

WELDING PROCEDURE SPECIFICATION SHEET**INDEX**

S.No.	Joint Description	Drg. No.	W.P.S.S. No.	Page Mark
1).	Bottom Long Beam Top Plate (22 mm thick M.S. Plate) with Side Plate (22 mm thick M.S. Plate)	RDSO/B-10436/1 & RDSO/B-10436/5	PCC/48.00/BOW/NHAI /01	01/68-02/68
2).	Bottom Long Beam Top & Bottom Plate (22 mm thick M.S. Plate) with Side Plate (22 mm thick M.S. Plate)	RDSO/B-10436/1 & RDSO/B-10436/5	PCC/48.00/BOW/NHAI /02	03/68-04/68
3).	Hanger Box Top & Bottom Plate (32 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)	RDSO/B-10436/1 & RDSO/B-10436/9	PCC/48.00/BOW/NHAI /03	05/68-06/68
4).	Arch Beam Bottom Plate (25 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)	RDSO/B-10436/1 & RDSO/B-10436/2	PCC/48.00/BOW/NHAI /04	07/68-08/68
5).	Arch Beam Top & Bottom Plate (25 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)	RDSO/B-10436/1 & RDSO/B-10436/2	PCC/48.00/BOW/NHAI /05	09/68-10/68
6).	Int. Bottom Cross Beam {Shipping Mark:BCB1/BCB2} Web Plate (16 mm thick M.S. Plate) with Top Flange Plate (20 mm thick Plate) Bottom Flange (28 mm thick Plate)	RDSO/B-10436/1 & RDSO/B-10436/6	PCC/48.00/BOW/NHAI /06	11/68-12/68
7).	Int. Bottom Cross Beam {Shipping Mark:BCB1/BCB2} Stiffener Plate (12 mm thick M.S. Plate) with Web Plate (16 mm thick M.S. Plate)	RDSO/B-10436/1 & RDSO/B-10436/6	PCC/48.00/BOW/NHAI /07	13/68-14/68



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8).	Int. Bottom Cross Beam {Shipping Mark:BCB1/BCB2} Cross Frame Channel (ISMC-150) with Stiffener Plate (12 mm thick M.S. Plate)	RDSO/B-10436/1 & RDSO/B-10436/6	PCC/48.00/BOW/NHAI /08	15/68-16/68
9).	Int. Bottom Cross Beam {BCB1/BCB2} Top Flange Cover Plate (25 mm thick Plate), Web Cover Plate (16 mm thick Plate) & Bottom Flange Cover Plate (32 & 20 mm thick Plate) with Int. Cross Beam.	RDSO/B-10436/1 & RDSO/B-10436/6	PCC/48.00/BOW/NHAI /09	17/68-18/68
10).	End Bottom Cross Beam {Shipping Mark:BCB3} Top & Bottom Plate (32 mm thick M.S. Plate) with Side Plate (22 mm thick M.S. Plate)	RDSO/B-10436/1 & RDSO/B-10436/6	PCC/48.00/BOW/NHAI /10	19/68-20/68
11).	End Bottom Cross Beam {BCB3} Top Flange Cover Plate (40 mm thick Plate), Web Cover Plate (28 mm thick Plate) & Bottom Flange Cover Plate (40 mm thick Plate) with Int. Cross Beam.	RDSO/B-10436/1 & RDSO/B-10436/6	PCC/48.00/BOW/NHAI /11	21/68-22/68
12).	Top Tie Beam, Top & Bottom Plate (22 mm thick M.S. Plate) with Side Plates (22 mm thick M.S. Plate)	RDSO/B-10436/1 & RDSO/B-10436/3	PCC/48.00/BOW/NHAI /12	23/68-24/68
13).	Top Lateral Bracing Beam, Top & Bottom Plate (25 mm thick M.S. Plate) with Side Plates (25 mm thick M.S. Plates)	RDSO/B-10436/1 & RDSO/B-10436/3	PCC/48.00/BOW/NHAI /13	25/68-26/68
14).	Top Tie Beam Joint, Cover Plate (28 mm thick M.S. Plate) with Top & Side Plates	RDSO/B-10436/3	PCC/48.00/BOW/NHAI /14	27/68-28/68
15).	Hanger with Arch Beam, Side Plate (32 mm thick M.S. Plate) with Arch Beam Side Plate (25 mm thick M.S. Plate)	RDSO/B-10436/9	PCC/48.00/BOW/NHAI /15	29/68-30/68



Signature

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WELDING PROCEDURE SPECIFICATION SHEET

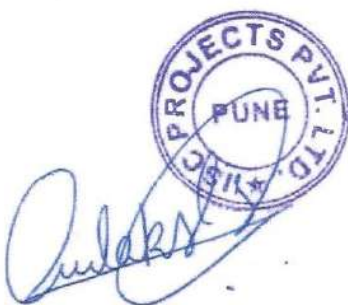
16).	Stiffener Plate (25 mm thick M.S. Plate) with Hanger (25 mm thick M.S. Plate) & Arch Beam (25 mm thick M.S. Plate)	RDSO/B-10436/9	PCC/48.00/BOW/NHAI /16	31/68-32/68
17).	Hanger with Bottom Long Beam, Side Plate (32 mm thick M.S. Plate) with Bottom Long Beam side plate (22 mm thick M.S. Plate)	RDSO/B-10436/9	PCC/48.00/BOW/NHAI /17	33/68-34/68
18).	Stiffener Plate (25 mm thick M.S. Plate) with Hanger (25 mm thick M.S. Plate) & Bottom Long Beam (22 mm thick M.S. Plate)	RDSO/B-10436/9	PCC/48.00/BOW/NHAI /18	35/68-36/68
19).	Diaphragm Plate (16 mm thick M. S. Plate) with Hanger	RDSO/B-10436/9	PCC/48.00/BOW/NHAI /19	37/68-38/68
20).	Joint at L0, Cover Plate (32 mm thick M.S. Plate) with Bottom Long Beam & Arch Beam	RDSO/B-10436/4	PCC/48.00/BOW/NHAI /20	39/68-40/68
21).	Stiffener Plate (25 mm thick M.S. Plate) with Bottom Cross Beam & Bottom Long Beam	RDSO/B-10436/6	PCC/48.00/BOW/NHAI /21	41/68-42/68
22).	Diaphragm Plate (20 mm thick M. S. Plate) with Arch Beam	RDSO/B-10436/2	PCC/48.00/BOW/NHAI /22	43/48-44/68
23).	Diaphragm Plate {Shipping Mark: DP1 & DP2} (16 mm & 20 mm thick M. S. Plate resp.) with Bottom Long Beam	RDSO/B-10436/5	PCC/48.00/BOW/NHAI /23	45/68-46/68
24).	Diaphragm Plate (10 mm thick M. S. Plate) with Top Tie Beam	RDSO/B-10436/3	PCC/48.00/BOW/NHAI /24	47/68-48/68
25).	Diaphragm Plate (10 mm thick M. S. Plate) with Top Lateral Bracing Beam	RDSO/B-10436/3	PCC/48.00/BOW/NHAI /25	49/68-50/68
26).	Bottom Cross Beam Angle Cleat (L150X150X15) with Bottom Long Beam Side Plate (22 mm thick M.S. Plate)	RDSO/B-10436/6	PCC/48.00/BOW/NHAI /26	51/68-52/68
27).	Stiffener Plate (25 mm thick M.S. Plate) with Arch Beam & Bottom Long Beam	RDSO/B-10436/4	PCC/48.00/BOW/NHAI /27	53/68-54/68



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28).	Bottom Long Beam Joint, Cover Plate (28 mm thick M.S. Plate) with Top & Side Plates	RDSO/B-10436/5	PCC/48.00/BOW/NHAI /28	55/68-56/68
29).	Arc Beam Joint, Cover Plate (32 mm thick M.S. Plate) with Top & Side Plates	RDSO/B-10436/2	PCC/48.00/BOW/NHAI /29	57/68-58/68
30).	Top Tie Beam with Arc Beam & Hanger	RDSO/B-10436/3	PCC/48.00/BOW/NHAI /30	59/68-60/68
31).	Top Lateral Bracing Beam with Top Tie Beam & Arc Beam.	RDSO/B-10436/3	PCC/48.00/BOW/NHAI /31	61/68-62/68
32).	Stiffener Plate (25 mm thick M.S. Plate) with Top Tie Beam, Top Lateral Bracing Beam & Arch Beam.	RDSO/B-10436/3	PCC/48.00/BOW/NHAI /32	63/68-64/68
33).	Stud Shear Connector on Top Flanges of Bottom Cross Beam	RDSO/B-10436/6	PCC/48.00/BOW/NHAI /33	65/68-66/68
34).	TACK Weld	All relevant drawings on the above	PCC/48.00/BOW/NHAI /34	67/68-68/68

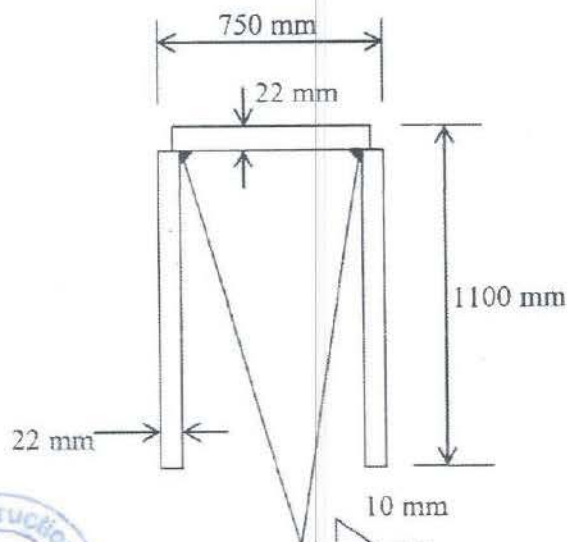



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WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/01
- 1). Drawing Series No. : RDSO/B-10436/1 & RDSO/B-10436/5.
Bottom Long Beam, Top Plate (22 mm thick M.S. Plate) with Side Plates (22 mm thick M.S. Plate).
- 2). Weld Joint Description : Fillet (10 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Horizontal
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.

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



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WELDING PROCEDURE SPECIFICATION SHEET

7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001

8). Welding Current : Type: DC, Polarity: Reverse

9). Welder qualification : As per IS: 7310 (Part-1) & 817

10). Welding parameters & techniques :

10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

10.2) Welding sequence & techniques : N.A.

11). Provision of run on/run off tabs : N.A.

12). Cleaning of weld bead before laying of next weld bead : Yes

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

14). Pre-heating & interpass temperature : 100°C - 150°C

15). Peening : N.A.

16). Post weld treatment : N.A.

17). Rectification of weld defect (If Any)

: By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.

18). Inspection of weld : Visual, D.P. Test.

19). Any other relevant detail : None

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)



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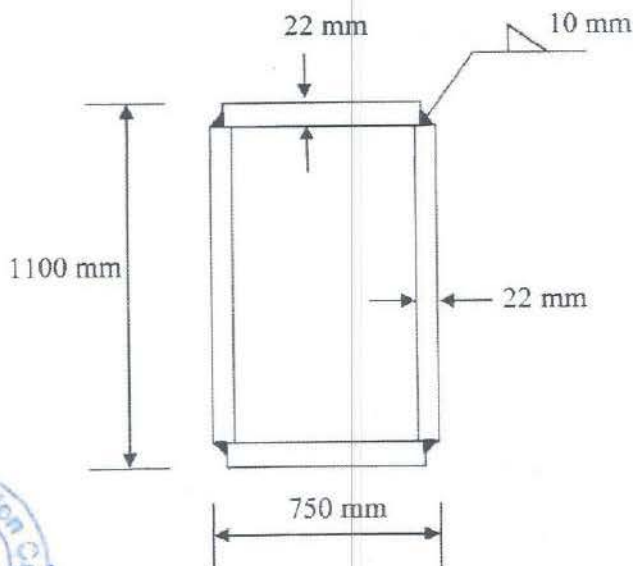


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भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/02
- 1). Drawing Series No. : RDSO/B-10436/1 & RDSO/B-10436/5.
Bottom Long Beam, Top & Bottom Plate (22 mm thick M.S. Plate) with Side Plates (22 mm thick M.S. Plate).
- 2). Weld Joint Description : Fillet (10 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : S.A.W.
- 5). Welding Position : Flat inclined at 45°
- 6). Welding Consumable :
- 6.1). Electrode Wire : Class: W2 of IRS M-39-2020
Type: Copper coated mild steel wire
Drying Method: N.A.
- 6.2). Flux : Class: F2 of IRS M-39-2020
Type: Agglomerated
Drying Method: 250°C for one hour before use
OR As recommended by manufacturer
- 6.3). Shielding Gas : N.A.
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.

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



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WELDING PROCEDURE SPECIFICATION SHEET

7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001

8). Welding Current : Type: DC, Polarity: Reverse

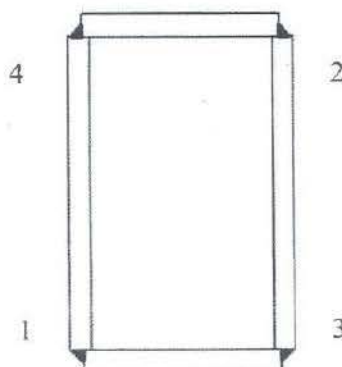
9). Welder qualification : As per IS: 7310 (Part-1) & 817

10). Welding parameters & techniques:

10.1) Welding parameters :

Weld pass	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Welding speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1+1	4.00	550-600	28-32	1.5-1.8	0.45-0.55	20	N.A.

10.2) Welding sequence & techniques : Welding from run on to run off tabs at the free ends.



11). Provision of run on/run off tabs : Yes

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

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

14). Pre-heating & Interpass temperature : 100°C - 150°C

16). Peening : N.A.

17). Post weld treatment : N.A.

18). Rectification of weld defect (If Any)

: By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS: 9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.

19). Inspection of weld : Visual, D.P. Test & Macro Etching.

20). Any other relevant detail : None

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Prepared by: Punia Construction Company.

Signature:

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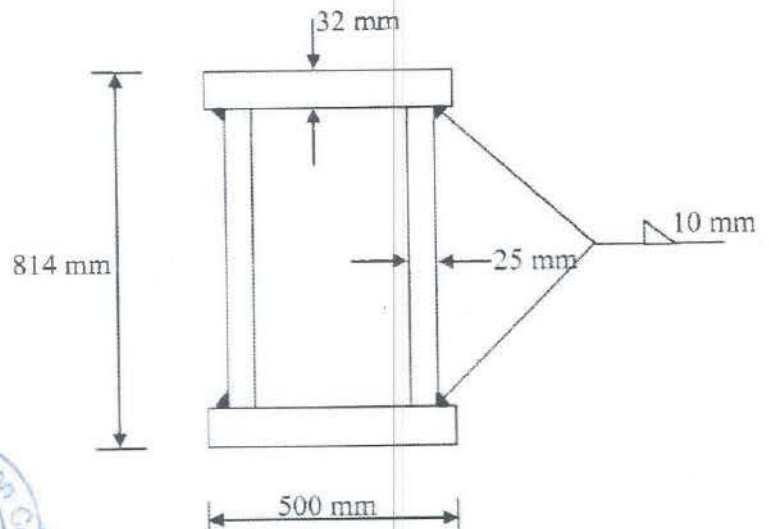
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भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/03
- 1). Drawing Series No. : RDSO/B-10436/1 & RDSO/B-10436/9.
Hanger Box, Top & Bottom Plate (32 mm thick M.S. Plate) with Side Plates (25 mm thick M.S. Plate).
- 2). Weld Joint Description : Fillet (10 mm) and 20mm fillet at hanger end(Bulge section)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : S.A.W.
- 5). Welding Position : Flat inclined at 45°
- 6). Welding Consumable :
- 6.1). Electrode Wire : Class: W2 of IRS M-39-2020
Type: Copper coated mild steel wire
Drying Method: N.A.
- 6.2). Flux : Class: F2 of IRS M-39-2020
Type: Agglomerated
Drying Method: 250°C for one hour before use
OR As recommended by manufacturer
- 6.3). Shielding Gas : N.A.
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements parts, Weld groove details, weld passes & their sequence, etc.)



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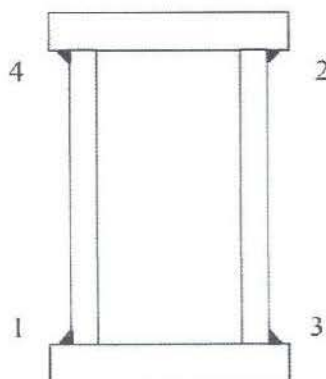
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- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques:
- 10.1) Welding parameters :

Weld pass	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Welding speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
I+1+1	4.00	550-600	28-32	1.5-1.8	0.50-0.60	20	N.A.

- 10.2) Welding sequence & techniques : Welding from run on to run off tabs at the free ends.



- 11). Provision of run on/run off tabs : Yes
- 12). Cleaning of weld bead before laying of next weld bead : N.A.
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & Interpass temperature : 100°C - 150°C
- 16). Peening : N.A.
- 17). Post weld treatment : N.A.
- 18). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS: 9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 19). Inspection of weld : Visual, D.P. Test & Macro Etching.
- 20). Any other relevant detail : None

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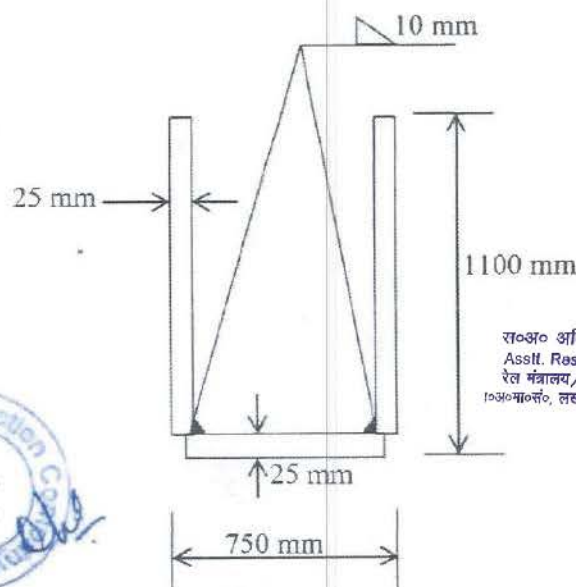


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Designation:
Date:
(For and on behalf of fabricator)

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WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/04
- 1). Drawing Series No. : RDSO/B-10436/1 & RDSO/B-10436/2.
Arch Beam, Bottom Plate (25 mm thick M.S. Plate) with Side Plates (25 mm thick M.S. Plate).
- 2). Weld Joint Description : Fillet (10 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Horizontal
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements parts, Weld groove details, weld passes & their sequence, etc.)



सं००० अधि० धातु एवं रसा०
Asslt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
1000000000, लखनऊ/R.D.S.O., Lucknow



प्रभाकर कृ० सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि०, राँची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001

8). Welding Current : Type: DC, Polarity: Reverse

9). Welder qualification : As per IS: 7310 (Part-1) & 817

10). Welding parameters & techniques :

10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

10.2) Welding sequence & techniques : N.A.

11). Provision of run on/run off tabs : N.A.

12). Cleaning of weld bead before laying of next weld bead : Yes

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

14). Pre-heating & interpass temperature : 100°C - 150°C

15). Peening : N.A.

16). Post weld treatment : N.A.

17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.

18). Inspection of weld : Visual, D.P. Test.

19). Any other relevant detail : None

Prepared by: Punia Construction Company

Signature:

Designation:

Date:

(For and on behalf of fabricator)

सं०अ० अधि० दायु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
1000मार्ग०, लखनऊ/R.D.S.O., Lucknow

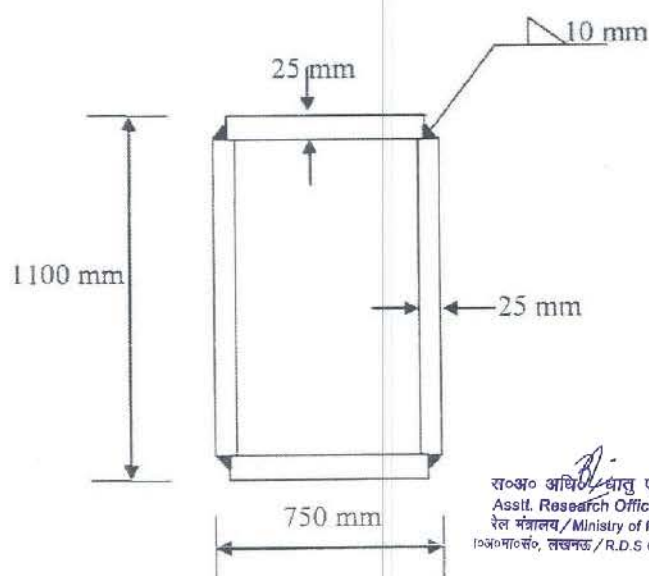


प्रभाकर कु० सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि०, राँची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAL/05
- 1). Drawing Series No. : RDSO/B-10436/1 & RDSO/B-10436/2
Arch Beam, Top & Bottom Plate (25 mm thick M.S. Plate) with Side Plates (25 mm thick M.S. Plate).
- 2). Weld Joint Description : Fillet (10 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : S.A.W.
- 5). Welding Position : Flat inclined at 45°
- 6). Welding Consumable :
- 6.1). Electrode Wire : Class: W2 of IRS M-39-2020
Type: Copper coated mild steel wire
Drying Method: N.A.
- 6.2). Flux : Class: F2 of IRS M-39-2020
Type: Agglomerated
Drying Method: 250°C for one hour before use
OR As recommended by manufacturer
- 6.3). Shielding Gas : N.A.
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.

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



सं०अ० अधिकारी एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
10000 मा० सं०, लखनऊ/R.D.S.O., Lucknow



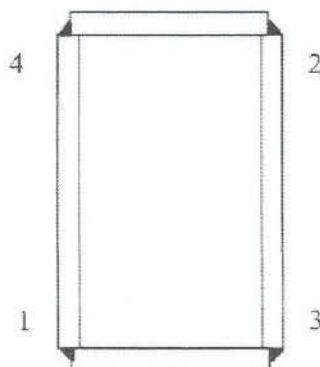
प्रभाकर कृ० सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता)/Jt. General Manager (Civil)
इंफोर्म इन्टरनेशनल लि०, राँची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques:
- 10.1) Welding parameters :

Weld pass	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Welding speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1 + 1	4.00	550-600	28-32	1.5-1.8	0.45-0.55	20	N.A.

- 10.2) Welding sequence & techniques : Welding from run on to run off tabs at the free ends.



- 11). Provision of run on/run off tabs : Yes
- 12). Cleaning of weld bead before laying of next weld bead : N.A.
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & Interpass temperature : 100°C - 150°C
- 16). Peening : N.A.
- 17). Post weld treatment : N.A.
- 18). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS: 9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 19). Inspection of weld : Visual, D.P. Test & Macro Etching.
- 20). Any other relevant detail : None

सं०अ० अधिकारी एवं सहा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/सं०, लखनऊ/R.D.S.O., Lucknow



Prepared by: Punia Construction Company
Signature:
Designation:
Date:
(For and on behalf of fabricator)



प्रभाकर कृ० सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असेनिक)/Jt. General Manager
इंफ्रान्स्ट्रक्चर्स लि०, गैरवा/IRCON INTERNATIONAL LTD.,
भारत सरकार का उपक्रम/Govt. of India Undertak

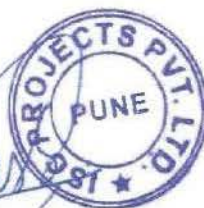
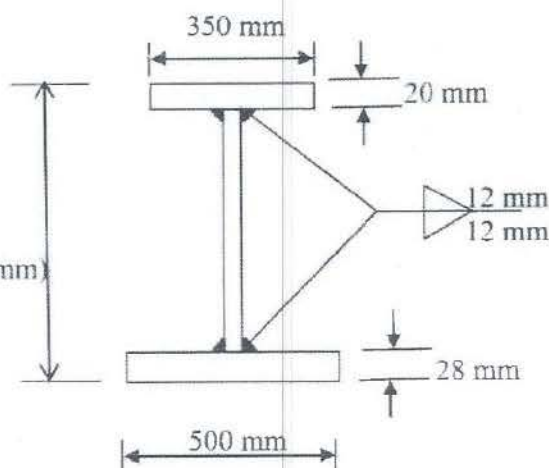
WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/06
- 1). Drawing Series No. : RDSO/B-10436/1 & RDSO/B-10436/6
Int. Bottom Cross Beam {Shipping Mark: BCB1/BCB2}, Web Plate (16 mm thick M.S. Plate) with Top Flange Plate (20 mm thick M.S. Plate) & Bottom Plate (28 mm thick M.S. Plate)
- 2). Weld Joint Description : Fillet (12 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0, Beam E250B0
- 4). Welding Process : S.A.W.
- 5). Welding Position : Flat inclined at 45°
- 6). Welding Consumable :
- 6.1). Electrode Wire : Class: W2 of IRS M-39-2020
Type: Copper coated mild steel wire
Drying Method: N.A.
- 6.2). Flux : Class: F2 of IRS M-39-2020
Type: Agglomerated
Drying Method: 250°C for one hour before use
OR As recommended by manufacturer
- 6.3). Shielding Gas : N.A.
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.

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

संशोधन अधिकारी एवं सहायक
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
लखनऊ / Lucknow

(Varies 748 to 1092 mm)



प्रभाकर कृ० सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि०, राँची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001

8). Welding Current : Type: DC, Polarity: Reverse

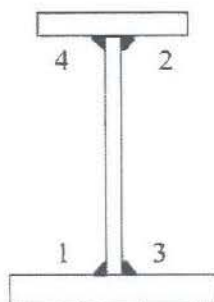
9). Welder qualification : As per IS: 7310 (Part-1) & 817

10). Welding parameters & techniques:

10.1) Welding parameters

Weld pass	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Welding speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1 +1	4.00	550-600	28-32	1.5-1.8	0.35-.40	20	N.A.

10.2) Welding sequence & techniques : Welding from run on to run off tabs at the free ends.



11). Provision of run on/run off tabs

: Yes

12). Cleaning of weld bead before laying of next weld bead

: N.A.

13). Root preparation before welding other side of groove weld

: N.A.

14). Pre-heating & Interpass temperature

: 100°C - 150°C

16). Peening

: N.A.

17). Post weld treatment

: N.A.

18). Rectification of weld defect
(If Any)

: By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS: 9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.

19). Inspection of weld

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

20). Any other relevant detail

: None

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



Prepared by: Punia Construction Company

Signature:

Designation:

Date:

(For and on behalf of fabricator)

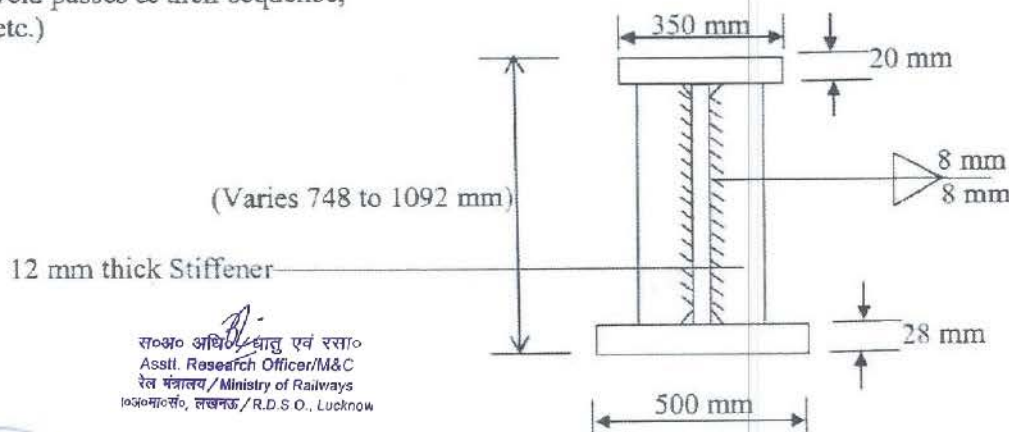


प्रभाकर कृष्ण सिंह/Prabhakar Kr. Singh
सहायक प्रबंधक (अभियंता)/Jt. General Manager (Civil)
इरॉन इंटरनेशनल लि., रांची/IRON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAL/07
- 1). Drawing Series No. : RDSO/B-10436/1 & RDSO/B-10436/6
Int. Bottom Cross Beam (BCB1/BCB2), Stiffener Plate (12 mm thick M.S. Plate) with Web Plates (16 mm thick M.S. Plate).
- 2). Weld Joint Description : Fillet (8 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Horizontal
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.

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



संशोधन अधिकारी एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
100000000, लखनऊ/R.D.S.O., Lucknow



प्रभाकर कृ० सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि०, राँची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20 0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

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

Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)

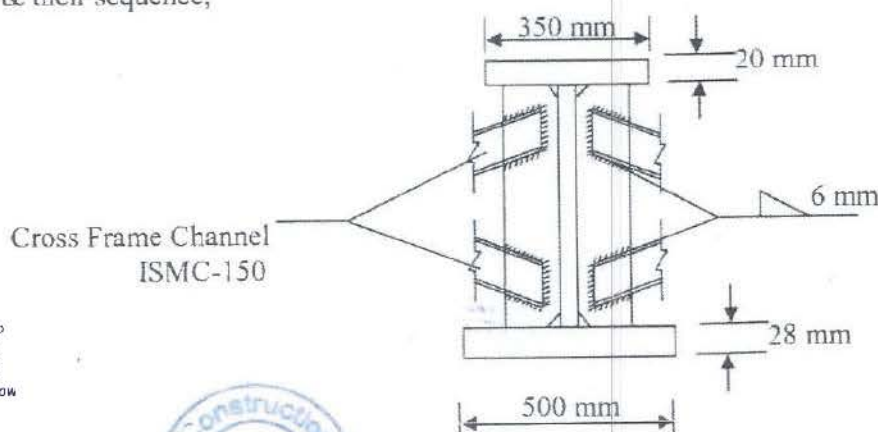


प्रभाकर कुंठ सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरॉन इंटरनेशनल लि०, राँची/IRON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAL/08
- 1). Drawing Series No. : RDSO/B-10436/1 & RDSO/B-10436/6
Int. Bottom Cross Beam (BCB1/BCB2), Cross Frame Channel (ISMC-150) with Stiffener Plate (12 mm thick M.S. Plate)
- 2). Weld Joint Description : Fillet (6 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0 & Channel IS: 2062-2011 E-250 B0
- 4). Welding Process : FCAW
- 5). Welding Position : Overhead (Welding at Bridge Site)
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.

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



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



प्रभाकर कृ० सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरकॉन इंटरनॅशनल लि०, रांची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001

8). Welding Current : Type: DC, Polarity: Reverse

9). Welder qualification : As per IS: 7310 (Part-1) & 817

10). Welding parameters & techniques :

10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

10.2) Welding sequence & techniques : N.A.

11). Provision of run on/run off tabs : N.A.

12). Cleaning of weld bead before laying of next weld bead : Yes

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

14). Pre-heating & interpass temperature : 100°C - 150°C

15). Peening : N.A.

16). Post weld treatment : N.A.

17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.

18). Inspection of weld : Visual, D.P. Test.

19). Any other relevant detail : None

सं०अ० अधिकारी एवं रसा०
Asslt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
०३० मा० सं०, लखनऊ/R.D.S.O., Lucknow

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)



प्रभाकर कृ० सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता)/Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि०, रांची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

Name & Address of fabricator	: Punia Construction Company Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
Welding Procedure Specification No.	: PCC/48.00/BOW/NHAI/09
1). Drawing Series No.	: RDSO/B-10436/6. Int. Cross Beam (BCB1/BCB2) Joint, Top Flange Cover Plate (25 mm thick M.S. Plate), Web Cover Plate (16 mm thick M.S. Plate) & Bottom Flange Cover Plates (32 & 20 mm thick M.S. Plate) with Int. Cross Beam.
2). Weld Joint Description	: Fillet (14 mm)
3). Base Metal	: Plates IS: 2062-2011, E-350 Gr. B0,
4). Welding Process	: FCAW
5). Welding Position	: Horizontal-Vertical (Welding at Bridge Site)
6). Welding Consumable	:
6.1). Electrode Wire	: Flux Cored Welding wire, Class 1 of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015). Type: Flux Cored Wire Drying Method: N.A.
6.2). Flux	: N.A.
6.3). Shielding Gas	: CO ₂
7). Base Metal Preparation	: Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust,
7.1). Joint design details (Sketch showing arrangements 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

Int. Cross Beam

Web Cover Plate
(16 mm thick)

Bottom Flange Cover Plate (32 mm thick)



प्रभाकर सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (सिविल)/Jt. General Manager (Civil)
इरॉन इंटरनेशनल लि, रांची/IRON INTERNATIONAL LTD, Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001

8). Welding Current : Type: DC, Polarity: Reverse

9). Welder qualification : As per IS: 7310 (Part-1) & 817

10). Welding parameters & techniques :

10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

10.2) Welding sequence & techniques

: N.A.

11). Provision of run on/run off tabs

: N.A.

12). Cleaning of weld bead before laying of next weld bead

: Yes

13). Root preparation before welding other side of groove weld

: N.A.

14). Pre-heating & interpass temperature

: 100°C - 150°C

15). Peening

: N.A.

16). Post weld treatment

: N.A.

17). Rectification of weld defect
(If Any)

: By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.

18). Inspection of weld

: Visual, D.P. Test.

19). Any other relevant detail

: None

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

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

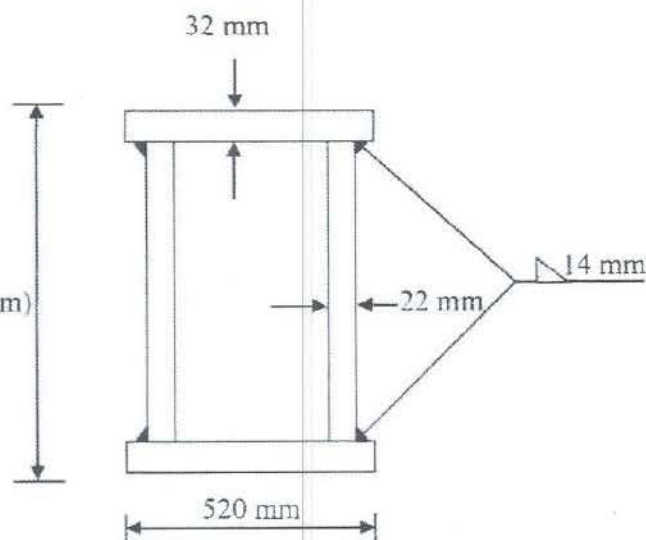


प्रभावकर कुं सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि., रांची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/10
- 1). Drawing Series No. : RDSO/B-10436/1 & RDSO/B-10436/6
Bottom Cross Beam {Shipping Mark: BCB3}, Top & Bottom Plate (32 mm thick M.S. Plate) with Side Plate (22 mm thick M.S. Plate)
- 2). Weld Joint Description : Fillet (14 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : S.A.W.
- 5). Welding Position : Flat inclined at 45°
- 6). Welding Consumable :
- 6.1). Electrode Wire : Class: W2 of IRS M-39-2020
Type: Copper coated mild steel wire
Drying Method: N.A.
- 6.2). Flux : Class: F2 of IRS M-39-2020
Type: Agglomerated
Drying Method: 150°C for one hour before use
OR As recommended by manufacturer
- 6.3). Shielding Gas : N.A.
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements parts, Weld groove details, weld passes & their sequence, etc.)

(Varies 748 to 1092 mm)



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



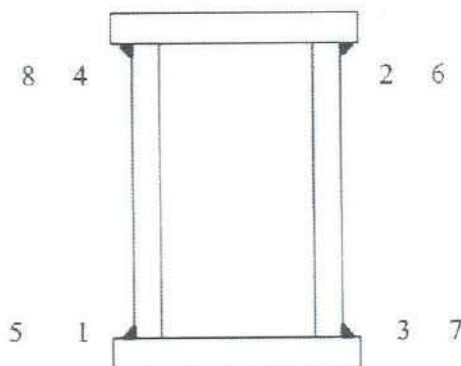
प्रभाकर सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभिनव)/Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि., राँची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques:
- 10.1) Welding parameters :

Weld pass	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Welding speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	4.00	550-600	28-32	1.5-1.8	0.45-0.55	20	N.A.
2	4.00	550-600	28-32	1.5-1.8	0.45-0.55	20	N.A.

- 10.2) Welding sequence & techniques : Welding from run on to run off tabs at the free ends.



- 11). Provision of run on/run off tabs : Yes
- 12). Cleaning of weld bead before laying of next weld bead : N.A.
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & Interpass temperature : 100°C - 150°C
- 16). Peening : N.A.
- 17). Post weld treatment : N.A.
- 18). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS: 9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 19). Inspection of weld : Visual, D.P. Test & Macro Etching.
- 20). Any other relevant detail : None

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



Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)



प्रभाकर सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इंफ्रास्ट्रक्चर डेवलपमेंट लि., रांची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

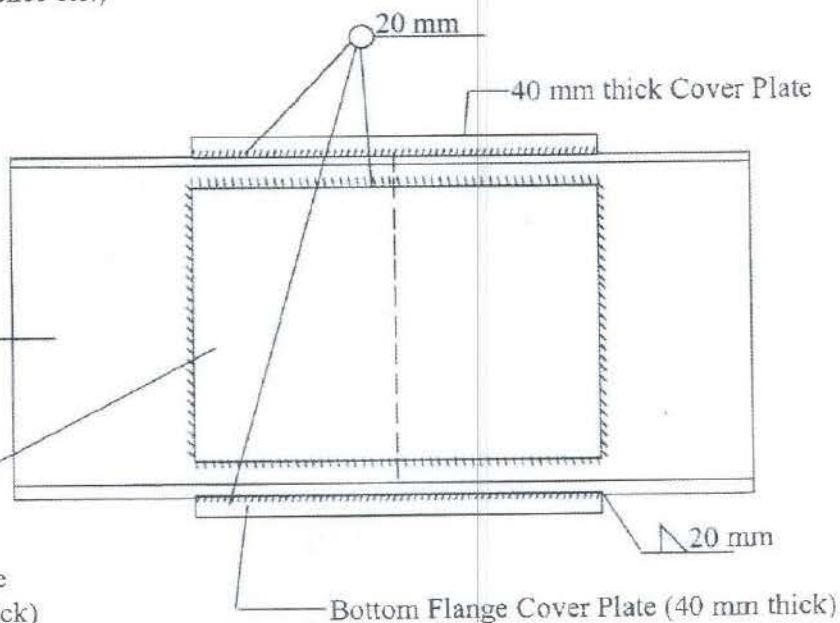
- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/11
- 1). Drawing Series No. : RDSO/B-10436/6.
End Cross Beam (BCB3) Joint, Top Flange
Cover Plate (40 mm thick M.S. Plate), Web Cover Plate
(28 mm thick M.S. Plate) & Bottom Flange Cover
Plates (40 mm thick M.S. Plate) with End Cross Beam.
- 2). Weld Joint Description : Fillet (20 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Horizontal-Vertical (Welding at Bridge Site)
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M:
2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made
free from cracks, notches, mill scale, grease, paint, rust.
- 7.1). Joint design details :
(Sketch showing arrangements
parts, Weld groove details,
weld passes& their sequence etc.)

सं०अ० अभि० प्रा० एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लुधियाना, लखनऊ/R.D.S.O., Lucknow

End Cross Beam



Cover Plate
(28 mm thick)



प्रभाकर कृ० सिंह/Prabhakar Kr. Singh
संयुक्त महप्रबंधक (अमेनिक)/Jt. General Manager (Civil)
इकोन इंटरनेशनल लि०, राँची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
5	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

संशोधन अधिकारी एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
1000 मांसो, लखनऊ / R.D.S.O., Lucknow

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

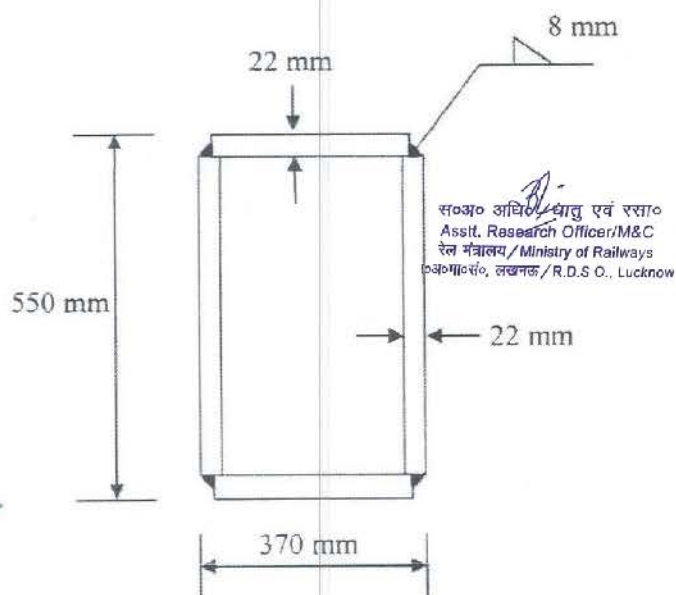
(For and on behalf of fabricator)



प्रभावकर कृष्ण Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता) / Jt. General Manager (Civil)
इंफ्रान्ट इंटरनैशनल लिमिटेड / IRCON INTERNATIONAL LT. Ranchi
भारत सरकार का उपक्रम / Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/12
- 1). Drawing Series No. : RDSO/B-10436/1 & RDSO/B-10436/3
Top Tie Beam, Top & Bottom Plate (22 mm thick M.S. Plate) with Side Plates (22 mm thick M.S. Plate)
- 2). Weld Joint Description : Fillet (8 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : S.A.W.
- 5). Welding Position : Flat inclined at 45°
- 6). Welding Consumable :
- 6.1). Electrode Wire : Class: W2 of IRS M-39-2020
Type: Copper coated mild steel wire
Drying Method: N.A.
- 6.2). Flux : Class: F2 of IRS M-39-2020
Type: Agglomerated
Drying Method: 250°C for one hour before use
OR As recommended by manufacturer
- 6.3). Shielding Gas : N.A.
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements parts, Weld groove details, weld passes & their sequence, etc.)



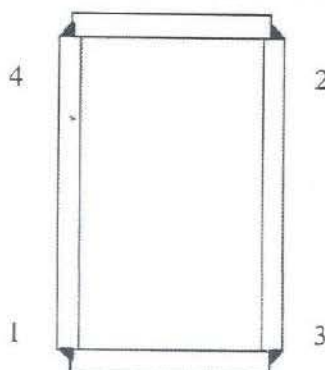
प्रभाकर कृष्ण सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अमानक)/Jt. General Manager (Civil)
इरॉन इंटरनेशनल लि., रांची/IRON INTERNATIONAL LTD. Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques:
- 10.1) Welding parameters :

Weld pass	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Welding speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
I	4.00	550-600	28-32	1.5-1.8	0.50-0.60	20	N.A.

- 10.2) Welding sequence & techniques : Welding from run on to run off tabs at the free ends.



- 11). Provision of run on/run off tabs : Yes
- 12). Cleaning of weld bead before laying of next weld bead : N.A.
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & Interpass temperature : 100°C - 150°C
- 16). Peening : N.A.
- 17). Post weld treatment : N.A.
- 18). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS: 9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 19). Inspection of weld : Visual, D.P. Test & Macro Etching.
- 20). Any other relevant detail : None

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



Prepared by: Punia Construction Company
Signature:
Designation:
Date:
(For and on behalf of fabricator)

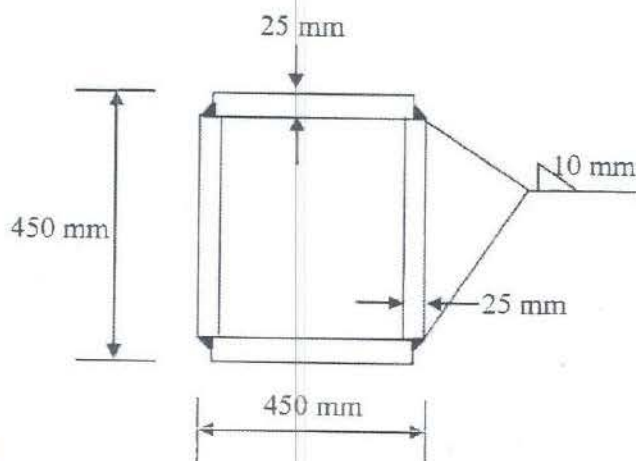


प्रभाकर सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता)/Jt General Manager (CI)
इंफ्रास्ट्रक्चर डेवेलपमेंट लि., रांची IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/13
- 1). Drawing Series No. : RDSO/B-10436/1 & RDSO/B-10436/3
Top Lateral Bracing Beam, Top & Bottom Plate (25 mm thick M.S. Plate) with Side Plates (25 mm thick M.S. Plate)
- 2). Weld Joint Description : Fillet (10 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : S.A.W.
- 5). Welding Position : Flat inclined at 45°
- 6). Welding Consumable :
6.1). Electrode Wire : Class: W2 of IRS M-39-2020
Type: Copper coated mild steel wire
Drying Method: N.A.
- 6.2). Flux : Class: F2 of IRS M-39-2020
Type: Agglomerated
Drying Method: 250°C for one hour before use
OR As recommended by manufacturer
- 6.3). Shielding Gas : N.A.
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements parts, Weld groove details, weld passes & their sequence, etc.)

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



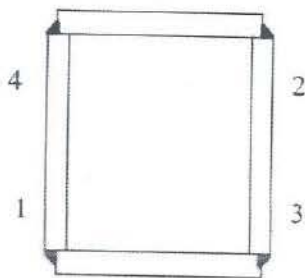
प्रभाकर सिंह Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि., रांची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques:
- 10.1) Welding parameters :

Weld pass	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Welding speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1+1	4.00	550-600	28-32	1.5-1.8	0.50-0.60	20	N.A.

- 10.2) Welding sequence & techniques : Welding from run on to run off tabs at the free ends.



- 11). Provision of run on/run off tabs : Yes
- 12). Cleaning of weld bead before laying of next weld bead : N.A.
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & Interpass temperature : 100°C - 150°C
- 16). Peening : N.A.
- 17). Post weld treatment : N.A.
- 18). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS: 9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 19). Inspection of weld : Visual, D.P. Test & Macro Etching.
- 20). Any other relevant detail : None

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



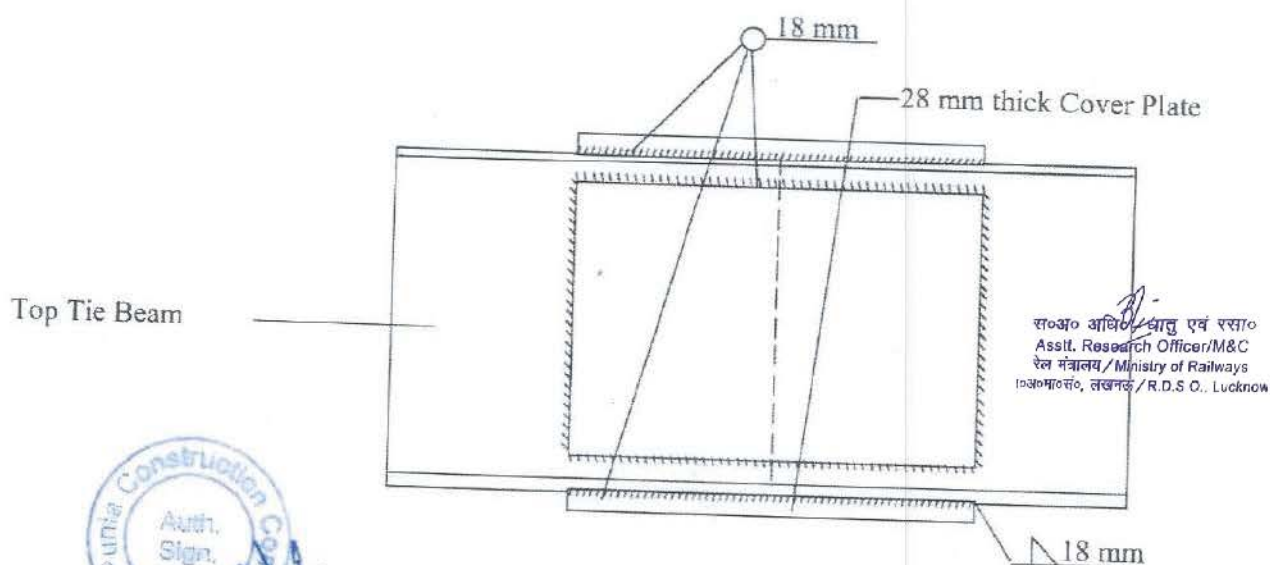
Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)



प्रभाकर कृष्ण सिंह/Prabhakar Kr. Singh
सहायक महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
रॉकवेल इंटरनेशनल लि., रांची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/14
- 1). Drawing Series No. : RDSO/B-10436/3.
Top Tie Beam Joint, Cover Plate (28 mm thick M.S. Plate) with Top Tie Beam Top & Side Plates
- 2). Weld Joint Description : Fillet (18 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Horizontal-Vertical (Welding at Bridge Site)
- 6). Welding Consumable : Flux Cored Welding wire, Class 1 of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.1). Electrode Wire : N.A.
- 6.2). Flux : CO₂
- 6.3). Shielding Gas : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust,
- 7). Base Metal Preparation :
- 7.1). Joint design details
(Sketch showing arrangements parts, Weld groove details, weld passes & their sequence, etc.)



प्रभावकर कृष्ण सिंह / Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक) / Jt. General Manager (Civil)
इरकान इंटरनैशनल लि., रांची / IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम / Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

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

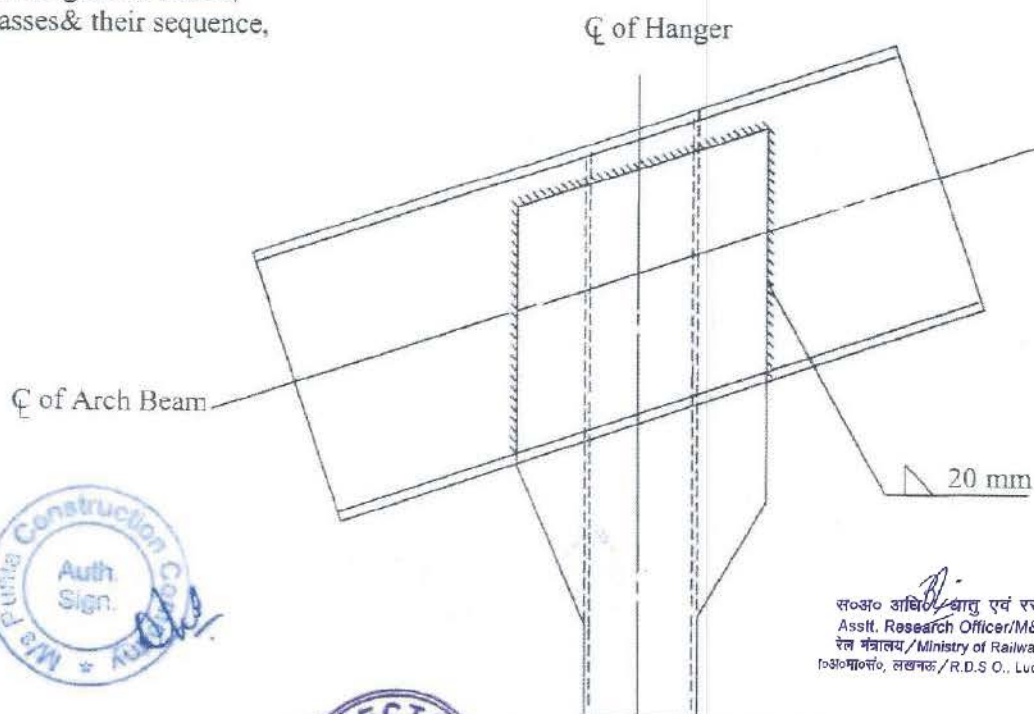
Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)



प्रभाकर कृ. सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अमानक)/Jt. General Manager (Civil)
इंफ्रा इन्टरनेशनल लि., रांची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Go.t. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/15
- 1). Drawing Series No. : RDSO/B-10436/9.
Hanger with Arch Beam, Side Plate (32mm thick M.S. Plate) with Arch Beam Side Plate (25 mm thick M.S. Plate).
- 2). Weld Joint Description : Fillet (20 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Overhead (Welding at Bridge Site)
- 6). Welding Consumable :
Flux Cored Welding wire, Class 1 of IRS: M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M:
2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.1). Electrode Wire : N.A.
- 6.2). Flux : CO₂
- 6.3). Shielding Gas : Fusion faces and adjacent surfaces are cleaned, made
free from cracks, notches, mill scale, grease, paint, rust,
etc. which may affect weld quality.
- 7). Base Metal Preparation :
- 7.1). Joint design details :
(Sketch showing arrangements
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



प्रभाकर कृष्ण सिंह/Prahbaker Kr. Singh
संयुक्त महाप्रबंधक (अभियंता)/Jt. General Manager (Civil)
इरॉन इंटरनॅशनल लि., रांची, IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
5	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

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

Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)

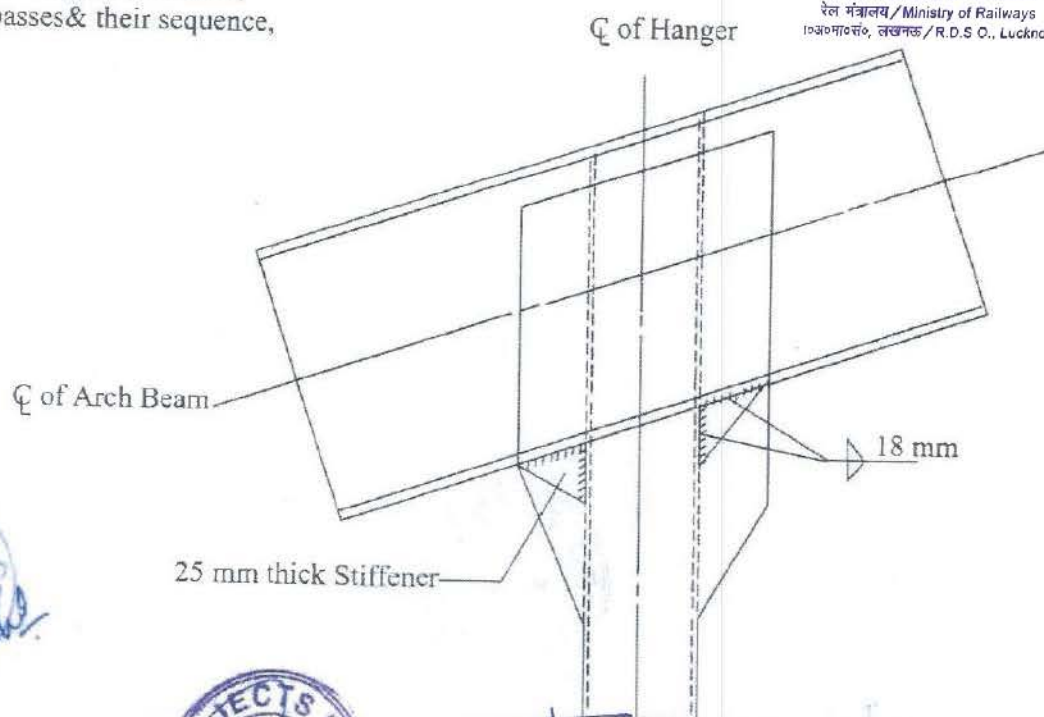


प्रभाकर क० सिंह / Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (भवनिकी) / Jt. General Manager (Civil)
इरॉन इंटरनेशनल लि०, राँची / IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम / Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/16
- 1). Drawing Series No. : RDSO/B-10436/9.
Stiffener Plate (25mm thick M.S. Plate) with Hanger
(25 mm thick M.S. Plate) & Arch Beam (28 mm thick M.S. Plate)
- 2). Weld Joint Description : Fillet (18 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Overhead (Welding at Bridge Site)
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M:
2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made
free from cracks, notches, mill scale, grease, paint, rust,
etc. which may affect weld quality.
- 7.1). Joint design details
(Sketch showing arrangements
parts, Weld groove details,
weld passes & their sequence,
etc.)

संज्ञा अधिकारी एवं रसा
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
10/अ/मार्ग, लखनऊ/R.D.S.O., Lucknow



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प्रभाकर कृ० सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता) Jt. General Manager (Civil)
इरॉन इंटरनेशनल लि० रॉड/IRON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम, Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

7.2). Joint Preparation

: As per IS: 4353-1995 & WBC-2001

8). Welding Current

: Type: DC, Polarity: Reverse

9). Welder qualification

: As per IS: 7310 (Part-1) & 817

10). Welding parameters & techniques

10.1) Welding parameters

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
5	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

10.2) Welding sequence & techniques : N.A.

11). Provision of run on/run off tabs

12). Cleaning of weld bead before laying of next weld bead

13). Root preparation before welding other side of groove weld

14). Pre-heating & interpass temperature

15). Peening

16). Post weld treatment

17). Rectification of weld defect
(If Any)

: By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.

18). Inspection of weld

: Visual, D.P. Test.

19). Any other relevant detail

: None

संज्ञा अधिकारी एवं एसाई N.A.

Asstt. Research Officer/M&C Yes

रेल मंत्रालय/Ministry of Railways

आगाँवाँ, लखनऊ/R.D.S.O., Lucknow

: 100°C - 150°C

: N.A.

: N.A.

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)



प्रभाकर कृष्ण सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इकोन इंटरनैशनल लि., राँची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/17
- 1). Drawing Series No. : RDSO/B-10436/9.
Hanger with Bottom Long Beam, Side Plate (32mm thick M.S. Plate) with Bottom Long Beam Side Plate (22 mm thick M.S. Plate).
- 2). Weld Joint Description : Fillet (18 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Overhead (Welding at Bridge Site)
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.

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

सं०अ० अधिकारी एवं सहा०
Asslt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
००००००००, लखनऊ/R.D.S.O., Lucknow

☐ of Bottom Long Beam

☐ of Hanger

18 mm



प्रभाकर कृ० सिंह/Prabhat Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरकॉन इंटरनॅशनल लि०, रांची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-I) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
5	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

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

Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)

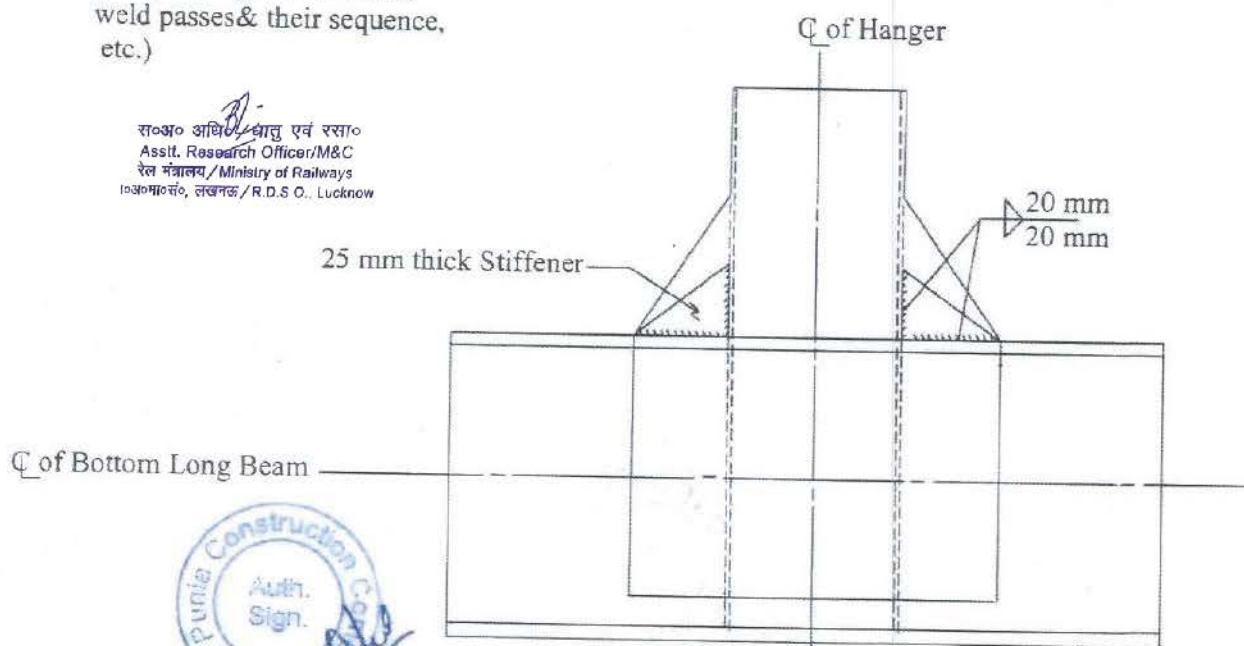


प्रभाकर कृष्ण सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता)/Jt. General Manager (Civil)
इकोन इंटरनेशनल लि., राँची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/18
- 1). Drawing Series No. : RDSO/B-10436/9.
Stiffener Plate (25mm thick M.S. Plate) with Hanger
(25 mm thick M.S. Plate) & Bottom Long Beam (22 mm thick M.S. Plate)
- 2). Weld Joint Description : Fillet (20 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Overhead (Welding at Bridge Site)
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M:
2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made
free from cracks, notches, mill scale, grease, paint, rust,
etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements
parts, Weld groove details,
weld passes & their sequence,
etc.)

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



प्रभाव कर्तु मिह Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभिनव) Jt. General Manager (Civil)
इंफ्रा इन्फ्रास्ट्रक्चर लि०, रॉचि IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

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

Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)

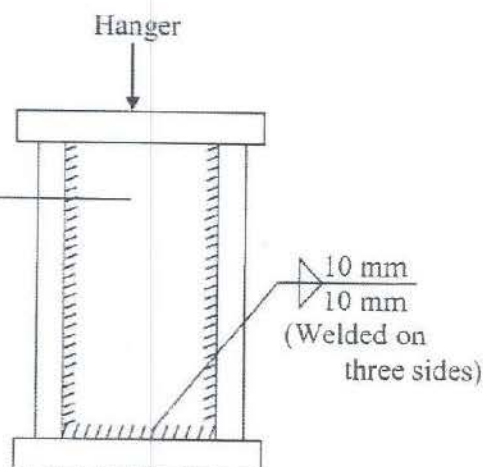


प्रभाकर सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि., गैंगो/IRCON INTERNATIONAL LTD., Gangi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/19
- 1). Drawing Series No. : RDSO/B-10436/9.
Diaphragm Plate (16 mm thick M.S. Plate) with Hanger.
- 2). Weld Joint Description : Fillet (10 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Horizontal-Vertical
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements parts, Weld groove details, weld passes & their sequence, etc.)

16 mm thick Diaphragm Plate



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



प्रभावः सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरॉन इंटरनैशनल लि., रांची IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

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

Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)



प्रभाकर कृष्ण सिंह Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि., रांची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.

Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/20

1). Drawing Series No.

: RDSO/B-10436/4.

2). Weld Joint Description

: **Joint at L0, Cover Plate (32 mm thick M.S. Plate) with Bottom Long Beam & Arch Beam.**

3). Base Metal

: Fillet (20 mm)

4). Welding Process

: Plates IS: 2062-2011, E-350 Gr. B0,

5). Welding Position

: FCAW

6). Welding Consumable

: Horizontal-Vertical (Welding at Bridge Site)

6.1). Electrode Wire

: Flux Cored Welding wire, Class I of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015).

Type: Flux Cored Wire

Drying Method: N.A.

6.2). Flux

: N.A.

6.3). Shielding Gas

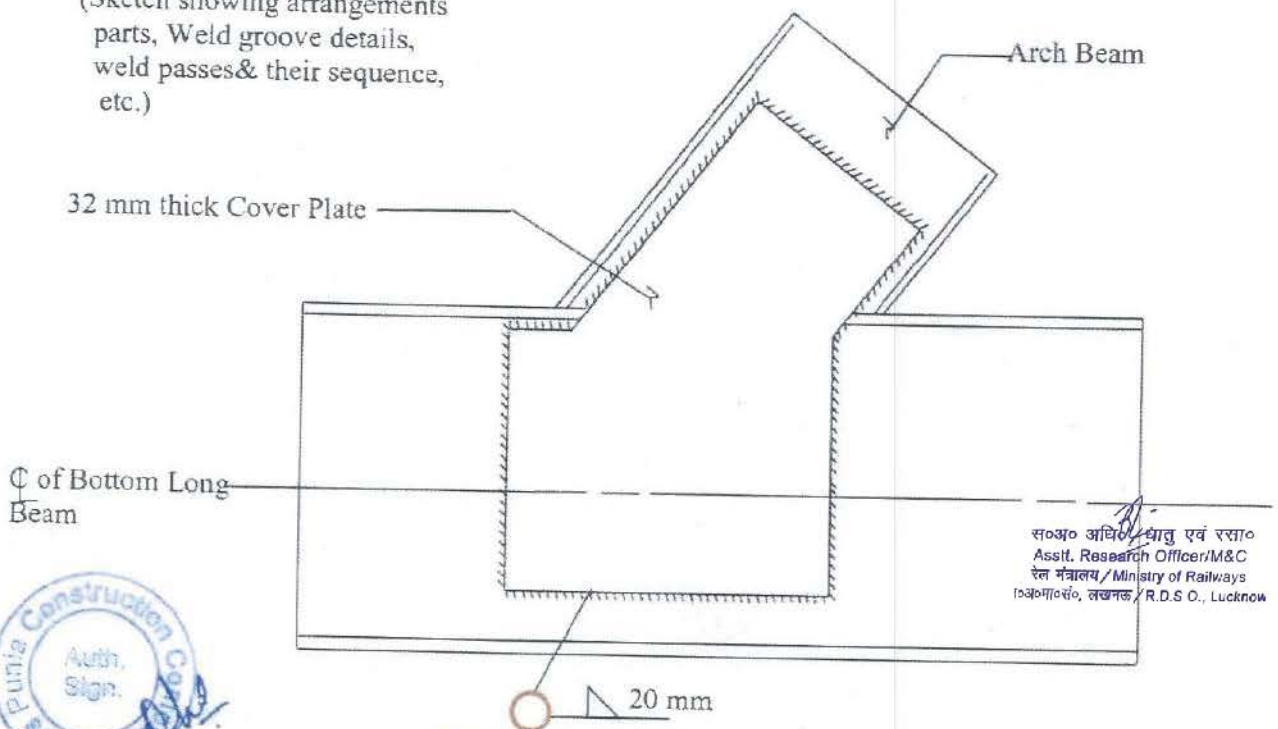
: CO₂

7). Base Metal Preparation

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

7.1). Joint design details

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



प्रभाकर कुं सिंह Prabinakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक) / Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि., रांची IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम / Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
5	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

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

Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)

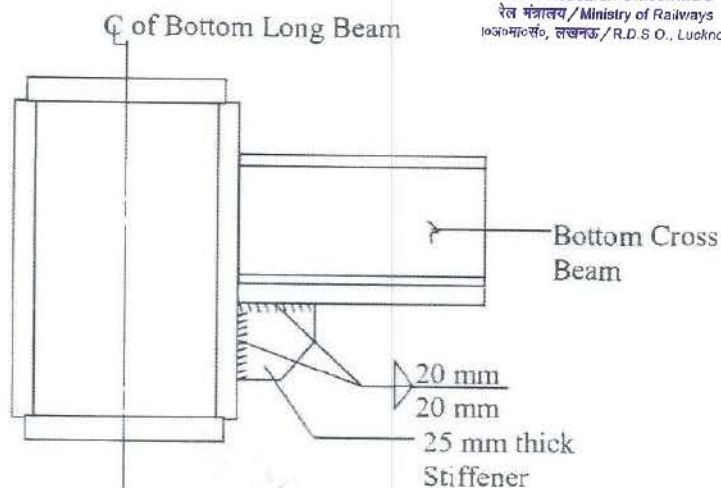


प्रभाकर कृष्ण सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता)/Jt. General Manager (Civil)
इरॉन इंटरनैशनल लि., रांची/IRON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/21
- 1). Drawing Series No. : RDSO/B-10436/6.
Stiffener (25 mm thick M.S. Plate) with Bottom
Cross Beam & Bottom Long Beam
- 2). Weld Joint Description : Fillet (20mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Overhead (Welding at Bridge Site)
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M:
2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made
free from cracks, notches, mill scale, grease, paint, rust,
etc. which may affect weld quality.
- 7.1). Joint design details
(Sketch showing arrangements
parts, Weld groove details,
weld passes & their sequence,
etc.)

सं०अ० अधिकारी एवं सहा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/R.D.S.O., Lucknow



प्रभाकर कृष्ण सिंह/Prabhakar Kr Singh
संयुक्त महाप्रबंधक (अभियंता) (Jt. General Superintendent (Civil))
इकोन इंटरनेशनल लि०, गान्धीनगर/ARCON INTERNATIONAL LTD., Gandhinagar
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
5	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

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

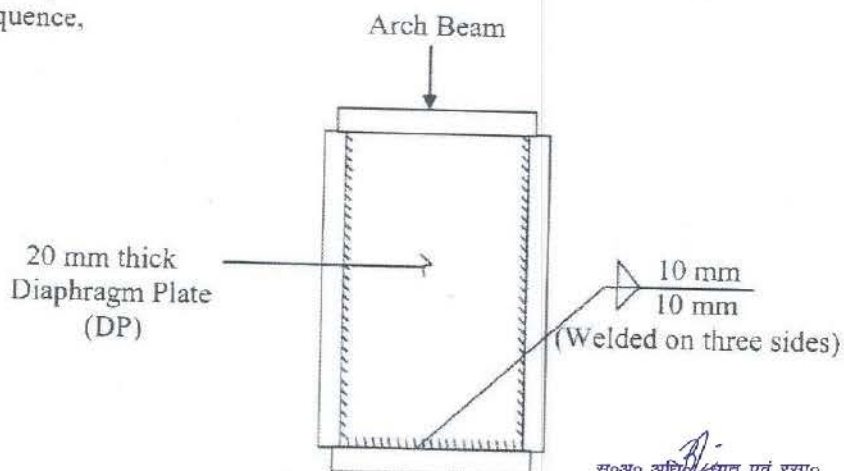
Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)



प्रभाकर कृष्ण सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता)/Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि., राँची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/22
- 1). Drawing Series No. : RDSO/B-10436/2.
Diaphragm Plate DP (20 mm thick M.S. Plate)
with Arch Beam
- 2). Weld Joint Description : Fillet (10 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Horizontal-Vertical
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M:
2005 (R2015).
Type: Flux Cored Wire.
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made
free from cracks, notches, mill scale, grease, paint, rust,
etc. which may affect weld quality.
- 7.1). Joint design details
(Sketch showing arrangements
parts, Weld groove details,
weld passes & their sequence,
etc.)



संशोधन अधिकारी एवं सहायक
Assit. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/Lucknow



प्रभाकर कृष्ण सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरॉन इंटरनेशनल लि०, रांची/IRON INTERNATIONAL LTD, Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

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

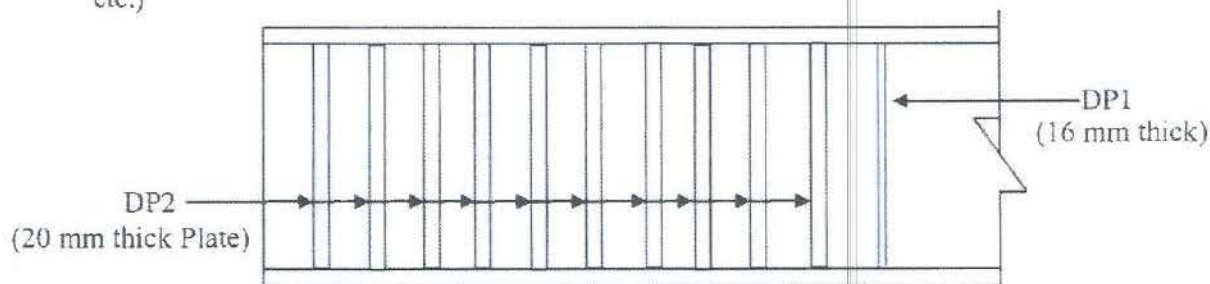


Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)

प्रभाकर कृष्ण सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरकॉन इंटरनैशनल लि., रांची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/23
- 1). Drawing Series No. : RDSO/B-10436/4 & RDSO/B-10436/5
Diaphragm Plate {Shipping Mark: DP1 & DP2}
(16 mm & 20 mm thick M.S. Plate resp.) With
Bottom Long Beam
- 2). Weld Joint Description : Fillet (10 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Horizontal-Vertical
- 6). Welding Consumable :
- 6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M:
2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made
free from cracks, notches, mill scale, grease, paint, rust,
etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements
parts, Weld groove details,
weld passes& their sequence,
etc.)



- ❖ All diaphragm plates welded from at least three side using 10 mm Fillet weld.
(Hanger side compulsory).

संज्ञा अधि. शास्त्र एवं रसा.
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/Lucknow



प्रभाकर सिंह Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अमेनिक) /Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि., रांची IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001

- 8). Welding Current : Type: DC, Polarity: Reverse
 9). Welder qualification : As per IS: 7310 (Part-1) & 817
 10). Welding parameters & techniques :
 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
 11). Provision of run on/run off tabs : N.A.
 12). Cleaning of weld bead before laying of next weld bead : Yes
 13). Root preparation before welding other side of groove weld : N.A.
 14). Pre-heating & interpass temperature : 100°C - 150°C
 15). Peening : N.A.
 16). Post weld treatment : N.A.
 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS: 9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
 18). Inspection of weld : Visual, D.P. Test.
 19). Any other relevant detail : None

संशोधन अधिकारी एवं रसायन
 Asstt. Research Officer/M&C
 रेल मंत्रालय/Ministry of Railways
 ०००००००, लखनऊ/R.D.S.O., Lucknow

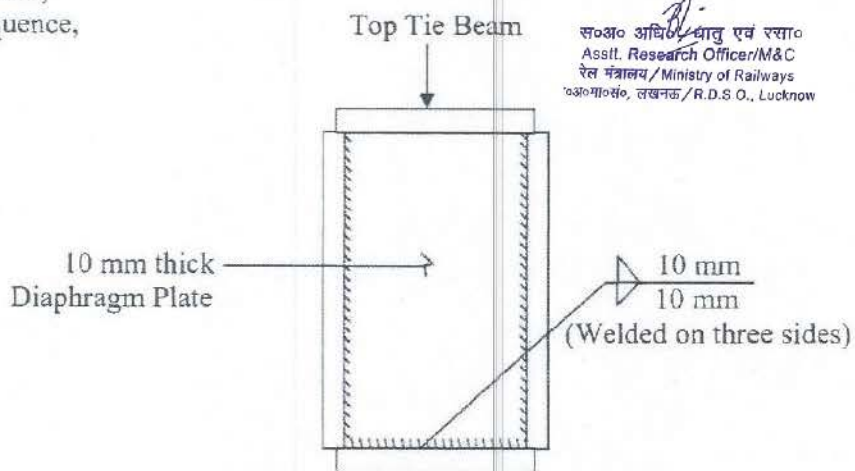
Prepared by: Punia Construction Company.
 Signature:
 Designation:
 Date:
 (For and on behalf of fabricator)



प्रभाकर कृष्ण सिंह Prabhakar Kr. Singh
 संयुक्त महाप्रबंधक (अभियंता)/Jt. General Manager (Civil)
 इरॉन इंटरनेशनल लि., रांची/IRON INTERNATIONAL LTD., Ranchi
 भारत सरकार का उपक्रम Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/24
- 1). Drawing Series No. : RDSO/B-10436/3.
Diaphragm Plate {Shipping Mark: DP} (10 mm thick M.S. Plate) With Top Tie Beam.
- 2). Weld Joint Description : Fillet (10 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Horizontal-Vertical
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements parts, Weld groove details, weld passes & their sequence, etc.)



प्रभाकर कृ. सिंह Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता) / Jt. General Manager (Civil)
इंफ्रास्ट्रक्चर लिमिटेड, रांची / IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम / Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-I) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS: 9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

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

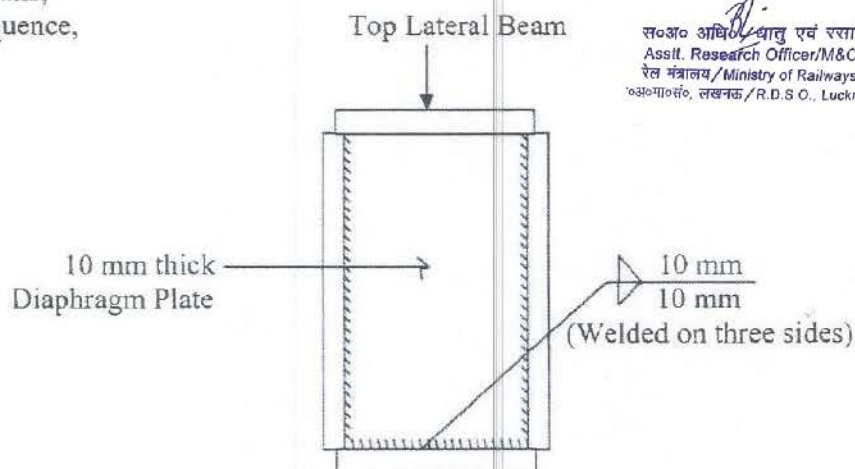
Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)



प्रभाकर कृष्ण सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता)/Jt. General Manager (Civil)
इरॉन इंटरनेशनल लिमिटेड, रांची IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/25
- 1). Drawing Series No. : RDSO/B-10436/3.
Diaphragm Plate {Shipping Mark: DP} (10 mm thick M.S. Plate) With Top Lateral Bracing Beam.
- 2). Weld Joint Description : Fillet (10 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Horizontal-Vertical
- 6). Welding Consumable :
- 6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO2
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements parts, Weld groove details, weld passes& their sequence, etc.)



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



प्रभावकर कुमार सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरॉन इंटरनेशनल लि., एच.एच. IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS: 9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

सं०अ० अधिकारी एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
०३०गा०सं०, लखनऊ/R.D.S.O., Lucknow

Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)

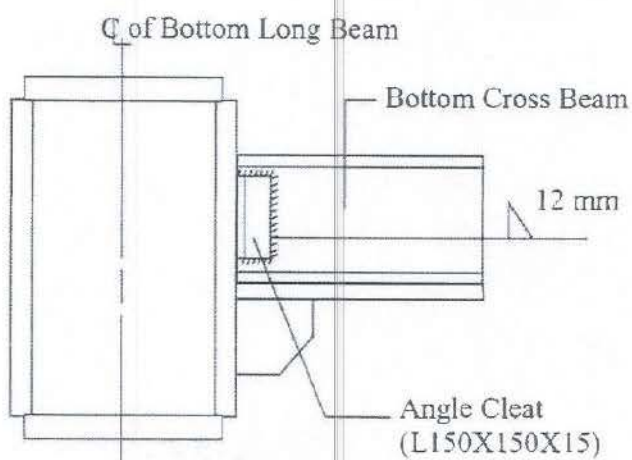


प्रभाकर कृ० सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि०, राँची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/26
- 1). Drawing Series No. : RDSO/B-10436/6.
Bottom Cross Beam Angle Cleat (L150X150X15) with
Bottom Long Beam Side Plate (22 mm thick M.S. Plate)
- 2). Weld Joint Description : Fillet (12 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Overhead (Welding at Bridge Site)
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M:
2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO2
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made
free from cracks, notches, mill scale, grease, paint, rust,
etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements
parts, Weld groove details,
weld passes & their sequence etc.)

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



प्रभाकर कृ० सिंह Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता) Jt. General Manager (Civil)
इरॉन इंटरनेशनल लि०, राँची IRCON INTERNATIONAL LTD. Ranchi
भारत सरकार का उपक्रम Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001

8). Welding Current : Type: DC, Polarity: Reverse

9). Welder qualification : As per IS: 7310 (Part-1) & 817

10). Welding parameters & techniques :

10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

10.2) Welding sequence & techniques

: N.A.

11). Provision of run on/run off tabs

: N.A.

12). Cleaning of weld bead before laying of next weld bead

: Yes

13). Root preparation before welding other side of groove weld

: N.A.

14). Pre-heating & interpass temperature

: 100°C - 150°C

15). Peening

: N.A.

16). Post weld treatment

: N.A.

17). Rectification of weld defect

: By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.

(If Any)

18). Inspection of weld

: Visual, D.P. Test.

19). Any other relevant detail

: None

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

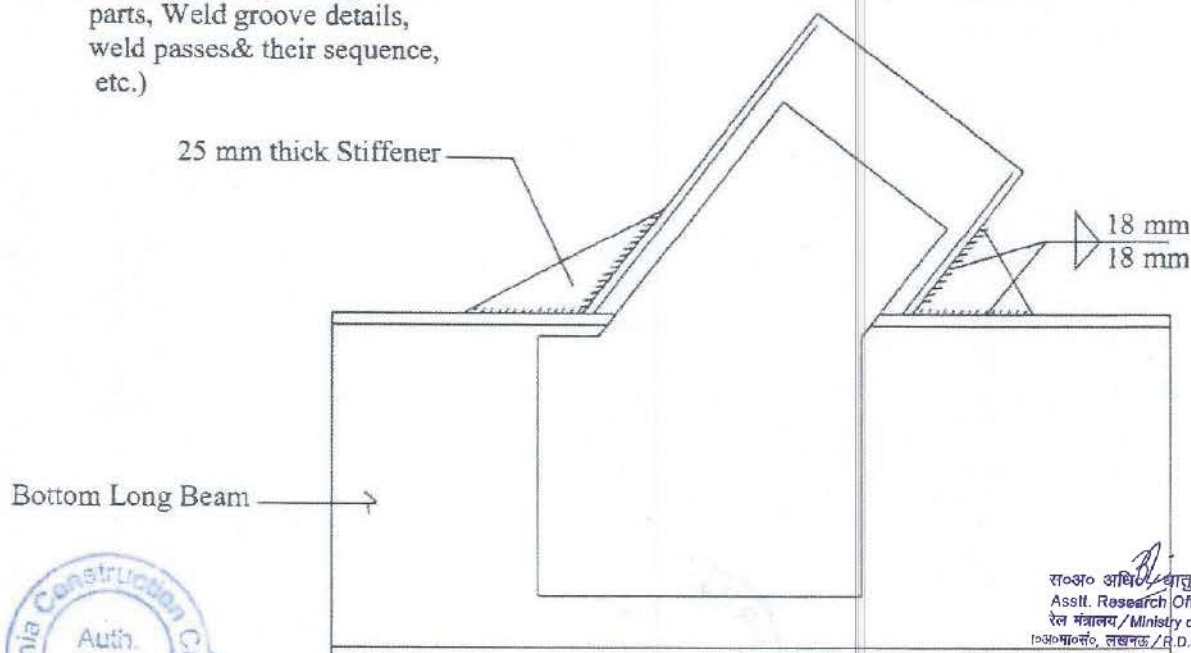
संलग्न अधीनस्थ एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
1000 मी/से, लखनऊ / R.D.S.O., Lucknow



प्रभाकर कृ. सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इकोन इंटरनेशनल लि., राँची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/27
- 1). Drawing Series No. : RDSO/B-10436/4.
Stiffener Plate (25 mm thick M.S. Plate) with Arch
Beam & Bottom Long Beam
- 2). Weld Joint Description : Fillet (18 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Horizontal - Vertical (Welding at Bridge Site)
- 6). Welding Consumable :
- 6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M:
2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made
free from cracks, notches, mill scale, grease, paint, rust,
etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements
parts, Weld groove details,
weld passes & their sequence,
etc.)



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प्रभाकर कृ. सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरॉन इंटरनेशनल लि., रांची/IRON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

रॉडो अधीक्षण एवं रसा.
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/R.D.S.O., Lucknow

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

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

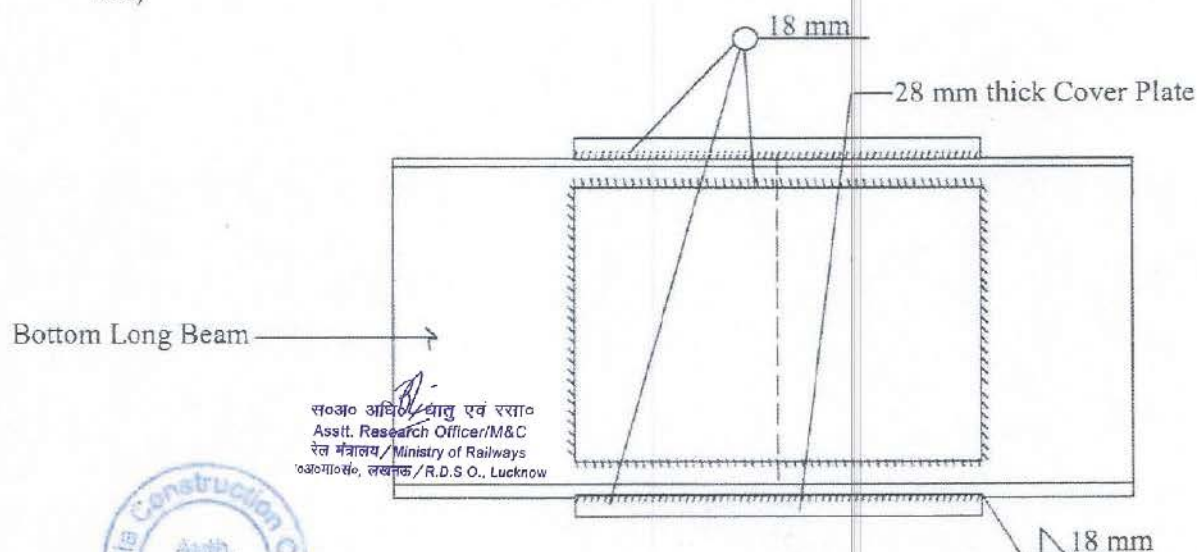


Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)

प्रभाकर कृष्ण सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इकाई इंटरनेशनल लि. रांची/RCOON INTERNATIONAL LTD., Ranchi
भारत सरकार का उद्योग/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/28
- 1). Drawing Series No. : RDSO/B-10436/5.
Bottom Long Beam Joint, Cover Plate (28 mm thick M.S. Plate) with Bottom Long Beam Top & Side Plates
- 2). Weld Joint Description : Fillet (18 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Overhead (Welding at Bridge Site)
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust,
- 7.1). Joint design details :
(Sketch showing arrangements parts, Weld groove details, weld passes& their sequence, etc.)



प्रभुकर कृ. सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता)/Jt. General Manager (Civil)
इरकॉन इंटरनेशनल लि. रांची/IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

सं०अ० अधिकारी एवं रसा०
Asslt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
आ०मा०सं०, लखनऊ / R.D.S.O., Lucknow

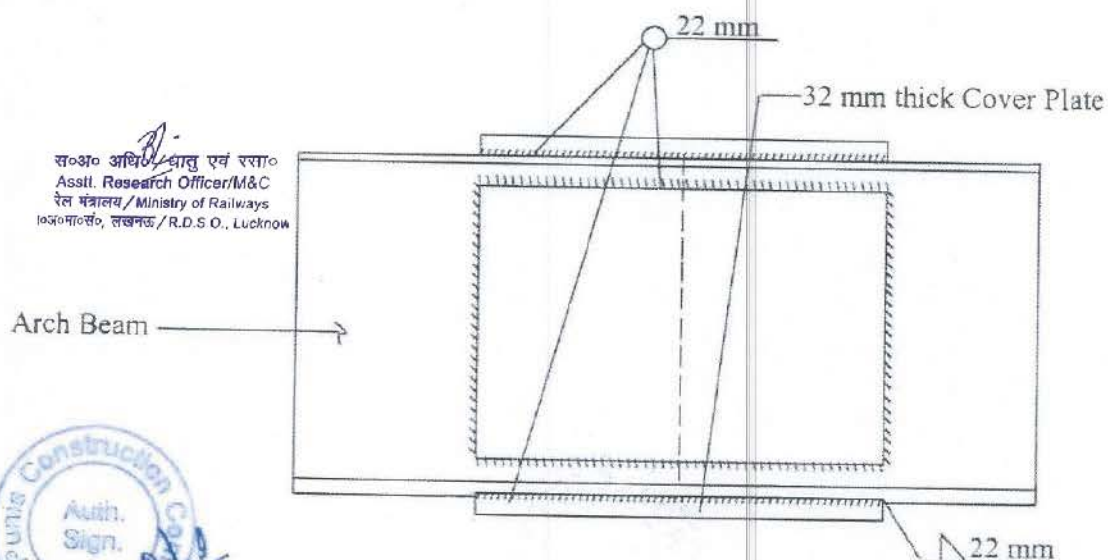
Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)



प्रभाकर कुं सिंह / Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता) / Jt. General Manager (Civil)
इंटरनेशनल लि., रांची / IRC ON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम / Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/24
- 1). Drawing Series No. : RDSO/B-10436/2.
Arc Beam Joint, Cover Plate (32 mm thick M.S. Plate)
with Arch Beam Top & Side Plates
- 2). Weld Joint Description : Fillet (22 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Overhead (Welding at Bridge Site)
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M:
2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made
free from cracks, notches, mill scale, grease, paint, rust,
etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements
parts, Weld groove details,
weld passes & their sequence,
etc.)



प्रभाकर कृ० सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक)/Jt. General Manager (Civil)
इरॉन इंटरनेशनल लि०, रांची/IRON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
5	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

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

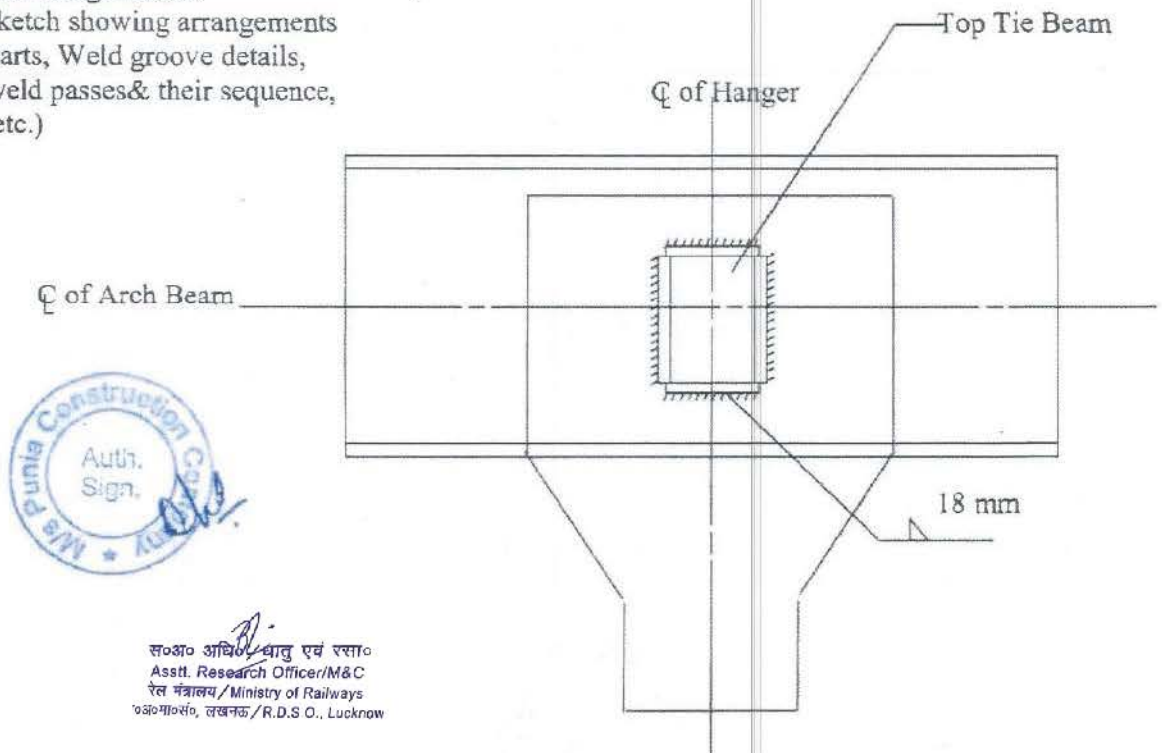


प्रभाकर कुंवर / Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभिनव) / Jt. General Manager (Civil)
इरॉन इंटरनेशनल लि., रांची / IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम / Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/30
- 1). Drawing Series No. : RDSO/B-10436/3.
Top Tie Beam with Top Arc Beam & Hanger,
- 2). Weld Joint Description : Fillet (18 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Overhead (Welding at Bridge Site)
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M:
2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made
free from cracks, notches, mill scale, grease, paint, rust,
etc. which may affect weld quality.
- 7.1). Joint design details :

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



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



प्रभावकर कृष्ण सिंह / Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक) / Jt. General Manager (Civil)
इरकॉन इंटरनैशनल लि., रांची / IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम / Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

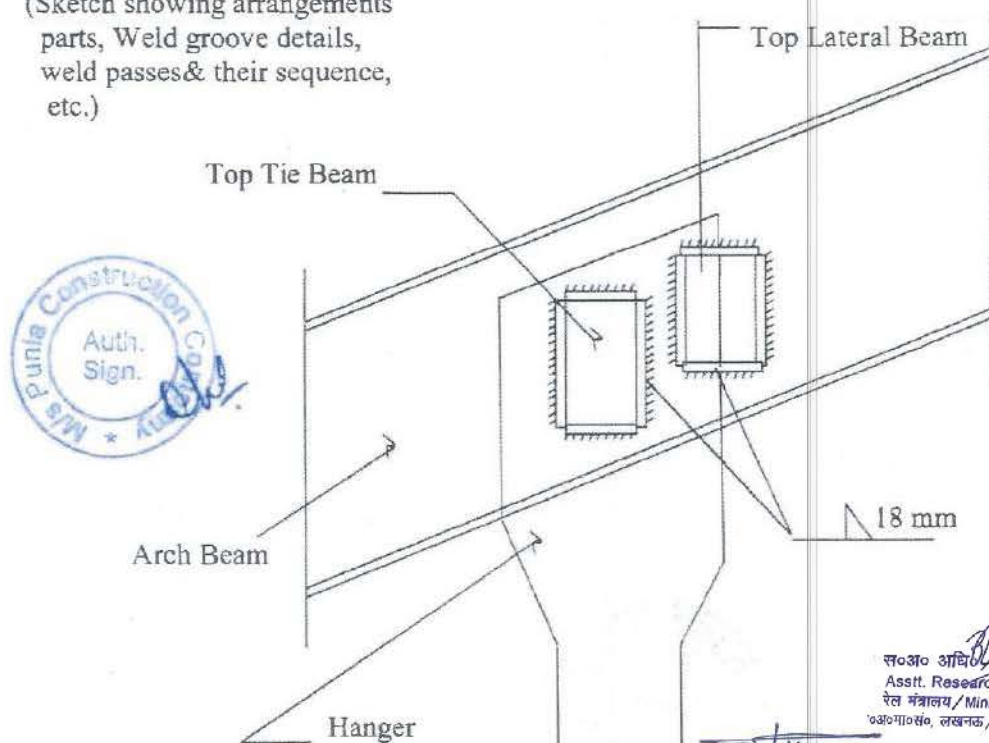
संलग्न अधिकारी एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
आर.डी.एस.ओ., लखनऊ / R.D.S.O., Lucknow



प्रभाकर कुं सिंह / Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक) / Jt. General Manager (Civil)
इंफ्रास्ट्रक्चर डेवलपर्स लि. / IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम / Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/31
- 1). Drawing Series No. : RDSO/B-10436/3.
Top Lateral Bracing Beam with Top Tie Beam & Arc Beam,
- 2). Weld Joint Description : Fillet (18 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Overhead (Welding at Bridge Site)
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.
- 1). Joint design details :
(Sketch showing arrangements parts, Weld groove details, weld passes & their sequence, etc.)



सं०अ० अधिकारी एवं सहा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
०३० गंगा रोड, लखनऊ/R.D.S.O., Lucknow



प्रभाकर कृ० सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभिनिक)/Jt. General Manager (Civil)
इरॉन इंटरनेशनल लि., राँची, IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

- 10.2) Welding sequence & techniques : N.A.
- 11). Provision of run on/run off tabs : N.A.
- 12). Cleaning of weld bead before laying of next weld bead : Yes
- 13). Root preparation before welding other side of groove weld : N.A.
- 14). Pre-heating & interpass temperature : 100°C - 150°C
- 15). Peening : N.A.
- 16). Post weld treatment : N.A.
- 17). Rectification of weld defect (If Any) : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.
- 18). Inspection of weld : Visual, D.P. Test.
- 19). Any other relevant detail : None

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

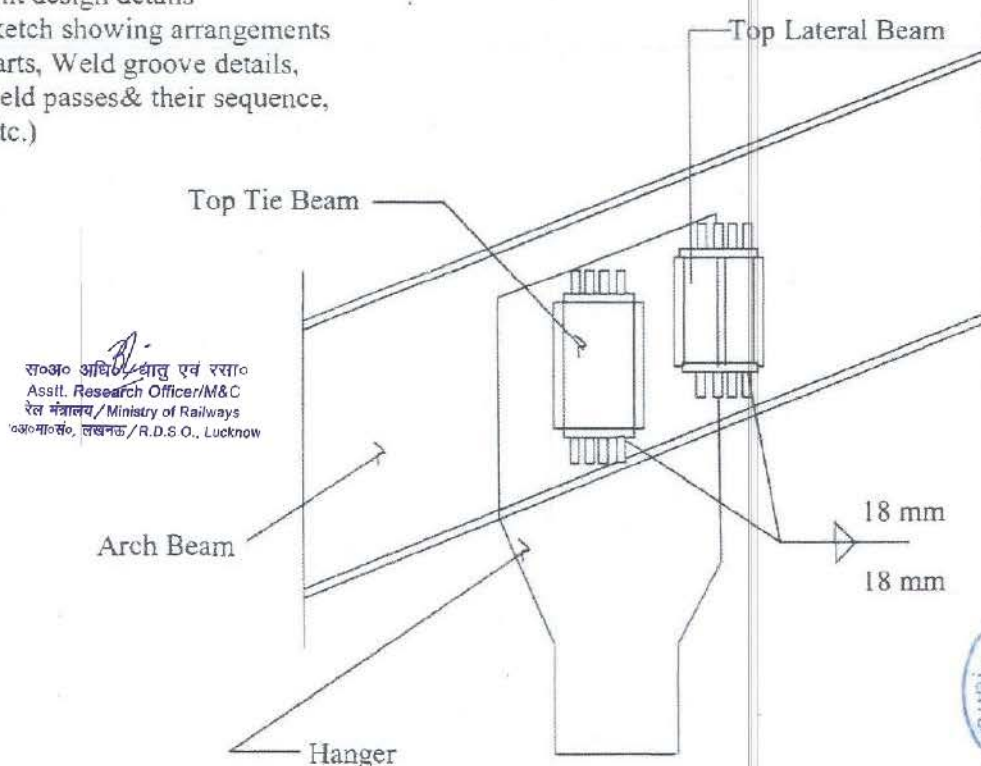
Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)



प्रभावकर कृ. सिंह Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अस. वि.)/Jt. General Manager (Civil)
इंफ्रान्ट्रस्ट्रक्चर लि. रांची IRCCN INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/32
- 1). Drawing Series No. : RDSO/B-10436/3.
Stiffener Plate (25 mm thick M.S. Plate) with Top Tie Beam, Top Lateral Bracing Beam & Arc Beam
- 2). Weld Joint Description : Fillet (18 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : FCAW
- 5). Welding Position : Overhead (Welding at Bridge Site)
- 6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M: 2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : CO₂
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements parts, Weld groove details, weld passes & their sequence, etc.)



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भारत सरकार का उपक्रम Govt. of India Undertaking



WELDING PROCEDURE SPECIFICATION SHEET

7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001

8). Welding Current : Type: DC, Polarity: Reverse

9). Welder qualification : As per IS: 7310 (Part-1) & 817

10). Welding parameters & techniques :

10.1) Welding parameters :

Weld pass No.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
4	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22

10.2) Welding sequence & techniques

: N.A.

11). Provision of run on/run off tabs

: N.A.

12). Cleaning of weld bead before laying of next weld bead

: Yes

13). Root preparation before welding other side of groove weld

: N.A.

14). Pre-heating & interpass temperature

: 100°C - 150°C

15). Peening

: N.A.

16). Post weld treatment

: N.A.

17). Rectification of weld defect

: By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/20 after conducting D.P. Test.

(If Any)

18). Inspection of weld

: Visual, D.P. Test.

19). Any other relevant detail

: None

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रेल मंत्रालय / Ministry of Railways
आ० मा० सं०, लखनऊ / R.D.S.O., Lucknow

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)



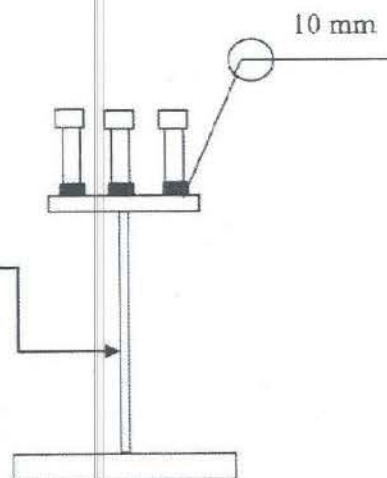
प्रभाकर कृ० सिंह / Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (असैनिक) / Jt. General Manager (Civil)
इरॉन इंटरनॅशनल लि०, राँची / IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम / Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAL/33
- 1). Drawing Series No. : RDSO/B-10436/6.
Stud Shear Connector on Top Flanges of Bottom Cross Beam
- 2). Weld Joint Description : Resistance Welding (10 mm All-around)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
The Stud Shear Connector & Ceramic Ferrules
Confirm to type SD1/UF as per BS EN ISO 13918.
- 4). Welding Process : Automatic Welding Machine
(Like Resistance Welding)
- 5). Welding Position : Down Hand
- 6). Welding Consumable :
- 6.1). Electrode Wire : N.A. Drying Method: N.A.
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : N.A.
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made
free from cracks, notches, mill scale, grease, paint, rust,
etc. which may affect weld quality.
- 7.1). Joint design details :
(Sketch showing arrangements
parts, Weld groove details,
weld passes& their sequence,
etc.)

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Asstt. Research Officer/M&C
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Bottom Cross Beam



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इरकॉन इंटरनेशनल लि., रांची IRCON INTERNATIONAL LTD., Ranchi
भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per Drawing
 8). Welding Current : Type: DC, Polarity: Reverse
 9). Welder qualification : As per IS: 7310 (Part-1) & 817
 10). Welding parameters & techniques :
 10.1) Welding parameters :

(For 25mm dia. Stud Shear Connector);

Weld Pass no.	Electrode/Wire dia. mm	Current (Amp)	Arc voltage(volt)	Time (in ms)	Lift (in mm)	Protrusion app. (in mm)	Shielding gas flow rate (Ltr/min)
1	N.A.	1800	N.A.	1600	-	-	N.A.

- 10.2) Welding sequence & techniques : 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). Pre-heating & interpass temperature : N.A.
 15). Peening : N.A.
 16). Post weld treatment : N.A.
 17). Rectification of weld defect : Rectification to be done as per BS 115 Cl. No. 6 (L, M & N)
 18). Inspection of weld : Visual, Ring Test and Bending Test.
 19). Any other relevant detail : None

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)



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



प्रभाकर कुमार सिंह/Prabhakar Kr. Singh
 संयुक्त महाप्रबंधक (अभियंता) Jt. General Manager (Civil)
 इरॉन इंटरनेशनल लि., रॉचि IRCON INTERNATIONAL LTD., Ranchi
 भारत सरकार का उपक्रम/Govt. of India Undertaking

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/48.00/BOW/NHAI/34
- 1). RDSO Drawing No. : All relevant drawings on the above
- 2). Weld Joint Description : 5mm Tack welds on all Fillet & Butt joints.
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0,
- 4). Welding Process : M.M.A.W.
- 5). Welding Position : Horizontal-Vertical
- 6). Welding Consumable :
- 6.1). Electrode Wire : Class: B2 of IRS M.28/20,
Type: Heavy coated
Drying Method: As recommended by the electrode manufacturer
- 6.2). Flux : N.A.
- 6.3). Shielding Gas : N.A.
- 7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.
- 7.1). Joint design details : N.A.
(Sketch showing arrangements parts, Weld groove details, weld passes & their sequence, etc.)
- 7.2). Joint Preparation : As per IS: 4353-1995 & WBC-2001
- 8). Welding Current : Type: DC, Polarity: Reverse
- 9). Welder qualification : As per IS: 7310 (Part-1) & 817
- 10). Welding parameters & techniques :
- 10.1) Welding parameters :

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Weld pass	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (in m/min.)	Travel speed (in m/min.)	Electrode stick out (in mm)	Gas flow (l/min.)
1	4	180	24	N.A.	N.A.	N.A.	N.A.



प्रभावकर कृ. सिंह/Prabhakar Kr. Singh
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WELDING PROCEDURE SPECIFICATION SHEET

- | | |
|--|--|
| 10.2) Welding sequence & techniques | : 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). Pre-heating & interpass temperature | : N.A. |
| 15). Peening | : N.A. |
| 16). Post weld treatment | : N.A. |
| 17). Rectification of weld defect | : N.A. |
| | : By grinding of the defective weld & rectifying the weld as per Cl.32.2 of IS:9595-96, using B2 class of electrodes of specification IRS M-28/12, after conducting D.P. Test. |
| 18). Inspection of weld | : Visual, D.P. Test. |
| 19). Any other relevant detail | : None |

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लखनऊ, लखनऊ/R.D.S.O., Lucknow

Prepared by: Punia Construction Company.
Signature:
Designation:
Date:
(For and on behalf of fabricator)



प्रभाकर कृ० सिंह/Prabhakar Kr. Singh
संयुक्त महाप्रबंधक (अभियंता) General Manager (Civil)
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