

WELDING PROCEDURE SPECIFICATION SHEET**INDEX**

S.No.	Joint Description	Drg. No.	W.P.S.S. No.	Page Mark
1).	Bottom Long Beam Top Plate (25 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)	RDSO/B-10430/1 & RDSO/B-10430/5	PCC/42.00/BOW/NHAI /01	01/68-02/68
2).	Bottom Long Beam Top & Bottom Plate (25 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)	RDSO/B-10430/1 & RDSO/B-10430/5	PCC/42.00/BOW/NHAI /02	03/68-04/68
3).	Hanger Box Top & Bottom Plate (28 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)	RDSO/B-10430/1 & RDSO/B-10430/9	PCC/42.00/BOW/NHAI /03	05/68-06/68
4).	Arch Beam Bottom Plate (28 mm thick M.S. Plate) with Side Plate (28 mm thick M.S. Plate)	RDSO/B-10430/1 & RDSO/B-10430/2	PCC/42.00/BOW/NHAI /04	07/68-08/68
5).	Arch Beam Top & Bottom Plate (28 mm thick M.S. Plate) with Side Plate (28 mm thick M.S. Plate)	RDSO/B-10430/1 & RDSO/B-10430/2	PCC/42.00/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 (25 mm thick Plate) Bottom Flange (28 mm thick Plate)	RDSO/B-10430/1 & RDSO/B-10430/6	PCC/42.00/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-10430/1 & RDSO/B-10430/6	PCC/42.00/BOW/NHAI /07	13/68-14/68
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-10430/1 & RDSO/B-10430/6	PCC/42.00/BOW/NHAI /08	15/68-16/68

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North Western Railway, Jaipur



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(N.C. Sharma)
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WELDING PROCEDURE SPECIFICATION SHEET

9).	Int. Bottom Cross Beam {BCB1/BCB2} Top Flange Cover Plate (32 mm thick Plate), Web Cover Plate (16 mm thick Plate) & Bottom Flange Cover Plate (45 mm thick Plate) with Int. Cross Beam.	RDSO/B-10430/1 & RDSO/B-10430/6	PCC/42.00/BOW/NHAI /09	17/68-18/68
10).	End Bottom Cross Beam {Shipping Mark:BCB3} Top & Bottom Plate (36 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)	RDSO/B-10430/1 & RDSO/B-10430/6	PCC/42.00/BOW/NHAI /10	19/68-20/68
11).	End Bottom Cross Beam {BCB3} Top Flange Cover Plate (45 mm thick Plate), Web Cover Plate (25 mm thick Plate) & Bottom Flange Cover Plate (45 mm thick Plate) with Int. Cross Beam.	RDSO/B-10430/1 & RDSO/B-10430/6	PCC/42.00/BOW/NHAI /11	21/68-22/68
12).	Top Tie Beam, Top & Bottom Plate (20 mm thick M.S. Plate) with Side Plates (20 mm thick M.S. Plate)	RDSO/B-10430/1 & RDSO/B-10430/3	PCC/42.00/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-10430/1 & RDSO/B-10430/3	PCC/42.00/BOW/NHAI /13	25/68-26/68
14).	Top Tie Beam Joint, Cover Plate (25 mm thick M.S. Plate) with Top & Side Plates	RDSO/B-10430/3	PCC/42.00/BOW/NHAI /14	27/68-28/68
15).	Hanger with Arch Beam, Side Plate (28 mm thick M.S. Plate) with Arch Beam Side Plate (28 mm thick M.S. Plate)	RDSO/B-10430/9	PCC/42.00/BOW/NHAI /15	29/68-30/68
16).	Stiffener Plate (25 mm thick M.S. Plate) with Hanger (25 mm thick M.S. Plate) & Arch Beam (28 mm thick M.S. Plate)	RDSO/B-10430/9	PCC/42.00/BOW/NHAI /16	31/68-32/68
17).	Hanger with Bottom Long Beam, Side Plate (28 mm thick M.S. Plate) with Bottom Long Beam side plate (25 mm thick M.S. Plate)	RDSO/B-10430/9	PCC/42.00/BOW/NHAI /17	33/68-34/68

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WELDING PROCEDURE SPECIFICATION SHEET

18).	Stiffener Plate (25 mm thick M.S. Plate) with Hanger (25 mm thick M.S. Plate) & Bottom Long Beam (25 mm thick M.S. Plate)	RDSO/B-10430/9	PCC/42.00/BOW/NHAI /18	35/68-36/68
19).	Diaphragm Plate (16 mm thick M. S. Plate) with Hanger	RDSO/B-10430/9	PCC/42.00/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-10430/4	PCC/42.00/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-10430/6	PCC/42.00/BOW/NHAI /21	41/68-42/68
22).	Diaphragm Plate (20 mm thick M. S. Plate) with Arch Beam	RDSO/B-10430/2	PCC/42.00/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-10430/5	PCC/42.00/BOW/NHAI /23	45/68-46/68
24).	Diaphragm Plate (10 mm thick M. S. Plate) with Top Tie Beam	RDSO/B-10430/3	PCC/42.00/BOW/NHAI /24	47/68-48/68
25).	Diaphragm Plate (10 mm thick M. S. Plate) with Top Lateral Bracing Beam	RDSO/B-10430/3	PCC/42.00/BOW/NHAI /25	49/68-50/68
26).	Bottom Cross Beam Angle Cleat (L150X150X18) with Bottom Long Beam Side Plate (25 mm thick M.S. Plate)	RDSO/B-10430/6	PCC/42.00/BOW/NHAI /26	51/68-52/68
27).	Stiffener Plate (25 mm thick M.S. Plate) with Arch Beam & Bottom Long Beam	RDSO/B-10430/4	PCC/42.00/BOW/NHAI /27	53/68-54/68
28).	Bottom Long Beam Joint, Cover Plate (32 mm thick M.S. Plate) with Top & Side Plates	RDSO/B-10430/5	PCC/42.00/BOW/NHAI /28	55/68-56/68
29).	Arc Beam Joint, Cover Plate (36 mm thick M.S. Plate) with Top & Side Plates	RDSO/B-10430/2	PCC/42.00/BOW/NHAI /29	57/68-58/68
30).	Top Tie Beam with Arc Beam & Hanger	RDSO/B-10430/3	PCC/42.00/BOW/NHAI /30	59/68-60/68
31).	Top Lateral Bracing Beam with Top Tie Beam & Arc Beam.	RDSO/B-10430/3	PCC/42.00/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-10430/3	PCC/42.00/BOW/NHAI /32	63/68-64/68

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WELDING PROCEDURE SPECIFICATION SHEET

33).	Stud Shear Connector on Top Flanges of Bottom Cross Beam	RDSO/B-10430/6	PCC/42.00/BOW/NHAI /33	65/68-66/68
34).	TACK Weld	All relevant drawings on the above	PCC/42.00/BOW/NHAI /34	67/68-68/68



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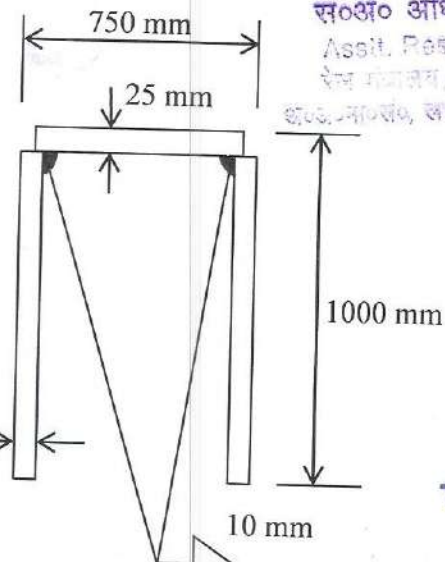
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Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur**

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/42.00/BOW/NHAI/01
- 1). Drawing Series No. : RDSO/B-10430/1 & RDSO/B-10430/5.
Bottom Long Beam, Top 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.)



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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

[Signature]
Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

[Signature]
(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

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



[Signature]
Ritesh

[Signature]
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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/42.00/BOW/NHAI/02
- 1). Drawing Series No. : RDSO/B-10430/1 & RDSO/B-10430/5.
Bottom Long Beam, Top & Bottom Plate (25 mm thick M.S. Plate) with Side Plates (25 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.

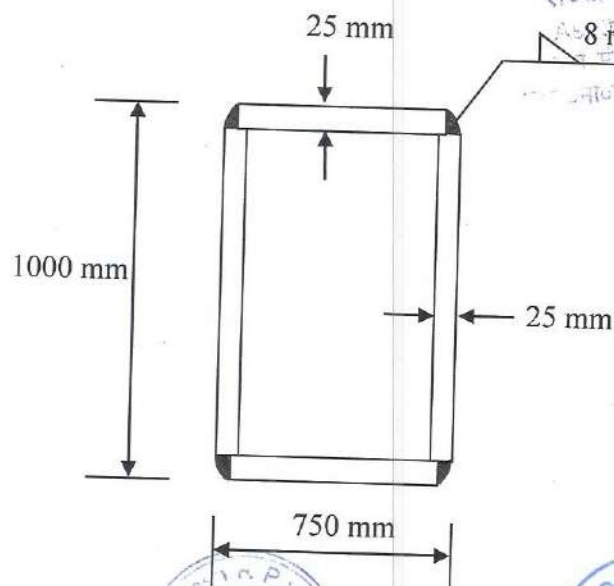
- 7.1). Joint design details
(Sketch showing arrangements parts, Weld groove details, weld passes & their sequence, etc.)

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D. Cum Superintending Engineer
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North Western Railway, Jaipur



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

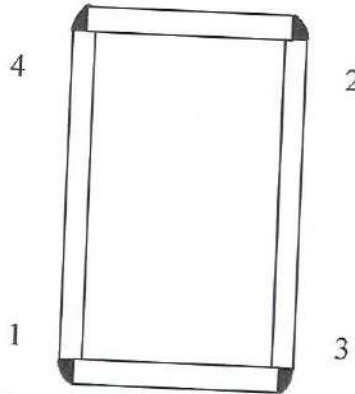
: As per IS: 7310 (Part-1) & 817

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 (1/min.)
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

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

16). Peening

17). Post weld treatment

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.

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

: None

19). Inspection of weld

20). Any other relevant detail

संशोधन अधिकारी/धातु एवं रसायन

Asstt. Research Officer/M&C

रेलवे विभाग / Ministry of Railways

संशोधन विभाग, लखनऊ / R.D.S.O., Lucknow

: Yes

: N.A.

: N.A.

: 100°C - 250°C

: N.A.

: N.A.

Project Manager
Cum Executive Engineer
PWD NH Division BarmerPrepared by: Runia Construction Company.
Signature: _____
Designation: _____
Date: _____
(For and on behalf of fabricator)उप मुख्य इंजीनियर (पुनर्निर्माण) - II
Dy. Chief Engineer (Bridges) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipurमण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुरनीतीश कुमार काशिक
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कॉप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

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(N.C. Sharma)

Cum Superintending Engineer
PWD NH Circle, JodhpurTEAM LEADER
GDRPL - SGL

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/42.00/BOW/NHAI/03
- 1). Drawing Series No. : RDSO/B-10430/1 & RDSO/B-10430/9.
Hanger Box, Top & Bottom Plate (28 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.)

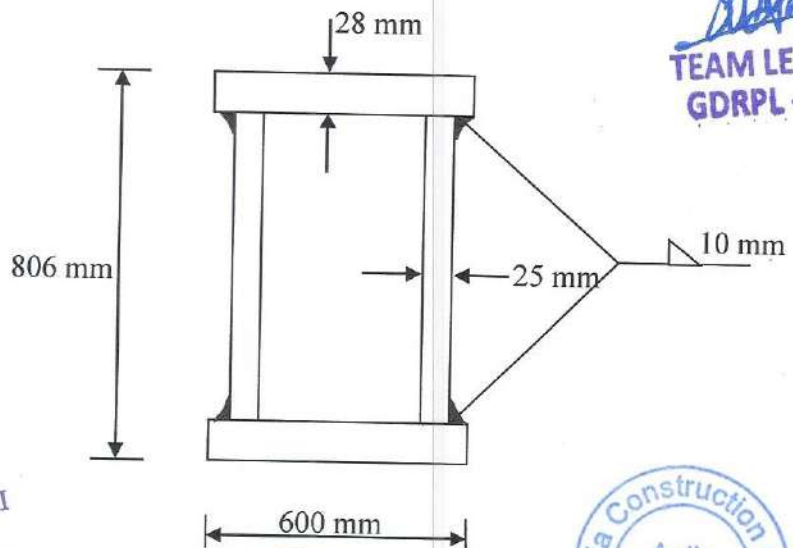
(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jaipur

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

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नितिश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबंधक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nager, Delhi-110092



TEAM LEADER
GDRPL - SGL



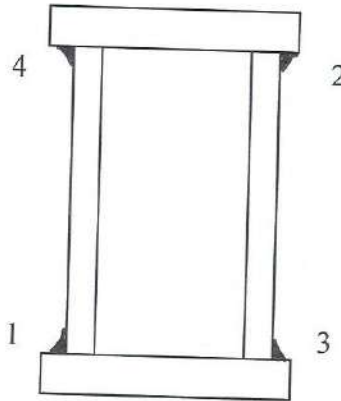
मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

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	0.50-0.60	20	N.A.

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



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

TEAM LEADER
GDRPL - SGL

- 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

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

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

मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

नीतीश कुमार काशी / NITISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कॉप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

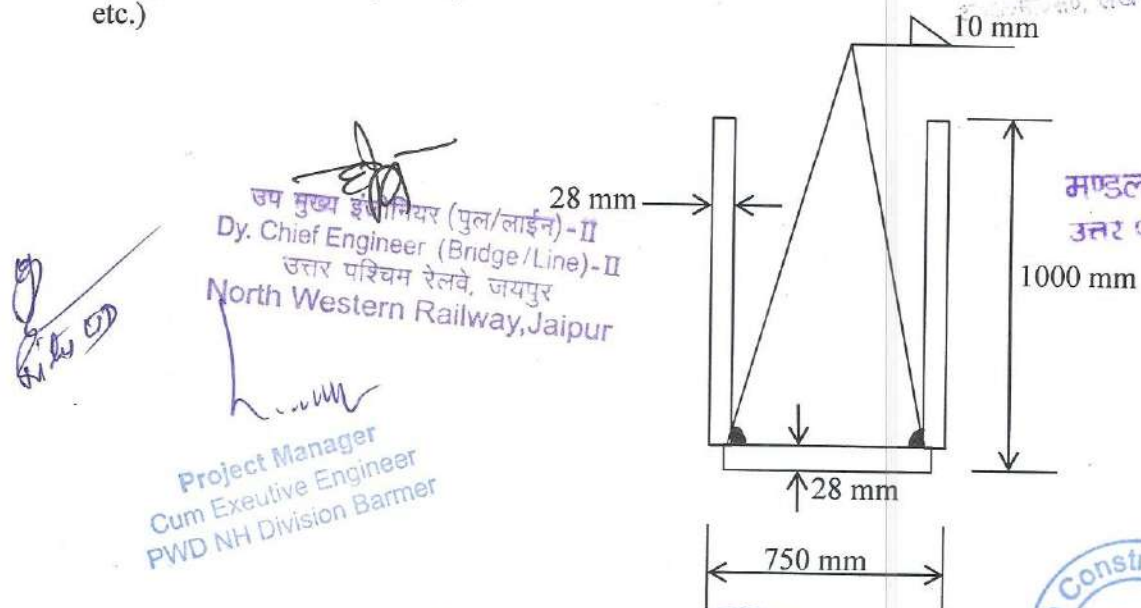
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उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जोधपुर
Western Railway, Jaipur

(N.C. Sharma)
PD Cum Superintending Engineer

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/42.00/BOW/NHAI/04
- 1). Drawing Series No. : RDSO/B-10430/1 & RDSO/B-10430/2.
Arch Beam, Bottom Plate (28 mm thick M.S. Plate) with Side Plates (28 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 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.)



Project Manager
Cum Executive Engineer
PWD NH Division Barmer

नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरिष्ठ महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Miner Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092



(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jodhpur



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

मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

TEAM LEADER
GDRPL - SGL

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

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

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



(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jaipur

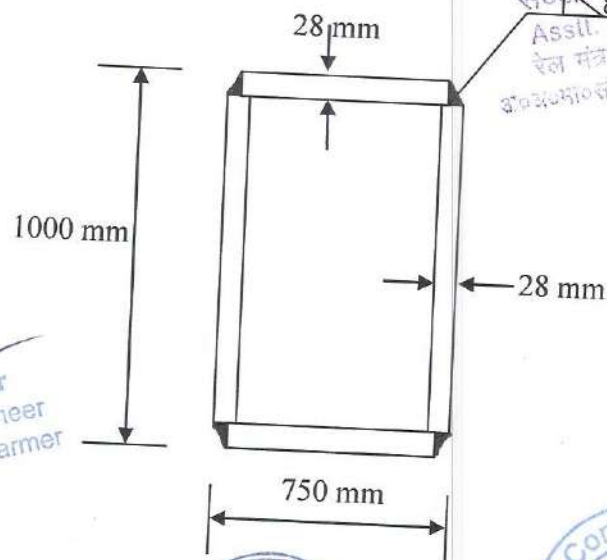
नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरि. उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

TEAM LEADER
GDRPL - SGL

अप्टल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जयपुर

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/42.00/BOW/NHAI/05
- 1). Drawing Series No. : RDSO/B-10430/1 & RDSO/B-10430/2
Arch Beam, Top & Bottom Plate (28 mm thick M.S. Plate) with Side Plates (28 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.)



(N.C. Sharma)

2D Cum Superintending Engineer
PWD NH Circle, Jaipur

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

सं. १०० अधि० / धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
आर.डी.एस.ओ., लखनऊ / R.D.S.O., Lucknow

TEAM LEADER
GDRPL - SGL



नीतीश कुमार कौशिक / NISH KUMAR KAUSHIK
वरिष्ठ सहायक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रत्यक्ष / A Govt. of India Enterprise)
स्कॉप मीनार, 12वां सत, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

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

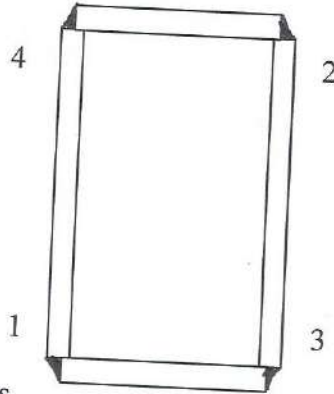
10). Welding parameters & techniques:

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	0.50-0.60	20	N.A.

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



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

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

16). Peening

17). Post weld treatment

18). Rectification of weld defect
(If Any)

: Yes
: N.A.
: N.A.
: 100°C - 250°C
: N.A.
: 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-28/20 after conducting D.P. Test.

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

: None

19). Inspection of weld

20). Any other relevant detail

(N.C. Sharma)

PD Cum Superintending Engineer
Jodhpur NH Circle, Jodhpur

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

नीतीश कुमार कौशिक / NISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबंधक (यांत्रिक) / Sr. Dy. General Manager (Mech)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

TEAM LEADER
GDRPL - SGL

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/42.00/BOW/NHAI/06

1). Drawing Series No. : RDSO/B-10430/1 & RDSO/B-10430/6
Int. Bottom Cross Beam {Shipping Mark: BCB1/BCB2}, Web Plate (16 mm thick M.S. Plate) with Top Flange Plate (25 mm thick M.S. Plate) & Bottom Plate (28 mm thick M.S. Plate)

2). Weld Joint Description : Fillet (10 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 :

7). Base Metal Preparation :

N.A.

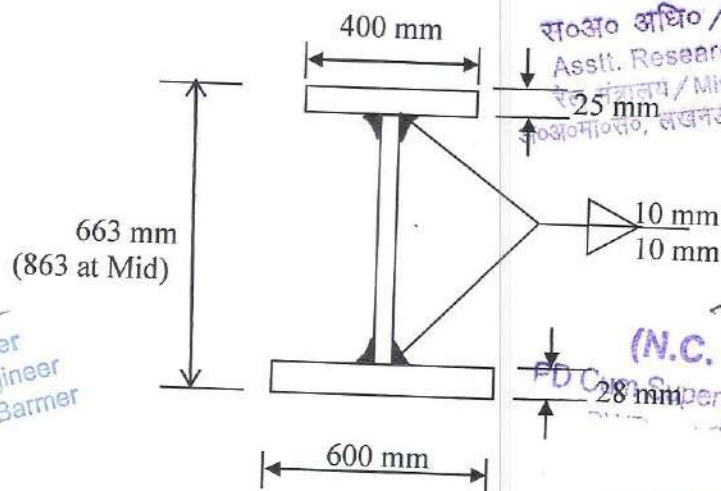
Fusion faces and adjacent surfaces are cleaned, made free from cracks, notches, mill scale, grease, paint, rust, etc. which may affect weld quality.

7.1). Joint design details

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

उप मुख् इंजीनियर (पुल/लाईन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

Project Manager
Cum Executive Engineer
PWD NH Division Barmer



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

(N.C. Sharma)
FD Cum Superintending Engineer
Barmer, Jodhpur

मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जयपुर
कुमार कौशिक/NITISH KUMAR KAUSHIK
उप मुख् महाप्रबन्धक (यांत्रिक)/Sr. Dy. General Manager (Mech.)
रयल इन्डिया लिमिटेड/RITES LIMITED
(भारत सरकार का प्रतिष्ठान/A Govt. of India Enterprise)
स्कॉप मीनार, 12वां तल, कोर-2/12th Floor, Scope Miner Core-2
लक्ष्मी नगर, दिल्ली-110092/Laxmi Nagar, Delhi-110092



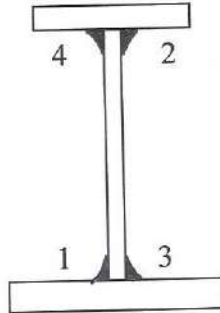
TEAM LEADER
GDRPL - SGL

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 (1/min.)
1	4.00	550-600	28-32	1.5-1.8	0.40-0.45	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
- 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
- 16). Peening
- 17). Post weld treatment
- 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/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
आञ्चलिक कार्यालय, लखनऊ/R.D.S.O., Lucknow

: Yes
: N.A.
: N.A.
: 100°C - 250°C
: N.A.
: N.A.

(N.C. Sharma)
PD Cum Superintending Engineer

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

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

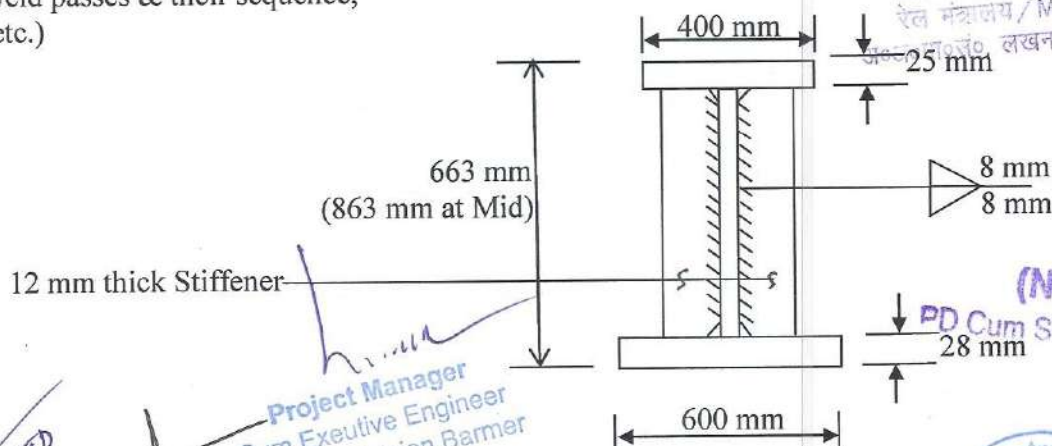
नवीन कुमार कौशिक / NAVEEN KUMAR KAUSHIK
उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
फ्लोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092
उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

TEAM LEADER
GDRPL - SGL

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/42.00/BOW/NHAI/07
- 1). Drawing Series No. : RDSO/B-10430/1 & RDSO/B-10430/6
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.)



Project Manager
Cum Exeutive Engineer
RWD NH Division Barmer
उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur



संयोजक/प्रमुख/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबंधक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

TEAM LEADER
GDRPL - SGL

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 - 250°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)

Project Manager
 Cum Executive Engineer
 PWD NH Division Barmer

Dy. Chief Engineer (Bridge/Line)-II
 उत्तर पश्चिम रेलवे, जयपुर
 North Western Railway, Jaipur

नीतीश कुमार कौशिक / NITESH KUMAR KAUSHIK
 वरिष्ठ महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
 राइट्स लिमिटेड / RITES LIMITED
 (भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
 स्कॉप मीनार, 12वां वल, कोर-2 / 12th Floor, Scope Minar Core-2
 लक्ष्मी नगर, दिल्ली-110002 / Laxmi Nagar, Delhi-110002

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मण्डल इंजीनियर/पश्चिम
 उत्तर पश्चिम रेलवे, जोधपुर

(N.C. Sharma)
 PWD Cum Superintending Engineer
 PWD NH Circle, Jodhpur

TEAM LEADER
 GDRPL - SGL

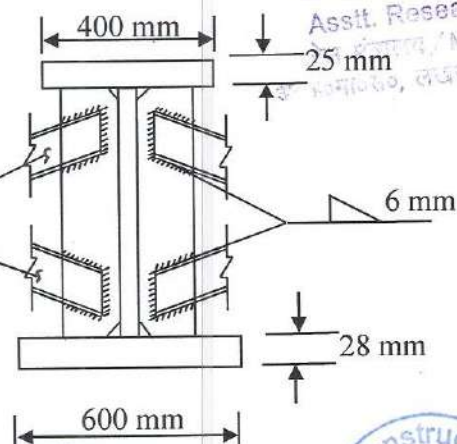
WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/42.00/BOW/NHAI/08
- 1). Drawing Series No. : RDSO/B-10430/1 & RDSO/B-10430/6
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.)

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur
Cross Frame Channel
ISMC-150

Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer



सं०अ० अधि०/धातु एवं रसा०
Assit. Research Officer/M&C
भारत सरकार, मंत्रालय of Railways
मंगली कुतिया, लुधियाना / R.D.S.O., Ludhiana

TEAM LEAD
GDRPL-
GUNKPE-SGL



मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर
15/08/2023
नोतास कुमार काशिक/NOTAS KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (धातु) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

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

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार काँशिक / NITISH KUMAR KAUSHIK
वरिष्ठ सहायक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वाँ तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

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मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

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

TEAM LEADER
GDRPL - SGL

उप मुख्य इंजीनियर (पुल/लाइन)-II
Dy. Chief Engineer (Bridge/Line)-II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

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/42.00/BOW/NHAI/09

1). Drawing Series No. : RDSO/B-10430/6.
Int. Cross Beam (BCB1/BCB2) Joint, Top Flange
Cover Plate (32 mm thick M.S. Plate), Web Cover Plate
(16 mm thick M.S. Plate) & Bottom Flange Cover
Plates (45 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)

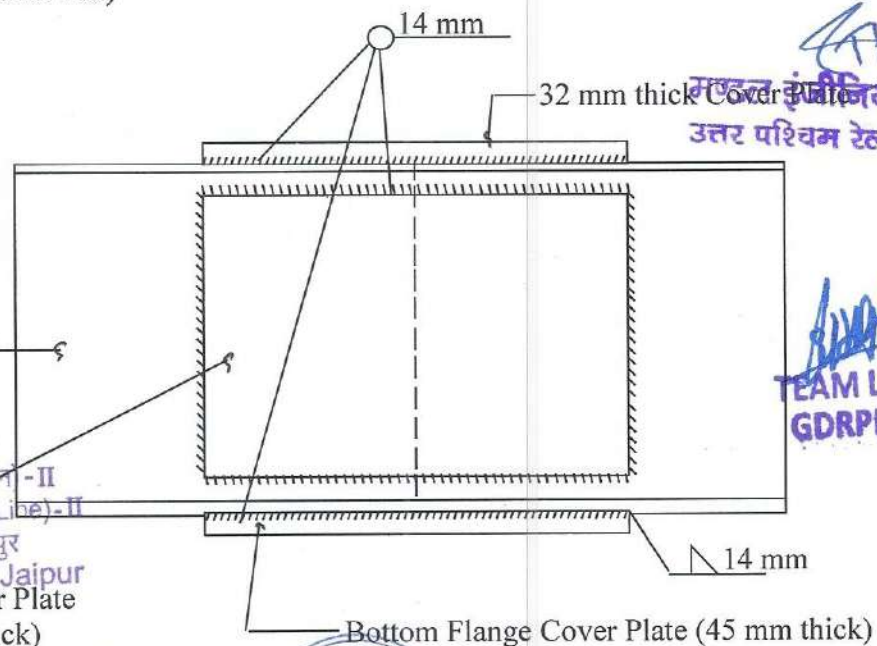
6). Welding Consumable :
6.1). Electrode Wire : Flux Cored Welding wire, Class 1 of IRS: M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20/A5.20M:
2005 (R2015).
Type: Flux Cored Wire
Drying Method: N.A.

6.2). Flux : N.A.

6.3). Shielding Gas : 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.)



(N.C. Sharma)

D Cum Superintending Engineer
PWD NH Circle, Jodhpur

Int. Cross Beam

उप मुख्य इंजीनियर (पुल/लाईन) - II
Dy. Chief Engineer (Bridge/Line)-II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

Web Cover Plate
(16 mm thick)

Bottom Flange Cover Plate (45 mm thick)

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Project Manager

Cum Executive Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार काशिक / NISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां फ्लोर, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092



संशोधन अधिकारी / धातु एवं रसायन
Asstt. Research Officer/M&C
रेलवे विभाग / Ministry of Railways
राजस्थान राज्य, जयपुर / Rajasthan State, Jaipur

TEAM LEADER
GDRPL - SGL

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. *SN*
- 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)

*(N.C. Sharma)*PD Cum Superintending Engineer
PWD NH Circle, JaipurProject Manager
Cum Executive Engineer
PWD NH Division Barmerनीलेश कुमार कोशिक / NISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (मैकेनिकल) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां मंज, कोर-2 / 12th Floor, Scope Minar Core-2
सखी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

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उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipurमण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुरTEAM LEADER
GDRPL - SGL

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/42.00/BOW/NHAI/10

1). Drawing Series No. : RDSO/B-10430/1 & RDSO/B-10430/6
Bottom Cross Beam {Shipping Mark: BCB3}, Top & Bottom Plate (36 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)

2). Weld Joint Description : Fillet (16 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.

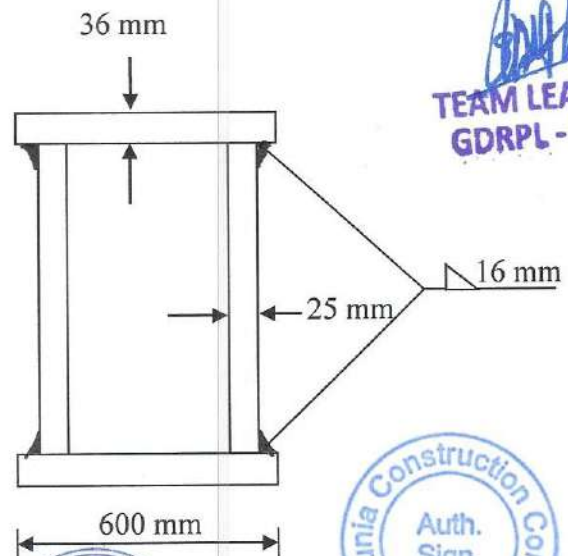
7.1). Joint design details

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

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

663 mm
(863 mm MID Span)

Project Manager
Cum Executive Engineer
PWD NH Division Barmer



TEAM LEADER
GDRPL-SGL

नीतीश कुमार काँशिक / NITESH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मिनर, 12वां फ्लोर, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

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उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

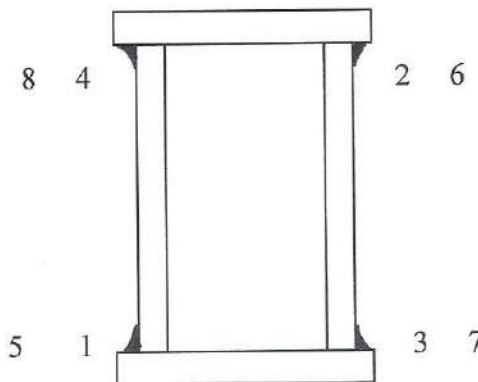
मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

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.



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

**TEAM LEADER
GDRPL - SGL**

- 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
- 20). Any other relevant detail

- : Visual, D.P. Test & Macro Etching
- : None

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

नीतीश कुमार कौशिक / NISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबंधक (मंत्रालय) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां मंज, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110002 / Laxmi Nagar, Delhi-110002

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

उप मुख्य इंजीनियर (पुल/लाइन) - II
Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

Auth. Sign.

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

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/42.00/BOW/NHAI/11

1). Drawing Series No. : RDSO/B-10430/6.
End Cross Beam (BCB3) Joint, Top Flange
Cover Plate (45 mm thick M.S. Plate), Web Cover Plate
(25 mm thick M.S. Plate) & Bottom Flange Cover
Plates (45 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.)

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

मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

TEAM LEADER
GDRPL - SGL

(N.C. Sharma)

D Cum Superintending Engineer/
PWD NH Circle, Jodhpur

End Cross Beam

उप मुख्य इंजीनियर (पुल/लाइन)-II
Dy. Chief Engineer (Bridge/Line)-II
उत्तर पश्चिम रेलवे, जोधपुर
North Western Railway, Jaipur

Cover Plate
(25 mm thick)

Bottom Flange Cover Plate (45 mm thick)

Project Manager

Cum Executive Engineer
PWD NH Division Barmer

नीतीश कुमार कौशिक / NISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां फ्लोर, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092



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/42.00/BOW/NHAI/12

1). Drawing Series No. : RDSO/B-10430/1 & RDSO/B-10430/3
Top Tie Beam, Top & Bottom Plate (20 mm thick M.S. Plate) with Side Plates (20 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

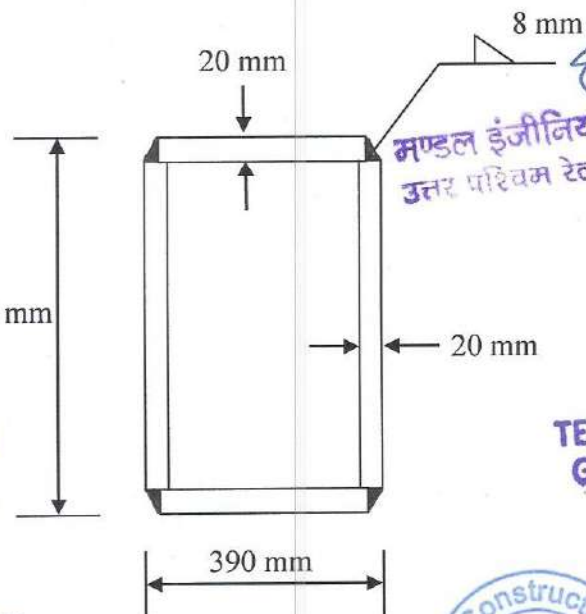
: N.A.

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.)



(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

नीतीश कुमार काशिक / NISHU KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां फ्लोर, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092



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

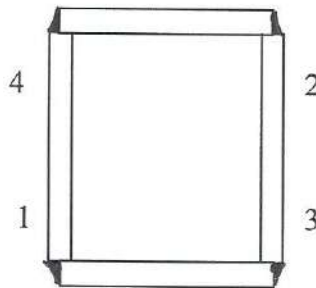
मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर
TEAM LEADER
GDRPL - SGL

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	0.50-0.60	20	N.A.

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



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

- 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 & re-welding 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

Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

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

नीतीश कुमार कौशिक / NITESH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कॉप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110002 / Laxmi Nagar, Delhi-110002

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

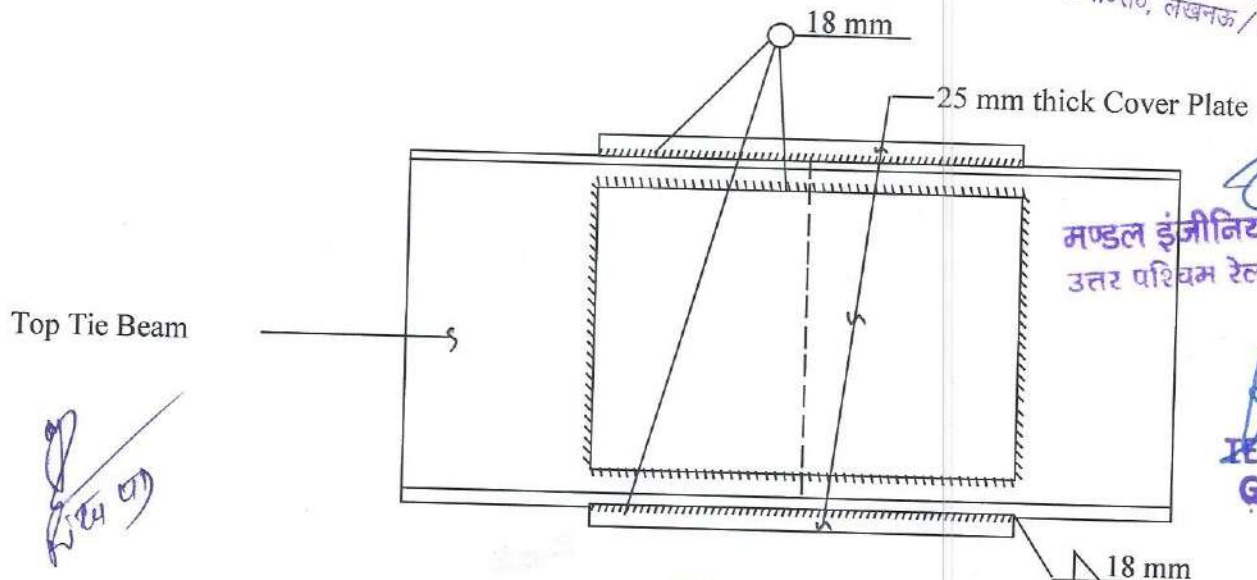
(N.C. Sharma)

Cum Superintending Engineer
PWD NH Circle, Jodhpur

TEAM LEADER
GDRPL - SGL

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/42.00/BOW/NHAI/14
- 1). Drawing Series No. : RDSO/B-10430/3.
Top Tie Beam Joint, Cover Plate (25 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.)



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Project Manager
Cum Executive Engineer
PWD NH Division Barmer

नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
साइडस लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां एत, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110002 / Laxmi Nager, Delhi-110002

(N.C. Sharma)
उप मुख्य इंजीनियर (पुल/लाईन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जोधपुर
North Western Railway, Jaipur



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

10). Welding parameters & techniques
10.1) Welding parameters

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

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

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

: Yes

14). Pre-heating & interpass temperature

: N.A.

15). Peening

: 100°C - 250°C

16). Post weld treatment

: N.A.

17). Rectification of weld defect
(If Any)

: 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-28/20 after conducting D.P. Test.

CW

18). Inspection of weld

: Visual D P Test

संज्ञा अधि

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/42.00/BOW/NHAI/15
- 1). Drawing Series No. : RDSO/B-10430/9.
Hanger with Arch Beam, Side Plate (28mm thick M.S. Plate) with Arch Beam Side Plate (28 mm thick M.S. Plate).
- 2). Weld Joint Description : Fillet (24 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.)

संअ० अधि०/धातु एवं रसा
Asslt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railway
अ०अ०मा०सं०, लखनऊ / R.D.S.C., Luck

TEAM LEADER
GDRPL - SGL

Q of Arch Beam

Q of Hanger

24 mm

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

Project Manager नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
Cum Executive Engineer बरि. उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
PWD NH Division Barmer राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां वल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

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मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर



उप मुख्य इंजीनियर (पुल/लाइन)-II
Dy. Chief Engineer (Bridge/Line)-II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

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.

संलग्न अधिन/धातु एवं रसायन

18). Inspection of weld

: Visual, D.P. Test.

Asstt. Research Officer/M&C

19). Any other relevant detail

: None

रेल मंत्रालय / Ministry of Railways

अंशमाला, लखनऊ / R.D.S.O., Lucknow

(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

नीतीश कुमार कांशिक / NISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रविष्टान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां वल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

उप मुख्य इंजीनियर (पुल/लाईन)-II
Dy. Chief Engineer (Bridge/Line)-II
उत्तर पश्चिम रेलवे, जोधपुर
North Western Railway, Jaipur

TEAM LEADER
GDRPL - SGL

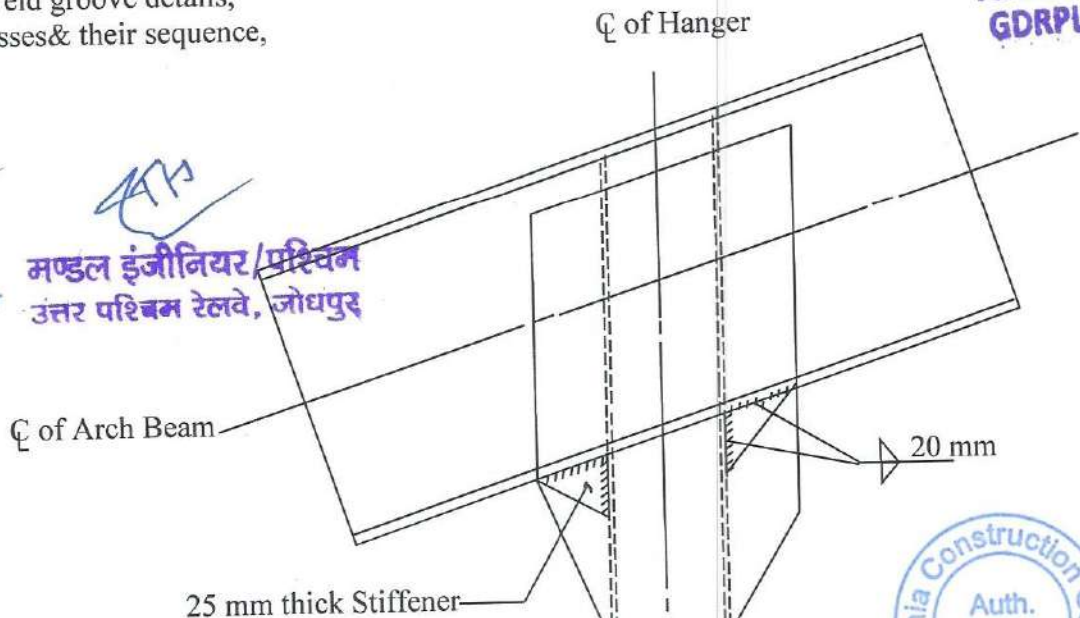
WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/42.00/BOW/NHAI/16
- 1). Drawing Series No. : RDSO/B-10430/9.
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 (20 mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0, स०अ० अधि०/धातु एवं रसा०
Asstt. Research Officer/M&C
- 4). Welding Process : FCAW रेल मंत्रालय/Ministry of Railways
- 5). Welding Position : Overhead (Welding at Bridge Site) अ०अ०मा०स०, लखनऊ/R.D.S.O., Luck
- 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.)

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर



TEAM LEADER
GDRPL - SGL

(N.C. Sharma)

Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार काँशिक / NITESH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise
स्कोप मीनार, 12वां तल, कोर-2/12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110002 / Laxmi Nagar, Delhi-110002



उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जोधपुर
North Western Railway, Jodhpur

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

: 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

संअ० अधि०/धातु एवं रसा०

Asstt. Research Officer/M&C

रेल मंत्रालय/Ministry of Railways

अ०अ०सं० लखनऊ/R.D.S.O., Lucknow

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुरनीतीश कुमार कौशिक
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092Project Manager
Cum Executive Engineer
PWD NH Division Barmer

(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, JodhpurTEAM LEADER
GDRPL - SGLउप मुख्य इंजीनियर (पुल/लाइन) - II
उत्तर पश्चिम रेलवे, जोधपुर
Dy. Chief Engineer (Bridge/Line) - II
North Western Railway, Jaipur

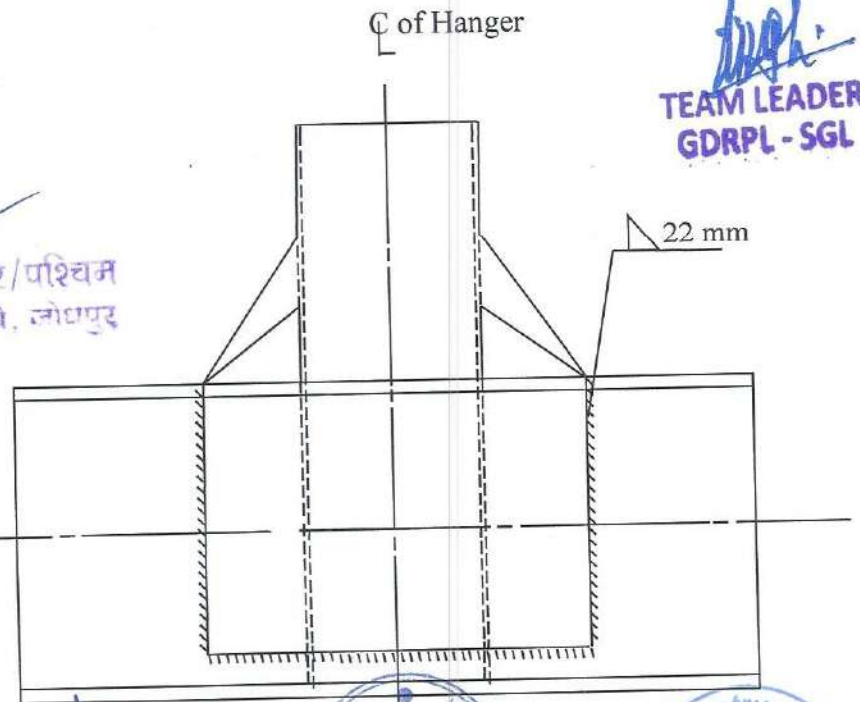
WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/42.00/BOW/NHAI/17

- 1). Drawing Series No. : RDSO/B-10430/9.
Hanger with Bottom Long Beam, Side Plate (28mm thick M.S. Plate) with Bottom Long Beam Side Plate (25 mm thick M.S. Plate).
- 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.)



TEAM LEADER
GDRPL - SGL

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

C of Bottom Long Beam

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Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

नीतीश कुमार काशिक / NITESH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबंधक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur



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

संज्ञा अधि/धातु एवं रसायन

Assit. Research Officer/M&C

रेल मंत्रालय / Ministry of Railways

Punjab Construction Company O., Lucknow

Prepared by: Punjab Construction Company

Signature:

Designation:

Date:

(For and on behalf of fabricator)

(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jodhpurनीतीश कुमार कौशिक / NISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कॉप गीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092मण्डल इंजीनियर/पश्चिम
तर पश्चिम रेलवे, जोधपुर

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Project Manager
Cum Executive Engineer
PWD NH Division Barmerउप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, JaipurTEAM LEADER
GDRPL - SGL

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/42.00/BOW/NHAI/18
- 1). Drawing Series No. : RDSO/B-10430/9.
Stiffener Plate (25mm thick M.S. Plate) with Hanger
(25 mm thick M.S. Plate) & Bottom Long Beam (25 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.)

मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

Q of Bottom Long Beam

Q of Hanger

25 mm thick Stiffener

18 mm
18 mm

TEAM LEADER
GDRPL - SGL

अं.अं. अधि. / धातु एवं रसा. अ. अधि.
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
अ.अ.म.सं., 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 - 250°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)

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

Auth.
 Sign.

(N.C. Sharma)
 PD Cum Superintending Engineer
 PWD NH Circle, Jodhpur

मण्डल इंजीनियर/पश्चिम
 उत्तर पश्चिम रेलवे, जोधपुर

नीतीश कुमार कौशिक / NITESH KUMAR KAUSHIK
 स.प्र. महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
 राइट्स लिमिटेड / RITES LIMITED
 (भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
 स्कॉप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
 लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

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Project Manager
 Cum Executive Engineer
 PWD NH Division Barmer

उप मुख्य इंजीनियर (पुल/लाइन) - II
 Dy. Chief Engineer (Bridge/Line) - II
 उत्तर पश्चिम रेलवे, जयपुर
 North Western Railway, Jaipur

TEAM LEADER
 GDRPL - SGL

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/42.00/BOW/NHAI/19
- 1). Drawing Series No. : RDSO/B-10430/9.
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

Hanger

सं० अ० अधिकारी / धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
प्र० अ० मंत्रालय, लखनऊ / R.D.S.O., Lucknow

10 mm
10 mm
(Welded on three sides)

(N.C. Sharma)

P.D. Cum Superintending Engineer
PWD NH Circle, Jodhpur

मुख्य इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरिष्ठ उप निदेशक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110002 / Laxmi Nagar, Delhi-110002

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Project Manager
Cum Executive Engineer
PWD NH Division Barmer

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

TEAM LEADER
GDRPL - SGL

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 (1/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 rd	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)

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur



मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

नीतीश कुमार कौशिक / NITESH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबंधक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कॉप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

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Project Manager
Cum Executive Engineer
PWD NH Division Barmer

उप मुख्य इंजीनियर (बुल/लाईन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

TEAM LEADER
GDRPL - SGL

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/42.00/BOW/NHAI/20

1). Drawing Series No. : RDSO/B-10430/4.
Joint at L0, Cover Plate (32 mm thick M.S. Plate) with Bottom Long Beam & Arch Beam.

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 : 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

6.3). Shielding Gas

7). Base Metal Preparation

: N.A.
: CO₂
: 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.)

32 mm thick Cover Plate

Arch Beam

☐ of Bottom Long Beam

22 mm

TEAM LEADER
GDRPL - SGL

(N.C. Sharma)

Cum Superintending Engineer
PWD NH Circle, Jodhpur

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नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइस लिमिटेड / RISES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur



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

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

: N.A.

: N.A.

: Yes

: N.A.

: N.A.

: N.A.

: N.A.

: N.A.

: N.A.

: N.A.

: N.A.

: N.A.

: N.A.

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: N.A.

: N.A.

: N.A.

: N.A.

: N.A.

: N.A.

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार कौशिक / NITESH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रविष्टान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां वल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

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Project Manager
Cum Executive Engineer
PWD NH Division Barmer

उप मुख्य इंजीनियर (पुल/लाईन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

TEAM LEADER
GDRPL - SGL

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/42.00/BOW/NHAI/21
- 1). Drawing Series No. : RDSO/B-10430/6.
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.)

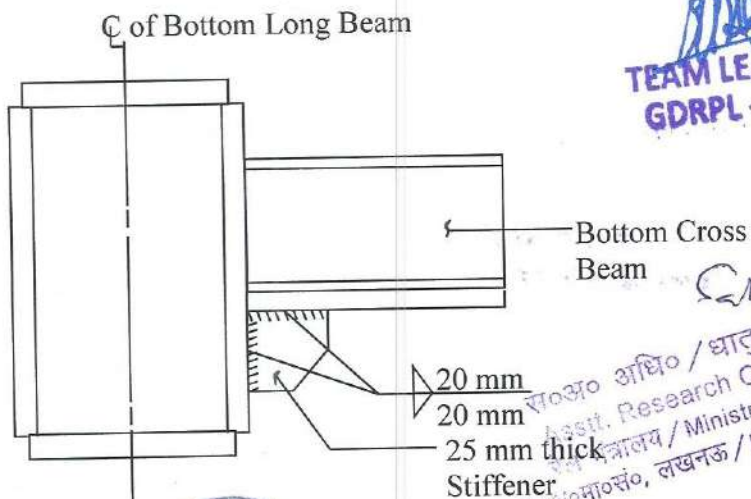
Project Manager
Cum Executive Engineer
PWD NH Division Barmer

(Signature)

(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार कौशिक / NITESH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (मशीनरी) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092



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/42.00/BOW/NHAI/22

1). Drawing Series No. : RDSO/B-10430/2.
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

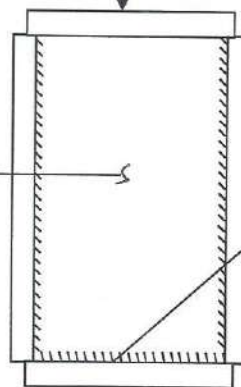
7). Base Metal Preparation

: 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.)

Arch Beam



(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

20 mm thick
Diaphragm Plate
(DP)

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

(Welded on three sides)

नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबंधक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लखनौ नगर, दिल्ली-110002 / Laxmi Nagar, Delhi-110002



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

Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

Prepared by: Punia Construction Company.

Signature:
Designation:
Date:

(For and on behalf of fabricator)

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

(N.C. Sharma)

Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार कौशिक/NITISH KUMAR KAUSHIK
वरि. उप महाप्रबन्धक (यांत्रिक)/Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड/RIGHTS LIMITED
(भारत सरकार का प्रतिष्ठान/A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2/12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092/Laxmi Nagar, Delhi-110092

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/42.00/BOW/NHAI/23

1). Drawing Series No. : RDSO/B-10430/4 & RDSO/B-10430/5
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 :
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

6.3). Shielding Gas

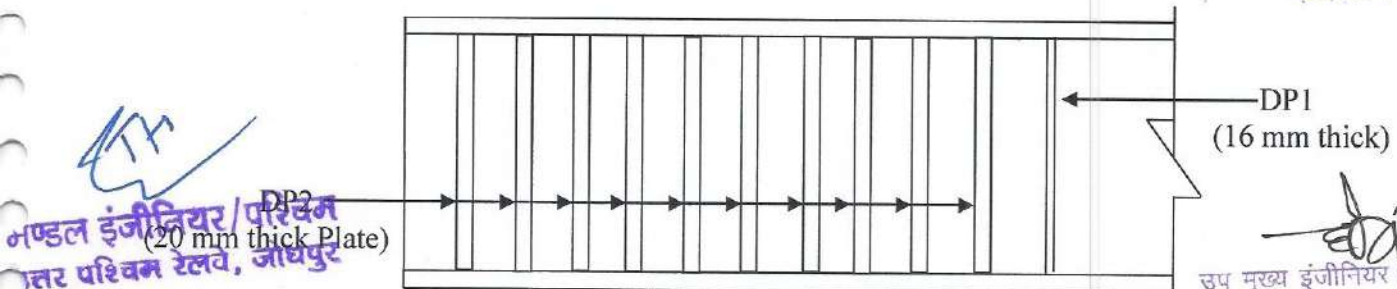
7). Base Metal Preparation : Fusion faces and adjacent surfaces are cleaned, made
free from cracks, notches, mill scale, grease, paint, rust,
etc. which may affect weld quality.

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

(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

TEAM LEADER
GDRPL - SGL



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

उप मुख्य इंजीनियर (पुल/लाइन) - II
Py. Chief Engineer (Bridge/Line) -
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110082 / Laxmi Nagar, Delhi-110082

Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

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)

(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार कौशिक
Sr. Dy. General Manager (Mech.)
RAJESH KUMAR KAUSHIK
RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Miner Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

उप मुख्य इंजीनियर/पश्चिम
पश्चिम रेलवे, जोधपुर

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उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

TEAM LEADER
GDRPL - SGL

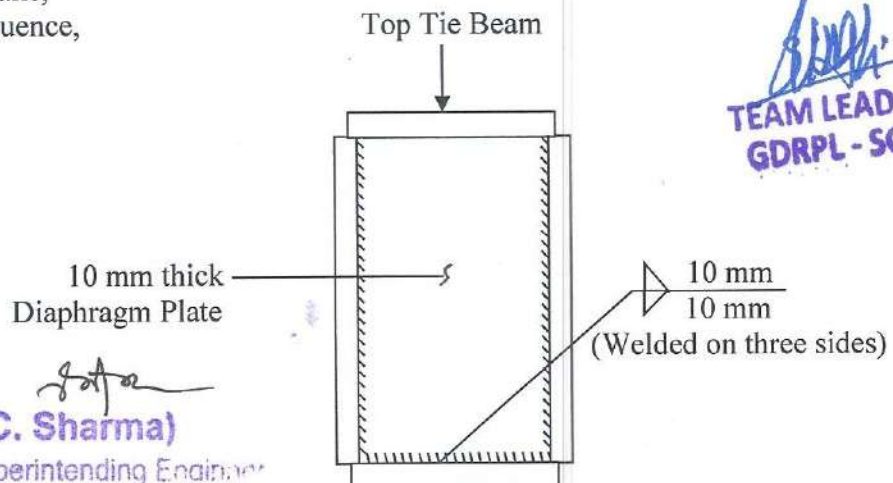
WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/42.00/BOW/NHAI/24

- 1). Drawing Series No. : RDSO/B-10430/3.
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.)



TEAM LEADER
GDRPL - SGL

(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबंधक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
सरकार का प्रतिष्ठान / A Govt. of India Enterprise
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110002 / Laxmi Nager, Delhi-110002

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उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

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

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)

: N.A.
: N.A.
: Yes
: N.A.
: 100°C - 150°C
: N.A.
: 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-28/20 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)

(N.C. Sharma)

Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार काँशिक / NITISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (मशीनरी) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां वल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

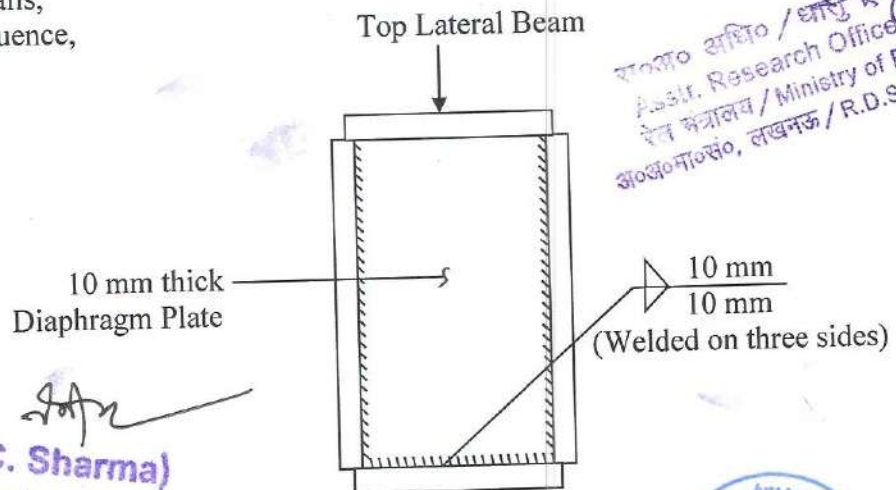
Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

TEAM LEADER
GDRPL - SGL

संशोधन अधिकारी / धातु एम एस रसायन
Asslt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
आवारा, लखनऊ / R.D.S.O., Lucknow

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/42.00/BOW/NHAI/25
- 1). Drawing Series No. : RDSO/B-10430/3.
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.)



रतना अशिम / धरु प्रहसा
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
आयोजना सं, लखनऊ / R.D.S.O., Lucknow

(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार कौशिक / NITESH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092



मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

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उप मुख्य इंजीनियर (पुल/लाईन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

TEAM LEADER
GDRPL - SGL

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 (1/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) : Visual, D.P. Test.
- 18). Inspection of weld : None
- 19). Any other relevant detail :

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार कौशिक / NITESH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110002 / Laxmi Nagar, Delhi-110002

मण्डल इंजीनियर/परिचय
उत्तर पश्चिम रेलवे, जयपुर

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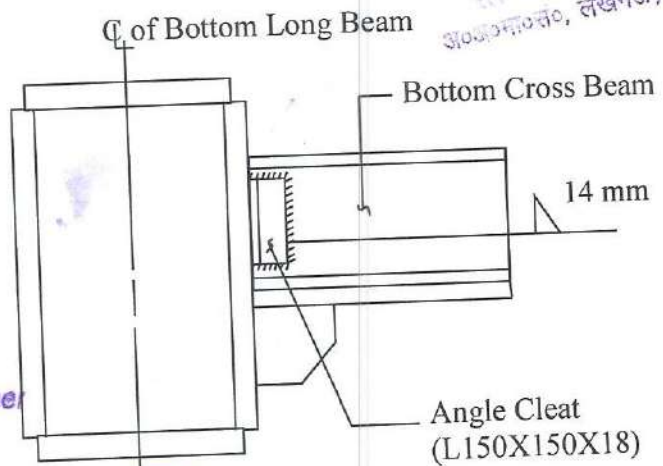
उप मुख्य इंजीनियर (पुल/लाइन)-II
Dy. Chief Engineer (Bridge/Line)-II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

TEAM LEADER
GDRPL - SGL

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/42.00/BOW/NHAI/26
- 1). Drawing Series No. : RDSO/B-10430/6.
Bottom Cross Beam Angle Cleat (L150X150X18) with
Bottom Long Beam Side Plate (25 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 : 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.)



(N.C. Sharma)

Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबंधक (यांत्रिक) / Sr. General Manager (Mechanical)
राष्ट्रिय लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान) / A Govt. of India Enterprise
स्कोप गीनार, 12वां तल, कोर-2 / 12th Floor, Scope (Minor Core-2)
नयी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

पंडल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

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उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जोधपुर
North Western Railway, Jaipur

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

TEAM LEADER
GDRPL - SGL



सहायक अभियंता/धातु एवं रसायन
Asstt. Research Officer/M&C
रेलवे मंत्रालय / Ministry of Railways
अवकाशमंडल, 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

- 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 - 250°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

(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)



मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

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उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जोधपुर
North Western Railway, Jaipur

नीतीश कुमार कौशिक
वरिष्ठ महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां बल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

TEAM LEADER
GDRPL - SGL

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

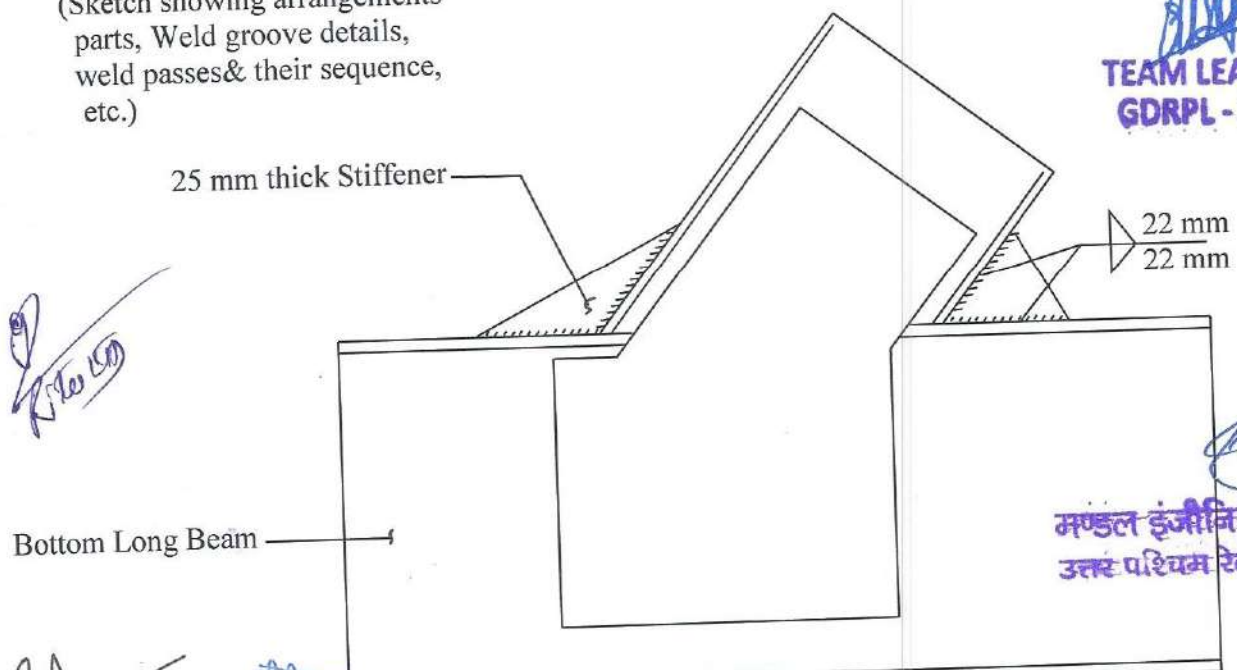
WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/42.00/BOW/NHAI/27

- 1). Drawing Series No. : RDSO/B-10430/4.
Stiffener Plate (25 mm thick M.S. Plate) with Arch
Beam & Bottom Long Beam
- 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 : 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.)



TEAM LEADER
GDRPL - SGL

मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

(N.C. Sharma)
D Cum Superintending Engineer
PWD NH Circle, Jodhpur
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उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जोधपुर
North Western Railway, Jaipur

नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरिष्ठ प्रशासनिक अधिकारी (मैकेनिकल) / Sr. General Manager (Mech)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान) / A Govt. of India Enterprise
स्कोप मीनार, 12वां फ्लोर, कोर-2 / 12th Floor, Scope Miner Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092



Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer



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 (1/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

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)

18). Inspection of weld

19). Any other relevant detail

: N.A.

: N.A.

: Yes

: N.A.

: 100°C - 250°C

: N.A.

: 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-28/20 after conducting D.P. Test.

: Visual, D.P. Test.

: None

Prepared by: Punja Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

संलग्न सचिव/धातु एवं रसायन
Asstt. Research Officer/M&C
रेलवे विभाग/Ministry of Railways
जोड़क/जोड़क/R.D.S.O., Lucknow

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार कौशिक / NITESH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबंधक (यांत्रिक) / Sr. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिकार्य / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

महेश्वर कृष्णनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

उप मुख्य इंजीनियर (पुल/लाईन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जोधपुर
North Western Railway, Jaipur

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

TEAM LEADER
GDRPL - SGL

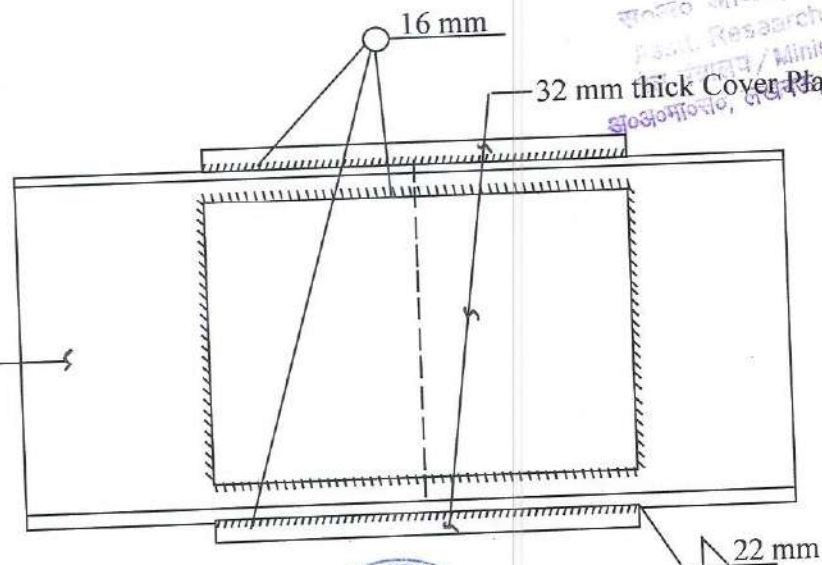
WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/42.00/BOW/NHAI/28
- 1). Drawing Series No. : RDSO/B-10430/5.
Bottom Long Beam Joint, Cover Plate (32 mm thick
M.S. Plate) with Bottom Long 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 :
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.)

(N.C. Sharma)

PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

Bottom Long Beam



नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबंधक (यांत्रिक) / Sr. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां फ्लोर, कोर-2 / 12th Floor, Scope Miner Core-2
लक्ष्मी नगर, दिल्ली-110002 / Laxmi Nagar, Delhi-110002



मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

TEAM LEADER
GDRPL - SGL

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

: $100^{\circ}\text{C} - 250^{\circ}\text{C}$

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

(N.C. Sharma)

PD Cum Superintending Engineer

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

नीतीश कुमार कौशिक / Sr. Dy. General Manager (Mech.)
 राइट्स लिमिटेड / RITES LIMITED
 (भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
 स्कोप मिनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
 लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092



Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

TEAM LEADER
GDRPL - SGL

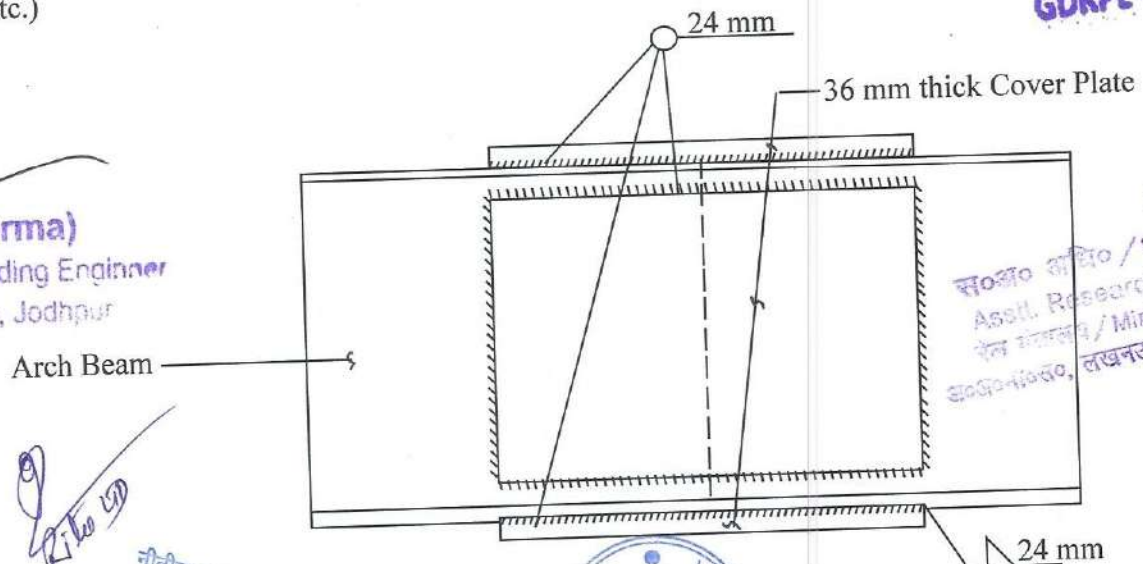
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मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

उप मुख्य इंजीनियर (पुल/लाईन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

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/42.00/BOW/NHAI/24
- 1). Drawing Series No. : RDSO/B-10430/2.
Arc Beam Joint, Cover Plate (36 mm thick M.S. Plate)
with Arch Beam Top & Side Plates
- 2). Weld Joint Description : Fillet (24 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.)

[Signature]
TEAM LEADER
GDRPL - SGL



[Signature]
(N.C. Sharma)

Cum Superintending Engineer
PWD NH Circle, Jodhpur

Arch Beam

[Signature]
संजय लाल / धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railway
संजय लाल, लखनऊ / R.D.S.O., Lu

[Signature]
नीतीश कुमार कौशिक / NISHANT KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
रूपम गीनार, 12वां फ्लोर, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092



[Signature]
Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

[Signature]
उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

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 : 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)

(N.C. Sharma)

PD Cum Superintending Engineer

नीतीश कुमार कौशिक
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राष्ट्रिय लिमिटेड / RITES LIMITED
(भारत सरकार का प्रविष्टान् / A Govt. of India Enterprise)
स्कोप मीनार, 12वां फ्लोर, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092



Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

TEAM LEADER
GDRPL - SGL

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

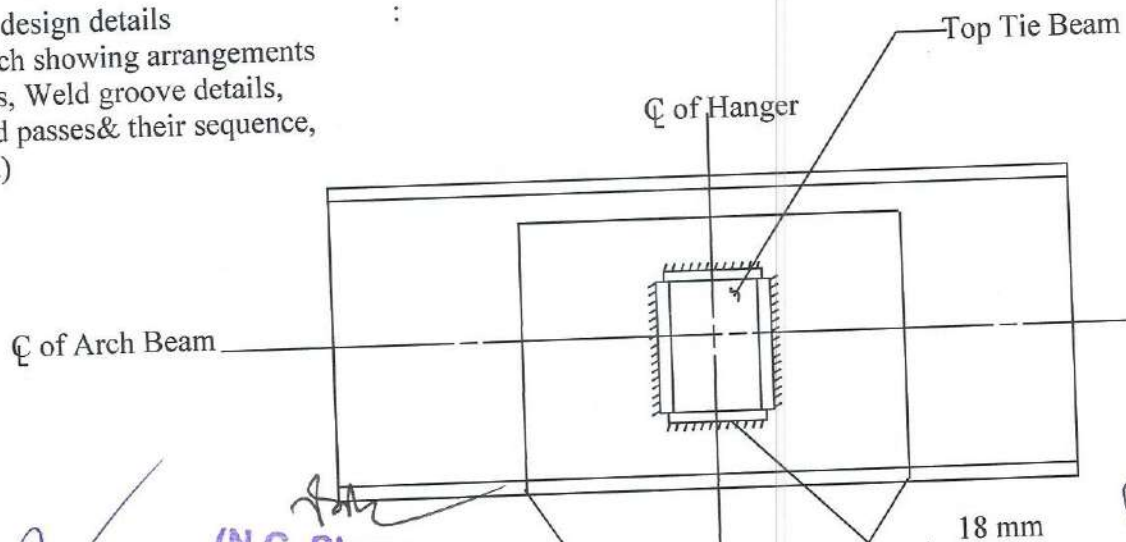
संलग्न अधिकारी / धातु एवं रसायन
Asst. Research Officer/M&M
रेल मंत्रालय / Ministry of Railways
लखनऊ / R.D.S.O., L



58 | पश्चिम
उत्तर पश्चिम रेलवे, जयपुर

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/42.00/BOW/NHAI/30
- 1). Drawing Series No. : RDSO/B-10430/3.
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 :
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.)



(N.C. Sharma)
D Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार कौशिक / NISHIKUMAR KAUSHIK
वरिष्ठ उप महाप्रबंधक (मैकेनिकल) / Sr. Dy. General Manager (Mech.)
राइटेस लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110002 / Laxmi Nagar, Delhi-110002

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



मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

उप मुख्य इंजीनियर (पुल/लाईन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

Project Manager
Cum Exeutive Engineer
PWD NH Division Barm

TEAM LEADER
GDRPL - SGL

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) : Visual, D.P. Test.
- 18). Inspection of weld : None
- 19). Any other relevant detail :

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

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

नीतीश कुमार कौशिक
वरिष्ठ उप महाप्रबन्धक (यांत्रिक),
राइटेस लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110002 / Laxmi Nagar, Delhi-110002



मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

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उप मुख्य इंजीनियर (पुल/लाइन)-II
Dy. Chief Engineer (Bridge/Line)-II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

TEAM LEADER
GDRPL - SGL

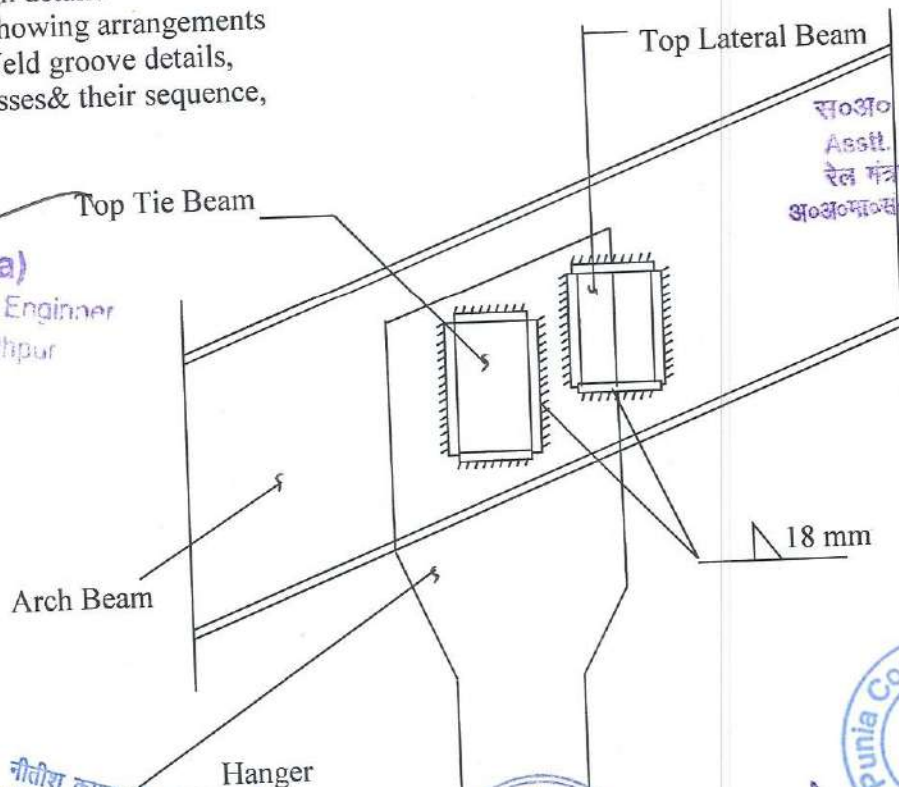
संशोधन अधिकारी/धातु एवं रसायन
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
संशोधन संस्थान, लखनऊ / R.D.S.O., Lucknow

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/42.00/BOW/NHAI/31
- 1). Drawing Series No. : RDSO/B-10430/3.
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 :
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 :

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

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur



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

TEAM LEADER
GDRPL - SGL

नीतीश कुमार काशीक / नीतीश कुमार काशीक
वरिष्ठ प्रबंधक (धातु) / Sr. Dy. General Manager (Mech.)
भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise
राज्य मंत्रालय, 12वां फ्लोर, स्कोप मिनर कोर-2
लखनऊ, दिल्ली-110002 / Laxmi Nagar, Delhi-110002

RITES LIMITED
भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise
राज्य मंत्रालय, 12वां फ्लोर, स्कोप मिनर कोर-2
लखनऊ, दिल्ली-110002 / Laxmi Nagar, Delhi-110002

उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur



Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

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

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

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

(N.C. Sharma)
PD Cum Superintending Engineer
Jaipur Circle, Jaipur

नीतीश कुमार कौशिक
रॉयल इन्डियन एयरलाइन्स लिमिटेड
भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise
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मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

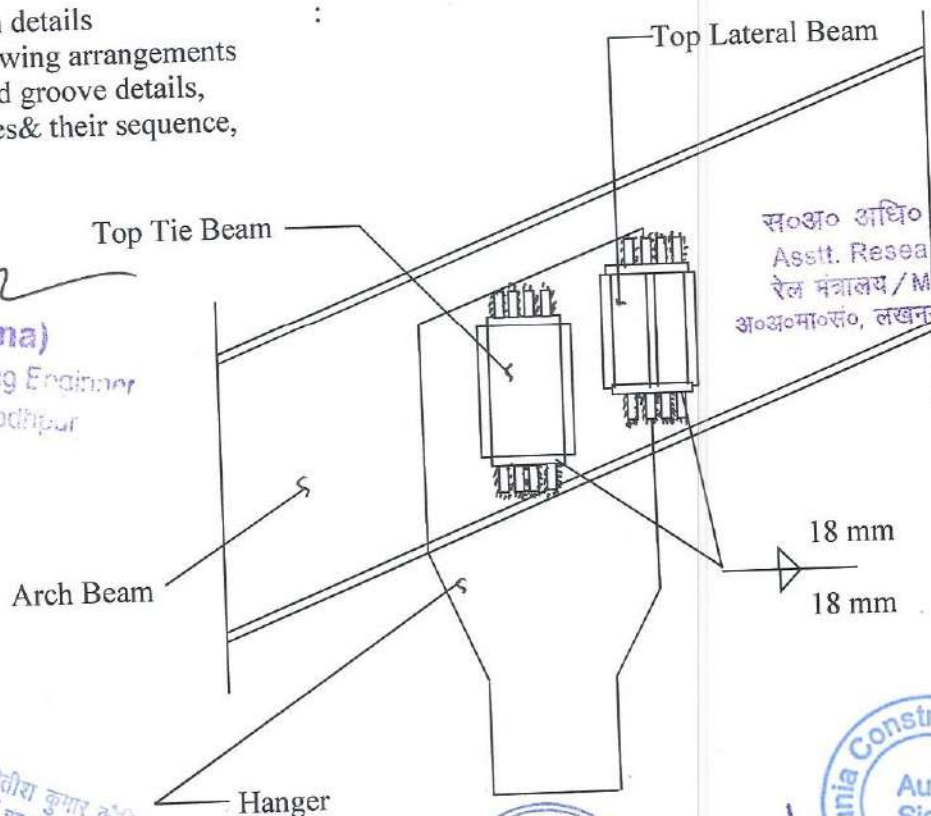
उप मुख्य इंजीनियर (पुल/लाइन) - II
Dy. Chief Engineer (Bridge/Line) - II
उत्तर पश्चिम रेलवे, जोधपुर
North Western Railway, Jaipur

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

TEAM LEADER
GDRPL - SGL

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/42.00/BOW/NHAI/32
- 1). Drawing Series No. : RDSO/B-10430/3.
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.)



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

TEAM LEADER
GDRPL - SGL

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर
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उप मुख्य इंजीनियर (पुल/लाइन)-II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur



Project Manager
Cum Exeutive Engineer
PWD NH Division Barmer

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

18). Inspection of weld

19). Any other relevant detail

Prepared by: Punia Construction Company.

Signature:

Designation:

Date:

(For and on behalf of fabricator)

(N.C. Sharma)

Superintending Engineer

PWD NH Circle, Jaipur

नीतीश कुमार काशीक

रवि उप महाप्रबन्धक (यांत्रिक)

राइट्स लिमिटेड

(भारत सरकार का प्रतिष्ठान)

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लक्ष्मी नगर, दिल्ली-110092/Laxmi Nagar, Delhi-110092

Dr. Dy. General Manager (Mech.)

RITES LIMITED

A Govt. of India Enterprise



मण्डल इंजीनियर/पश्चिम

उत्तर पश्चिम रेलवे, जोधपुर

उप मुख्य इंजीनियर (पुल/लाइन) - II

Dy. Chief Engineer (Bridge/Line) -

उत्तर पश्चिम रेलवे, जयपुर

North Western Railway, Jaipur

Project Manager

Cum Exeutive Engineer

PWD NH Division Barmer

TEAM LEADER

GDRPL - SGL

WELDING PROCEDURE SPECIFICATION SHEET

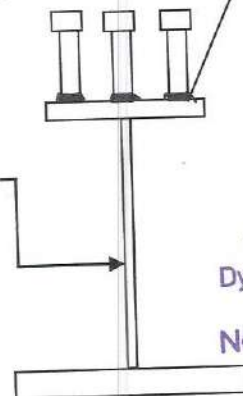
- Name & Address of fabricator : Punia Construction Company
Mangali Kutiya, 8 KM Stone on Tosham Road, Hisar.
- Welding Procedure Specification No. : PCC/42.00/BOW/NHAI/33
- 1). Drawing Series No. : RDSO/B-10430/6.
Stud Shear Connector on Top Flanges of Bottom Cross Beam
- 2). Weld Joint Description : 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 :
: N.A. Drying Method: N.A.
- 6.1). Electrode Wire : 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.)

Project Manager
Cum Executive Engineer
PWD NH Division Barmer

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

Bottom Cross Beam

Project Manager
Cum Executive Engineer
PWD NH Division Barmer



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

उप मुख्य इंजीनियर (पुल/लाइन)-1
Dy. Chief Engineer (Bridge/Line)-1
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

नीतीश कुमार काशिक / NITISH KUMAR KAUSHIK
उत्तर पश्चिम रेलवे, जयपुर
रॉकेट मलप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
रॉकेट लिमिटेड / RITES LIMITED
संयोजक का प्रतिष्ठान / A Govt. of India Enterprise
लक्ष्मी नगर, दिल्ली-110062 / Laxmi Nagar, Delhi-110062

TEAM LEADER
GDRPL - SGL

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, BS-115
 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

उप मुख्य इंजीनियर (पुल/लाइन) - II
 Dy. Chief Engineer (Bridge/Line) - II
 उत्तर पश्चिम रेलवे, जोधपुर
 North Western Railway, Jaipur

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



Project Manager
 Cum Executive Engineer
 PWD NH Division Barmer

नीतीश कुमार काशिक / NITISH KUMAR KAUSHIK
 वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
 राइट्स लिमिटेड / RITES LIMITED
 (भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
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संशोधन अधिकारी / अनुसंधान अधिकारी
 Asstt. Research Officer / M&C
 रेल मंत्रालय / Ministry of Railways
 अंशुमती, लखनऊ / R.D.S.O., Lucknow

TEAM LEADER
 GDRPL - SGL

(N.C. Sharma)
 PD Cum Superintending Engineer
 PWD NH Circle, जोधपुर

मण्डल इंजीनियर/पश्चिम
 उत्तर पश्चिम रेलवे, जोधपुर

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/42.00/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

8). Welding Current

9). Welder qualification

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.)	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.

10.2) Welding sequence & techniques

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

नीतीश कुमार कौशिक
वरिष्ठ उप महाप्रबन्धक (पुल/लाइन)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
स्कोप मीनार, 12वां तल, कोर-2 / 12th Floor, Scope Minar Core-2
लक्ष्मी नगर, दिल्ली-110092 / Laxmi Nagar, Delhi-110092

सहायक अभियंता / धातु एवं रसायन
Asstt. Research Officer/M&C
मंत्रालय / Ministry of Railways
अखण्डमंडल, लखनऊ / R.D.S.O., Lucknow
TEAM LEADER
GDRPL - SGL

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Project Manager
Cum Executive Engineer
PWD NH Division Barmer

(N.C. Sharma)
Cum Superintending Engineer



उप मुख्य इंजीनियर (पुल/लाइन)
Dy. Chief Engineer (Bridge/Line)
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur



WELDING PROCEDURE SPECIFICATION SHEET

- 15). Peening
16). Post weld treatment
17). Rectification of weld defect

: N.A.

: 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.
: Visual, D.P. Test.
: None

- 18). Inspection of weld
19). Any other relevant detail

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



TEAM LEADER
GDRPL - SGL

मण्डल इंजीनियर/पश्चिम
उत्तर पश्चिम रेलवे, जोधपुर

नीतीश कुमार कौशिक / NITISH KUMAR KAUSHIK
वरिष्ठ उप महाप्रबन्धक (यांत्रिक) / Sr. Dy. General Manager (Mech.)
राइट्स लिमिटेड / RITES LIMITED
(भारत सरकार का प्रतिष्ठान / A Govt. of India Enterprise)
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Project Manager
Cum Executive Engineer
PWD NH Division Barmer

(N.C. Sharma)
PD Cum Superintending Engineer
PWD NH Circle, Jodhpur

उप मुख्य इंजीनियर (पुल/लाइन)-II
Dy. Chief Engineer (Bridge/Line)-II
उत्तर पश्चिम रेलवे, जयपुर
North Western Railway, Jaipur

संशोधन अधिकारी / सहायक एवं रसायन
Research Officer/M&C
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