/1 – 6/2
07	Bottom Cross Beam (BCB - 1,2)	Web Pl. (16mm) To Top/Bottom Flg. Pl. (25mm/28mm)	10 mm Fillet (SAW)	RDSO/B – 10429/6	SSG/WORKSHOP/LC- 21 SPL/E/SURI/48M BSG/WPSS/07	7/1 – 7/2
08	Stiffener Pl. of Bottom Cross Beam (BCB - 1,2)	Stiff. Pl. (12mm) To Web/Top/Bott. Pl. (16mm/25mm/ 28mm)	8 mm Fillet (FCAW)	RDSO/B – 10429/6	SSG/WORKSHOP/LC- 21 SPL/E/SURI/48M BSG/WPSS/08	8/1 – 8/2
09	Bottom Cross Beam (BCB - 3)	Web Pl. (25mm) To Top/Bott. Pl. (36mm/36mm)	16 mm Fillet (SAW)	RDSO/B – 10429/6	SSG/WORKSHOP/LC- 21 SPL/E/SURI/48M BSG/WPSS/09	9/1 – 9/2

Sl. No.	Component	Joint description	Weld Size/ Process	RDSO Drg. No.	WPSS No.	Page Mark
10	Diaphragm Pl. (DP) Bottom Cross Beam (BCB - 3)	Diaphragm Pl. (18mm) To Web/Top/Bott. Pl. (25mm/36mm 36mm)	10 mm Fillet (FCAW)	RDSO/B - 10429/6	SSG/WORKSHOP/LC-21 SPL/E/SURI/48M BSG/WPSS/10	10/1 - 10/2
11	Criss - Cross Frame Bottom Cross Beam (BCB-1,2,3)	Stiff. Pl. (12mm) To ISMC - 150	6 mm Fillet (FCAW)	RDSO/B - 10429/6	SSG/WORKSHOP/LC-21 SPL/E/SURI/48M BSG/WPSS/11	11/1 - 11/2
12	Hanger	Web Pl. (25mm) To Flange Pl. (32mm)	10 mm Fillet (SAW)	RDSO/B - 10429/9	SSG/WORKSHOP/LC-21 SPL/E/SURI/48M BSG/WPSS/12	12/1 - 12/2
13	Hanger (Top & Bott.)	Web Pl. (25mm) To Flange Pl. (32mm)	16 mm Fillet (SAW)	RDSO/B - 10429/9	SSG/WORKSHOP/LC-21 SPL/E/SURI/48M BSG/WPSS/13	13/1 - 13/2
14	Diaphragm Pl. (DP1) Hanger	Diaphragm Pl. (16mm) to Web/Flg. Pl. (25mm/32mm)	10 mm Fillet (FCAW)	RDSO/B - 10429/9	SSG/WORKSHOP/LC-21 SPL/E/SURI/48M BSG/WPSS/14	14/1 - 14/2
15	Top Arch (Inside)	Web Pl. (32mm) To Bottom Flg. Pl. (32mm)	10 mm Fillet (SAW) (Inside)	RDSO/B - 10429/2	SSG/WORKSHOP/LC-21 SPL/E/SURI/48M BSG/WPSS/15	15/1 - 15/2
16	Top Arch (Outside)	Web Pl. (32mm) to Top/Bott. Flg. Pl. (32mm/32mm)	8 mm Fillet (SAW) (Outside)	RDSO/B - 10429/2	SSG/WORKSHOP/LC-21 SPL/E/SURI/48M BSG/WPSS/16	16/1 - 16/2
17	Diaphragm Pl. (DP) Top Arch	Diaphragm Pl. (20mm) To Web Pl. (32mm)/ Top/Bott. Flg. Pl. (32mm/32mm)	10 mm Fillet (FCAW)	RDSO/B - 10429/2	SSG/WORKSHOP/LC-21 SPL/E/SURI/48M BSG/WPSS/17	17/1 - 17/2
18	Top Tie Beam	Web Pl. (20mm) To Top/Bott. Flg. Pl. (20mm/20mm)	8 mm Fillet (SAW)	RDSO/B - 10429/3	SSG/WORKSHOP/LC-21 SPL/E/SURI/48M BSG/WPSS/18	18/1 - 18/2
19	Diaphragm Pl. (DP) Top Tie Beam	Diaphragm Pl. (10mm) To Web/Top/Bott. Pl. (20mm/20mm/ 20mm)	8 mm Fillet (FCAW)	RDSO/B - 10429/3	SSG/WORKSHOP/LC-21 SPL/E/SURI/48M BSG/WPSS/19	19/1 - 19/2
20	Top Diagonal Tie Beam	Web Pl. (28mm) To Top/Bott. Flg. Pl. (28mm/28mm)	10 mm Fillet (SAW)	RDSO/B - 10429/3	SSG/WORKSHOP/LC-21 SPL/E/SURI/48M BSG/WPSS/20	20/1 - 20/2
21	Diaphragm Pl. (DP) Top Diagonal Tie Beam	Diaphragm Pl. (10mm) To Web/Top/Bott. Pl. (28mm/28mm/ 28mm)	8 mm Fillet (FCAW)	RDSO/B - 10429/3	SSG/WORKSHOP/LC-21 SPL/E/SURI/48M BSG/WPSS/21	21/1 - 21/2
22	Stud Shear Connec. Bott. Cross Beam (BCB 1,2,3)	Stud (25mm) To Top Flg. Pl. (25mm/36mm)	All around 31mm Min. Height 7mm Approx	RDSO/B - 10429/6	SSG/WORKSHOP/LC-21 SPL/E/SURI/48M BSG/WPSS/22	22/1 - 22/2

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

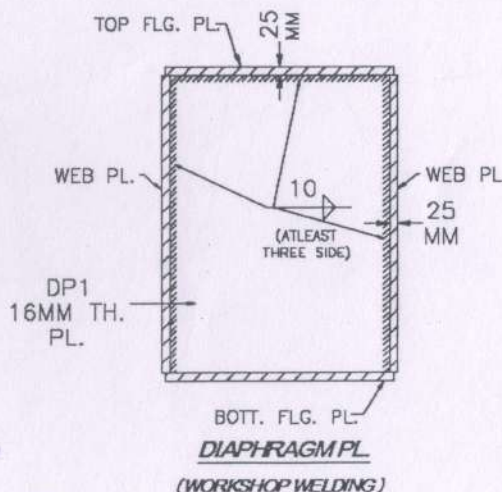
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/05

1. Drawing No. : **Drg. No. RDSO/B – 10429/5 (Section B – B)**
Diaphragm MKD. DP1 for BC-1,BC-1X (Bottom Long Beam)
Diaphragm Pl to Web Pl/Top/Bottom Flg. Pl.
16mm Th Pl. to 25mm/25mm/25mm Th Pl.
2. Weld joint description : 10mm Fillet weld (At least Three Sides)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W.**
5. Welding Position : Horizontal - Vertical
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M:46-2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



संशोधन अधिकारी एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
लखनऊ / R.D.S.O., Lucknow

- 7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr/min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
2 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead
Before laying of next weld bead : N.A
13. Root preparation before
Welding other side of groove weld : N.A
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M.28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test
19. Any other relevant detail : Being similar this WPSS also covers the same for the following Bottom Long Beam : MKD. BC-2,BC-2X, BC-3, BC 3X Drg. No. RDSO/B – 10429/5 & 10429/8

अधीन / धातु एवं रसायन
Officer/M&C

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

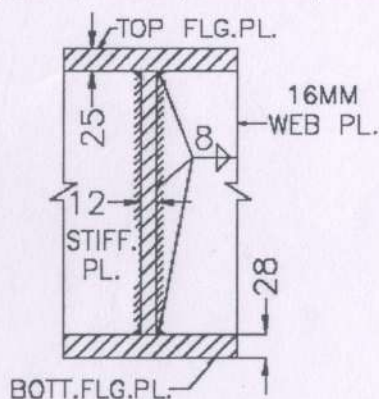
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/08

1. Drawing No. : **Drg. No. RDSO/B – 10429/6 (Section J - J)**
Stiffener Pl. of Bottom Cross Beam MKD - BCB - 1
Stiff. Pl. To Web Pl./ Top/Bott. Flg. Pl.
12mmTh.Pl. To 16mm/25mm/28mm Th. Pl.
2. Weld joint description : 8mm Fillet weld (Both Side all around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux cored mig welding filler wire with shielding gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc, which may affect weld quality.

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



SECTION 3-3 & 6-6

(WORKSHOP WELDING)

संशोधन अधिकारी/घातु एवं रसायन
Asstt. Research Officer/M&C
Ministry of Railways

- 7.2 Joint preparation : As per IS 10178 - 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
1 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual, D.P. test.
19. Any other relevant detail : Being similar this WPSS also covers the same for the following Bottom Long Beam : MKD. BCB - 2
Drg. No. RDSO/B - 10429/6

सं०अ० अधी० / धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०श०भा०सं०, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

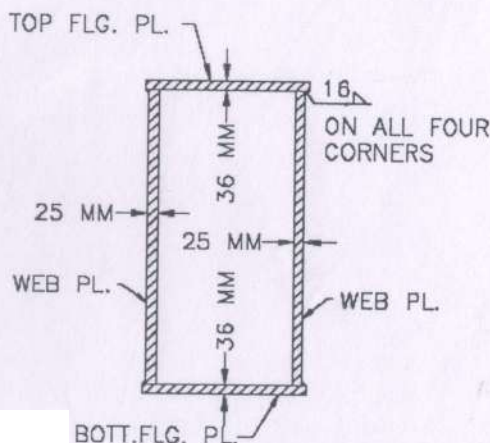
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/09

1. Drawing No. : Drg. No. RDSO/B – 10429/6 (Section - E - E)
Bottom Cross Beam MKD. BCB-3 (Box Type)
Web Pl. To Top/Bott. Flg. Pl.
25mmTh.Pl. To 36mm/36mm Th. Pl.
2. Weld joint description : 16mm Fillet weld (Outside)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : S.A.W
5. Welding Position : Flat
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : II, Gr. W2 of IRS M: 39 - 2020
Type : Copper Coated mild steel wire
Drying method : N.A
- 6.2 Flux : Class : II, Gr. F2 of IRS M: 39 - 2020
Type : Agglomerated
Drying method : 250°C for one hour before use
- 6.3 Shielding Gas : N.A
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION E-E & 9-9
(WORKSHOP WELDING)

सं०अ० अधिकारी एवं रसा०
Asstt. Research Officer/M&C
Ministry of Railways
Lucknow

- 7.2 Joint preparation : As per IS 4353 – 1995, Cl.7 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Pass	4	500 - 550	28 - 30	1.2 - 1.4	0.35 - 0.40	15 - 20	N.A
2 Pass	4	500 - 550	28 - 30	1.2 - 1.4	0.30 - 0.35	15 - 20	N.A

- 10.2 Welding sequence and technique : Welding from Run-on to run off tabs
11. Provision of run – on/ Run - off tabs : Yes
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding , 150-250°C
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual, Macro Etching and D.P. test.
19. Any other relevant detail : N.A

संजो अधि० / धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अंधाबाद, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

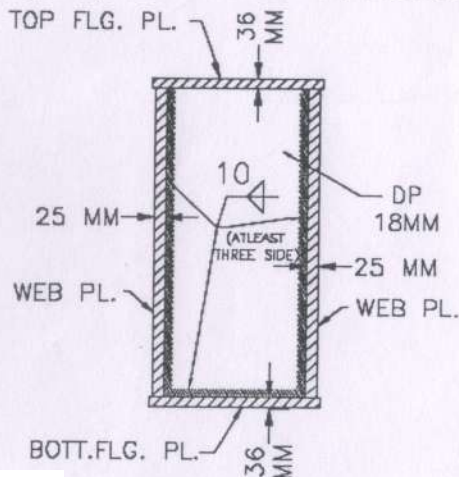
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/10

1. Drawing No. : Drg. No. RDSO/B – 10429/6 (Section - D - D)
Diaphragm Pl. (DP) for Bottom Cross Beam MKD - BCB - 3
Diaphragm Pl. To Web Pl./ Top/Bott. Flg. Pl.
18mmTh.Pl. To 25mm/36mm/36mm Th. Pl.
2. Weld joint description : 10mm Fillet weld (At least three sides)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux cored mig welding filler wire with shielding gas
Drying method : N.A
6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



DIAPHRAGM PL
(WORKSHOP WELDING)

संजो अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/R.D.S.O., Lucknow

- 7.2 Joint preparation : As per IS 10178 - 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
2 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual, D.P. test.
19. Any other relevant detail : N.A


संजो अघि/धातु एवं रसां
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
असंभार, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

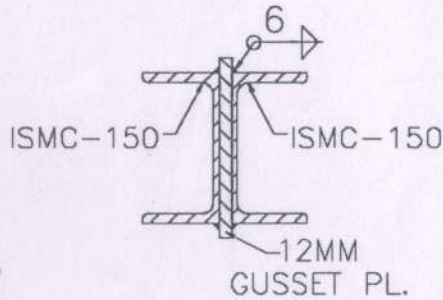
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/11

1. Drawing No. : **Drg. No. RDSO/B – 10429/1 (Criss - Cross Frame)**
Criss-Cross Frame of Bottom Cross Beam MKD. BCB-1,2,3
Center Gusset Pl. To ISMC - 150
12mmTh.Pl. to ISMC - 150
2. Weld joint description : 6mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 & E 250 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/R.D.S.O., Lucknow

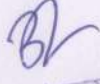
CRISS-CROSS FRAME
(WORKSHOP WELDING)

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A


संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
असंशोधन, लखनऊ/R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

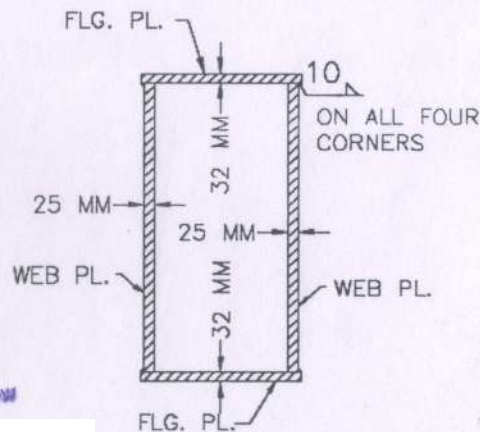
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/12

1. Drawing No. : **Drg. No. RDSO/B – 10429/9 (Section - B - B)**
HANGER - L1 - U1 MKD. HR-1,1X (Box Type)
Web Pl. To Flange. Pl.
25mmTh.Pl. To 32mm
2. Weld joint description : 10mm Fillet weld (Outside, on all four corners)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **S.A.W**
5. Welding Position : Flat
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : II, Gr. W2 of IRS M: 39 - 2020
Type : Copper Coated mild steel wire
Drying method : N.A
- 6.2 Flux : Class : II, Gr. F2 of IRS M: 39 - 2020
Type : Agglomerated
Drying method : 250°C for one hour before use
- 6.3 Shielding Gas : N.A
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc, which may affect weld quality.

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



SECTION - B - B
(WORKSHOP WELDING)

संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
लुकरा / Ministry of Railways
R.S.O. Lucknow

- 7.2 Joint preparation : As per IS 4353 – 1995, Cl.7 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Pass	4	500 - 550	28 - 30	1.2 - 1.4	0.30 - 0.35	15 - 20	N.A

- 10.2 Welding sequence and technique : Welding from Run-on to run off tabs
11. Provision of run – on/ Run - off tabs : Yes
12. Cleaning of weld bead : N.A
- Before laying of next weld bead
13. Root preparation before : N.A
- Welding other side of groove weld
14. Preheating and interpass temperature : 150°C before welding, 150-250°C (interpass temp?)
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual, Macro Etching and D.P. test.
19. Any other relevant detail : Being similar this WPSS also covers the same for the following Hangers : L2 - U2, L3 - U3, L4 - U4, MKD. HR - 2,2X, HR - 3,3X, HR - 4 Drg. No. RDSO/B - 10429/9

BR

संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
संशोधन विभाग, लखनऊ/R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

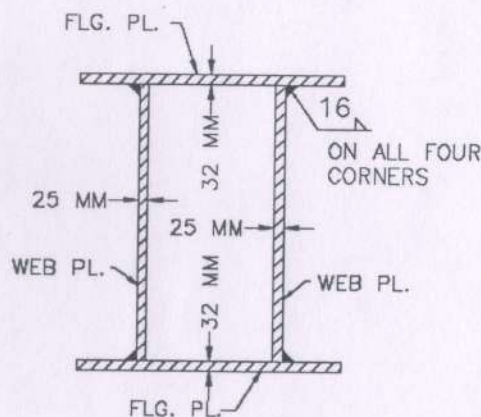
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/13

1. Drawing No. : **Drg. No. RDSO/B – 10429/9 (View - C - C)**
HANGER - L1 - U1 MKD. HR-1.1X (Box Type)
Web Pl. To Flange. Pl.
25mmTh.Pl. To 32mm
2. Weld joint description : 16mm Fillet weld (Outside, Top & Bott. of Web Pl.)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **S.A.W**
5. Welding Position : Flat
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : II, Gr. W2 of IRS M: 39 - 2020
Type : Copper Coated mild steel wire
Drying method : N.A
- 6.2 Flux : Class : II, Gr. F2 of IRS M: 39 - 2020
Type : Agglomerated
Drying method : 250°C for one hour before welding
- 6.3 Shielding Gas : N.A
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



VIEW - C - C
(WORKSHOP WELDING)

सं०अ० अधि० / धातु एवं रसा०
Asstt. Research Officer/M&C
Ministry of Railways

- 7.2 Joint preparation : As per IS 4353 – 1995, Cl.7 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	4	500 - 550	28 - 30	1.2 – 1.4	0.35 – 0.40	15 - 20	N.A
2 Pass	4	500 - 550	28 - 30	1.2 - 1.4	0.30 - 0.35	15 - 20	N.A

- 10.2 Welding sequence and technique : Welding from Run-on to run off tabs
11. Provision of run – on/ Run - off tabs : Yes
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding (150-280°C)
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual, Macro Etching and D.P. test.
19. Any other relevant detail : Being similar this WPSS also covers the same for the following Hanger : L2 - U2, L3 - U3, L4 - U4, MKD. HR - 2,2X, HR - 3,3X, HR - 4 Drg. No. RDSO/B - 10429/9


 स०अ० अधि०/धातु एवं रसा०
 Asstt. Research Officer/M&C
 रेल मंत्रालय / Ministry of Railways
 अ०अ०ना०स०, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

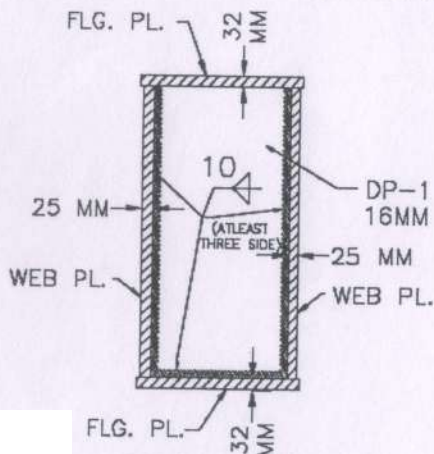
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/14

1. Drawing No. : **Drg. No. RDSO/B – 10429/9 (Section - B - B)**
Diaphragm Pl.(DP1) for Hanger - L1 - U1 MKD-HR - 1,1X (Box Type)
Diaphragm Pl. To Web Pl/Flg. Pl.
16mmTh.Pl. To 25mm/32mm Th. Pl.
2. Weld joint description : 10mm Fillet weld (At least three sides)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



सं०अ० अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
Ministry of Railways

7.2 Joint preparation

: As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current

: Type DC, Polarity : Reverse

9. Welder Qualification

: As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique

10.1 Welding parameters

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
2 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

10.2 Welding sequence and technique

: N.A

11. Provision of run – on/ Run - off tabs

: N.A

12. Cleaning of weld bead

: N.A

Before laying of next weld bead

13. Root preparation before

: N.A

Welding other side of groove weld

14. Preheating and interpass temperature

: 110°C - 150°C before welding

15. Peening

: N.A

16. Post weld treatment

: N.A

17. Rectification of weld defect

: By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M.28/2020 after conducting D.P test.

18. Inspection of weld

: Visual and D.P. test.

19. Any other relevant detail

: Being similar this WPSS also covers the same for the following Hanger : L2 - U2, L3 - U3, L4 - U4, MKD. HR - 2,2X, HR - 3,3X, HR - 4 Drg. No. RDSO/B - 10429/9



संअ० अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०मा०स०, लखनऊ / R.D.S O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

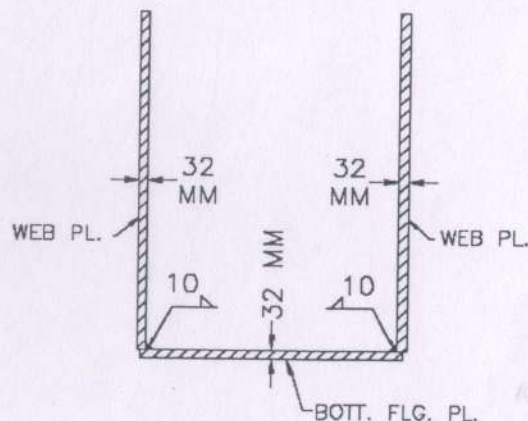
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/15

1. Drawing No. : Drg. No. RDSO/B – 10429/2 & RDSO/B - 10429/8 (Section - K - K)
Top Arch MKD. TC-1,1X (Box Type)
Web Pl. To Bottom Flange Pl.
32mmTh.Pl. To 32mm
2. Weld joint description : 10mm Fillet weld (Inside Detail - 3, Bottom)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : S.A.W
5. Welding Position : Flat
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : II, Gr. W2 of IRS M: 39 - 2020
Type : Copper Coated mild steel wire
Drying method : N.A
- 6.2 Flux : Class : II, Gr. F2 of IRS M: 39 - 2020
Type : Agglomerated
Drying method : 250°C for one hour before use
- 6.3 Shielding Gas : N.A
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION K-K-DETAIL-3
(WORKSHOP WELDING)

संशोधन अधिकारी एवं रसायन
Asstt. Research Officer/M&C
रेलवे मंत्रालय / Ministry of Railways
RDSO, Lucknow

- 7.2 Joint preparation : As per IS 4353 – 1995, Cl.7 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Pass	4	500 - 550	28 - 30	1.2 – 1.4	0.30 – 0.35	15 - 20	N.A

- 10.2 Welding sequence and technique : Welding from Run-on to run off tabs
11. Provision of run – on/ Run - off tabs : Yes
12. Cleaning of weld bead : N.A
- Before laying of next weld bead
13. Root preparation before : N.A
- Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding (150-250°C interpass temp)
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M.28/2020 after conducting D.P test.
18. Inspection of weld : Visual, Macro Etching and D.P. test.
19. Any other relevant detail : Being similar this WPSS also covers the same for the following Top Arch : MKD - TC - 2,2X, TC - 3,3X , TC - 4,4X
Drg. No. RDSO/B - 10429/2 & RDSO/B - 10429/8

सं०अ० अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०ना०सं०, लखनऊ / R.D.S O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B - 10429 (SERIES) "Class - A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated -** 10.02.2021

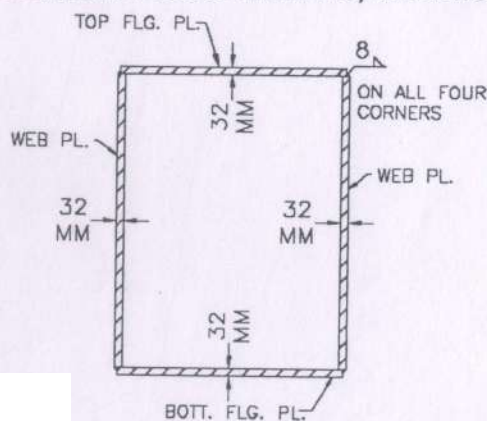
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/16

1. Drawing No. : Drg. No. RDSO/B - 10429/2 & RDSO/B - 10429/8 (Section - K - K)
Top Arch MKD. TC-1,1X (Box Type)
Web Pl. To Bottom Flange Pl.
32mmTh.Pl. To 32mm
2. Weld joint description : 8mm Fillet weld (Outside Detail - 2, on all four corners)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : S.A.W
5. Welding Position : Flat
6. Welding Consumable :
6.1 Electrode/Wire : Class : II, Gr. W2 of IRS M: 39 - 2020
Type : Copper Coated mild steel wire
Drying method : N.A
- 6.2 Flux : Class : II, Gr. F2 of IRS M: 39 - 2020
Type : Agglomerated
Drying method : 250°C for one hour before use
- 6.3 Shielding Gas : N.A
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION K-K-DETAIL -2
(WORKSHOP WELDING)

- 7.2 Joint preparation : As per IS 4353 – 1995, Cl.7 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Pass	4	500 - 550	26 - 30	1.2 – 1.4	0.35 – 0.40	15 - 20	N.A

- 10.2 Welding sequence and technique : Welding from Run-on to run off tabs
11. Provision of run – on/ Run - off tabs : Yes
12. Cleaning of weld bead : N.A
- Before laying of next weld bead
13. Root preparation before : N.A
- Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M.28/2020 after conducting D.P test.
18. Inspection of weld : Visual, Macro Etching and D.P. test.
19. Any other relevant detail : Being similar this WPSS also covers the same for the following Top Arch : MKD - TC - 2,2X, TC - 3,3X , TC - 4,4X
Drg. No. RDSO/B - 10429/2 & RDSO/B - 10429/8

संशोधन अधिकारी/घातु एवं रसायन
Asslt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
असंशोधन, लखनऊ / R.D.S O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 Dated – 10.02.2021

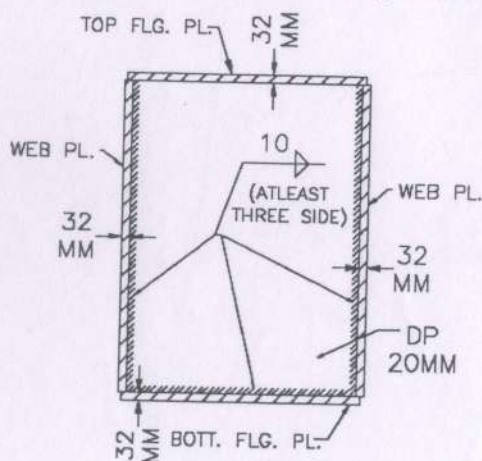
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/17

1. Drawing No. : **Drg. No. RDSO/B – 10429/2 (Section - B - B)**
Diaphragm Pl. (DP) for Top Arch - MKD - TC - 1,1X (Box Type)
Diaphragm Pl. To Web Pl/Top/Bott.Flg. Pl.
20mmTh.Pl. To 32mm/32mm Th. Pl.
2. Weld joint description : 10mm Fillet weld (At least three sides)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION B-B
(WORKSHOP WELDING)

संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
लोकमंडल/Ministry of Railways
लोकमंडल/R.D.S.O., Lucknow

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
2 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : Being similar this WPSS also covers the same for the following Top Arch : MKD - TC - 2,2X, TC - 3,3X , TC - 4,4X
Drg. No. RDSO/B - 10429/2 & RDSO/B - 10429/8

BR
संशोधन अधिकारी/धातु एवं रसायन
Asslt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
आवक संख्या: 10429/2 & 10429/8

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

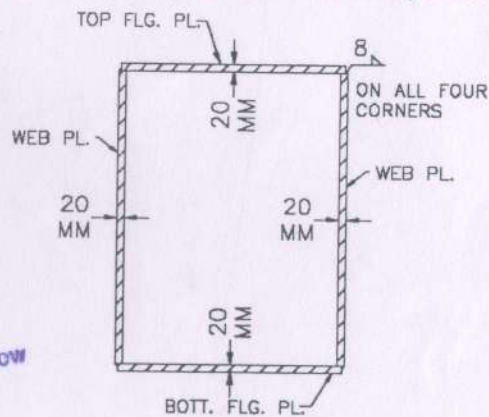
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/18

1. Drawing No. : Drg. No. RDSO/B – 10429/3 (Section - E - E)
Top Tie Beam, MKD. TTB (Box Type)
Web Pl. To Top/Bottom Flange Pl.
20mmTh.Pl. To 20mm/20mm Th. Pl.
2. Weld joint description : 8mm Fillet weld (Outside on all four Corners)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : S.A.W
5. Welding Position : Flat
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : II, Gr. W2 of IRS M: 39 - 2020
Type : Copper Coated mild steel wire
Drying method : N.A
- 6.2 Flux : Class : II, Gr. F2 of IRS M: 39 - 2020
Type : Agglomerated
Drying method : 250°C for one hour before use
- 6.3 Shielding Gas : N.A
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION E-E
(WORKSHOP WELDING)

संअ० अधि० धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ० न० सं०, लखनऊ / R.D.S.O., Lucknow

- 7.2 Joint preparation : As per IS 4353 – 1995, Cl.7 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Pass	4	500 - 550	28 - 30	1.2 – 1.4	0.35 – 0.40	15 - 20	N.A

- 10.2 Welding sequence and technique : Welding from Run-on to run off tabs
11. Provision of run – on/ Run - off tabs : Yes
12. Cleaning of weld bead : N.A
- Before laying of next weld bead
13. Root preparation before : N.A
- Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding, 150-250°C interpass temp.
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M.28/2020 after conducting D.P test.
18. Inspection of weld : Visual, Macro Etching and D.P. test.
19. Any other relevant detail : N.A


संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेलवे मंत्रालय/Ministry of Railways
संशोधन विभाग, लखनऊ/R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

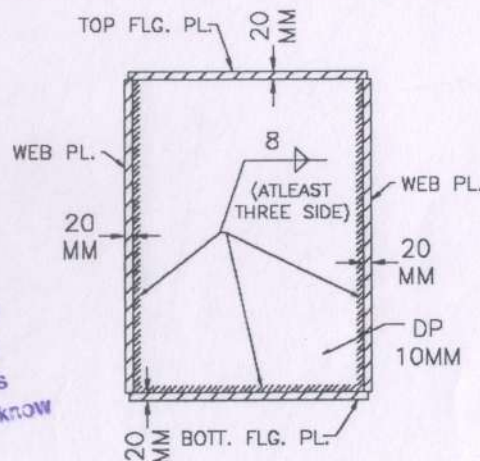
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/19

1. Drawing No. : **Drg. No. RDSO/B – 10429/3 (Section - B - B)**
Diaphragm Pl. (DP) for Top Tie Beam - MKD - TTB (Box Type)
Diaphragm Pl. To Web Pl/Top/Bott. Flg. Pl.
10mmTh.Pl. To 20mm/20mm/20mm Th. Pl.
2. Weld joint description : 8mm Fillet weld (At least three sides)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION B-B
(WORKSHOP WELDING)

सं०अ० अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०ना०स०, लखनऊ / R.D.S.O., Lucknow

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
1 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M.28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A


सं०अ० अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
सं०अ०अ०, लखनऊ/R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

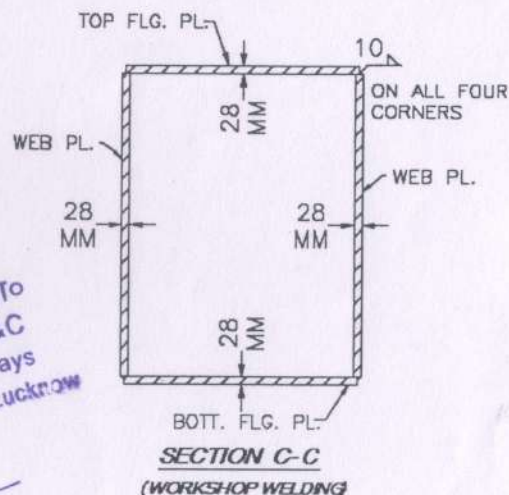
Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.
LOA Memo No: 67/W-250 **Dated –** 10.02.2021
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/20

1. Drawing No. : **Drg. No. RDSO/B – 10429/3 (Section - C - C)**
Top Diagonal Tie Beam, MKD. TDTB (Box Type)
Web Pl. To Top/Bottom Flange Pl.
28mmTh.Pl. To 28mm/28mm Th. Pl.
2. Weld joint description : 10mm Fillet weld (Outside on all four Corners)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **S.A.W**
5. Welding Position : Flat
6. Welding Consumable :
6.1 Electrode/Wire : Class : II, Gr. W2 of IRS M: 39 - 2020
Type : Copper Coated mild steel wire
Drying method : N.A
6.2 Flux : Class : II, Gr. F2 of IRS M: 39 - 2020
Type : Agglomerated
Drying method : As recommended by the manufacturer
- 6.3 Shielding Gas : N.A
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc, which may affect weld quality.

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



32
संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
अवध विभाग, लखनऊ/R.D.S.O., Lucknow

- 7.2 Joint preparation : As per IS 4353 – 1995, Cl.7 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Pass	4	500 - 550	26 - 30	1.2 – 1.4	0.30 – 0.35	15 - 20	N.A

- 10.2 Welding sequence and technique : Welding from Run-on to run off tabs
11. Provision of run – on/ Run - off tabs : Yes
12. Cleaning of weld bead : N.A
- Before laying of next weld bead
13. Root preparation before : N.A
- Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding , 150-250°C interpass
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M.28/2020 after conducting D.P test.
18. Inspection of weld : Visual, Macro Etching and D.P. test.
19. Any other relevant detail : N.A

Br
संज्ञा अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
आ०आ०सं०, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

WORKSHOP WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

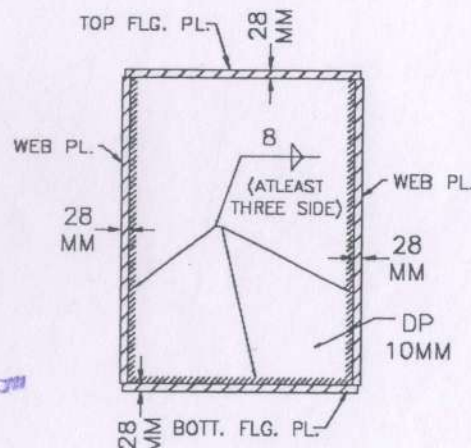
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/21

1. Drawing No. : **Drg. No. RDSO/B – 10429/3 (Section - B - B)**
Diaphragm Pl. (DP) for Top Dia. Tie Beam - MKD - TDTB (Box Type)
Diaphragm Pl. To Web Pl/Top/Bott. Flg. Pl.
10mmTh.Pl. To 28mm/28mm/28mm Th. Pl.
2. Weld joint description : 8mm Fillet weld (At least three sides)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION C-C

(WORKSHOP WELDING)

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
1 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M.28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

संअ० अधि० धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०मा०सं०, लखनऊ / R.D.S.O., Lucknow

WORKSHOP WELDING

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Welding procedure specification No. : BIPL/WORKSHOP/LC - 21 SPL/E/SURI/48M.BSG/WPSS/22

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

SECTION B-B

DETAIL OF STUD

Page – 22/1

Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
नई दिल्ली / New Delhi

- 7.2 Joint preparation : IRS B1-2001
CI.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : N.A
10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Time		Lift (mm)	Plunge (mm)
				Second	Cycles		
1 Pass	N.A	1950 -2200	N.A	1.35-1.40	85	0.125	0.250

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : N.A
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : Stud with defective welding is removed and new stud is welded
18. Inspection of weld : 1) Appearance Test
2) Ring Test
3) Bend Test
19. Any other relevant detail : N.A

संअ० अधि० / धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०मा०सं०, लखनऊ / R.D.S O., Lucknow

(WPSS)

SITE WELDING

2 X 48.0m BOW STRING STEEL GIRDER

**RDSO DRG. NO. RDSO/B - 10429 (SERIES) " CLASS - A AND 70R LOADING
SPECIAL CLASS 385 TONE"**

BHARTIA INFRA PROJECTS LTD
(WEST BENGAL)



WELDING PROCEDURE SPECIFICATION SHEET (WPSS)
(SITE WELDING)

2 X 48.0m BOW STRING STEEL GIRDER 3 LANE

RDSO DRG. NO. RDSO/B - 10429 (SERIES) " CLASS – A AND 70R LOADING AND SPECIAL CLASS
LOADING OF 385 TONE "



BHARTIA INFRA PROJECTS LTD
(WEST BENGAL)

NAME OF THE WORK : CONSTRUCTION OF PROPOSED ROB AND IT'S APPROACHES IN
REPLACEMENT OF EXISTING LEVEL CROSSING GATE NO. – 21 SPL/E
IN SURI AT KM. 338 OF NH-60 BETWEEN KACHUJARA – SURI
STATION.

NAME OF AGENCY : S.S. CIVIL CONSTRUCTION PVT. LTD, 1/4, NRITYA GOPAL
CHATTERJEE LANE, KOLKATA - 700037

CLIENT : SUPERINTENDING ENGINEER, NATIONAL HIGHWAY CIRCLE NO.
II, PW (ROADS) DIRECTORATE, GOVT. OF WEST BENGAL, SARAK
BHAWAN, LAMBODARPUR, SURI, BIRBHUM

LOA MEMO NO. : 67/W-250 DATED – 10.02.2021

RDSO. DRG. NO. : RDSO/B - 10429 (SERIES) BOW STRING STEEL GIRDER

NAME OF FABRICATOR : BHARTIA INFRA PROJECT LIMITED
JL-32, MOUZA BARUNDA, BAGNAN HOWRAH,
WEST BENGAL - 711303

PLACE OF INSPECTION : PROJECT SITE AT LEVEL CROSSING GATE NO. – 21 SPL/E IN SURI
AT KM 338 OF NH – 60 BETWEEN KACHUJORA – SURI SATION

INDEX
(SITE WELDING)

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 Dated – 10.02.2021

Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Sl. No.	Component	Joint description	Weld Size/ Process	RDSO Drg. No.	WPSS No.	Page Mark
01	All Component	Tack Weld All Fillet Joint	5 mm Fillet (FCAW)	RDSO/B – 10429 (Series)	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/01	1/1 – 1/2
02	Web Splice Pl. Bottom Long Beam	Web Splice Pl. (32mm) To Web Pl. (25mm)	22 mm Fillet (FCAW)	RDSO/B – 10429/5	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/02	2/1 – 2/2
03	Top/Bottom Splice Pl. Bottom Long Beam	Top/Bott. Splice Pl. (32mm/32mm) To Top/Bott. Flg. Pl. (25mm/25mm)	22 mm Fillet (FCAW)	RDSO/B – 10429/5	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/03	3/1 – 3/2
04	Rib Pl. Bottom Long Beam & Bottom Cross Beam	Rib Pl. (25mm) To Web Pl. (25mm) BLB / Bottom Pl. (28mm/36mm) BCB	20 mm Fillet (FCAW)	RDSO/B – 10429/5	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/04	4/1 – 4/2
05	Web Splice Pl. Bottom Cross Beam - BCB 1,2	Web Splice Pl. (16mm) To Web Pl. (16mm)	14 mm Fillet (FCAW)	RDSO/B – 10429/6	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/05	5/1 – 5/2
06	Top Splice Pl. Bottom Cross Beam - BCB 1,2	Top Splice Pl. (32mm) To Top Flg. Pl. (25mm)	18 mm Fillet (FCAW)	RDSO/B – 10429/6	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/06	6/1 – 6/2
07	Bottom Splice Pl. Bottom Cross Beam BCB - 1,2	Bottom Splice Pl. (45mm) To Bott. Flg. Pl. (28mm)	24 mm Fillet (FCAW)	RDSO/B – 10429/6	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/07	7/1 – 7/2
08	Web Splice Pl. Bottom Cross Beam - BCB 3	Web Splice Pl. (25mm) To Web Pl. (25mm)	20 mm Fillet (FCAW)	RDSO/B – 10429/6	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/08	8/1 – 8/2
09	Top/Bottom Splice Pl. Bottom Cross Beam (BCB - 3)	Top/Bott. Splice Pl. (45mm) to Top/Bott. Pl. (36mm/36mm)	28 mm Fillet (FCAW)	RDSO/B – 10429/6	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/09	9/1 – 9/2

Sl. No.	Component	Joint description	Weld Size/ Process	RDSO Drg. No.	WPSS No.	Page Mark
10	Angle Cleat Bottom Cross Beam - BCB 1,2,3 & Bottom Long Beam	Angle Cleat (Ls 150x150x18) To Web Pl. (BCB/BLB) (16mm/25mm/25mm)	14 mm Fillet (FCAW)	RDSO/B – 10429/6	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/10	10/1 – 10/2
11	Criss Cross Frame Bottom Cross Beam	Criss Cross Frame (ISMC 150) To Stiff. Pl. (12mm)	6 mm Fillet (FCAW)	RDSO/B – 10429/6	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/11	11/1 – 11/2
12	Hanger Flange Pl.	Hanger Flg. Pl. (32mm) To Web Pl. (25mm) BLB	22 mm Fillet (FCAW)	RDSO/B – 10429/9	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/12	12/1 – 12/2
13	Rib Pl. Hanger & Bottom Long Beam	Rib Pl. (25mm) To Hanger Web Pl. (25mm) / Top Flg. Pl. (25mm) BLB	18 mm Fillet (FCAW)	RDSO/B – 10429/9	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/13	13/1 – 13/2
14	Hanger Flange Pl.	Hanger Flg. Pl. (32mm) To Web Pl. (32mm) Top Arch	24 mm Fillet (FCAW)	RDSO/B – 10429/9	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/14	14/1 – 14/2
15	Rib Pl. Hanger & Top Arch	Rib Pl. (25mm) To Hanger Web Pl. (25mm) / Bottom Flg. Pl. (32mm) Top Arch	20 mm Fillet (FCAW)	RDSO/B – 10429/9	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/15	15/1 – 15/2
16	Web Splice Pl. Top Arch	Web Splice Pl. (40mm) To Web Pl. (32mm)	28 mm Fillet (FCAW)	RDSO/B – 10429/2	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/16	16/1 – 16/2
17	Top/Bottom Splice Pl. Top Arch	Top/Bott. Splice Pl. (40mm/40mm) to Top/Bott. Pl. (32mm/32mm)	28 mm Fillet (FCAW)	RDSO/B – 10429/2	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/17	17/1 – 17/2
18	Web Splice Pl. Top Tie Beam	Web Splice Pl. (25mm) To Web Pl. (20mm)	18 mm Fillet (FCAW)	RDSO/B – 10429/3	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/18	18/1 – 18/2
19	Top/Bottom Splice Pl. Top Tie Beam	Top/Bott. Splice Pl. (25mm/25mm) To Top/Bott. Pl. (20mm/20mm)	18 mm Fillet (FCAW)	RDSO/B – 10429/3	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/19	19/1 – 19/2
20	Top Tie Beam Connection at Hanger Flange Pl.	Web Pl./Top/Bott. Flg. Pl. (20mm/20mm/20mm) TTB To Flg. Pl. (32mm) HR	18 mm Fillet (FCAW)	RDSO/B – 10429/3	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/20	20/1 – 20/2

Sl. No.	Component	Joint description	Weld Size/ Process	RDSO Drg. No.	WPSS No.	Page Mark
21	Top Diagonal Tie Beam Connection at Hanger Flange Pl. & Top Arch	Web Pl./Top/Bott. Flg. Pl. (28mm/28mm/28 mm) TDTB To Flg. Pl. (32mm) HR/ Web Pl. (32mm) TA	18 mm Fillet (FCAW)	RDSO/B – 10429/3	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/21	21/1 – 21/2
22	Top Diagonal Tie Beam Connection at Top Tie Beam	Web Pl./Top/Bott. Flg. Pl. (28mm/28mm/28 mm) TDTB To Web Pl. (20mm) TTB	18 mm Fillet (FCAW)	RDSO/B – 10429/3	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/22	22/1 – 22/2
23	Rib Pl. Hanger & Top Tie Beam	Rib Pl. (25mm) To Hanger Flg. Pl. (32mm)/Top/Bott. Flg. Pl. TTB (20mm/20mm)	18 mm Fillet (FCAW)	RDSO/B – 10429/3	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/23	23/1 – 23/2
24	Rib Pl. Hanger, Top Arch & Top Diagonal Tie Beam	Rib Pl. (25mm) To HR Flg. Pl. (32mm) /TA Web Pl. (32mm) /Top/Bott. Flg. Pl. (28mm/28mm) TDTB	22 mm Fillet (FCAW)	RDSO/B – 10429/3	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/24	24/1 – 24/2
25	Web Cover Pl. LO Joint	Web Cover Pl. (36mm) To Web Pl. (25mm) BLB/Web Pl.(32mm) TA	22 mm Fillet (FCAW)	RDSO/B – 10429/4	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/25	25/1 – 25/2
26	Top Arch Connection LO Joint	Top/Bott. Flg. Pl. (32mm/32mm) TA To Top Flg. Pl. BLB (25mm)	22 mm Fillet (FCAW)	RDSO/B – 10429/4	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/26	26/1 – 26/2
27	Rib Pl. Bottom Long Beam & Top Arch LO Joint (Bott.)	Rib Pl. (25mm) To Top Flg. Pl. (25mm) BLB/Bott. Flg. Pl. (32mm) TA	22 mm Fillet (FCAW)	RDSO/B – 10429/4	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/27	27/1 – 27/2
28	Cover Pl. of Rib Pl. (Bottom) LO Joint	Cover Pl. (6mm) To Rib Pl. (25mm)	6 mm Fillet (FCAW)	RDSO/B – 10429/4	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/28	28/1 – 28/2
29	Rib Pl. Bottom Long Beam & Top Arch LO Joint (Top)	Rib Pl. (25mm) To Top Flg. Pl. (25mm) BLB/Top Flg. Pl. (32mm) TA	22 mm Fillet (FCAW)	RDSO/B – 10429/4	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/29	29/1 – 29/2
30	Cover Pl. of Rib Pl. (Top) LO Joint	Cover Pl. (6mm) To Rib Pl. (25mm)	6 mm Fillet (FCAW)	RDSO/B – 10429/4	SSG/SITE/LC-21 SPL/E/SURI/48M BSG/WPSS/30	30/1 – 30/2

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/01

1. Drawing No. : Drg. No. RDSO/B – 10429 (Series)
2. Weld joint description : 5 mm Tack Weld on all fillet Joints
3. Base Metal : IS 2062-2011, Gr. E 350 B0 for Plate section and E 250 B0 for Rolled Section
4. Welding Process : F.C.A.W
5. Welding Position : Horizontal
6. Welding Consumable :
 - 6.1 Electrode/Wire : Class : I of IRS M:46 - 2020
Type : Copper coated mild steel wire
Drying method : N.A
 - 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
 - 6.3 Shielding Gas : N.A
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.
 - 7.1 Joint design details : Length of tack Weld – 50 mm.
(Sketch showing arrangements of parts, weld groove details, Weld passes & their sequence etc.) gap between two Tack welds – 300 mm

सं०अ० अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways



- 7.2 Joint preparation : As per IS 4353 – 1995, Cl.7, IS: 10178 Cl. 9, IRS B-2001 Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr/min)
1 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : N.A
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By re-Welding after complete removal of defective weld
18. Inspection of weld : Visual
19. Any other relevant detail : None


 स०अ० अधि०/धातु एवं रसा०
 Asstt. Research Officer/M&C
 रेल मंत्रालय / Ministry of Railways
 अ०अ०मा०स०, लखनऊ / R.D.S O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

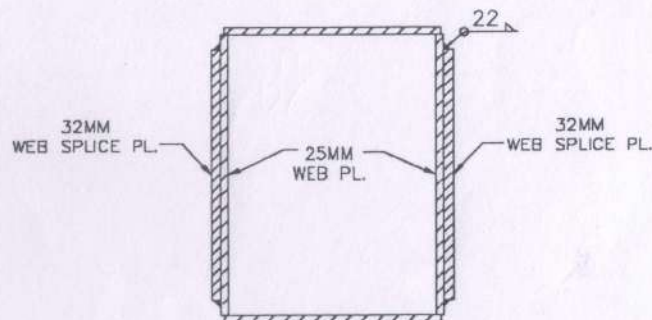
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/02

1. Drawing No. : **Drg. No. RDSO/B – 10429/5 (Details of Splice-Elevation, Sec. - J - J)**
Web Splice Pl. of Bottom Long Beam (Box Type)
Web Splice Pl. To Web Pl. of Bottom Long Beam
32mmTh.Pl. To 25mm Th. Pl.
2. Weld joint description : 22mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION J-J
(SITE WELDING)

संशोधन अधिकारी/घातु एवं रसायन
Asstt. Research Officer/M&C
Ministry of Railways

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
14 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL.32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M.28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

Br
संअ० अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०ना०स०, लखनऊ / R.D.S O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

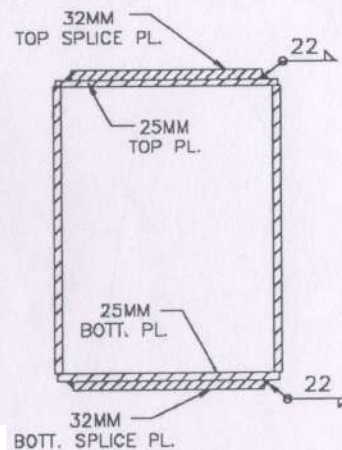
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/03

1. Drawing No. : **Drg. No. RDSO/B – 10429/5 (View - G - G)**
Top/Bottom Splice Pl. of Bottom Long Beam (Box Type)
Top/Bott. Splice Pl. To Top/Bott. Pl. of Bottom Long Beam
32mmTh.Pl. To 25mm/25mm Th. Pl.
2. Weld joint description : 22mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



सं०३० अधी० / धातु एवं रसा०
Asstt. Research Officer/M&C
रेल नंत्रालय / Ministry of Railways
लखनऊ / R.D.S.O., Lucknow

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
14 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL.32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

सं० अधि०/धातु एवं रसा०
Assit. Research Officer/M&C
रेल्व मंत्रालय / Ministry of Railways
नई दिल्ली, भारत / New Delhi, India

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

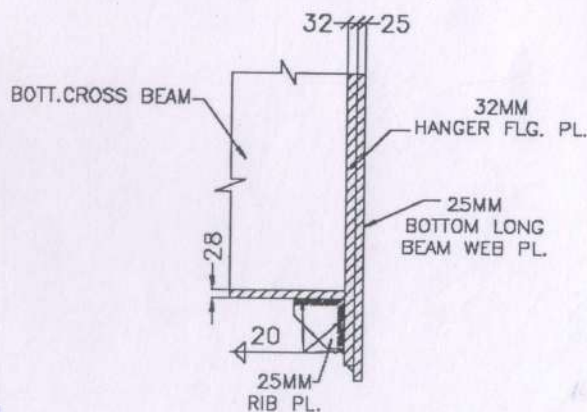
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/04

1. Drawing No. : **Drg. No. RDSO/B – 10429/5 (Detail - 5)**
Rib Pl. of Bottom Long Beam & Bottom Cross Beam
Rib Pl. To Web Pl. of Bottom Long Beam/Bott. Pl. of Bott. Cross Beam
25mmTh.Pl. To 25mm/28mm/36mm Th. Pl.
2. Weld joint description : 20mm Fillet weld (Both Side All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc, which may affect weld quality.

- 7.1 Joint design details
(Sketch showing arrangements of parts, weld groove details, Weld passes & their sequence etc.)



DETAIL - 5
(SITE WELDING)

संजो अधि/घातु एवं रसां
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/R.D.S.O., Lucknow

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse

9. Welder Qualification : As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique :

10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
12 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

10.2 Welding sequence and technique : N.A

11. Provision of run – on/ Run - off tabs : N.A

12. Cleaning of weld bead : N.A

Before laying of next weld bead

13. Root preparation before : N.A

Welding other side of groove weld

14. Preheating and interpass temperature : 110°C - 150°C ~~before~~ welding

15. Peening : N.A

16. Post weld treatment : N.A

17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL.32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M.28/2020 after conducting D.P test.

18. Inspection of weld : Visual and D.P. test.

19. Any other relevant detail : N.A

सं० अ० अधि० / धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ० अ० मा० सं०, लखनऊ / R.D.S O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

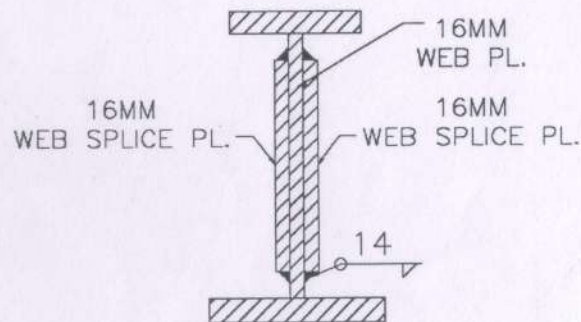
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/05

1. Drawing No. : **Drg. No. RDSO/B – 10429/6 (Detail - SP1 & SP2, SEC. 3 - 3 & 6 - 6)**
Web Splice Pl. of Bottom Cross Beam MKD - BCB - 1 & BCB - 2
Web Splice Pl. To Web Pl. of Bottom Cross Beam
16mmTh.Pl. To 16mm Th. Pl.
2. Weld joint description : 14mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION 3-3 & 6-6

(SITE WELDING)

संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
नया दिल्ली / New Delhi

7.2 Joint preparation

: As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
5 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M.28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A


संजय अग्रवाल / धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अंजनामंडल, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

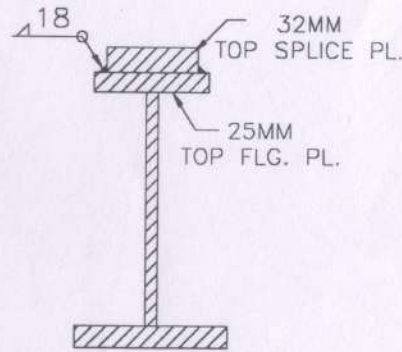
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/06

1. Drawing No. : **Drg. No. RDSO/B – 10429/6 (Detail - SP1 & SP2, View 1 - 1 & 4 - 4)**
Top Splice Pl. of Bottom Cross Beam MKD - BCB - 1 & BCB - 2
Top Splice Pl. To Top Pl. of Bottom Cross Beam
32mmTh.Pl. To 25mm Th. Pl.
2. Weld joint description : 18mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



संशोधन अधिकारी/धातु एवं रसायन
Research Officer/M&C
Ministry of Railways
S.O., Lucknow

SECTION 3-3 & 6-6

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
9 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
असंशोधन, लखनऊ/R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

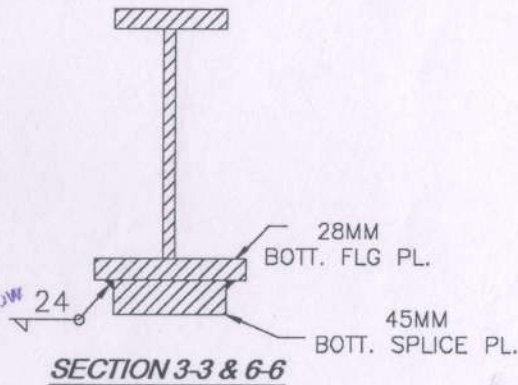
Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/07

1. Drawing No. : Drg. No. RDSO/B – 10429/6 (Detail - SP1 & SP2, View 2 - 2 & 5 - 5)
Bottom Splice Pl. of Bottom Cross Beam MKD - BCB - 1 & BCB - 2
Bottom Splice Pl. To Bottom Pl. of Bottom Cross Beam
45mmTh.Pl. To 28mm Th. Pl.
2. Weld joint description : 24mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : F.C.A.W
5. Welding Position : Horizontal
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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

संशोधन अधिकारी/घातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
लखनऊ / R.D.S.O., Lucknow



- 7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001
8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
- 10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
15 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
- Before laying of next weld bead
13. Root preparation before : N.A
- Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL.32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

Dr.
संजय अग्रवाल / धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
असिस्टेंट रिसर्च ऑफिसर, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

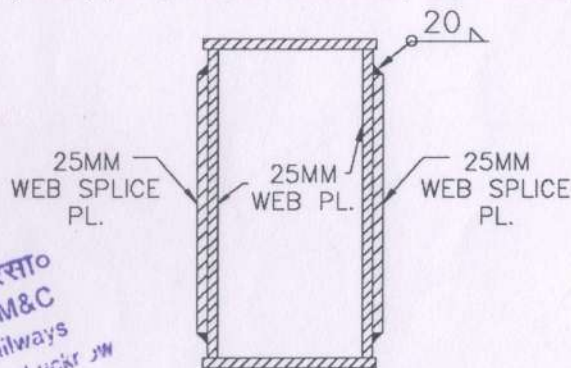
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/08

1. Drawing No. : **Drg. No. RDSO/B – 10429/6 (Detail - SP3, Section - 9 - 9)**
Web Splice Pl. of Bottom Cross Beam MKD - BCB - 3
Web Splice Pl. To Web Pl. of Bottom Cross Beam
25mmTh.Pl. To 25mm Th. Pl.
2. Weld joint description : 20mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION E-E & 9-9
(SITE WELDING)

रॉड अडिओ / धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
लुकरा, लखनऊ / R.D.S.O., Lucknow

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
10 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C ~~before welding~~
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL.32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A


संजय अधि/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
अवध विभाग, लखनऊ/R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

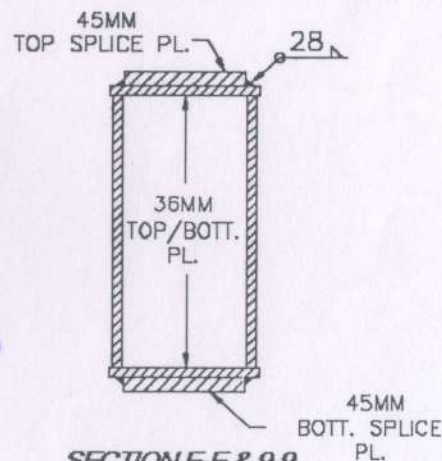
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/09

1. Drawing No. : **Drg. No. RDSO/B – 10429/6 (Detail - SP3, View - 7 - 7 & 8 - 8)**
Top/Bottom Splice Pl. of Bottom Cross Beam MKD - BCB - 3
Top/Bott. Splice Pl. To Top/Bott. Pl. of Bottom Cross Beam
45mmTh.Pl. To 36mm Th. Pl.
2. Weld joint description : 28mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



सं० अ० अधि० / धातु एवं रसा०
Asstt. Research Officer/M&C
सं० अ० अधि० / धातु एवं रसा०
R.D.S.O., Lucknow

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
21 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL.32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

संअ० अधि० / धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०मा०सं०, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

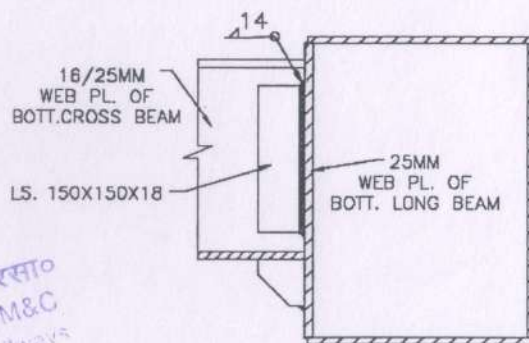
Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.
LOA Memo No: 67/W-250 **Dated –** 10.02.2021
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/10

1. Drawing No. : **Drg. No. RDSO/B – 10429/6 (Section - F - F, G - G, H - H)**
Angle Cleat of Bottom Cross Beam MKD - BCB - 1,2,3
Angle Cleat To Web Pl. of Bott. Cross Beam/Web of Bott. Long Beam
Ls. 150X150X18 To 16mm/25mm/25mm Th. Pl.
2. Weld joint description : 14mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 for Plate Section & E 250 B0 for Rolled Section fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION - F-F, G-G, H-H
(SITE WELDING)

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
5 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

Br
संजं अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०मा०स०, लखनऊ / R.D.S O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

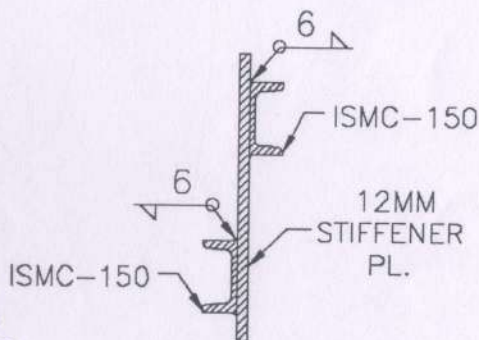
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/11

1. Drawing No. : **Drg. No. RDSO/B – 10429/6 (Section - B - B & E - E)**
Criss - Cross Frame of Bottom Cross Beam MKD - BCB - 1,2,3
ISM - 150 To Stiffener Pl. of Bottom Cross Beam
ISM - 150 To 12mm Th. Pl.
2. Weld joint description : 6mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



संज्ञा अधि० / धातु एवं रसा०
Asstt. Research Officer/M&C
मंत्रालय / Ministry of Railways
लुकर / R.D.S.O., Lucknow

SECTION B - B & E - E

(SITE WELDING)

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld
as per CL. 32.2 of 9595-96, using B2 Class of electrodes
of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

Dr.
संजय अधि० / धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अध्यक्ष, लखनऊ / R.D.S.O., Luckn

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/12

1. Drawing No. : Drg. No. RDSO/B – 10429/9 (Joint Details-Elevation - L1,L2,L3,L4 & Section - N - N)

Hanger Flange Pl. To Bottom Long Beam Web Pl.

32 mm Th. To 25 mm Th.

2. Weld joint description : 22mm Fillet weld (All around)

3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing

4. Welding Process : F.C.A.W

5. Welding Position : Vertical - Overhead

6. Welding Consumable :

6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020

Type : Flux Cored MIG Welding filler wire with shield gas

Drying method : N.A

6.2 Flux : Class : N.A

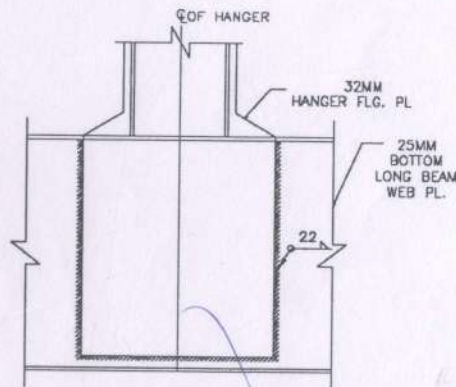
Type : N.A

Drying method : N.A

6.3 Shielding Gas : CO₂

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

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



JOINT DETAILS ELEVATION (L1,L2,L3,L4)
(SITE WELDING)

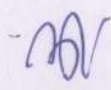
संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेलवे मंत्रालय / Ministry of Railways
लखनऊ, उत्तर प्रदेश / R.D.S.O., Lucknow

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
14 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL. 32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A


संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
आर.डी.ए.ओ., रायबरेली/R.D.S.O. Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

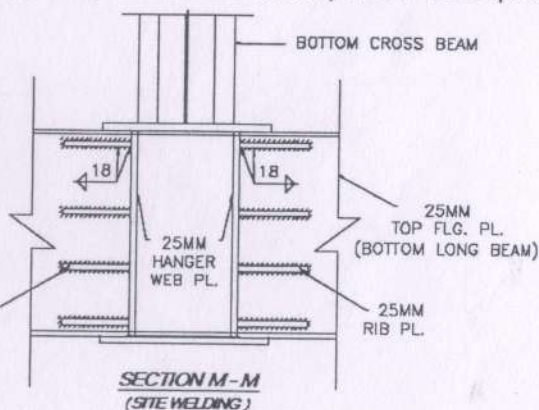
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/13

1. Drawing No. : Drg. No. RDSO/B – 10429/9 (Joint Details-Elevation - L1,L2,L3,L4 & Section - N - N, M - M)
Rib Pl. for Hanger & Bottom Long Beam
Rib Pl. To Hanger Web Pl/Bottom Long Beam Top Flg. Pl.
25 mm Th. To 25 mm/25mm Th.
2. Weld joint description : 18mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : F.C.A.W
5. Welding Position : Horizontal - Vertical
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/R.D.S.O., Lucknow

INFRA

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse

9. Welder Qualification : As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique :

10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
9 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

10.2 Welding sequence and technique : N.A

11. Provision of run – on/ Run - off tabs : N.A

12. Cleaning of weld bead : N.A

Before laying of next weld bead

13. Root preparation before : N.A

Welding other side of groove weld

14. Preheating and interpass temperature : 110°C - 150°C before welding

15. Peening : N.A

16. Post weld treatment : N.A

17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.

18. Inspection of weld : Visual and D.P. test.

19. Any other relevant detail : N.A


रजनीश अग्रवाल / धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
इंजीनियरिंग, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/14

1. Drawing No. : Drg. No. RDSO/B – 10429/9 (Elevation of Joint - U1,U2,U3,U4 & Section - H - H)

Hanger Flange Pl. To Top Arch Web Pl.

32 mm Th. To 32 mm Th.

2. Weld joint description : 24mm Fillet weld (All around)

3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing

4. Welding Process : F.C.A.W

5. Welding Position : Horizontal - Vertical

6. Welding Consumable :

6.1 Electrode/Wire :

Class : I of IRS M: 46 - 2020

Type : Flux Cored MIG Welding filler wire with shield gas

Drying method : N.A

6.2 Flux :

Class : N.A

Type : N.A

Drying method : N.A

6.3 Shielding Gas :

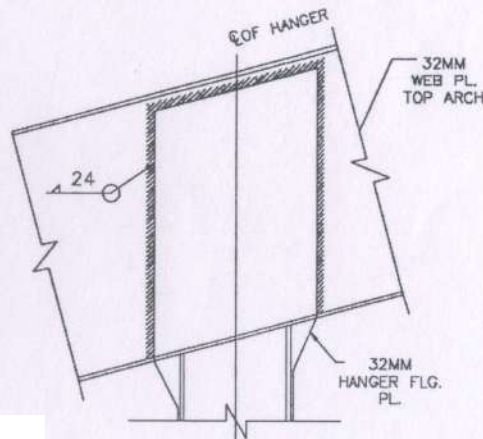
CO₂

7. Base metal preparation :

Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

7.1 Joint design details :

(Sketch showing arrangements of parts, weld groove details, Weld passes & their sequence etc.)



संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
Ministry of Railways
RDSO, Lucknow

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
15 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL.32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A


सहायक अधीक्षक/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
अं०अ०मी०एच०, लखनऊ/R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/15

1. Drawing No. : Drg. No. RDSO/B – 10429/9 (Elevation of Joint - U1,U2,U3,U4
& Section - H - H, K - K)

Rib Pl. for Hanger & Top Arch

Rib Pl. To Hanger Web Pl/Top Arch Bottom Flg. Pl.

25 mm Th. To 25 mm/32mm Th.

2. Weld joint description :

3. Base Metal :

4. Welding Process :

5. Welding Position :

6. Welding Consumable :

6.1 Electrode/Wire :

20mm Fillet weld (All around)

IS 2062-2011, Gr. E 350 B0 fully killed with normalizing

F.C.A.W

Vertical - Overhead

Class : I of IRS M: 46 - 2020

Type : Flux Cored MIG Welding filler wire with shield gas

Drying method : N.A

6.2 Flux :

Class : N.A

Type : N.A

Drying method : N.A

6.3 Shielding Gas :

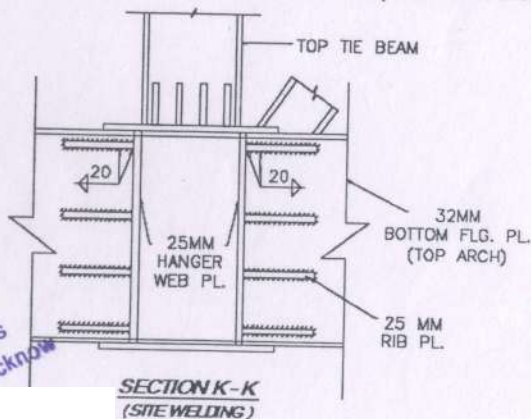
7. Base metal preparation :

CO₂

Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

7.1 Joint design details :

(Sketch showing arrangements of parts, weld groove details, Weld passes & their sequence etc.)



7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
12 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL.32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

Dr.
संजय अग्रवाल / धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अध्यक्ष, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 Dated – 10.02.2021

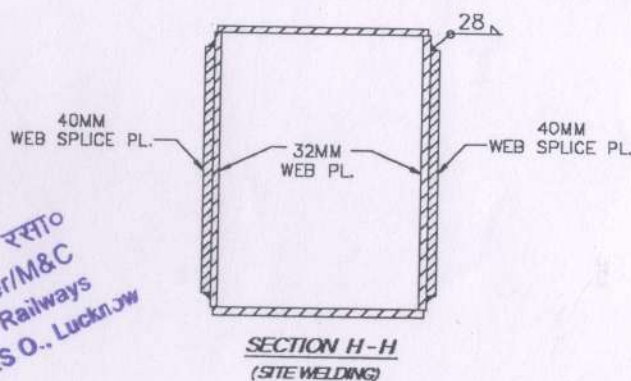
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/16

1. Drawing No. : Drg. No. RDSO/B – 10429/2 (Details of Splice - Elevation Sec. H-H)
Web Splice Pl for Top Arch Web Pl.
Web Splice Pl. To Web Pl of Top Arch
40 mm Th. To 32mm Th.
2. Weld joint description : 28mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : F.C.A.W
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



संशोधन अधिकारी / धातु एवं रसायन
Asstt. Research Officer/M&C
संशोधन विभाग / Ministry of Railways
लखनऊ / R.D.S.O., Lucknow

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
21 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL.32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

संजो अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०मो०सं०, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

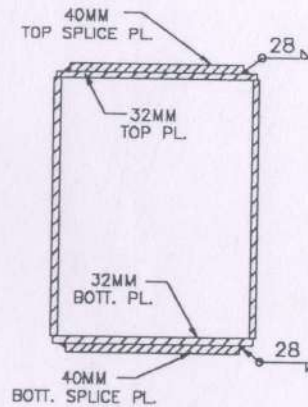
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/17

1. Drawing No. : Drg. No. RDSO/B – 10429/2 (View F-F & G-G, Sec. H-H)
Top/Bottom Splice Pl. for Top Arch Top/Bottom Flg. Pl.
Top/Bottom Splice Pl. To Top/Bottom Flg. Pl. of Top Arch
40 mm/40mm Th. To 32mm/32mm Th.
2. Weld joint description : 28mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : F.C.A.W
5. Welding Position : Horizontal - Overhead
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION H-H
VIEW-F-F & G-G

सं.अ. अधि. / धातु एवं रसा.
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
सं.अ.मंत्रालय, लखनऊ / R.D.S.O., Lucknow



7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
21 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL. 32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A


संज्ञा अधि० / धातु एवं रसा०
Asslt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०मा०सं०, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

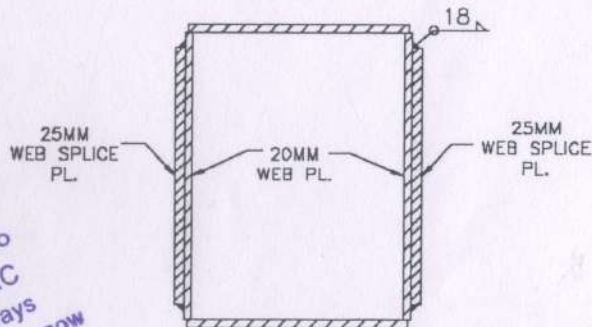
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/18

1. Drawing No. : **Drg. No. RDSO/B – 10429/3 (Details of Splice - Elevation Sec. O-O)**
Web Splice Pl for Top Tie Beam Web Pl.
Web Splice Pl. To Web Pl of Top Tie Beam
25 mm Th. To 20mm Th.
2. Weld joint description : 18mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION O-O
(SITE WELDING)

(Handwritten signature)
संशोधन अधिकारी / धातु एवं रसायन
Asstt. Research Officer/M&C
मंत्रालय / Ministry of Railways
लखनऊ / R.D.S.O., Lucknow

INFRA PROJECT

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
9 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A


संशोधन अधिकारी / धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अंशुमती, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

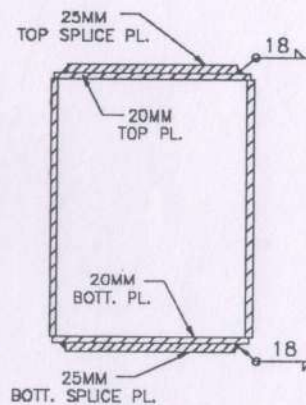
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/19

1. Drawing No. : Drg. No. RDSO/B – 10429/2 (View M-M & N-N, Sec. O-O)
Top/Bottom Splice Pl. for Top Tie Beam Top/Bottom Flg. Pl.
Top/Bottom Splice Pl. To Top/Bottom Flg. Pl. of Top Tie Beam
25 mm/25mm Th. To 20mm/20mm Th.
2. Weld joint description : 18mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : F.C.A.W
5. Welding Position : Horizontal - Overhead
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



SECTION O-O
VIEW-M-M&N-N
(SITE WELDING)

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
10 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL.32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

सं०अ० अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०मा०सं०, लखनऊ/R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

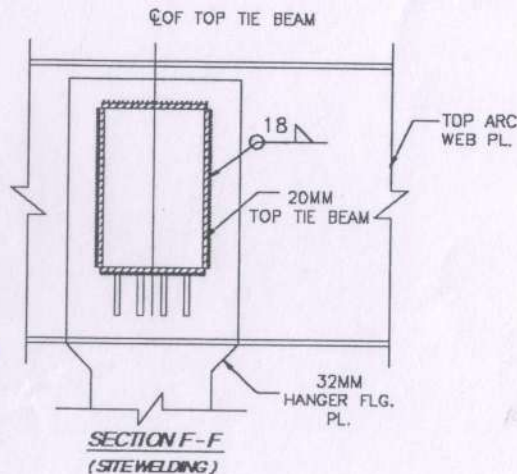
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/20

1. Drawing No. : Drg. No. RDSO/B – 10429/3 (Section - F - F)
Web Pl./Top/Bott. Flg. Pl. of Top Tie Beam To Hanger Flg. Pl.
20 mm/20mm/20mm Th. To 32mm Th.
2. Weld joint description : 18mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : F.C.A.W
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



संजो अधि / धातु एवं रसां
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अं००६८००००, लखनऊ / R.D.S.O., Lucknow

7.2 Joint preparation

: As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current

: Type DC, Polarity : Reverse

9. Welder Qualification

: As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique

10.1 Welding parameters

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
10 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

10.2 Welding sequence and technique

: N.A

11. Provision of run – on/ Run - off tabs

: N.A

12. Cleaning of weld bead

: N.A

Before laying of next weld bead

13. Root preparation before

: N.A

Welding other side of groove weld

14. Preheating and interpass temperature

: 110°C - 150°C before welding

15. Peening

: N.A

16. Post weld treatment

: N.A

17. Rectification of weld defect

: By grinding of the defective weld & rectify the weld as per
CL. 32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.

18. Inspection of weld -

: Visual and D.P. test.

19. Any other relevant detail

: N.A

संजो अधि० / घातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०मा०स०, लखनऊ / R.D.S.O., Luckn.jw

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

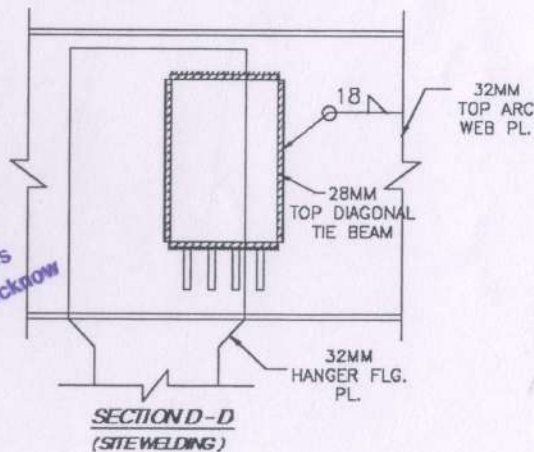
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/21

1. Drawing No. : **Drg. No. RDSO/B – 10429/3 (Section - D - D)**
Web Pl./Top/Bott. Flg. Pl. of Top Diagonal Tie Beam To Hanger
Flg. Pl./Top Arch Web Pl.
28 mm/28mm/28mm Th. To 32mm/32mm Th.
2. Weld joint description : 18mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



संशोधन अधिकारी / धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
असंशोधन, लखनऊ / R.D.S.O., Lucknow



7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
10 pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

Br
र०अ० अधि० / धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ०अ०म०स०, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/22

1. Drawing No. : Drg. No. RDSO/B – 10429/3 (Detail - 2 , Section - J - J)
Web Pl./Top/Bott. Flg. Pl. of Top Diagonal Tie Beam To
Top Tie Beam Web Pl.

2. Weld joint description : 28 mm/28mm/28mm Th. To 20mm Th.
3. Base Metal : 18mm Fillet weld (All around)

4. Welding Process : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing

5. Welding Position : **F.C.A.W**
Horizontal - Vertical - Overhead

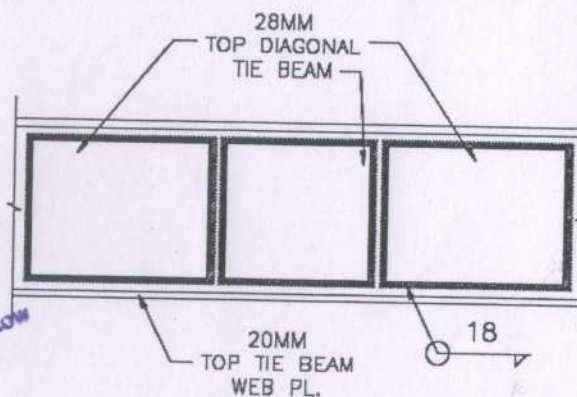
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A

6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A

6.3 Shielding Gas : CO₂

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

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



संशोधन अधिकारी / धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
कोलकाता, लखनऊ / R.D.S.O., Lucknow

SECTION - J - J
(SITE WELDING)

7.2 Joint preparation

: As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current

: Type DC, Polarity : Reverse

9. Welder Qualification

: As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique

:

10.1 Welding parameters

:

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
9 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

10.2 Welding sequence and technique

: N.A

11. Provision of run – on/ Run - off tabs

: N.A

12. Cleaning of weld bead

: N.A

Before laying of next weld bead

13. Root preparation before

: N.A

Welding other side of groove weld

14. Preheating and interpass temperature

: 110°C - 150°C before welding

15. Peening

: N.A

16. Post weld treatment

: N.A

17. Rectification of weld defect

: By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.

18. Inspection of weld

: Visual and D.P. test.

19. Any other relevant detail

: N.A

31
संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
आंध्रप्रदेश, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A or and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated – 10.02.2021**

Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

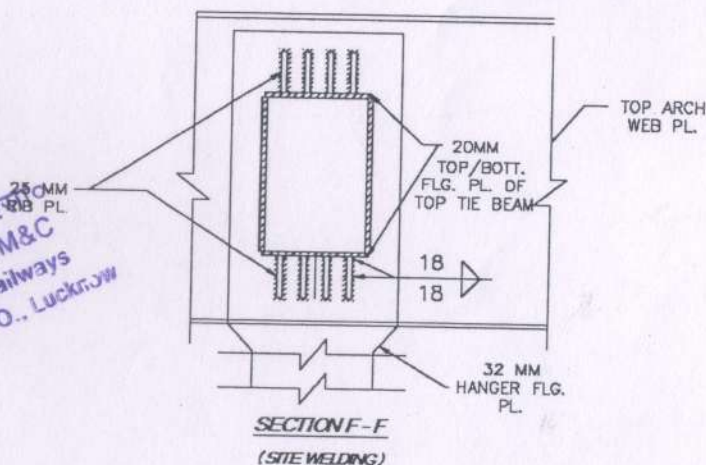
Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/23

1. Drawing No. : Drg. No. RDSO/B – 10429/3 (Section - D - D, F - F)
Rib Pl. To Top/ Bott. Flg. Pl. of Top Tie Beam/Hanger Flg. Pl.
25 mm To 20mm/20mm/32mm Th.
2. Weld joint description : 18mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : F.C.A.W
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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

संशोधन अधिकारी / धातु एवं रसायन
Asstt. Research Officer/M&C
रेलवे मंत्रालय / Ministry of Railways
आर.डी.एस.ओ., लखनऊ / R.D.S.O., Lucknow



7.2 Joint preparation

: As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current

: Type DC, Polarity : Reverse

9. Welder Qualification

: As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique

10.1 Welding parameters

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
10 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

10.2 Welding sequence and technique

11. Provision of run – on/ Run - off tabs : N.A

12. Cleaning of weld bead : N.A

Before laying of next weld bead

13. Root preparation before : N.A

Welding other side of groove weld

14. Preheating and interpass temperature : 110°C - 150°C before welding

15. Peening : N.A

16. Post weld treatment : N.A

17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.

18. Inspection of weld : Visual and D.P. test.

19. Any other relevant detail : N.A

संशोधन अधिकारी / धातु एवं रसायन
Asslt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
असिस्टेंट रिसर्च ऑफिसर / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

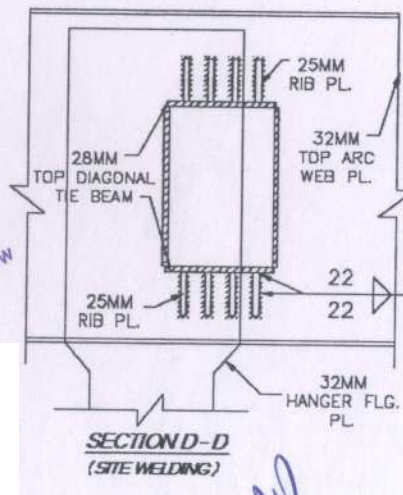
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/24

1. Drawing No. : Drg. No. RDSO/B – 10429/3 (Section - D - D)
Rib Pl. To Top/ Bott. Flg. Pl. of Top Dia. Tie Beam/Hanger
Flg. Pl./Top Arch Web Pl.
25 mm To 28mm/28mm/32mm/32mm Th.
2. Weld joint description : 22mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : F.C.A.W
5. Welding Position : Vertical - Overhead
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



7.2 Joint preparation

: As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current

: Type DC, Polarity : Reverse

9. Welder Qualification

: As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique

:

10.1 Welding parameters

:

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
17 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

10.2 Welding sequence and technique

: N.A

11. Provision of run – on/ Run - off tabs

: N.A

12. Cleaning of weld bead

: N.A

Before laying of next weld bead

13. Root preparation before

: N.A

Welding other side of groove weld

14. Preheating and interpass temperature

: 110°C - 150°C before welding

15. Peening

: N.A

16. Post weld treatment

: N.A

17. Rectification of weld defect

: By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.

18. Inspection of weld

: Visual and D.P. test.

19. Any other relevant detail

: N.A

31
संशोधन अधिकारी / धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
असंशोधन अधिकारी, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

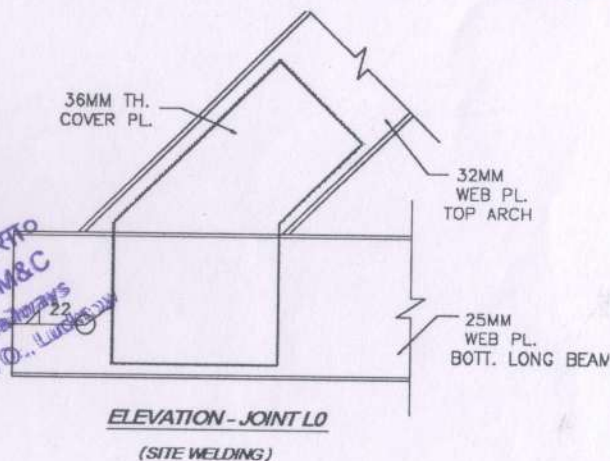
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/25

1. Drawing No. : **Drg. No. RDSO/B – 10429/4 (Elevation - Joint L0, Sec. J - J)**
Web Cover Pl. To Web Pl. of Bott. Long Beam/Web Pl. of Top Arch
36 mm To 25mm/32mm Th.
2. Weld joint description : 22mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

- 7.1 Joint design details
(Sketch showing arrangements of parts, weld groove details, Weld passes & their sequence etc.)



7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
14 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL. 32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

39/-
सहायक अभियंता / धातु एवं रसायन
Asstt. Research Officer/M&C
रेलवे प्रयोगशाला / Ministry of Railways
अहमदाबाद, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

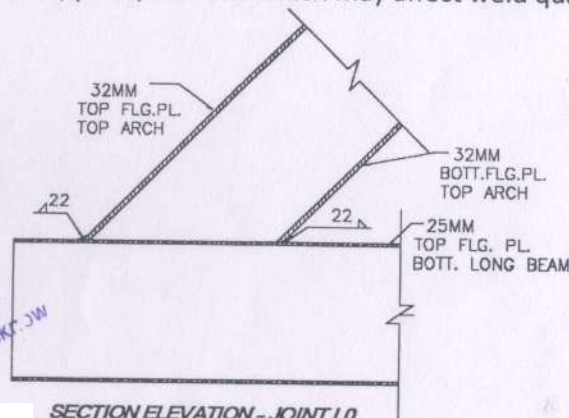
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/26

1. Drawing No. : Drg. No. RDSO/B – 10429/4 (Sectional Elevation - Joint L0)
Top/Bottom Flg. Pl. of Top Arch (End)
Top/Bottom Flg. Pl. To Top Flg. Pl. of Bottom Long Beam
32 mm/32 Th. To 25mm Th.
2. Weld joint description : 22mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : F.C.A.W
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



7.2 Joint preparation

: As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current

: Type DC, Polarity : Reverse

9. Welder Qualification

: As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique

10.1 Welding parameters

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
14 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

10.2 Welding sequence and technique

: N.A

11. Provision of run – on/ Run - off tabs

: N.A

12. Cleaning of weld bead

: N.A

Before laying of next weld bead

13. Root preparation before

: N.A

Welding other side of groove weld

14. Preheating and interpass temperature

: 110°C - 150°C before welding

15. Peening

: N.A

16. Post weld treatment

: N.A

17. Rectification of weld defect

: By grinding of the defective weld & rectify the weld as per CL. 32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.

18. Inspection of weld

: Visual and D.P. test.

19. Any other relevant detail

: N.A

32
संशोधन अधिकारी / धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अंशुमानास, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

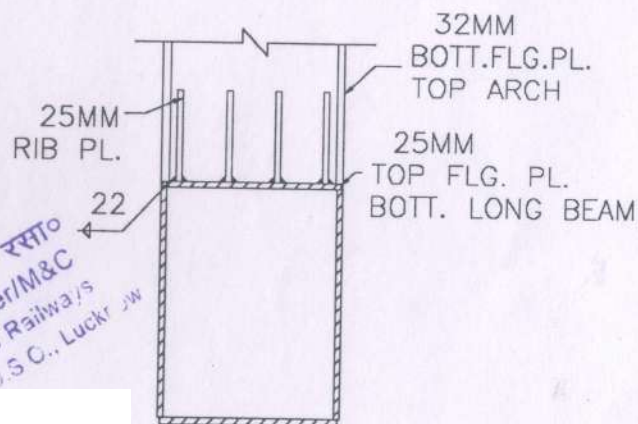
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/27

1. Drawing No. : Drg. No. RDSO/B – 10429/4 (Sectional Elevation - Joint L0, Sec. J-J)
Rib Pl. of Bott. Flg. Pl. of Top Arch/Top Flg. Pl. of Bott. Long Beam
Rib Pl. To Bott. Flg. Pl. of Top Arch/Top Flg. Pl. of Bott. Long Beam
25 mm Th. To 32mm/25mm Th.
2. Weld joint description : 22mm Fillet weld (Both side all around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : F.C.A.W
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

- 7.1 Joint design details
(Sketch showing arrangements of parts, weld groove details, Weld passes & their sequence etc.)



7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
14 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL. 32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

87-
रिजर्च ऑफिस / धातु एवं रसायन
Asstt. Research Officer/M&C
रेलवे विभाग / Ministry of Railways
अखिल भारतीय, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

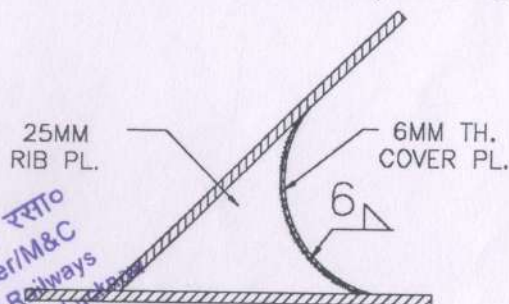
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/28

1. Drawing No. : **Drg. No. RDSO/B – 10429/4 (DETAIL - 2)**
Cover Pl. of Rib Pl. (Bottom)
Cover Pl. To Rib Pl.
6 mm Th. To 25mm Th.
6mm Fillet weld (All around)
IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
F.C.A.W
Horizontal - Vertical
2. Weld joint description :
3. Base Metal :
4. Welding Process :
5. Welding Position - :
6. Welding Consumable :
6.1 Electrode/Wire :
Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux :
Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas :
CO₂
7. Base metal preparation :
Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



रजिस्टर्ड ऑफिसर / धातु एवं रसायन
Asstt. Research Officer/M&C
मंत्रालय / Ministry of Railways
लखनऊ / R.D.S.O., Lucknow

DETAIL - 2
(SITE WELDING)

7.2 Joint preparation

: As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current

: Type DC, Polarity : Reverse

9. Welder Qualification

: As per IS 7310 (Part 1) - 1974

10. Welding parameters and technique

10.1 Welding parameters

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

10.2 Welding sequence and technique

: N.A

11. Provision of run – on/ Run - off tabs

: N.A

12. Cleaning of weld bead

: N.A

Before laying of next weld bead

13. Root preparation before

: N.A

Welding other side of groove weld

14. Preheating and interpass temperature

: 110°C - 150°C before welding

15. Peening

: N.A

16. Post weld treatment

: N.A

17. Rectification of weld defect

: By grinding of the defective weld & rectify the weld as per CL. 32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.

18. Inspection of weld

: Visual and D.P. test.

19. Any other relevant detail

: N.A

37-
संजो अधि / धातु एवं रसां
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अंजोमांसो, लखनऊ / R.D.S.C., Luckn. JW

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 **Dated –** 10.02.2021

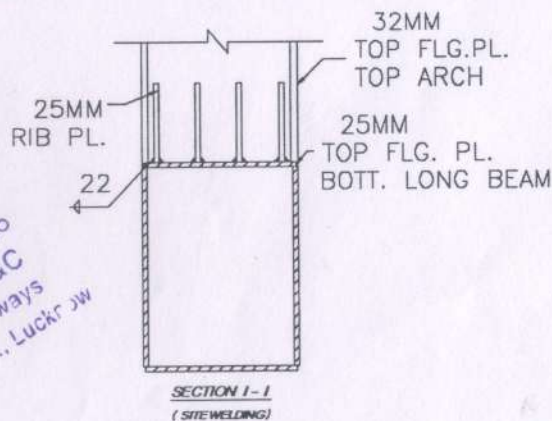
Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/29

1. Drawing No. : Drg. No. RDSO/B – 10429/4 (Sectional Elevation - Joint L0, Sec. I-I)
Rib Pl. of Top Flg. Pl. of Top Arch/Top Flg. Pl. of Bott. Long Beam
Rib Pl. To Top Flg. Pl. of Top Arch/Top Flg. Pl. of Bott. Long Beam
25 mm Th. To 32mm/25mm Th.
2. Weld joint description : 22mm Fillet weld (Both side all around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : F.C.A.W
5. Welding Position : Horizontal - Vertical
6. Welding Consumable :
6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



संशोधन अधिकारी / धातु एवं रसायन
Asstt. Research Officer/M&C
रेलवे मंत्रालय / Ministry of Railways
लखनऊ, लखनऊ / R.D.S.O., Lucknow

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Root	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18
14 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per
CL.32.2 of 9595-96, using B2 Class of electrodes of specify
IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

असि. / धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अवध विभाग, लखनऊ / R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

SITE WELDING

2 X 48m CLEAR SPAN BOW STRING STEEL GIRDER 3 LANE DRG. NO. RDSO/B – 10429 (SERIES) "Class – A and 70R Loading and Special class loading of 385 Tone "

Name of Work : Construction of proposed ROB and it's approaches in replacement of exiting level crossing gate no - 21 SPL/E in Suri at Km. 338 of NH - 60 between Kachujora - Suri Station.

LOA Memo No: 67/W-250 Dated – 10.02.2021

Agency : S.S. CIVIL CONSTRUCTION PVT. LTD. 1/4 Nritya Gopal Chatterjee Lane - Kol - 700037

Name & address of fabricator : Bhartia Infra Projects Ltd
JL-32, Mouza Barunda, Bagnan, Howrah, West Bengal - 711303

Welding procedure specification No. : BIPL/SITE/LC - 21 SPL/E/SURI/48M.BSG/WPSS/30

1. Drawing No. : Drg. No. RDSO/B – 10429/4 (DETAIL - 1)
Cover Pl. of Rib Pl. (Top)
Cover Pl. To Rib Pl.
6 mm Th. To 25mm Th.
2. Weld joint description : 6mm Fillet weld (All around)
3. Base Metal : IS 2062-2011, Gr. E 350 B0 fully killed with normalizing
4. Welding Process : **F.C.A.W**
5. Welding Position : Horizontal - Vertical - Overhead
6. Welding Consumable :
- 6.1 Electrode/Wire : Class : I of IRS M: 46 - 2020
Type : Flux Cored MIG Welding filler wire with shield gas
Drying method : N.A
- 6.2 Flux : Class : N.A
Type : N.A
Drying method : N.A
- 6.3 Shielding Gas : CO₂
7. Base metal preparation : Fusion faces and adjacent surfaces are cleaned and made free from cracks, notches, mill scale, grease, paint, rust etc. which may affect weld quality.

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



3-
T. S. R. S. / धातु एवं रसायन
Asstt. Research Officer/M&C
Ministry of Railways
लखनऊ / R.D.S.O., Lucknow

7.2 Joint preparation : As per IS 10178 – 1995, Cl.9 IRS B-2001
Cl.17.3 & WBC-2001

8. Welding current : Type DC, Polarity : Reverse
9. Welder Qualification : As per IS 7310 (Part 1) - 1974
10. Welding parameters and technique :
10.1 Welding parameters :

Weld Pass	Electrode/Wire Dia.(mm)	Current (Amps)	Arc Voltage (Volt)	Wire feed speed (m/min)	Travel speed (m/min)	Electrode stick out (mm)	Gas flow (ltr./min)
1 Pass	1.2	200 - 220	24 - 26	5 - 6	N.A	15 - 20	15 - 18

- 10.2 Welding sequence and technique : N.A
11. Provision of run – on/ Run - off tabs : N.A
12. Cleaning of weld bead : N.A
Before laying of next weld bead
13. Root preparation before : N.A
Welding other side of groove weld
14. Preheating and interpass temperature : 110°C - 150°C before welding
15. Peening : N.A
16. Post weld treatment : N.A
17. Rectification of weld defect : By grinding of the defective weld & rectify the weld as per CL.32.2 of 9595-96, using B2 Class of electrodes of specify IRS M. 28/2020 after conducting D.P test.
18. Inspection of weld : Visual and D.P. test.
19. Any other relevant detail : N.A

67
रिज. ऑफिस / अनु एवं रसा
Res. Officer/M&C
रेल. विभाग / Ministry of Railways
अवकाशवादी, लखनऊ / R.D.S.O., Lucknow

