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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-10435/1 & RDSO/B-10435/5	PCC/54.00/BOW/NHAI /01	06/73-07/73
2).	Bottom Long Beam Top & Bottom Plate (25 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)	RDSO/B-10435/1 & RDSO/B-10435/5	PCC/54.00/BOW/NHAI /02	08/73-09/73
3).	Hanger Box Top & Bottom Plate (32 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)	RDSO/B-10435/1 & RDSO/B-10435/9	PCC/54.00/BOW/NHAI /03	10/73-11/73
4).	Arch Beam Bottom Plate (25 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)	RDSO/B-10436/1 & RDSO/B-10436/2	PCC/54.00/BOW/NHAI /04	12/73-13/73
5).	Arch Beam Top & Bottom Plate (25 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)	RDSO/B-10435/1 & RDSO/B-10435/2	PCC/54.00/BOW/NHAI /05	14/73-15/73
6).	Int. Bottom Cross Beam {Shipping Mark:BCB1/BCB2} Web Plate (16 mm thick M.S. Plate) with Top Flange Plate (20 mm thick Plate) Bottom Flange (28 mm thick Plate)	RDSO/B-10435/1 & RDSO/B-10436/5/6	PCC/54.00/BOW/NHAI /06	16/73-17/73
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-10435/1 & RDSO/B-10435/6	PCC/54.00/BOW/NHAI /07	18/73-19/73

Signature of

Fabricating Agency



Decm
Signature of

NHAI

Signature of
Dy. Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of
Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)

Ministry of Railways

SITE ENGINEER

2 | NHAI PIU-Chhindwara (M.P.)

S.E.C Railway, Bilaspur

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WELDING PROCEDURE SPECIFICATION SHEET

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-10435/1 & RDSO/B-10435/6	PCC/54.00/BOW/NHAI /08	20/73- 21/73
9).	Int. Bottom Cross Beam {BCB1/BCB2} Top Flange Cover Plate (25 mm thick Plate), Web Cover Plate (16 mm thick Plate) & Bottom Flange Cover Plate (32 & 20 mm thick Plate) with Int. Cross Beam.	RDSO/B-10435/1 & RDSO/B-10435/6	PCC/54.00/BOW/NHAI /09	22/73- 23/73
10).	End Bottom Cross Beam {Shipping Mark:BCB3} Top & Bottom Plate (32 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)	RDSO/B-10435/1 & RDSO/B-10435/6	PCC/54.00/BOW/NHAI /10	24/73- 25/73
11).	End Bottom Cross Beam {BCB3} Top Flange Cover Plate (40 mm thick Plate), Web Cover Plate (28 mm thick Plate) & Bottom Flange Cover Plate (40 mm thick Plate) with Int. Cross Beam.	RDSO/B-10435/1 & RDSO/B-10435/6	PCC/54.00/BOW/NHAI /11	26/73- 27/73
12).	Top Tie Beam, Top & Bottom Plate (20 mm thick M.S. Plate) with Side Plates (20 mm thick M.S. Plate)	RDSO/B-10435/1 & RDSO/B-10435/3	PCC/54.00/BOW/NHAI /12	28/73- 29/73
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-10435/1 & RDSO/B-10435/3	PCC/54.00/BOW/NHAI /13	30/73- 31/73
14).	Top Tie Beam Joint, Cover Plate (25 mm thick M.S. Plate) with Top & Side Plates	RDSO/B-10435/3	PCC/54.00/BOW/NHAI /14	32/73- 33/73
15).	Hanger with Arch Beam, Side Plate (32 mm thick M.S. Plate) with Arch Beam Side Plate (25 mm thick M.S. Plate)	RDSO/B-10435/9	PCC/54.00/BOW/NHAI /15	34/73- 35/73

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Fabricating
Agency



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Dean
NHAI

SITE ENGINEER

NHAI PIU-Chhindwara (M.P.)

3 | Page

Signature of
Dy. Chief Engineer (Bridge)
Dy. Chief Engineer (Br.)
S.E.C. Railway (Bilaspur)
S.E.C. Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)
Ministry of Railway

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WELDING PROCEDURE SPECIFICATION SHEET

16).	Stiffener Plate (25 mm thick M.S. Plate) with Hanger (25 mm thick M.S. Plate) & Arch Beam (25 mm thick M.S. Plate)	RDSO/B-10435/9	PCC/54.00/BOW/NHAI /16	36/73-37/73
17).	Hanger with Bottom Long Beam, Side Plate (32 mm thick M.S. Plate) with Bottom Long Beam side plate (25 mm thick M.S. Plate)	RDSO/B-10435/9	PCC/54.00/BOW/NHAI /17	38/73-39/73
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-10435/9	PCC/54.00/BOW/NHAI /18	40/73-41/73
19).	Diaphragm Plate (16 mm thick M. S. Plate) with Hanger	RDSO/B-10435/9	PCC/54.00/BOW/NHAI /19	42/73-43/73
20).	Joint at L0, Cover Plate (36 mm thick M.S. Plate) with Bottom Long Beam & Arch Beam	RDSO/B-10435/4	PCC/54.00/BOW/NHAI /20	44/73-45/73
21).	Stiffener Plate (25 mm thick M.S. Plate) with Bottom Cross Beam & Bottom Long Beam	RDSO/B-10435/6	PCC/54.00/BOW/NHAI /21	46/73-47/73
22).	Diaphragm Plate (20 mm thick M. S. Plate) with Arch Beam	RDSO/B-10435/2	PCC/54.00/BOW/NHAI /22	48/73-49/73
23).	Diaphragm Plate {Shipping Mark: DP1 & DP2} (16 mm & 20 mm thick M. S. Plate resp.) with Bottom Long Beam	RDSO/B-10435/5	PCC/54.00/BOW/NHAI /23	50/73-51/73
24).	Diaphragm Plate (10 mm thick M. S. Plate) with Top Tie Beam	RDSO/B-10435/3	PCC/54.00/BOW/NHAI /24	52/73-53/73
25).	Diaphragm Plate (10 mm thick M. S. Plate) with Top Lateral Bracing Beam	RDSO/B-10435/3	PCC/54.00/BOW/NHAI /25	54/73-55/73
26).	Bottom Cross Beam Angle Cleat (L150X150X15) with Bottom Long Beam Side Plate (25 mm thick M.S. Plate)	RDSO/B-10435/6	PCC/54.00/BOW/NHAI /26	56/73-57/73
27).	Stiffener Plate (25 mm thick M.S. Plate) with Arch Beam & Bottom Long Beam	RDSO/B-10435/4	PCC/54.00/BOW/NHAI /27	58/73-59/73

Signature of  Signature of  Signature of  Signature of 

Fabricating Agency Contractor

Signature of  Signature of  Signature of  Signature of 

General Manager (M.P.)
SITE ENGINEER
NHAIU-Chhindwara (M.P.)

Signature of  Signature of  Signature of  Signature of 

Dy. Chief Engineer (Bridge) Dy. Chief Engineer (Br.) Dy. Chief Engineer (Br.) Dy. Chief Engineer (Br.)

S.E.C. Railway (Bilaspur) S.E.C. Railway (Bilaspur) S.E.C. Railway (Bilaspur) S.E.C. Railway (Bilaspur)

Signature of  Signature of  Signature of  Signature of 

Chief Engineer (Bridge) Chief Engineer (Bridge) Chief Engineer (Bridge) Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur) S.E.C. Railway (Bilaspur) S.E.C. Railway (Bilaspur) S.E.C. Railway (Bilaspur)

Signature of  Signature of  Signature of  Signature of 

R.D.S.O (Lucknow) Ministry of Railways

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WELDING PROCEDURE SPECIFICATION SHEET

28).	Bottom Long Beam Joint, Cover Plate (32 mm thick M.S. Plate) with Top & Side Plates	RDSO/B-10435/5	PCC/54.00/BOW/NHAI /28	60/73-61/73
29).	Arc Beam Joint, Cover Plate (32 mm thick M.S. Plate) with Top & Side Plates	RDSO/B-10435/2	PCC/54.00/BOW/NHAI /29	62/73-63/73
30).	Top Tie Beam with Arc Beam & Hanger	RDSO/B-10435/3	PCC/54.00/BOW/NHAI /30	64/73-65/73
31).	Top Lateral Bracing Beam with Top Tie Beam & Arc Beam.	RDSO/B-10435/3	PCC/54.00/BOW/NHAI /31	66/73-67/73
32).	Stiffener Plate (25 mm thick M.S. Plate) with Top Tie Beam, Top Lateral Bracing Beam & Arch Beam.	RDSO/B-10435/3	PCC/54.00/BOW/NHAI /32	68/73-69/73
33).	Stud Shear Connector on Top Flanges of Bottom Cross Beam	RDSO/B-10435/6	PCC/54.00/BOW/NHAI /33	70/73-71/73
34).	TACK Weld	All relevant drawings on the above	PCC/54.00/BOW/NHAI /34	72/73-73/73



Signature of

Signature of

Signature of

Fabricating Agency

Contract

NHAI

Dec
SITE ENGINEER
NHAI PIU-Chhindwara (M.P.)

उपसहाय्य अभियंता (पुल)
Dy. Chief Engineer (Br.)
राज्य पूर्वा मंच रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Dy. Chief Engineer (Bridge)

Signature of
Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)

Ministry of Railways

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WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/01

1). Reference Drawing No. : RDSO/B-10435/1 & RDSO/B-10435/5
Bottom Long Beam Top Plate (25 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)

2). Weld Joint Description : Fillet (10mm)

3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0

4). Welding Process : FCAW

5). Welding Position : Horizontal

6). Welding Consumable: -

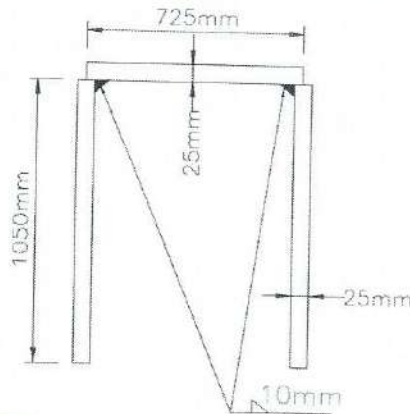
6.1). Electrode/Wire : 1.2 mm
DIA : 1.2 mm
Class : Flux Cored Welding wire, Class 1 of IRS M-46/20, Grade E71T-12 as per IS/AWS Spec.: A5.20M:2005 (R2015)

Type : Flux Cored wire
Drying : N.A.

6.2). Flux : N.A.
Class : N.A.
Type : N.A.
Drying Method : N.A.

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



Signature of 
Fabricating Agency

Fabricating Agency

Contractor

Signature of 
NHA

Signature of

Signature of

Dy. Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of
Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)

Ministry of Railways

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

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WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None



SITE ENGINEER
NHAI
Chhindwara (M.P.)

Dy. Chief Engineer (Br.)
S.E.C. Railway (Bilaspur)

S.E.C Railway, Bilaspur

Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

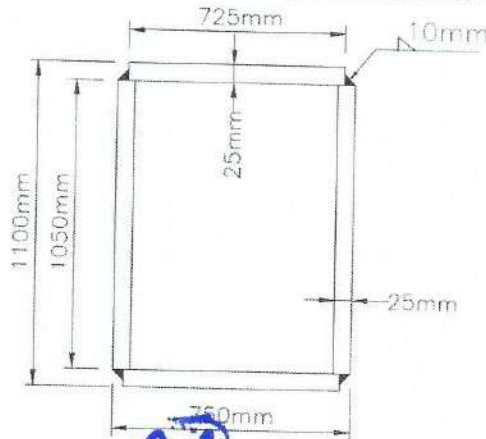
सं० अ० अधिकारी एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/Lucknow

Signature of R.D.S.O (Lucknow)
Ministry of Railways

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WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator :M/s. Punia Construction Company
Mangali Kutiya, 8KM Stone on Tosham Road, Hisar
- Welding Procedure Specification No. :PCC/54.00/BOW/NHAI/02
- 1). Reference Drawing No. : RDSO/B-10435/1 & RDSO/B-10435/5
Bottom Long Beam Top Plate (25 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)
- 2). Weld Joint Description : Fillet (10mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0
- 4). Welding Process : SAW
- 5). Welding Position : Flat inclined at 45°
- 6). Welding Consumable: -
- 6.1). Electrode/Wire
- DIA : 4.00 mm
- Class : Class W2 of IRS M-39/2020,
- Type : Copper coated mild steel wire
- Drying : N.A.
- 6.2). Flux
- Class : F2 of IRS M-39-2020
- Type : Agglomerated
- Drying Method : 250°C for one hour before use
- 6.3). Shielding Gas : N.A
- 7). Base Metal Preparation : fusion face and adjacent surface are cleaned, made Free from cracks, notches, mill scale, grease, paint, rust Etc. which may affect weld quality.
- 7.1). Joint design detail :As per Sketch shown below:



Signature of General Manager
Signature of
Fabricating Agency Contractor
NHAH

SITE ENGINEER
NHAH PUDUCHATTIWARA (M.P.)

उप मुख्य अभियंता (पुल)
Signature of Dy. Chief Engineer (Bridge)
दक्षिण पूर्व यमो रेलवे, बिलासपुर
S.E.C. Railway (Bilaspur)

Signature of Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

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

Signature of R.D.S.O (Lucknow)
Ministry of Railways

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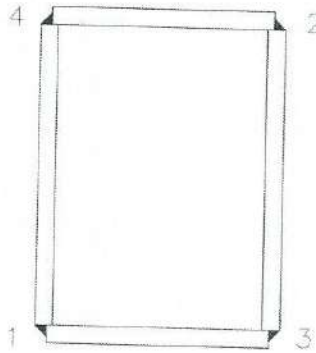
WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:4353&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./min.)
1	4.00	550-600	28-32	1.5-1.8	0.45-0.55	20	N.A

10.2) Welding sequence & techniques

: N.A.



- 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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None



Signature of
Dy. Chief Engineer (Br.)
S.E.C. Railway (Bilaspur)
NHAI PIU-Chhindwara (M.P.)
SITE ENGINEER

Signature of
Dy. Chief Engineer (Br.)
S.E.C. Railway (Bilaspur)
Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

सं० अ० अधि० शालु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
10/अ० मार्ग०, लखनऊ/R.D.S.O., Lucknow

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

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WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/03

1). Reference Drawing No. : RDSO/B-10435/1 & RDSO/B-10435/9
Hanger Box Top & Bottom Plate (32 mm thick M.S. Plate)
with Side Plate (25 mm thick M.S. Plate)
: Fillet (10mm)

2). Weld Joint Description

3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0

4). Welding Process : SAW

5). Welding Position : Flat inclined at 45°

6). Welding Consumable: -

6.1). Electrode/Wire

DIA : 4.00 mm

Class : Class W2 of IRS M-39/2020,

Type : Copper coated mild steel wire

Drying : N.A.

6.2). Flux

Class : F2 of IRS M-39-2020

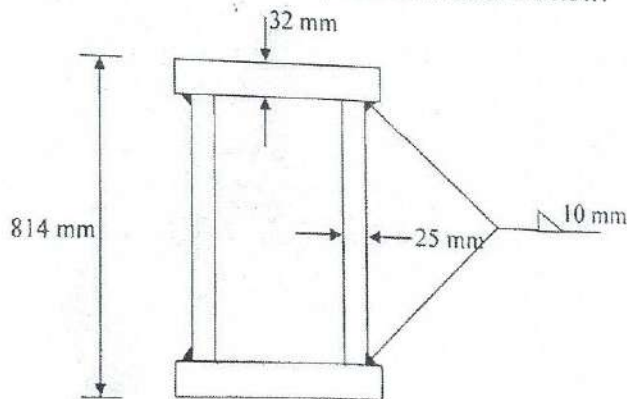
Type : Agglomerated

Drying Method : 250°C for one hour before use

6.3). Shielding Gas : N.A.

7). Base Metal Preparation : fusion face and adjacent surface are cleaned, made
Free from cracks, notches, mill scale, grease, paint, rust
Etc. which may affect weld quality.

7.1). Joint design detail : As per Sketch shown below:



Signature of General Manager
Signature of Fabricating Agency
Signature of Contractor
Signature of NHAI

Dec
SITE ENGINEER
NHAI PULCHINDWARA (M.P.)

उप मुख्य अभियंता (पुल)
Dr. Chandra Shekhar (Pul)
S.E.C. Railway (Bilaspur)
S.E.C. Railway, Bilaspur

Signature of Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

सं०अ० अधिकारी एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
०८००००००, लखनऊ / R.D.S.O., Lucknow

Signature of R.D.S.O (Lucknow)
Ministry of Railways

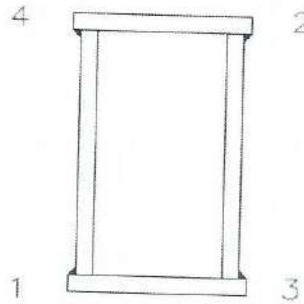
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WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:4353&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./min.)
1	4.00	550-600	28-32	1.5-1.8	0.45-0.55	20	N.A

- 10.2) Welding sequence & techniques : N.A.



- 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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

Signature of General Manager
Fabricating Agency

Signature of SITE ENGINEER
NHA/PIU, Chhindwara (M.P.)

Signature of Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

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

Signature of R.D.S.O (Lucknow)
Ministry of Railways

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WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/04

1). Reference Drawing No. : RDSO/B-10435/1 & RDSO/B-10435/2
Arch Beam Bottom Plate (25 mm thick M.S. Plate)
with Side Plate (25 mm thick M.S. Plate)

2). Weld Joint Description : Fillet (10mm)

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

DIA : 1.2 mm

Class : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20M:2005
(R2015)

Type : Flux Cored wire

Drying : N.A.

6.2). Flux

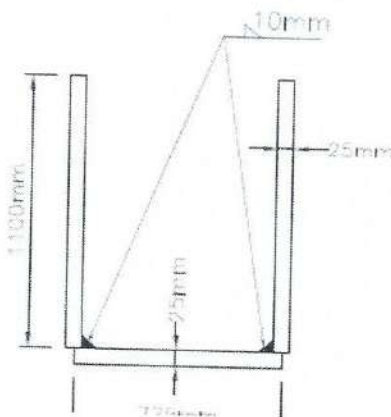
Class : N.A

Type : N.A

Drying Method : N.A

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



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

Signature of General Manager
Signature of Contractor
Fabricating Agency

Signature of
SITE ENGINEER
NHAI PCC/54.00/BOW/NHAI/04

Signature of
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)
दक्षिण पूर्व मध्ये रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

Signature of
General Manager
Fabricating Agency

Signature of
SITE ENGINEER
NHA PW Chennai (M.P.)

Signature of
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्ये रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

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

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. :PCC/54.00/BOW/NHAI/05

1). Reference Drawing No. : RDSO/B-10435/1 & RDSO/B-10435/2
Arch Beam Bottom Plate (25 mm thick M.S. Plate)
with Side Plate (25 mm thick M.S. Plate)

2). Weld Joint Description : Fillet (10mm)

3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0

4). Welding Process : SAW

5). Welding Position : Flat inclined at 45°

6). Welding Consumable: -

6.1). Electrode/Wire

DIA : 4.00 mm

Class : Class W2 of IRS M-39/2020,

Type : Copper coated mild steel wire

Drying : N.A.

6.2). Flux

Class : F2 of IRS M-39-2020

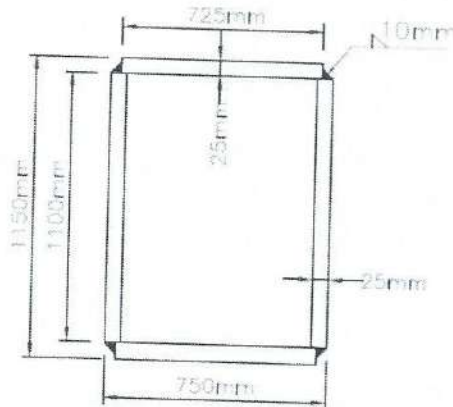
Type : Agglomerated

Drying Method : 250°C for one hour before use

6.3). Shielding Gas : N.A

7). Base Metal Preparation : fusion face and adjacent surface are cleaned, made
Free from cracks, notches, mill scale, grease, paint, rust
Etc. which may affect weld quality.

7.1). Joint design detail :As per Sketch shown below:



Signature of General Manager
Signature of Fabricating Agency
Signature of Contractor
Signature of NHAI

SITE ENGINEER
NHAI PIU Chandigarh (M.P.)

उप प्रधान अभियंता (पुल)
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

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

Signature of R.D.S.O (Lucknow)
Ministry of Railways

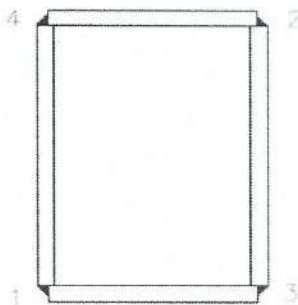
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WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:4353&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), & IS: 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 (m /min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr. /min.)
1	4.00	550-600	28-32	1.5-1.8	0.45-0.55	20	N.A

- 10.2) Welding sequence & techniques : N.A.



- 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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

Signature of General Manager
Fabricating Agency

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Signature of
SITE ENGINEER
NHAI PHU

Signature of
Chief Engineer (Bridge)
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

संज्ञा अधि. धातु एवं रसा.
Asslt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
१०३० मा० सं०, लखनऊ / R.D.S.O., Lucknow

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHA1/06

1). Reference Drawing No. : RDSO/B-10435/1 & RDSO/B-10435/6
Int. Bottom Cross Beam {Shipping Mark:BCB1/BCB2}
Web Plate (16 mm thick M.S. Plate) with Top Flange
Plate (20 mm thick Plate) Bottom Flange (28 mm thick Plate)

2). Weld Joint Description : Fillet (12mm)

3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0

4). Welding Process : SAW

5). Welding Position : Flat inclined at 45°

6). Welding Consumable: -

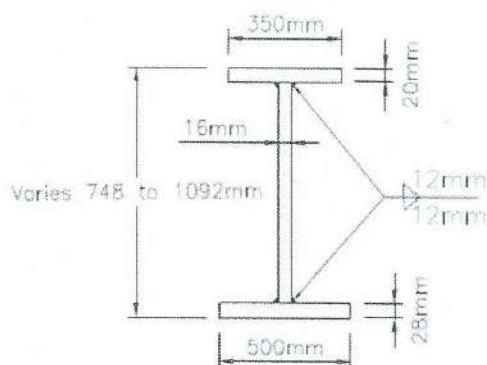
6.1). Electrode/Wire
DIA : 4.00 mm
Class : Class W2 of IRS M-39/2020,
Type : Copper coated mild steel wire
Drying : N.A.

6.2). Flux
Class : F2 of IRS M-39-2020
Type : Agglomerated
Drying Method : 250°C for one hour before use

6.3). Shielding Gas : N.A

7). Base Metal Preparation : fusion face and adjacent surface are cleaned, made
Free from cracks, notches, mill scale, grease, paint, rust
Etc. which may affect weld quality.

7.1). Joint design detail : As per Sketch shown below:



Signature of General Manager
Signature of Fabricating Agency

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Signature of
SITE ENGINEER
NHA1 PIU-Chhindwara (M.P.)

Signature of
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)
दक्षिण पूर्व मध्ये रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

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

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:4353&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./min.)
1	4.00	550-600	28-32	1.5-1.8	0.45-0.55	20	N.A

10.2) Welding sequence & techniques

: N.A.



- 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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

Signature of General Manager
Fabricating Agency

17 | Page

Signature of Dy. Chief Engineer (Br.)
SITE ENGINEER
NHAI PH/Chhindwara (M.P.)

Signature of Dy. Chief Engineer (Bridge)
Dy. Chief Engineer (Br.)
S.E.C. Railway (Bilaspur)
दक्षिण पूर्व मध्ये रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

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

Signature of R.D.S.O (Lucknow)
Ministry of Railways

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WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/07

1). Reference Drawing No. : RDSO/B-10435/1 & RDSO/B-10435/6
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))

2). Weld Joint Description : Fillet (08mm)

3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0

4). Welding Process : FCAW

5). Welding Position : Vertical

6). Welding Consumable: -

6.1). Electrode/Wire

DIA : 1.2 mm

Class : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005
(R2015)

Type : Flux Cored wire

Drying : N.A.

6.2). Flux

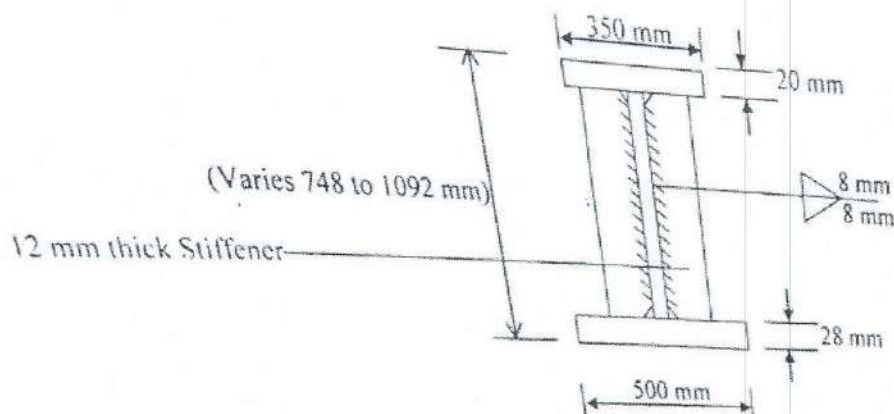
Class : N.A

Type : N.A

Drying Method : N.A

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



Signature of General Manager
Signature of Contractor
Fabricating Agency

SITE ENGINEER
NHAI PIU-Chhindwara (M.P.)

उप मुख्य अभियंता (पुल)
Dy. Chief Engineer (Br.)
संविधान पूर्व मध्ये रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of Chief Engineer (Bridge)
S.E.C. Railway(Bilaspur)

Signature of R.D.S.O (Lucknow)
Ministry of Railways

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

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WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m /min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr. /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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

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

Signature of
Fabricating
Agency



Signature of
Contractor
NHAI

SITE ENGINEER
NHAI Bilaspur (M.P.)

Signature of
Dy. Chief Engineer (Bridge)
S.E.C. Railway Bilaspur

(मुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

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WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/08

1). Reference Drawing No. : RDSO/B-10435/1 & RDSO/B-10435/6
Int. Bottom Cross Beam{Shipping Mark: BCB1/BCB2} Cross
Frame Channel (ISMC- 150) with Stiffener Plate (12 mm thick
M.S. Plate)

2). Weld Joint Description : Fillet (06mm)

3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0 & Channe IS: 2062-2011,
E-35 Gr. B0

4). Welding Process : FCAW

5). Welding Position : Overhead (Welding at Bridge site)

6). Welding Consumable: -

6.1). Electrode/Wire

DIA : 1.2 mm

Class : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005
(R2015)

Type : Flux Cored wire

Drying : N.A.

6.2). Flux

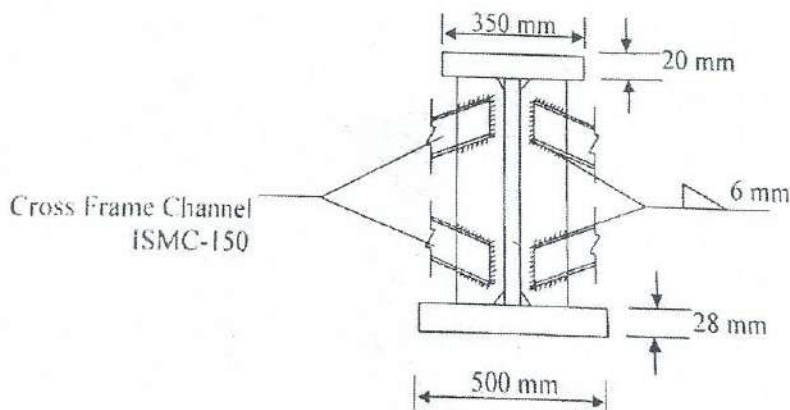
Class : N.A

Type : N.A

Drying Method : N.A

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



Signature of General Manager
Signature of Fabricating Agency
Signature of Contractor

20 | Page

Signature of Dy. Chief Engineer (Bridge)
Signature of Dy. Chief Engineer (Br.)
Signature of S.E.C. Railway (Bilaspur)

Signature of Dy. Chief Engineer (Bridge)
Signature of Dy. Chief Engineer (Br.)
Signature of S.E.C. Railway (Bilaspur)

Signature of Dy. Chief Engineer (Bridge)
Signature of Dy. Chief Engineer (Br.)
Signature of S.E.C. Railway (Bilaspur)

Signature of R.D.S.O (Lucknow)
Signature of Ministry of Railways

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

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

Signature of General Manager
Signature of Fabricating Agency
Signature of Contractor

Signature of Dy. Chief Engineer (Bridge)
Signature of Dy. Chief Engineer (Br.)
Signature of S.E.C. Railway (Bilaspur)
Signature of S.E.C. Railway (Bilaspur)

Signature of Dy. Chief Engineer (Bridge)
Signature of Chief Engineer (Bridge)
Signature of S.E.C. Railway (Bilaspur)
Signature of S.E.C. Railway (Bilaspur)

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

Signature of R.D.S.O (Lucknow)
Signature of Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/09

1). Reference Drawing No. : RDSO/B-10435/1 & RDSO/B-10435/6
Int. Bottom Cross Beam{BCB1/BCB2} Top Flange Cover Plate
(25 mm thick Plate), Web Cover Plate (16 mm thick Plate) &
Bottom Flange Cover Plate (32 & 20 mm thick Plate) with
Int. Cross Beam.)

2). Weld Joint Description : Fillet (14mm)

3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0

4). Welding Process : FCAW

5). Welding Position : Horizontal-Vertical (Welding at Site)

6). Welding Consumable: -

6.1). Electrode/Wire

DIA : 1.2 mm

Class : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005
(R2015)

Type : Flux Cored wire

Drying : N.A.

6.2). Flux

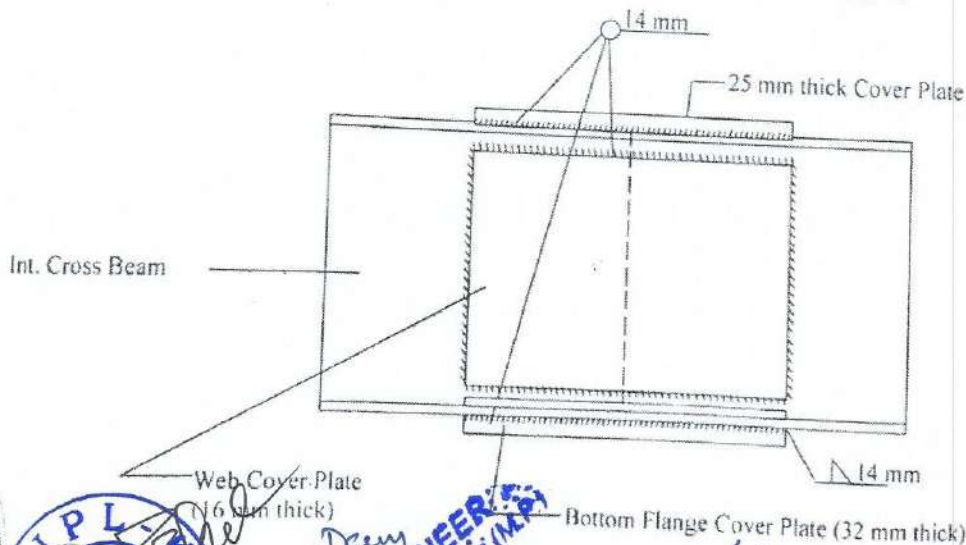
Class : N.A

Type : N.A

Drying Method : N.A

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



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

Signature of General Manager
Signature of Fabricating Agency
Signature of Contractor
Signature of NHAI

Signature of Dy. Chief Engineer (Bridge)
Signature of Dy. Chief Engineer (Br.)
Signature of S.E.C. Railway (Bilaspur)

Signature of Dy. Chief Engineer (Bridge)
Signature of S.E.C. Railway (Bilaspur)

Signature of R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

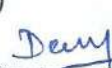
WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 817
10). Welding parameters & techniques :
10.1) Welding parameters

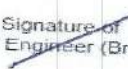
Weld pass no.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Wire feed speed (m /min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr. /min.)
1	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
2	1.2	220-300	26-31	5.0-5.5	0.20-0.25	10	15-22
3	1.2	220-300	26-31	5.0-5.5	0.20-0.25	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 : N.A.
14). Pre-heating & inter pass temperature : Min. 100°C.- 150°C.
15). Peening : N.A.
16). Post weld treatment : N.A.
17). Rectification of weld defect : N.A.
: By grinding of the defective weld & rectifying the Weld as per Cl.32.2 of IS:9595-96, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

Signature of 
Fabricating Agency

Signature of 
NHA
SITE ENGINEER
NHAI PIU-Chhindwara (M.P.)

Signature of 
Dy. Chief Engineer (Br.)
S.E.C. Railway (Bilaspur)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of 
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

सं०अ० अधिकारी एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
1000000000, लखनऊ/R.D.S.O., Lucknow

Signature of 
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/10

1). Reference Drawing No. : RDSO/B-10435/1 & RDSO/B-10435/6
End Bottom Cross Beam {Shipping Mark: BCB3} Top & Bottom Plate (32 mm thick M.S. Plate) with Side Plate (25 mm thick M.S. Plate)

2). Weld Joint Description : Fillet (14mm)

3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0

4). Welding Process : SAW

5). Welding Position : Flat inclined at 45°

6). Welding Consumable: -

6.1). Electrode/Wire

DIA : 4.00 mm

Class : Class W2 of IRS M-39/2020,

Type : Copper coated mild steel wire

Drying : N.A.

6.2). Flux

Class : F2 of IRS M-39-2020

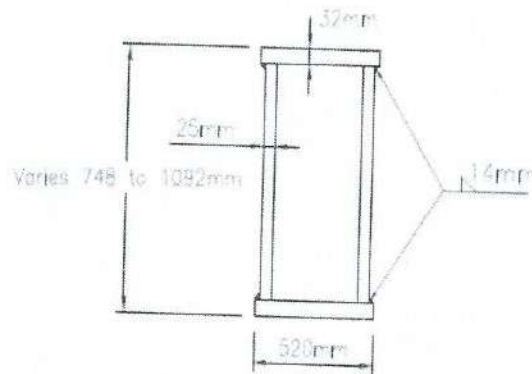
Type : Agglomerated

Drying Method : 150°C for one hour before use

6.3). Shielding Gas : N.A.

7). Base Metal Preparation : fusion face and adjacent surface are cleaned, made Free from cracks, notches, mill scale, grease, paint, rust Etc. which may affect weld quality.

7.1). Joint design detail : As per Sketch shown below:



Signature of General Manager
Signature of Dy. Chief Engineer (Bridge)
Signature of Dy. Chief Engineer (Br.)
Signature of S.E.C. Railway (Bilaspur)
Signature of R.D.S.O (Lucknow)
Signature of Ministry of Railways

Signature of Dy. Chief Engineer (Bridge)
Signature of Dy. Chief Engineer (Br.)
Signature of S.E.C. Railway (Bilaspur)
Signature of R.D.S.O (Lucknow)
Signature of Ministry of Railways

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

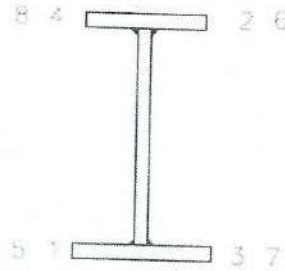
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WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:4353&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./min.)
1	4.00	550-600	28-32	1.5-1.8	0.45-0.55	20	N.A

- 10.2) Welding sequence & techniques : N.A.



- 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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None



Signature of

Fabricating Agency



Signature of

NHAI

SITE ENGINEER
NHAI PIU-Chhindwara (M.P.)

Signature of

Dy. Chief Engineer (Br.)
S.E.C. Railway (Bilaspur)

दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of

Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

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

Signature of
R.D.S.O (Lucknow)

Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/11

1). Reference Drawing No. : RDSO/B-10435/1 & RDSO/B-10435/6
End Bottom Cross Beam {BCB3} Top Flange Cover Plate
(40 mm thick Plate), Web Cover Plate (28 mm thick Plate)
& Bottom Flange Cover Plate (40 mm thick Plate) with Int.
Cross Beam.

2). Weld Joint Description : Fillet (20mm)

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

DIA : 1.2 mm

Class : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005
(R2015)

Type : Flux Cored wire

Drying : N.A.

6.2). Flux

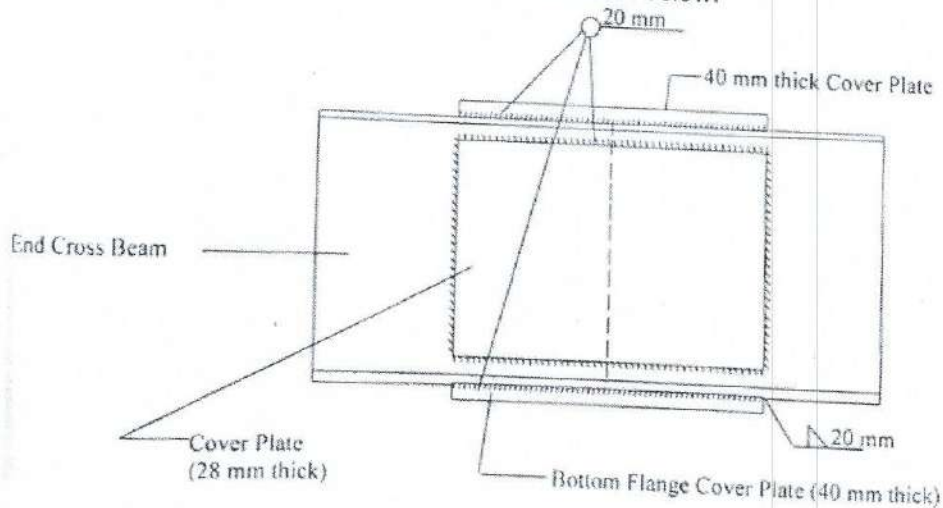
Class : N.A

Type : N.A

Drying Method : N.A

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



Signature of
FABRICATING
AGENCY

Signature of
General
Manager

26/11/2019

Signature of
NHA

SITE ENGINEER
NHAI PIU, Chandigarh

Signature of
Dy. Chief Engineer (Bridge)

Signature of
Chief Engineer (Bridge)

Signature of
S.E.C. Railway (Bilaspur)

Signature of
S.E.C. Railway (Bilaspur)

दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

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

Signature of
R.D.S.O (Lucknow)

Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None



Signature of
Fabricating
Agency



27 |

SITE ENGINEER
NHAI PIU-Chhindwara (M.T.P.)

उप सहाय अभियंता (पुल)
Dy. Chief Engineer (Br.)
S.E.C. Railway (Bilaspur)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

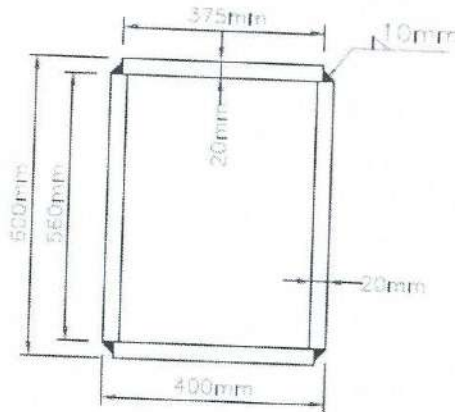
सं०अ० अधिकारी एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/R.D.S.O., Lucknow

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : M/s. Punia Construction Company
Mangali Kutiya, 8KM Stone on Tosham Road, Hisar
- Welding Procedure Specification No. : PCC/54.00/BOW/NHA/12
- 1). Reference Drawing No. : RDSO/B-10435/1 & RDSO/B-10435/3
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 (10mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0
- 4). Welding Process : SAW
- 5). Welding Position : Flat inclined at 45°
- 6). Welding Consumable: -
- 6.1). Electrode/Wire
- DIA : 4.00 mm
- Class : Class W2 of IRS M-39/2020,
- Type : Copper coated mild steel wire
- Drying : N.A.
- 6.2). Flux
- Class : F2 of IRS M-39-2020
- Type : Agglomerated
- Drying Method : 250°C for one hour before use
- 6.3). Shielding Gas : N.A.
- 7). Base Metal Preparation : fusion face and adjacent surface are cleaned, made
Free from cracks, notches, mill scale, grease, paint, rust
Etc. which may affect weld quality.
- 7.1). Joint design detail : As per Sketch shown below:



Signature of _____
General Manager
Fabricating Agency

Signature

SITE ENGINEER
NHA/PH/Lucknow (M)

Signature of _____
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of _____
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

सं०३० अचि० वि० एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
१०३० मा० सं०, लखनऊ / R.D.S.O., Lucknow

Signature of _____
R.D.S.O. (Lucknow)
Ministry of Railways

[Type here]

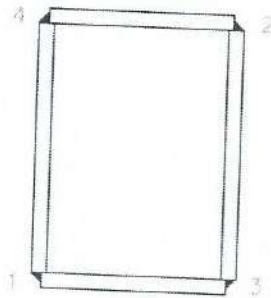
WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:4353&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./min.)
1	4.00	550-600	28-32	1.5-1.8	0.45-0.55	20	N.A

10.2) Welding sequence & techniques

: N.A.



- 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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

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

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)
उप मुख्य अभियंता (पुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

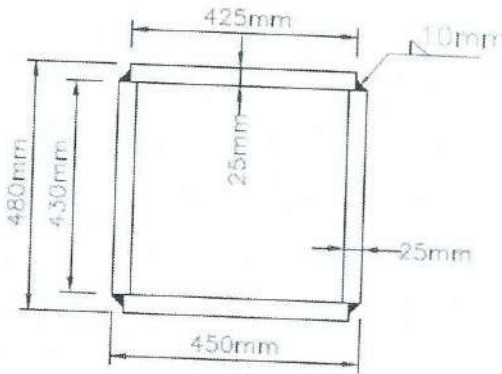
Signature of
General Manager
NHAI PIU-Chhindwara (M.P.)
SITE ENGINEER

Signature of
Fabricating Agency

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- Name & Address of fabricator : M/s. Punia Construction Company
Mangali Kutiya, 8KM Stone on Tosham Road, Hisar
- Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/13
- 1). Reference Drawing No. : RDSO/B-10435/1 & RDSO/B-10435/3
Top Lateral Bracing Beam, Top & Bottom Plate (25 mm thick M.S. Plate) with Side Plates (25 mm thick M.S. Plates)
- 2). Weld Joint Description : Fillet (10mm)
- 3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0
- 4). Welding Process : SAW
- 5). Welding Position : Flat inclined at 45°
- 6). Welding Consumable:-
- 6.1). Electrode/Wire
- DIA : 4.00 mm
- Class : Class W2 of IRS M-39/2020,
- Type : Copper coated mild steel wire
- Drying : N.A.
- 6.2). Flux
- Class : F2 of IRS M-39-2020
- Type : Agglomerated
- Drying Method : 250°C for one hour before use
- 6.3). Shielding Gas : N.A
- 7). Base Metal Preparation : fusion face and adjacent surface are cleaned, made Free from cracks, notches, mill scale, grease, paint, rust Etc. which may affect weld quality.
- 7.1). Joint design detail : As per Sketch shown below:



Signature of _____
Fabricating Agency

30/10/2020



Senior Engineer
NHAI PCC/54.00/BOW/NHAI/13

Signature of _____
Dy. Chief Engineer (Bridge)

सुप्रमुख अभियंता (पुल)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of _____
Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

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

Signature of _____
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

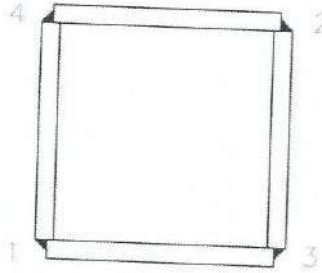
WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:4353&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./min.)
1	4.00	550-600	28-32	1.5-1.8	0.45-0.55	20	N.A

10.2) Welding sequence & techniques

: N.A.



- 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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

Signature of _____
Fabrication Agency
Signature of _____
General Manager
Signature of _____
SITE ENGINEER
NHA/PIU-Chhindwad (M.A.)

Signature of _____
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)
वर्तमान पूर्व मध्ये रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of _____
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

सं०३० अधि० धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/R.D.S.O., Lucknow
Signature of _____
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/14

1). Reference Drawing No. : RDSO/B-10435/3
Top Tie Beam Joint, Cover Plate (25 mm thick
M.S. Plate) with Top & Side Plates

2). Weld Joint Description : Fillet (16mm)

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

DIA : 1.2 mm

Class : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005
(R2015)

Type : Flux Cored wire

Drying : N.A.

6.2). Flux

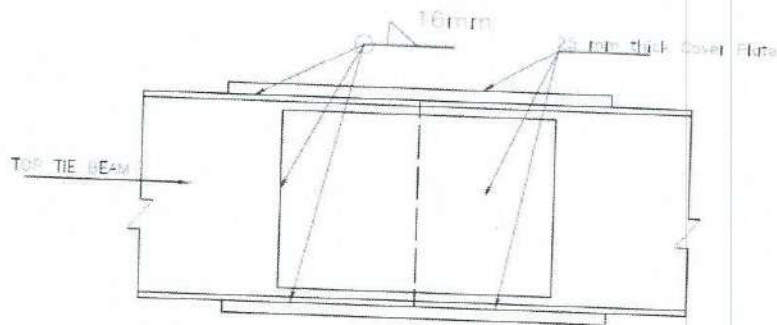
Class : N.A

Type : N.A

Drying Method : N.A

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



Signature of _____

Fabricating Agency



SITE ENGINEER
NHAI Pili Chhindwara (M.P.)

Signature of _____

NHAI

Signature of _____
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

संयोजक अभियंता (पुल)
Dy. Chief Engineer (Br)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of _____
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

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

Signature of _____
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

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



Dem
SITE ENGINEER
NHAI PIU-Chhindwara (M.P.)

Signature of Dy. Chief Engineer (Bridge)
Signature of Dy. Chief Engineer (Bf.)
S.E.C. Railway, Bilaspur
दक्षिण पूर्व मध्ये रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of R.D.S.O (Lucknow)
Ministry of Railways

WELDING PROCEDURE SPECIFICATION SHEET

M/s. Punia Construction Company
Mangali Kutiya, 8KM Stone on Tosham Road, Hisar

: PCC/54.00/BOW/NHAI/15

: RDSO/B-10435/9

Hanger with Arch Beam, Side Plate (32 mm thick M.S. Plate) with Arch Beam Side Plate (25 mm thick M.S. Plate) Fillet (20mm)

: Fillet (20mm)

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

: FCAW

: Overhead (Welding at Bridge site)

DIA

: 1.2 mm

:Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005
(R2015)

: Flux Cored wire

:N.A.

Class

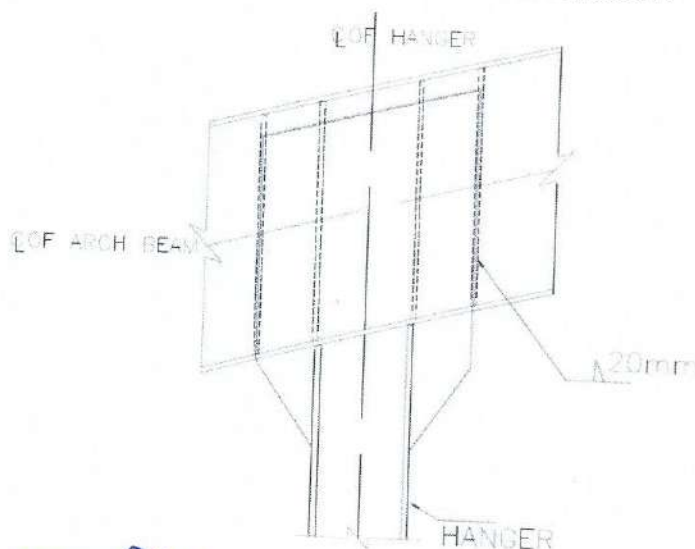
: N.A

: N.A

: N.A

: Co2

:As per Sketch shown below:



Signature of
R.D.S.O (Lucknow)

Ministry of Railways

ing Contractor
General
Manager

S.E.C Railway, Bilaspur

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr. /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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None



Signature of

Fabricating Agency

Signature of



Dem
SITE ENGINEER
NHAI PIU-Chhindwara (M.P.)

Signature of

NHAI

Signature of

Dy. Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

सुप
सुप मुख्य अभियंता (पुल)
Dy. Chief Engineer (Bridge)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

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

Signature of
R.D.S.O (Lucknow)

Ministry of Railways

WELDING PROCEDURE SPECIFICATION SHEET

M/s. Punia Construction Company
Mangali Kutiya, 8KM Stone on Tosham Road, Hisar

:PCC/54.00/BOW/NHAI/16

: RDSO/B-10435/9

Stiffener Plate (25 mm thick M.S. Plate) with Hanger (25 mm thick M.S. Plate) & Arch Beam (25 mm thick M.S. Plate)

: Fillet (6mm)

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

: FCAW

: Overhead (Welding at Bridge site)

DIA

: 1.2 mm

Class

:Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005
(R2015)

Type

: Flux Cored wire

Drying

: N.A.

6.2). Flux

Class

: N.A

Type

: N.A

Drying Method

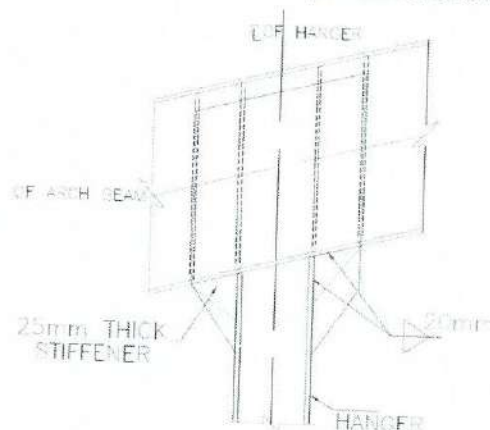
: N.A

6.3). Shielding Gas

$$: \text{Co}_2$$

7.1). Joint design detail

:As per Sketch shown below:



Devy
SITE ENGINEER
NHAI PIU-Chhindwara (M.P.)

स०अ० अधि० धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
10अ०मा०सं०, लखनऊ/R.D.S O., Lucknow

Signature of _____ Signature of _____

Signature of _____

Signature of
Dr. Chief Executive

Signature of
Chief Engineer (Bridge)

Signature of
R.D.S.O (Lucknow)

Fabricating Agency

Contractor

NH₄I

S.E.C. Railway (Bilaspur)

S.E.C. Railway(Bilaspur)

Ministry of Railways

S.E.C Railway, Bilaspur

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m /min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr. /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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

SITE ENGINEER
NHAI PIU-Chhindwara (M.P.)

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

Signature of Fabricating Agency
Signature of Contractor
Signature of NHAI



Signature of Dy. Chief Engineer (Bridge)
Signature of Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)
S.E.C. Railway (Bilaspur)

Signature of R.D.S.O. (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/17

1). Reference Drawing No. : RDSO/B-10435/9
Hanger with Bottom Long Beam, Side Plate
(32 mm thick M.S. Plate) with Bottom Long Beam
Side Plate (25 mm thick M.S. Plate)

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 : 1.2 mm
DIA : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Class : Grade E71T-12 as per IS/AWS Spec.: A5.20M:2005
(R2015)

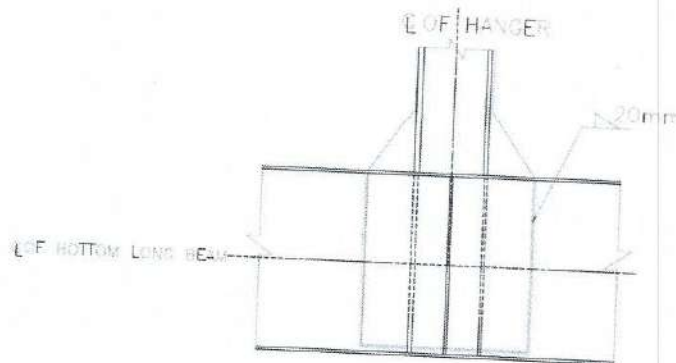
Type : Flux Cored wire

Drying : N.A.

6.2). Flux : N.A.
Class : N.A.
Type : N.A.
Drying Method : N.A.

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



Signature of

Fabricating
Agency

Signature of

Contractor

Signature of

NHAI

Signature of

Dy. Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

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S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

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S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

सं०३० अधि० धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/लखनऊ/R.D.S.O., Lucknow

Signature of

R.D.S.O (Lucknow)

Ministry of Railways



[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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
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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None



Signature of

Fabricating Agency

Signature of



Senior SITE ENGINEER
NHA/PHU-Chhindwara (M.P.)

Signature of

NHA

Signature of

Dy. Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

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S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

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S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

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

Signature of

R.D.S.O (Lucknow)

Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/18

1). Reference Drawing No. : RDSO/B-10435/9
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)

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 : DIA : 1.2 mm
Class : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20M:2005
(R2015)

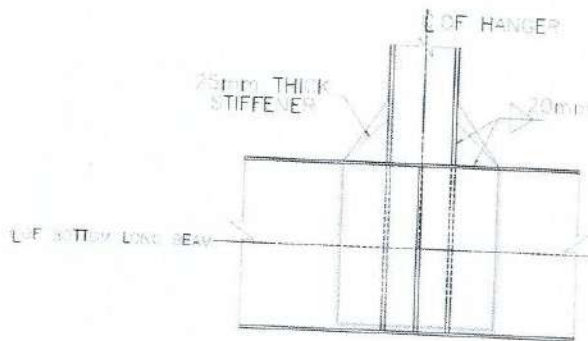
Type : Flux Cored wire

Drying : N.A.

6.2). Flux : Class : N.A.
Type : N.A.
Drying Method : N.A.

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



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

Signature of
Fabricating Agency



SITE ENGINEER
NHA1 Piu Chhindwara (M.P.)

Signature of
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

सह मुख्य अभियंता (पुल)
Dy Chief Engineer (Br.)
दक्षिण पूर्व मध्ये रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

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

Signature of _____
Signature of _____



SITE ENGINEER
NHA/PU-Canawara (M.P.)
NHA/

Signature of _____
Dy. Chief Engineer (Bridge)
Signature of _____
Chief Engineer (Bridge)
Signature of _____
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of _____
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/19

1). Reference Drawing No. : RDSO/B-10435/9
Diaphragm Plate (16 mm thick M.S.
Plate) with Hanger

2). Weld Joint Description : Fillet (10mm)

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 : 1.2 mm
DIA
Class : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20M:2005
(R2015)

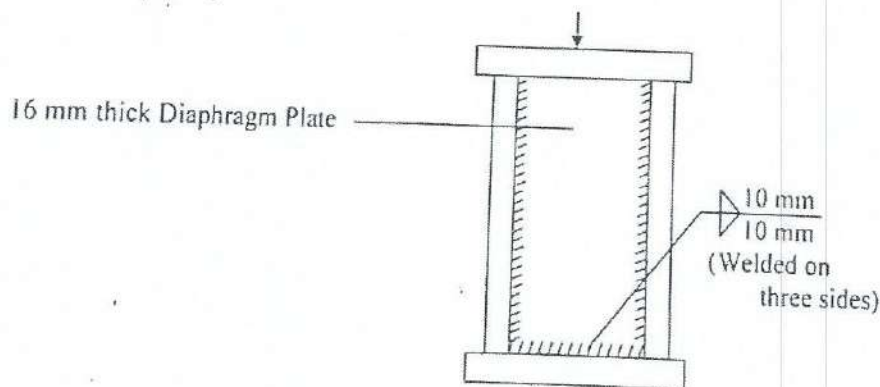
Type : Flux Cored wire

Drying : N.A.

6.2). Flux : N.A.
Class : N.A.
Type : N.A.
Drying Method : N.A.

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



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

Signature of

Signature of

Signature of

Fabricating
Agency

Contractor

NHAI

Signature of

Dy. Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

R.D.S.O (Lucknow)

Ministry of Railways



SITE ENGINEER
NHAII PCC/54.00/BOW/NHAI/19

डा. सुभाष अभिवर्ता (पुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
12). Cleaning of weld bead before laying of next weld bead : N.A.
13). Root preparation before Welding : Yes
14). Pre-heating & inter pass temperature : N.A.
15). Peening : Min. 100°C. - 150°C.
16). Post weld treatment : N.A.
17). Rectification of weld defect : N.A.
: By grinding of the defective weld & rectifying the Weld as per Cl.32.2 of IS:9595-96, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

Signature of
Fabricating Agency



Signature of
SITE ENGINEER
NHAI PIU-Chhindwara (M.P.)

Signature of
Dy. Chief Engineer (Br.)
S.E.C Railway (Bilaspur)

संलग्न अधिकारी एवं रसां
Assit. Research Officer/M&C
रेल मंत्रालय / Ministry of Railways
1000 मांसं, लखनऊ / R.D.S.O., Lucknow

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/20

1). Reference Drawing No. : RDSO/B-10435/4
Joint at L0, Cover Plate (36 mm thick M.S.
Plate) with Bottom Long Beam & Arch Beam

2). Weld Joint Description : Fillet (22mm)

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: -

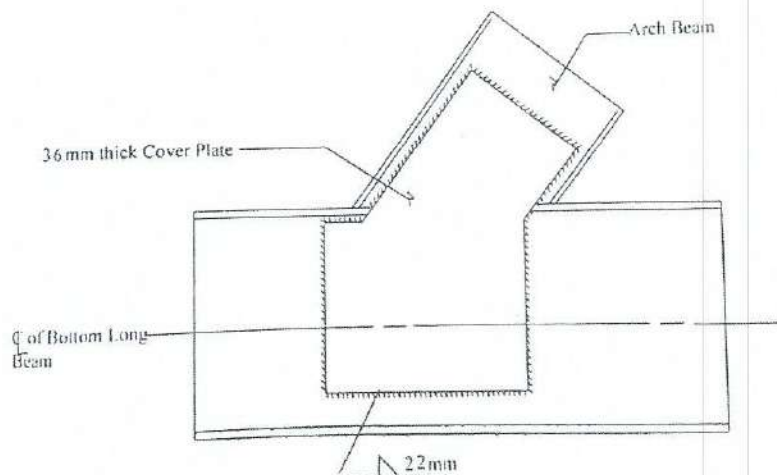
6.1). Electrode/Wire : 1.2 mm
DIA : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Class : Grade E71T-12 as per IS/AWS Spec.: A5.20M:2005
(R2015)

Type : Flux Cored wire
Drying : N.A.

6.2). Flux : N.A.
Class : N.A.
Type : N.A.
Drying Method : N.A.

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



Signature of
Fabricating
Agency

Signature of
General
Manager

44

Signature of
NHAI

**Deputy
SITE ENGINEER
NHAI PU-Chhindwara (M.P.)**

Signature of
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

**Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur**

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

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

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr. /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
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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None



SITE ENGINEER
NHAI PUNE-Chhindwara (M.P.)

उप मुख्य अभियंता (पुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

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

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/21

1). Reference Drawing No. : RDSO/B-10435/6
Stiffener Plate (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 : Horizontal-vertical (Welding at site)

6). Welding Consumable: -

6.1). Electrode/Wire : 1.2 mm
DIA : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Class : Grade E71T-12 as per IS/AWS Spec.: A5.20M:2005
(R2015)

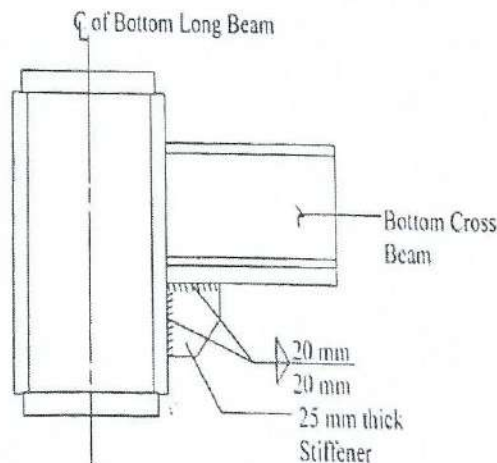
Type : Flux Cored wire

Drying : N.A.

6.2). Flux : N.A.
Class : N.A.
Type : N.A.
Drying Method : N.A.

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



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



Signature of
Fabricating
Agency



Signature of
Contractor
General
Manager
SBIPL-KO
46

Signature of
Dy. Chief Engineer (Bridge)
Dy. Chief Engineer (Br.)
S.E.C. Railway (Bilaspur)
S.E.C. Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O. (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

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

Signature of
General Manager
Contractor
Agency

Signature of

SITE ENGINEER
NHAI PUNE-Chhindwara (M.P.)

Signature of
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

राम सुख्य अभियंता (पुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. :PCC/54.00/BOW/NHAI/22

1). Reference Drawing No. :RDSO/B-10435/2
Diaphragm Plate (20 mm thick M.S.
Plate) with Arch Beam

2). Weld Joint Description : Fillet (10mm)

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 : 1.2 mm
DIA : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Class : Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005
(R2015)

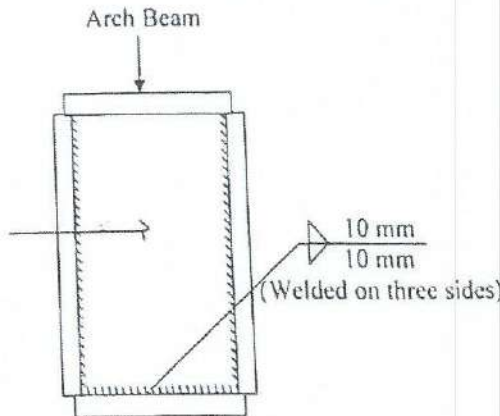
Type : Flux Cored wire
Drying : N.A.

6.2). Flux : N.A.
Class : N.A.
Type : N.A.
Drying Method : N.A.

6.3). Shielding Gas : Co2

7.1). Joint design detail :As per Sketch shown below:

ence,



Signature of _____

Fabricating Agency _____

General Manager _____

Signature of _____

Signature of _____

Signature of _____

Signature of _____

Signature of _____

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Signature of _____

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

Signature of _____

Signature of _____

Signature of _____

Signature of _____

Signature of _____

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Signature of _____

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m /min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr. /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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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 CI.32.2 of IS:9595-96, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

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

Signature of
Fabricating
Agency



SITE ENGINEER
NHAI PIU-Chhindwara (M.P.)

उप मुख्य अभियंता (पुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O. (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. :PCC/54.00/BOW/NHAI/23

1). Reference Drawing No. : RDSO/B-10435/5
Diaphragm Plate {Shipping Mark:DP1 & DP2}.
(16 mm & 20 mm thick M.S. Plate) with Bottom Long Beam

2). Weld Joint Description : Fillet (10mm)

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

DIA : 1.2 mm

Class : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005
(R2015)

Type : Flux Cored wire

Drying : N.A.

6.2). Flux

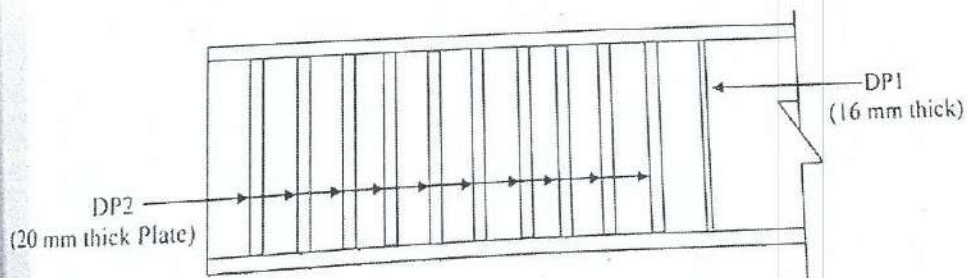
Class : N.A

Type : N.A

Drying Method : N.A

6.3). Shielding Gas : Co2

7.1). Joint design detail :As per Sketch shown below:



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

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



Signature of
Fabricating
Agency

50 |



Deputy
SITE ENGINEER
NHAI PIU-Chhindwara (M.P.)

Signature of
Dy. Chief Engineer (Bridge)

उप-मुख्य अभियंता (पुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)

Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

Signature of
Fabricating
Agency

Signature of

Signature of

Signature of
Dy. Chief Engineer (Bridge)

Signature of
Chief Engineer (Bridge)

Signature of
R.D.S.O (Lucknow)

Fabricating
Agency

Contractor

NHAI

S.E.C. Railway (Bilaspur)

S.E.C. Railway (Bilaspur)

Ministry of Railways



Site Engineer
NHAI PIU-Chhindwara (M.P.)

डा. सुख्य अभियंता (पुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

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

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/24

1). Reference Drawing No. : RDSO/B-10435/3
Diaphragm Plate (10 mm thick M.S. Plate) with Top Tie Beam

2). Weld Joint Description : Fillet (10mm)

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

DIA : 1.2 mm

Class : Flux Cored Welding wire, Class 1 of IRS M-46/20, Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005 (R2015)

Type : Flux Cored wire

Drying : N.A.

6.2). Flux

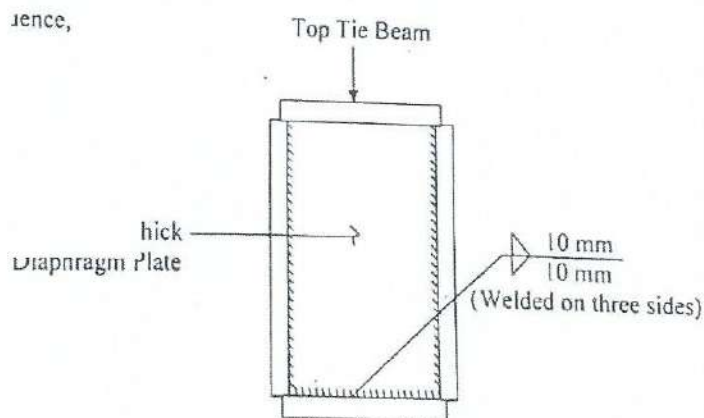
Class : N.A

Type : N.A

Drying Method : N.A

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



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



Signature of

Fabricating Agency

52



Signature of

Contractor

General Manager

NHAI Bilaspur

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

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

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

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Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of

Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

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

Signature of
Fabricating
Agency

Signature of
Contractor

Signature of
General
Manager

Signature of
Dy. Chief Engineer (Bridge)

Signature of
Chief Engineer (Bridge)

Signature of
R.D.S.O (Lucknow)

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/25

1). Reference Drawing No. : RDSO/B-10435/3
Diaphragm Plate (10 mm thick M.S. Plate) with Top Lateral Bracing

2). Weld Joint Description : Fillet (10mm)

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

DIA : 1.2 mm

Class : Flux Cored Welding wire, Class 1 of IRS M-46/20, Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005 (R2015)

Type : Flux Cored wire

Drying : N.A.

6.2). Flux

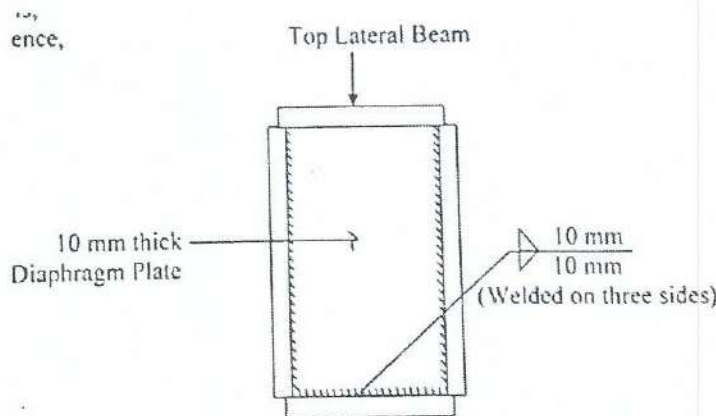
Class : N.A

Type : N.A

Drying Method : N.A

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



सं०अ० अधिकारी एवं रसा०
Assit. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/Lucknow



Signature of

Fabricating
Agency

54



Signature of

Contractor
General
Manager

Deputy Engineer
SITE ENGINEER
NHAI/PUA/Chhindwara (M.P.)

Signature of
Dy. Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

रूप मध्य अभियंता (पुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilasour

Signature of
Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O. (Lucknow)

Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

Signature of _____
Fabricating Agency

Signature of _____
General Manager

Signature of _____
SITE ENGINEER
NHAI P/O, Chandwara (M.P.)

Signature of _____
Dy. Chief Engineer (Bridge)

Signature of _____
Dy. Chief Engineer (Br.)
S.E.C. Railway, Bilaspur

Signature of _____
Chief Engineer (Bridge)

Signature of _____
R.D.S.O (Lucknow)

Signature of _____
Ministry of Railways

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

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WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/26

1). Reference Drawing No. : RDSO/B-10435/6
BCB Angle Cleat (L 150X1150X16) with BLB Side Plate
(25 mm thick M.S Plate)

2). Weld Joint Description : Fillet (12mm)

3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0

4). Welding Process : FCAW

5). Welding Position : Overhead (Welding at Site)

6). Welding Consumable: -

6.1). Electrode/Wire

DIA : 1.2 mm

Class : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005
(R2015)

Type : Flux Cored wire

Drying : N.A.

6.2). Flux

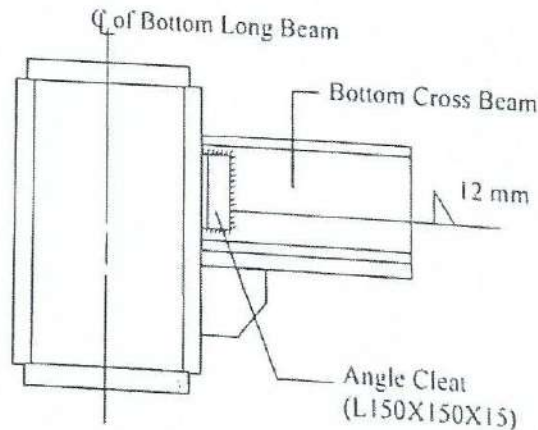
Class : N.A

Type : N.A

Drying Method : N.A

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



Signature of
Fabricating
Agency

56 |



Signature of
General
Manager



Signature of
Dy. Chief Engineer (Bridge)

संयोजक अभियंता (पुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

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

Signature of
R.D.S.O. (Lucknow)

Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

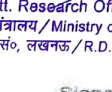

Signature of _____
Fabricating Agency


Signature of _____
Contractor


Signature of _____
NHAI


Signature of _____
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)


Signature of _____
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)


Signature of _____
R.D.S.O. (Lucknow)
Ministry of Railways

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

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/27

1). Reference Drawing No. : RDSO/B-10435/4
Stiffener Plate (25 mm thick M.S.
Plate) with Arch Beam & BLB

2). Weld Joint Description : Fillet (20mm)

3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0

4). Welding Process : FCAW

5). Welding Position : Horizontal-Vertical (Welding at site)

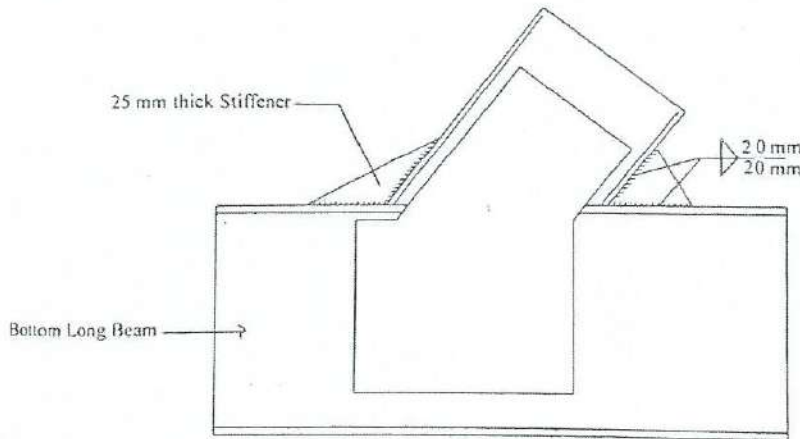
6). Welding Consumable: -

6.1). Electrode/Wire : DIA : 1.2 mm
Class : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005
(R2015)
Type : Flux Cored wire
Drying : N.A.

6.2). Flux : Class : N.A.
Type : N.A.
Drying Method : N.A.

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



ENGINEER
NHA/PIO Chhindwara (M.P.)

उप मुख्य अभियंता (पुल)
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

पश्चिम पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

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

Signature of
R.D.S.O (Lucknow)

Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

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Signature of _____
Fabricating Agency

Signature of _____
General Manager
NHAI

Signature of _____
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of _____
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of _____
R.D.S.O (Lucknow)
Ministry of Railways

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

SHR ENGINEER
NHA, Chhindwara (M.P.)

राजेश कुमार अभिलेखा (पुल)
Dy. Chief Engineer (Bridge)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/28

1). Reference Drawing No. : RDSO/B-10435/5
Bottom Long Beam Joint, Cover Plate (32 mm thick M.S. Plate) with Top & Side Plate

2). Weld Joint Description : Fillet (22mm)

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

DIA : 1.2 mm

Class : Flux Cored Welding wire, Class 1 of IRS M-46/20, Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005 (R2015)

Type : Flux Cored wire

Drying : N.A.

6.2). Flux

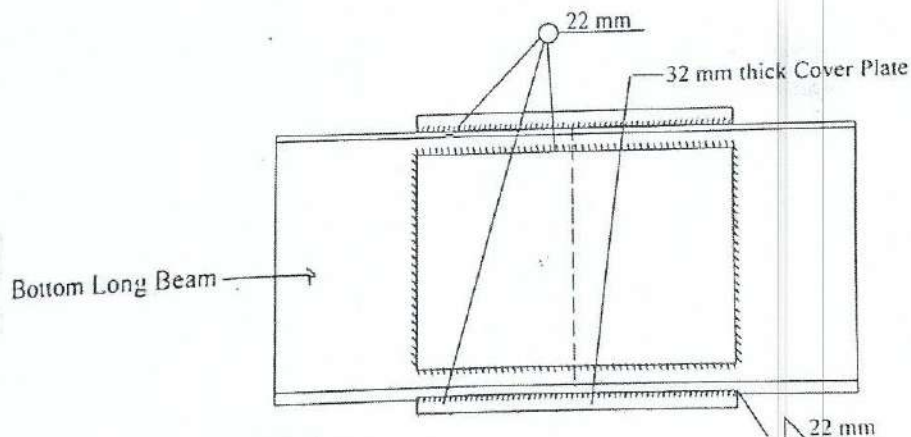
Class : N.A

Type : N.A

Drying Method : N.A

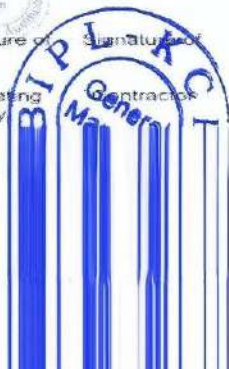
6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



Signature of

Fabricating Agency



Signature of

Contractor

SITE ENGINEER
J.P. Chinnwara (M.P.)

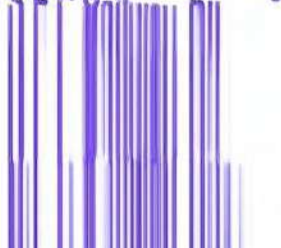
Signature of

Dy. Chief Engineer (Bridge)

उप मुख्य अभियंता (पुल)

Dy. Chief Engineer (Br.)

दक्षिण पूर्व मध्य रेलवे, बिलासपुर



Signature of

Chief Engineer (Bridge)



Signature of

R.D.S.O. (Lucknow)

सं०अ० अधिकारी एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
१०३० मा० सं०, लखनऊ/R.D.S.O., Lucknow

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. :PCC/54.00/BOW/NHAI/29

1). Reference Drawing No.	: RDSO/B-10435/2 Arch Beam Joint, Cover Plate (32 mm thick M.S. Plate) with Top & Side Plate
---------------------------	---

2). Weld Joint Description	: Fillet (22mm)
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

DIA

: 1.2 mm

Class

:Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005
(R2015)

Type

: Flux Cored wire

Drying

:N.A.

6.2). Flux

Class

: N.A

Type

: N.A

Drying Method

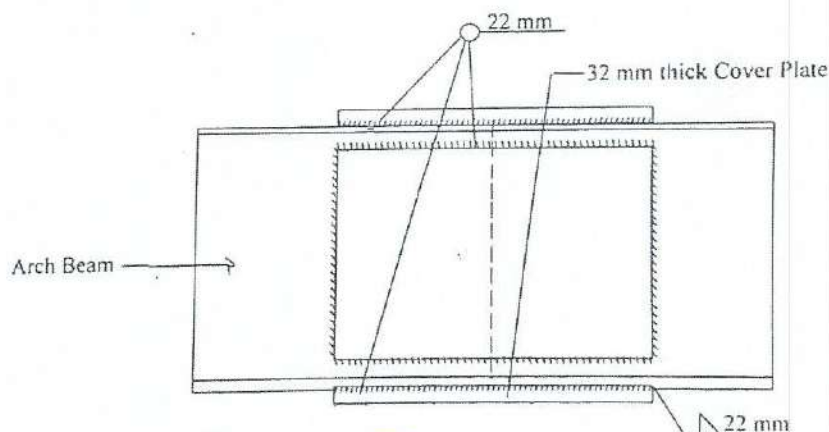
: N.A

6.3). Shielding Gas

 Co_2

7.1). Joint design detail

:As per Sketch shown below:



स०अ० अधि० धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
10अ०मा०सं०, लखनऊ/R.D.S O., Lucknow

Signature of _____
Fabricating Agency _____

Signature of
General
Manager

DR. SURESH CHANDRA
Dy. C. S. E. Chhindwara (M.P.)

Signed
Dy. Chief
S. E.

Signature of
Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

Signature of _____
Fabrication Agency

Signature of _____
General Manager

Signature of _____
SITE ENGINEER
NHAI PU-Chhindwara (M.P.)

Signature of _____
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of _____
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of _____
R.D.S.O. (Lucknow)
Ministry of Railways

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

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/30

1). Reference Drawing No. : RDSO/B-10435/3
Top Tie Beam with Arch Beam & Hanger)

2). Weld Joint Description : Fillet (18mm)

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

DIA : 1.2 mm

Class : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.: A5.20M:2005
(R2015)

Type : Flux Cored wire

Drying : N.A.

6.2). Flux

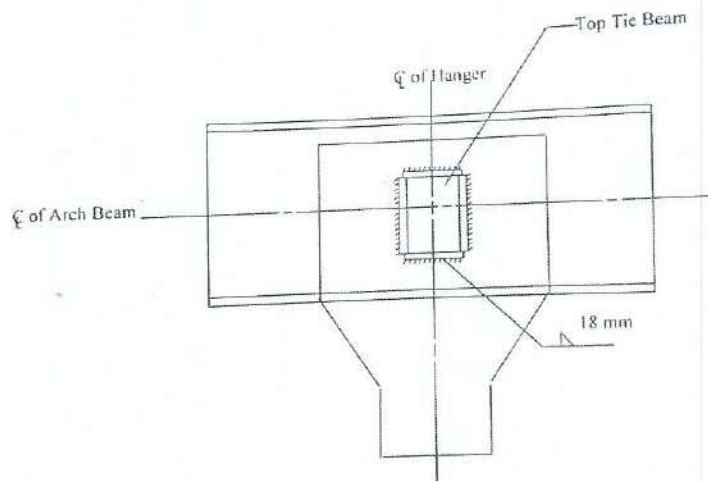
Class : N.A

Type : N.A

Drying Method : N.A

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



Signature of _____
Fabricating Agency

64



Signature of _____
SITE ENGINEER
NHAI Bilaspur (M.P.)

Signature of _____
Dy. Chief Engineer (Br)
हथिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of _____
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of _____
R.D.S.O (Lucknow)
Ministry of Railways

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

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

Signature of
Fabricating Agency



Signature of
S.E. Engineer
NHA/PAO Bhindwara (M.P.)

Signature of
Dy. Chief Engineer (Br.)
रविशंकर प्रसाद रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

संज्ञा अधिकारी एवं रसा
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
1000 मांस, लखनऊ/R.D.S.O., Lucknow

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WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. :PCC/54.00/BOW/NHAI/31

1). Reference Drawing No. : RDSO/B-10435/3
Top Lateral Bracing Beam with Top Tie Beam
& Arch Beam

2). Weld Joint Description : Fillet (18mm)

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

DIA : 1.2 mm

Class : Flux Cored Welding wire, Class 1 of IRS M-46/20,
Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005
(R2015)

Type : Flux Cored wire

Drying : N.A.

6.2). Flux

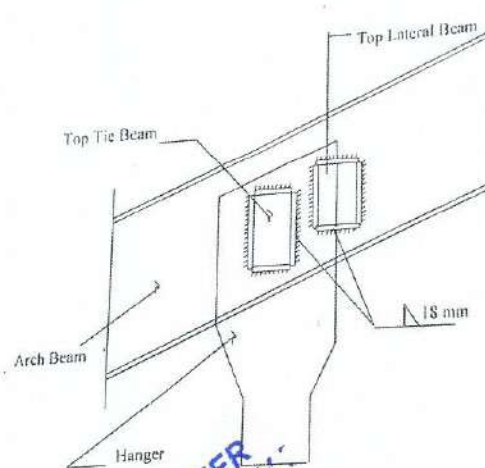
Class : N.A

Type : N.A

Drying Method : N.A

6.3). Shielding Gas : Co2

7.1). Joint design detail : As per Sketch shown below:



Signature of

Fabricating
Agency

Signature of

Contractor

Signature of

NHAI

Dy.

S.E.C. Railway

उप मुख्य अभियंता (पुल)
Dy. Chief Engineer (Br.)

वर्तमान पूर्व मध्य रेलवे, बिलासपुर
S.E.C. Railway (Bilaspur)

S.E.C. Railway, Bilaspur

Signature of

Chief Engineer (Bridge)

Signature of

R.D.S.O. (Lucknow)

Ministry of Railways

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

[Type here]

WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

Signature of _____
Fabricating Agency

Signature of _____
General Manager
NHAI

Signature of _____
SHE ENGINEER
NHAI
Chhindwara (M.F.)

उप मुख्य अभियंता (पुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of _____
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of _____
R.D.S.O (Lucknow)
Ministry of Railways

सं० अ० अधि० धातु एवं रसा०
Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
ल० अ० मा० सं०, लखनऊ/R.D.S.O., Lucknow

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WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. :PCC/54.00/BOW/NHA1/32

1). Reference Drawing No. : RDSO/B-10435/3
Stiffener Plate (25 mm thick M.S. Plate) with Top Tie Beam, Top Lateral Bracing Beam & Arch Beam

2). Weld Joint Description : Fillet (18mm)

3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0

4). Welding Process : FCAW

5). Welding Position : Overhead (Welding at Bridge site)

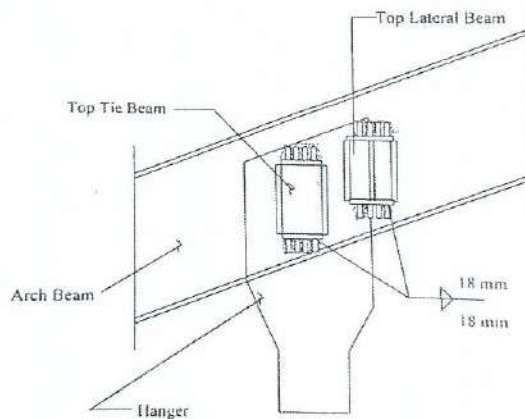
6). Welding Consumable: -

6.1). Electrode/Wire
DIA : 1.2 mm
Class : Flux Cored Welding wire, Class 1 of IRS M-46/20, Grade E71T-12 as per IS/AWS Spec.:A5.20M:2005 (R2015)
Type : Flux Cored wire
Drying : N.A.

6.2). Flux
Class : N.A
Type : N.A
Drying Method : N.A

6.3). Shielding Gas : Co2

7.1). Joint design detail :As per Sketch shown below:



Signature of

Fabricating Agency

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Signature of

NHA1

Deputy Engineer
NHA1 Pili-Chhindwara (M.P.)

Signature of
Dy. Chief Engineer (Bridge)

उप मुख्य अभियंता (पुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मंडल, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)

Ministry of Railways

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

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WELDING PROCEDURE SPECIFICATION SHEET

- 7.2). Joint Preparation : As per IS:43&WBC-2011-CL12
8). Welding Current : DC
Polarity : Reverse
9). Welder qualification : As per IS:7310 (Part-1), IS:7307 (Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr. /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 : N.A.
14). Pre-heating & inter pass temperature : Min. 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, B2 class of electrode of specification IRS M-28/20 after conduction D.P test.
18). Inspection of weld : Visual, D.P. Test & weld gauge
19). Any other relevant detail : None

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रेल मंत्रालय/Ministry of Railways
लखनऊ/Lucknow

Signature of
Fabricating
Agency



Deputy
SITE ENGINEER
NHA PH-I, Chhindwara (M.P.)

Signature of
NHA

Signature of
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

उप मुख्य अभियंता (पुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O. (Lucknow)
Ministry of Railways

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WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. :PCC/54.00/BOW/NHAI/33

1). Reference Drawing No. : RDSO/B-10435/6
Shear Stud Connector on Top Flange of Bottom Cross Beam

2). Weld Joint Description : Resistance Welding (10mm All-around)

3). Base Metal : Plates IS: 2062-2011, E-350 Gr. B0
The Stud Shear Connector & Ceramic Ferrule
Conform to type SD1/UF as per BS EN ISO 13918.

4). Welding Process : Automatic Welding Machine

5). Welding Position : Down-head

6). Welding Consumable: -

6.1). Electrode/Wire

DIA : N.A

Class : N.A

Type : N.A

Drying : N.A

6.2). Flux

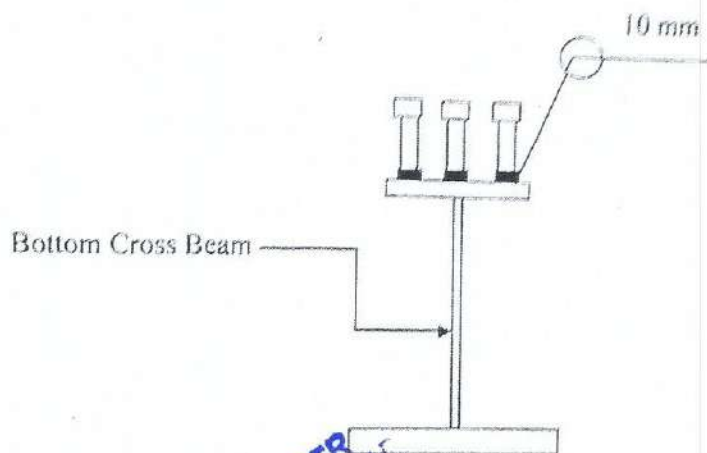
Class : N.A

Type : N.A

Drying Method : N.A

6.3). Shielding Gas : N.A

7.1). Joint design detail :As per Sketch shown below:



Signature of
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Signature of
General
Manager

Signature of
SITE ENGINEER
NHAI/AY-Chhindwara (M.F.)

Signature of
Dy. Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

उप मुख्य अभियंता (पुल)
उप मुख्य अभियंता (पुल)
बिलासपुर मंडल रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)

S.E.C. Railway (Bilaspur)

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

Signature of
R.D.S.O (Lucknow)

Ministry of Railways

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WELDING PROCEDURE SPECIFICATION SHEET

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

Weld pass no.	Electrode/Wire dia. (in mm)	Current (in Amp.)	Arc voltage (in volt)	Time (in ms)	Lift (mm.)	Protrusion app. (mm)	Gas flow (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 : N.A.
14). Pre-heating & inter pass temperature : N.A.
15). Peening : N.A.
16). Post weld treatment : N.A.
17). Rectification of weld defect : As per BS 115C1.No.6 (L. M&N)
18). Inspection of weld : Visual, Ring Test & Bend Test
19). Any other relevant detail : None

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Asstt. Research Officer/M&C
रेल मंत्रालय/Ministry of Railways
लखनऊ/Lucknow

Signature of
Fabricating
Agency

Signature of
Contractor
General
Manager

Signature of

Deputy Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)
NHAI Pw-Chhindwara (M.O.)

उप मुख्य अभियंता (पुल)
Dy. Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

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WELDING PROCEDURE SPECIFICATION SHEET

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

Welding Procedure Specification No. : PCC/54.00/BOW/NHAI/34

Weld Joint Description : 5mm tack welds on all fillet & Butt Joints.
Ref. Drg No. All relevant drawing.

1. Base Metal : Plates IS: 2062-2011, E-350 Gr. B0, Fully-killed & Normalized

Welding Process : MANUAL METAL ARC WELDING (MMAW)

4). Welding Position : Horizontal-Vertical

5). Welding Consumable: -

a). Electrode/Wire

Class : B2 as per IRS M28/20

Type : Heavy Coated

Drying Method : As recommended by the electrode manufacturer

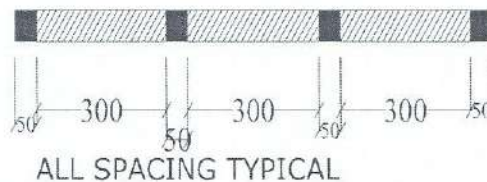
b). Flux

Class : N.A.

Type : N.A.

6.1). Shielding Gas : N.A.

7.1). Joint design detail : As per Sketch shown below:



Signature of
Auth. Sign.

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Agency

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Signature of
General
Manager
BILASPUR
NHAI PU-Chhindwara (M.P.)
SITE ENGINEER

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)
S.E.C Railway, Bilaspur

Signature of
Chief Engineer (Bridge)
S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)
Ministry of Railways

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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 : DCEP
- 9). Welder qualification : As per IS:7310 (Part-1), IS:7307(Part-1) & IS: 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 (m/min.)	Travel speed (m/min.)	Electrode stick out (mm)	Gas flow (Ltr./min.)
1	4	180	24	N. A	N. A	N. A	N. A

10.2) Welding sequence & techniques

String or Weave Bead

: String/Weave as per requirement

Initial & Interpass Cleaning

: Brushing/Grinding

Single or Multipass(per side)

: Single

Single or Multiple Electrode

: Single

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

: N.A.

14). Pre-heating & interpass temperature

: N.A.

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, B2 class of electrode of specification IRS M-28/12 after conduction D.P test.

18). Inspection of weld

: Visual, D.P Test

19). Any other relevant detail

: N.A.



उप मुख्य अभियंता (पुल)
Dy. Chief Engineer (Br.)
दक्षिण पूर्व मध्य रेलवे, बिलासपुर
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S.E.C. Railway (Bilaspur)

Signature of
R.D.S.O (Lucknow)
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