

## INDIAN RAILWAYS



सत्यमेव जयते

## CHECKSHEETS

FOR

CRF SECTIONS OF BOGIE OPEN WAGON TYPE – BOXNR

S.No.	Month & Year of issue	Revision / Amendment	Page No.	Reason for Amendment
1.	October - 2011	-	-	First issue

**Note:**

- These check sheets do not detail all the dimensions or technical requirements of respective wagon assemblies/components. These check sheets are issued only for general guidance & assistance of inspecting officials. Notwithstanding the above, the inspecting officials are advised to refer to relevant drawings and/or relevant specifications to confirm conformity to the specified dimensions and technical details.**
- R.D.S.O. Guideline no. WD-16-BOXNR-2010 (read along with Amendment No. 01 of December 2010) with latest drawings, should be referred at appropriate places for repair, inspection, storage etc.**

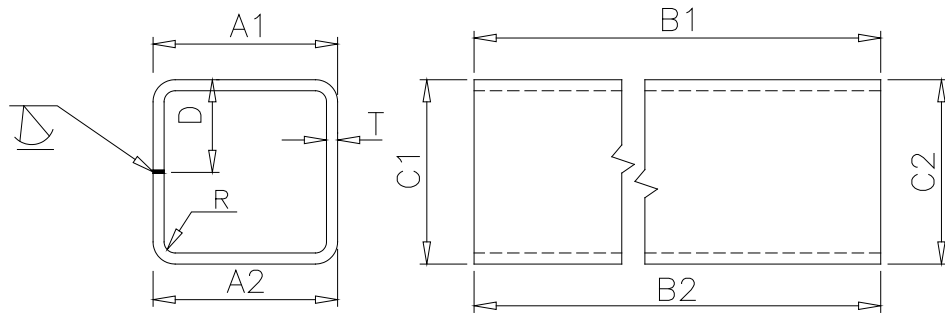
ISSUED BY

RESEARCH DESIGNS AND STANDARDS ORGANISATION  
 MINISTRY OF RAILWAYS  
MANAK NAGAR, LUCKNOW - 226 011

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**SIDE TOP COPING**



Ref: Drawing No. WD-07001-S-08 Item-1 & CRF Drawing No. WD-07064-S-01 Item-1

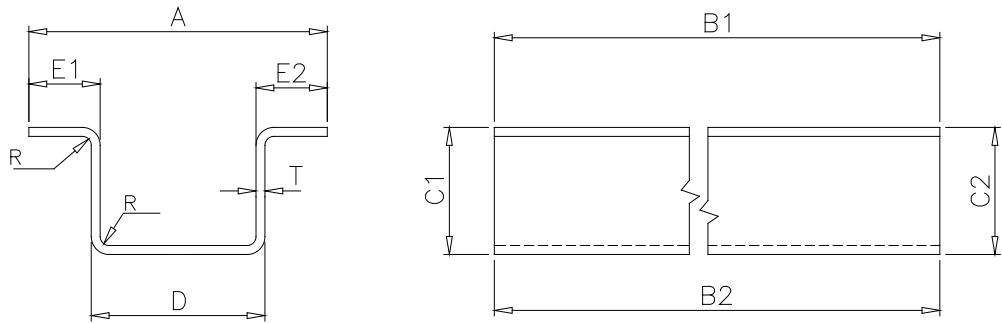
SIDE TOP COPING*				Date:	
SL. NO.	STAGE	Works Inspection	Inspecting Authority	Remarks	
1.	Welding	Check quality of welding visually if required can be checked with gauge			
2.	Dressing				
3.	Dimensions	As follows			
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension	
				Works Inspection	Inspecting Authority
i.	Width over corner bend angle	A1	100± 1.5		
		A2			
ii.	Length overall	B1	9990 +4/-1		
		B2			
iii.	Height overall	C1	100± 1.5		
		C2			
iv.	Joint from height	D	50± 1.25		
v.	Thickness of top coping	T	6± 0.30		
vi.	Radius of top coping	R	12± 1.5		
vii.	Angle	-	± 1°15'		
viii.	Waviness	-	2 max.		
ix.	Bow	-	1 in 600		
x.	Camber	-	1 in 600		
xi.	Twist	-	1 deg./metre		
x.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects		
xii.	Welding Section 100x100x6 with one weld joint. (Single V butt weld, 2mm Gap & 60° angle)	-	Visual check for any weld defects.		

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

**BODY SIDE STANCHION**



Ref: Drawing No. WD-07001-S-08 Item-2 & CRF Drawing No. WD-07064-S-01 Item-2

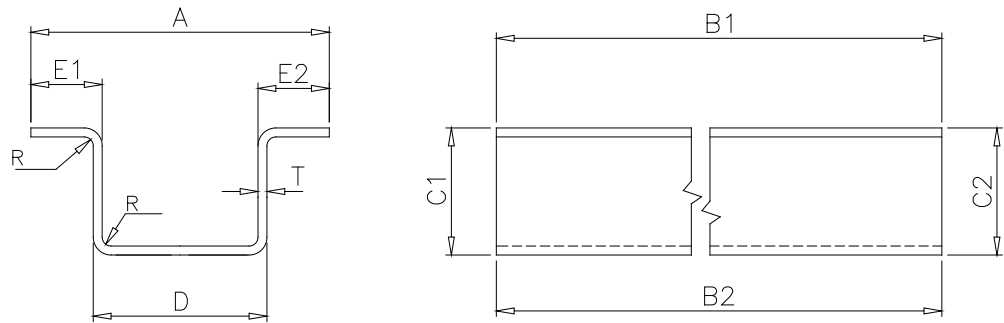
END TOP COPING*				Date:		
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	201 ± 1.25			
ii.	Length overall	B1	2271 +3/-1			
		B2				
iii.	Height overall	C1	85 ± 1.25			
		C2				
iv.	Bottom width	D	117 ± 1.25			
v.	Top flange	E1	48 ± 1.25			
		E2				
vi.	Thickness	T	6 ± 0.30			
vii.	Radius	R	12 ± 1.5			
viii.	Angle	-	± 1°15'			
ix.	Waviness	-	2 max.			
x.	Bow	-	1 in 600			
xi.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

DOOR WAY MIDDLE STANCHION



Ref: Drawing No. WD-07001-S-08 Item-3 & CRF Drawing No. WD-07064-S-01 Item-3

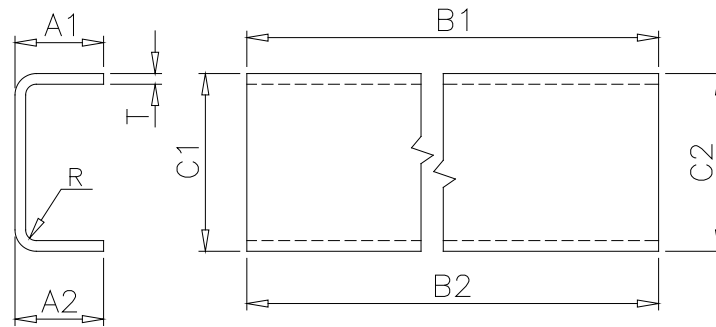
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SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1..	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	201± 1.25			
ii.	Length overall	B1	1132 ± 1.00			
		B2				
iii.	Height overall	C1	85± 1.25			
		C2				
iv.	Bottom width	D	117± 1.25			
v.	Top flange	E1	48± 1.25			
		E2				
vi.	Thickness	T	6± 0.30			
vii.	Radius	R	12± 1.5			
viii.	Angle	-	± 1°15'			
ix.	Waviness	-	2 max.			
x.	Bow	-	1 in 600			
xi.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
xi.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

DOOR WAY CROSS BAR PRESSING



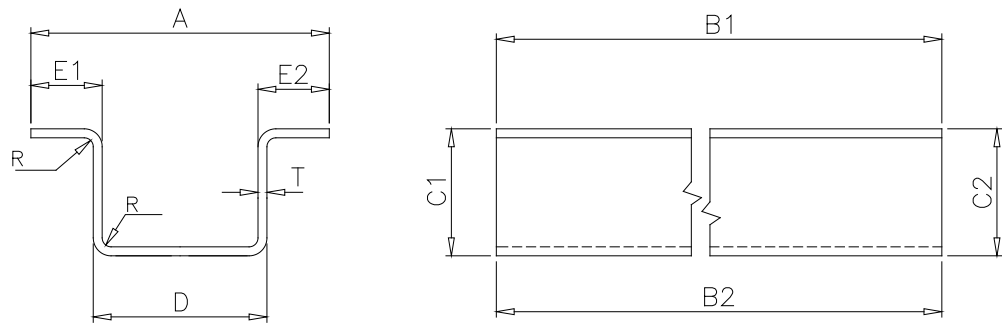
Ref: Drawing No. WD-07001-S-08 Item-4 & CRF Drawing No. WD-07064-S-01 Item-4

END TOP COPING*				Date:	
SL. NO.	STAGE	Works Inspection	Inspecting Authority	Remarks	
1.	Fitment of all components				
2.	Welding	Check quality of welding visually if required can be checked with gauge			
3.	Dressing				
4.	Dimensions	As follows			
	LOCATION	Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
			Works Inspection	Inspecting Authority	
i.	Width over corner bend angle	A1	34 ± 1.25		
		A2			
ii.	Length overall	B1	1544 ± 1.00		
		B2			
iii.	Height overall	C1	145 ± 1.25		
		C2			
iv.	Thickness	T	6 ± 0.30		
v.	Radius	R	12 ± 1.5		
vi.	Angle	-	± 1°15'		
vii.	Waviness	-	2 max.		
viii.	Bow	-	1 in 600		
ix.	Camber	-	1 in 600		
x.	Twist	-	1 deg./metre		
xi.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects		

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

SIDE WALL END MIDDLE COPING



Ref: Drawing No. WD-07001-S-08 Item-5 & CRF Drawing No. WD-07064-S-01 Item-5

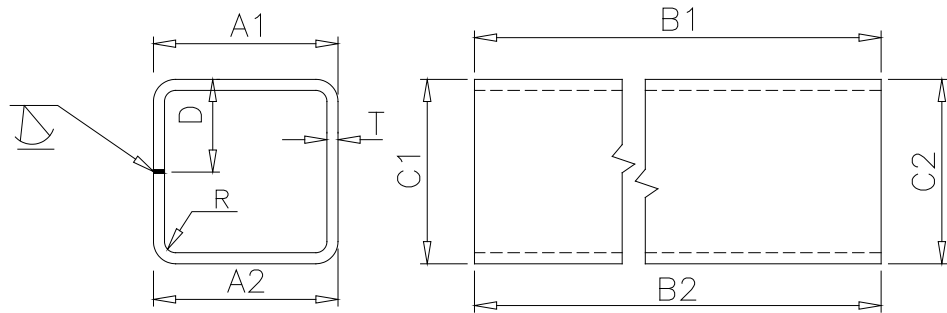
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SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	201 ± 1.25			
ii.	Length overall	B1	814.5 ± 1.00			
		B2				
iii.	Height overall	C1	85 ± 1.25			
		C2				
iv.	Bottom width	D	117 ± 1.25			
v.	Top flange	E1	48 ± 1.25			
		E2				
vi.	Thickness	T	6 ± 0.30			
vii.	Radius	R	12 ± 1.5			
viii.	Angle	-	± 1°15'			
ix.	Waviness	-	2 max.			
x.	Bow	-	1 in 600			
xi.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
xi.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

END TOP COPING



Ref: Drawing No. WD-07001-S-10 Item-1 & CRF Drawing No. WD-07064-S-01 Item-6

END TOP COPING*				Date:		
SL. NO.	STAGE	Works Inspection	Inspecting Authority	Remarks		
1.	Welding	Check quality of welding visually if required can be checked with gauge				
2.	Dressing					
3.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width over corner bend angle	A1	100± 1.5			
		A2				
ii.	Length overall	B1	2960 +3/-1			
		B2				
iii.	Height overall	C1	100± 1.5			
		C2				
iv.	Joint from height	D	50± 1.25			
v.	Thickness of top coping	T	6± 0.30			
vi.	Radius of top coping	R	12± 1.5			
vii.	Angle	-	± 1°15'			
viii.	Waviness	-	2 max.			
ix.	Bow	-	1 in 600			
x.	Camber	-	1 in 600			
xi.	Twist	-	1 deg./metre			
x.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			
xii.	Welding Section 100x100x6 with one weld joint. (Single V butt weld, 2mm Gap & 60° angle)	-	Visual check for any weld defects.			

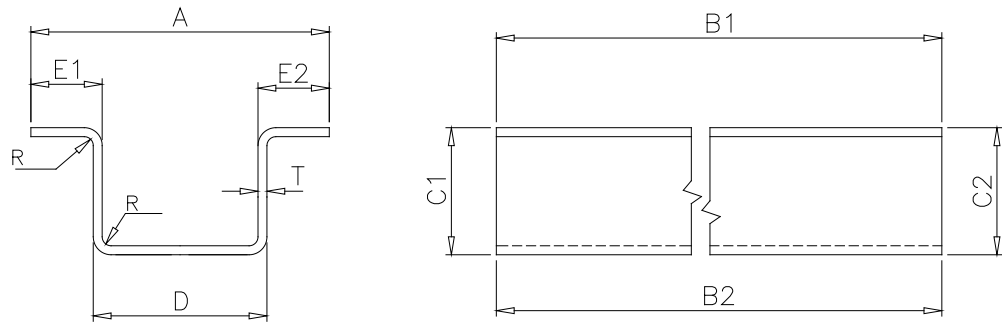
\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	



END STANCHION BOTTOM



Ref: Drawing No. WD-07001-S-10 Item-2 & CRF Drawing No. WD-07064-S-01 Item-7

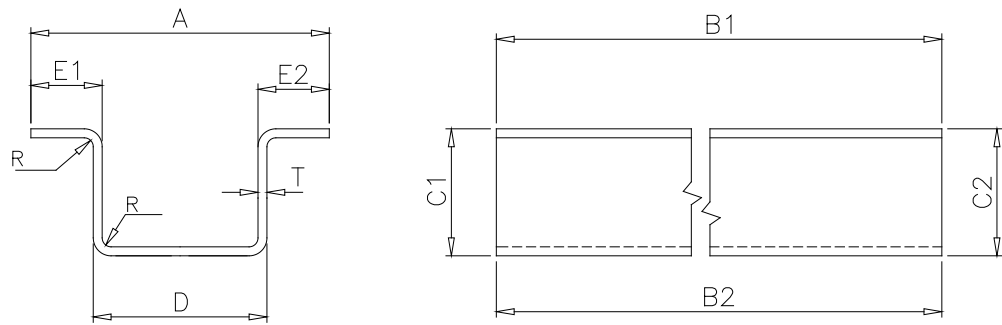
END TOP COPING*				Date:		
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	201 ± 1.25			
ii.	Length overall	B1	938 ± 1.00			
		B2				
iii.	Height overall	C1	85 ± 1.25			
		C2				
iv.	Bottom width	D	117 ± 1.25			
v.	Top flange	E1	48 ± 1.25			
		E2				
vi.	Thickness	T	6 ± 0.30			
vii.	Radius	R	12 ± 1.5			
viii.	Angle	-	± 1°15'			
ix.	Waviness	-	2 max.			
x.	Bow	-	1 in 600			
xi.	Camber	-	1 in 600			
	Twist	-	1 deg./metre			
	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

END WALL MIDDLE COPING



Ref: Drawing No. WD-07001-S-10 Item-3 & CRF Drawing No. WD-07064-S-01 Item-8A

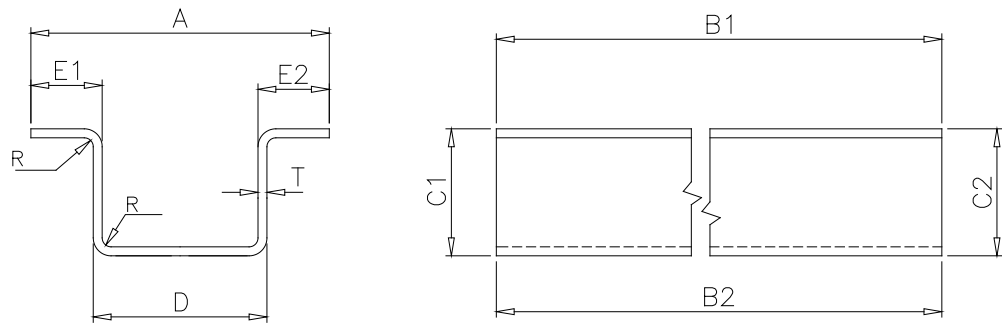
END TOP COPING*				Date:		
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	201 ± 1.25			
ii.	Length overall	B1	2960 +3.0/-1.0			
		B2				
iii.	Height overall	C1	85 ± 1.25			
		C2				
iv.	Bottom width	D	117 ± 1.25			
v.	Top flange	E1	48 ± 1.25			
		E2				
vi.	Thickness	T	6 ± 0.30			
vii.	Radius	R	12 ± 1.5			
viii.	Angle	-	± 1°15'			
ix.	Waviness	-	2 max.			
x.	Bow	-	1 in 600			
xi.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

END STANCHION MIDDLE



Ref: Drawing No. WD-07001-S-10 Item-16 & CRF Drawing No. WD-07064-S-01 Item-8B

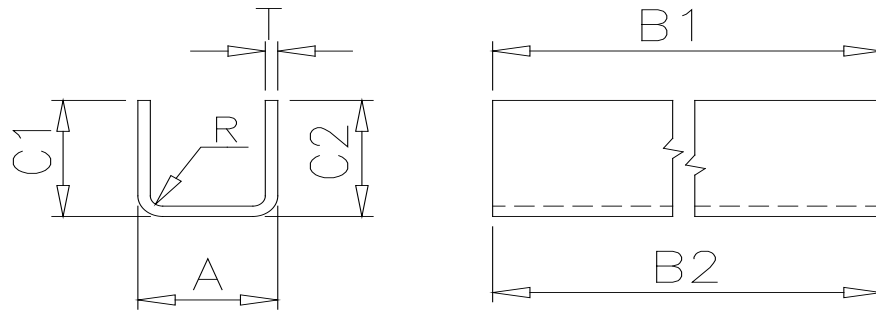
END TOP COPING*				Date:		
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	201 ± 1.25			
ii.	Length overall	B1	544 ± 1.00			
		B2				
iii.	Height overall	C1	85 ± 1.25			
		C2				
iv.	Bottom width	D	117 ± 1.25			
v.	Top flange	E1	48 ± 1.25			
		E2				
vi.	Thickness	T	6 ± 0.30			
vii.	Radius	R	12 ± 1.5			
viii.	Angle	-	± 1°15'			
ix.	Waviness	-	2 max.			
x.	Bow	-	1 in 600			
xi.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

DOOR FRAME MIDDLE



Ref: Drawing No. WD-09081-S-01 Item-18 & CRF Drawing No. WD-07064-S-01 Item-9

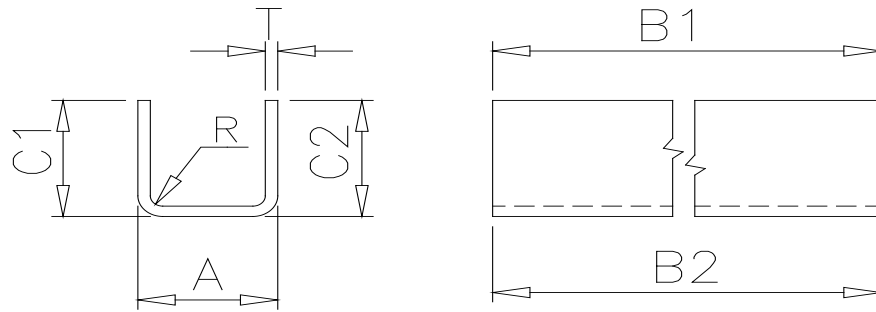
END TOP COPING*					Date:	
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	45 ± 1.25			
ii.	Length overall	B1	729 ± 1.00			
		B2				
iii.	Height overall	C1	45 ± 1.25			
		C2				
v.	Thickness	T	4 ± 0.20			
vi.	Radius	R	6 ± 1.5			
vii.	Angle	-	± 1°15'			
viii.	Waviness	-	2 max.			
ix.	Bow	-	1 in 600			
x.	Camber	-	1 in 600			
xi.	Twist	-	1 deg./metre			
xii.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

DOOR FRAME SIDE



Ref: Drawing No. WD-09081-S-01 Item-17 & CRF Drawing No. WD-07064-S-01 Item-10

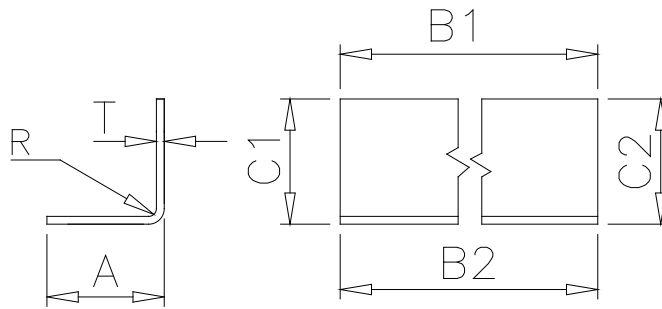
END TOP COPING*					Date:	
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	45 ± 1.25			
ii.	Length overall	B1	777 ± 1.00			
		B2				
iii.	Height overall	C1	45 ± 1.25			
		C2				
v.	Thickness	T	4 ± 0.20			
vi.	Radius	R	6 ± 1.5			
vii.	Angle	-	± 1°15'			
viii.	Waviness	-	2 max.			
ix.	Bow	-	1 in 600			
x.	Camber	-	1 in 600			
xi.	Twist	-	1 deg./metre			
xii.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

DOOR FRAME TOP



Ref: Drawing No. WD-09081-S-01 Item-1 & CRF Drawing No. WD-07064-S-01 Item-11

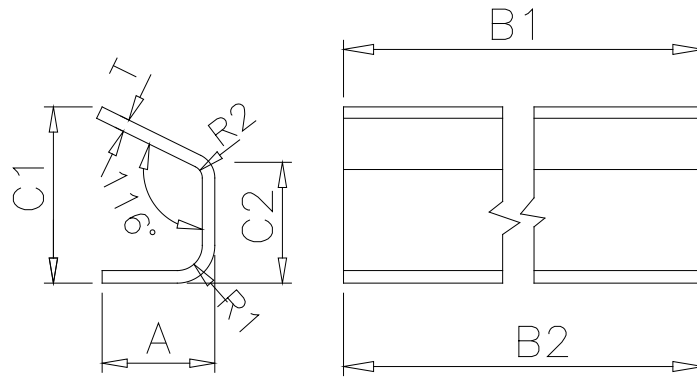
END TOP COPING*					Date:	
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	45 ± 1.25			
ii.	Length overall	B1	1470 ± 1.00			
		B2				
iii.	Height overall	C1	48.15 ± 1.25			
		C2				
iv.	Thickness	T	3.15 ± 0.20			
v.	Radius	R	5 ± 1.5			
vi.	Angle	-	± 1°15'			
vii.	Waviness	-	2 max.			
viii.	Bow	-	1 in 600			
ix.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
xi.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

DOOR FRAME BOTTOM



Ref: Drawing No. WD-09081-S-01 Item-19 & CRF Drawing No. WD-07064-S-01 Item-12

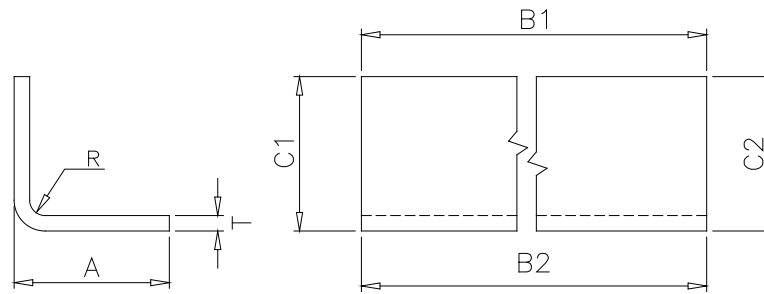
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SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	45 ± 1.25			
ii.	Length overall	B1	1380 ± 1.00			
		B2				
iii.	Height overall	C1	65 ± 1.25			
		C2	48 ± 1.25			
iv.	Thickness	T	5 ± 0.25			
v.	Radius	R1	10 ± 1.5			
		R2	8 ± 1.5			
vi.	Angle	-	± 1°15'			
vii.	Waviness	-	2 max.			
viii.	Bow	-	1 in 600			
ix.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
xi.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

CORNER STANCHION



Ref: Drawing No. WD-07001-S-10 Item-5 & CRF Drawing No. WD-07064-S-01 Item-13

END TOP COPING*				Date:		
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	100± 1.50			
ii.	Length overall	B1	2277 +3.0/-1.0			
		B2				
iii.	Height overall	C1	100± 1.50			
		C2				
iv.						
v.	Thickness	T	10± 0.50			
vi.	Radius	R	20± 1.5			
vii.	Angle	-	± 1°15'			
viii.	Waviness	-	2 max.			
ix.	Bow	-	1 in 600			
x.	Camber	-	1 in 600			
xi.	Twist	-	1 deg./metre			
xii.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

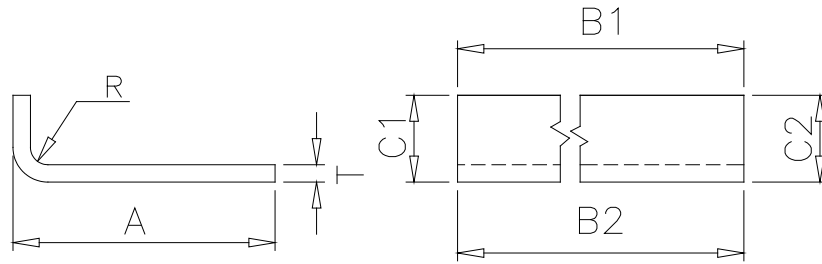
\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	



COVER PLATE



Ref: Drawing No. WD-07001-S-10 Item-7 & CRF Drawing No. WD-07064-S-01 Item-14

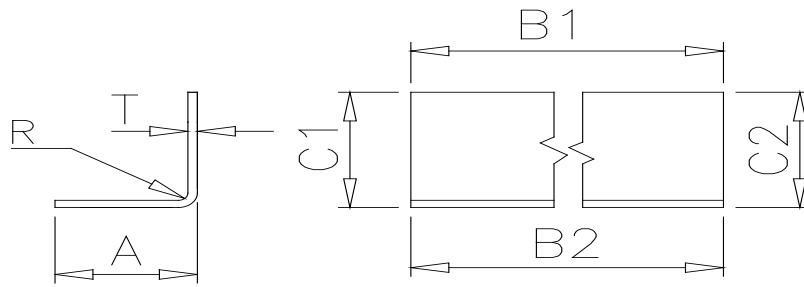
END TOP COPING*				Date:		
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	150 ± 1.50			
ii.	Length overall	B1	88 ± 0.10			
		B2				
iii.	Height overall	C1	50 ± 1.50			
		C2				
iv.	Thickness	T	8 ± 0.40			
v.	Radius	R	16 ± 1.5			
vi.	Angle	-	± 1°15'			
vii.	Waviness	-	2 max.			
viii.	Bow	-	1 in 600			
ix.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
xi.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

SIDE CRIB ANGLE (OUTER)



Ref: Drawing No. WD-07001-S-05 Item-8 & CRF Drawing No. WD-07064-S-01 Item-15

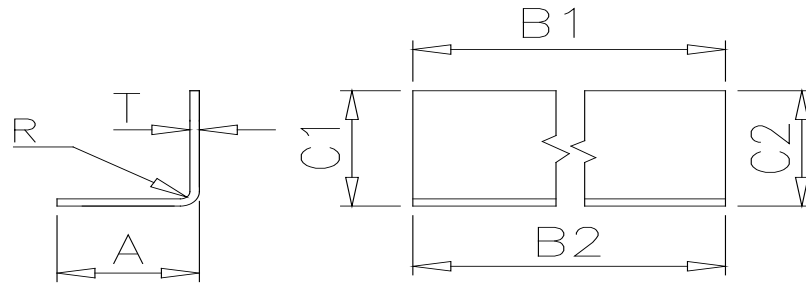
END TOP COPING*					Date:	
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	50± 1.25			
ii.	Length overall	B1	1655 ± 1.00			
		B2				
iii.	Height overall	C1	50± 1.25			
		C2				
iv.	Thickness	T	4± 0.20			
v.	Radius	R	6± 1.5			
vi.	Angle	-	± 1°15'			
vii.	Waviness	-	2 max.			
viii.	Bow	-	1 in 600			
ix.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
xi.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

SIDE CRIB ANGLE (INNER)



Ref: Drawing No. WD-07001-S-05 Item-9 & CRF Drawing No. WD-07064-S-01 Item-16

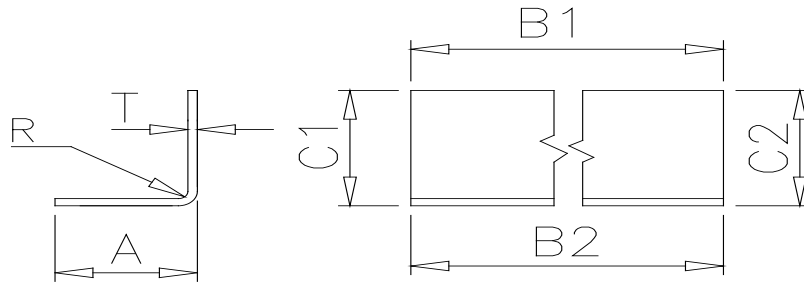
END TOP COPING*				Date:		
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	50± 1.25			
ii.	Length overall	B1	3518 +3.0/-1.0			
		B2				
iii.	Height overall	C1	50± 1.25			
		C2				
iv.	Thickness	T	4± 0.20			
v.	Radius	R	6± 1.5			
vi.	Angle	-	± 1°15'			
vii.	Waviness	-	2 max.			
viii.	Bow	-	1 in 600			
ix.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
xi.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

END CRIB ANGLE



Ref: Drawing No. WD-07001-S-05 Item-4 & CRF Drawing No. WD-07064-S-01 Item-17

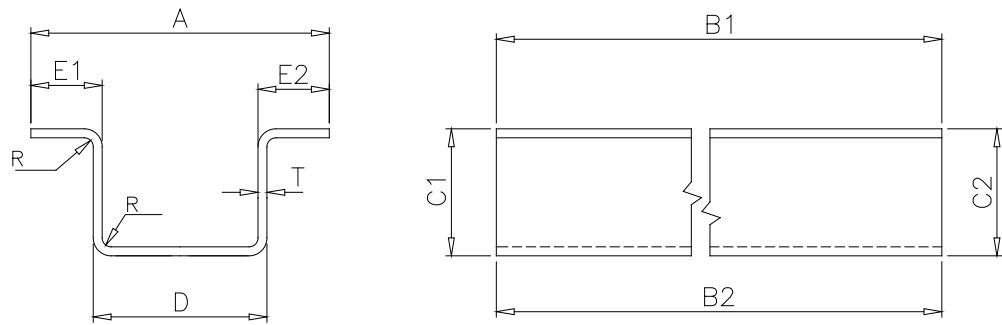
END TOP COPING*					Date:	
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	50 ± 1.25			
ii.	Length overall	B1	2960 +3.0/-1.0			
		B2				
iii.	Height overall	C1	50 ± 1.25			
		C2				
iv.	Thickness	T	4 ± 0.20			
v.	Radius	R	6 ± 1.5			
vi.	Angle	-	± 1°15'			
vii.	Waviness	-	2 max.			
viii.	Bow	-	1 in 600			
ix.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
xi.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

DOOR SIDE MIDDLE COPING



Ref: Drawing No. WD-07001-S-08 Item-15 & CRF Drawing No. WD-07064-S-01 Item-18

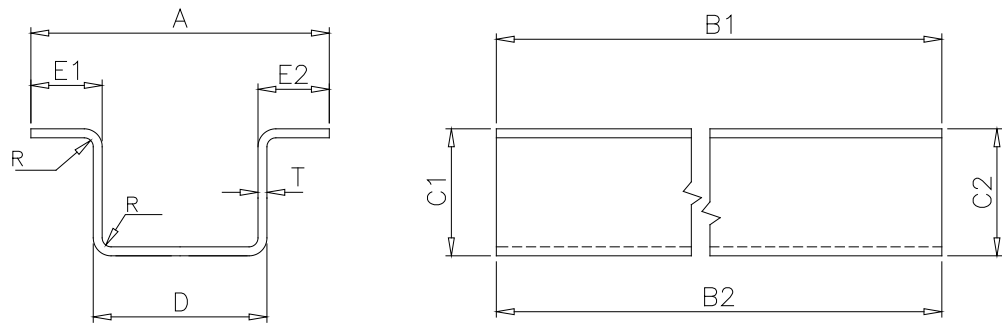
END TOP COPING*				Date:		
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	201 ± 1.25			
ii.	Length overall	B1	715 ± 1.00			
		B2				
iii.	Height overall	C1	85 ± 1.25			
		C2				
iv.	Bottom width	D	117 ± 1.25			
v.	Top flange	E1	48 ± 1.25			
		E2				
vi.	Thickness	T	6 ± 0.30			
vii.	Radius	R	12 ± 1.5			
viii.	Angle	-	± 1°15'			
ix.	Waviness	-	2 max.			
x.	Bow	-	1 in 600			
xi.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
xi.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

SIDE MIDDLE COPING (CENTRE)



Ref: Drawing No. WD-07001-S-08 Item-16 & CRF Drawing No. WD-07064-S-01 Item-19

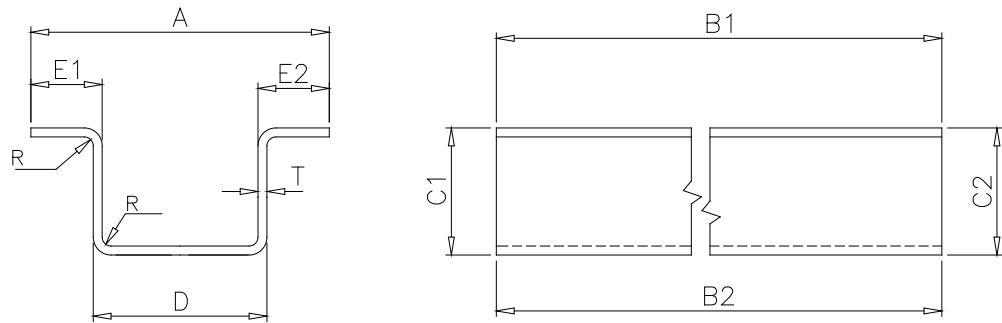
END TOP COPING*				Date:		
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	201 ± 1.25			
ii.	Length overall	B1	713 ± 1.00			
		B2				
iii.	Height overall	C1	85 ± 1.25			
		C2				
iv.	Bottom width	D	117 ± 1.25			
v.	Top flange	E1	48 ± 1.25			
		E2				
vi.	Thickness	T	6 ± 0.30			
vii.	Radius	R	12 ± 1.5			
viii.	Angle	-	± 1°15'			
ix.	Waviness	-	2 max.			
x.	Bow	-	1 in 600			
xi.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
xi.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

END STANCHION TOP



Ref: Drawing No. WD-07001-S-10 Item-17 & CRF Drawing No. WD-07064-S-01 Item-20

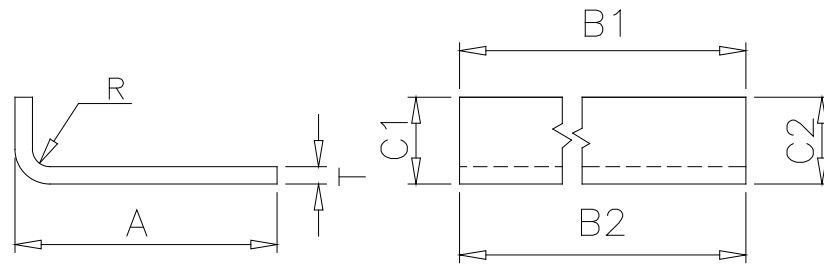
END TOP COPING*				Date:		
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	201 ± 1.25			
ii.	Length overall	B1	597.5 ± 1.00			
		B2				
iii.	Height overall	C1	85 ± 1.25			
		C2				
iv.	Bottom width	D	117 ± 1.25			
v.	Top flange	E1	48 ± 1.25			
		E2				
vi.	Thickness	T	6 ± 0.30			
vii.	Radius	R	12 ± 1.5			
viii.	Angle	-	± 1°15'			
ix.	Waviness	-	2 max.			
x.	Bow	-	1 in 600			
xi.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
xi.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	

PACKING COVER PLATE



Ref: Drawing No. WD-07001-S-10 Item-14 & CRF Drawing No. WD-07064-S-01 Item-21

END TOP COPING*				Date:		
SL. NO.	STAGE	Works Inspection		Inspecting Authority		Remarks
1.	Dimensions	As follows				
	LOCATION		Nominal Dimensions & Allowable Deviation	Actual Dimension		Remarks
				Works Inspection	Inspecting Authority	
i.	Width overall	A	130 ± 1.50			
ii.	Length overall	B1	110 ± 1.00			
		B2				
iii.	Height overall	C1	50 ± 1.50			
		C2				
iv.	Thickness	T	8 ± 0.40			
v.	Radius	R	16 ± 1.5			
vi.	Angle	-	± 1°15'			
vii.	Waviness	-	2 max.			
viii.	Bow	-	1 in 600			
ix.	Camber	-	1 in 600			
x.	Twist	-	1 deg./metre			
xi.	Appearance	-	Free from Deep Marks, Cracks, & Other Defects			

\* Note:- 1. See STR No. WD-16-BOXNR-2010 (Amendment No. 01) with latest Drawings.

All dimensions are in mm

Works Inspector		Inspecting Authority	
Signature:		Signature:	
Name:		Name:	
Designation:		Designation:	
Date:		Date:	



Sampling plan											
S. No	Component s/ Operation /Product/ Process		Characteristics/ Parameters	Mode of Inspection/ Equipments	Internal Inspection Sample-		Reference documents/ Specification	Acceptance Criteria	Documents of Records	RDSO Inspection Sample-	
					Size	Frequency				Size	Frequency
1	Raw Material Receipt	a)	Source of Procurement	Visual	-	Every lot	Receipt Particulars & RDSO's Vendor List	Should be procured from RDSO approved sources only	Format no....	-	Every Lot
		b)	System of Unloading	Visual	Complete Lot	Every lot	Nil	No external damage should occur		AUDIT	
		c)	Quantity	Visual	Complete Lot	Every lot	Receipt particulars	To be as per receipt particulars			
		d)	Weight	Weighing Machine	One/Lot	Every lot					
2	Raw Material Inspection	a)	Identification of Coil/plate	Visual	Every coil/plate	Every coil/ plate	T.C.	Coil No. & Heat No. to be as per T.C.	Format no---	AUDIT	
		b)	Coil/Strip width & thickness	Measuring Tape/Steel Rule/ Micrometer	One per Coil/Plate	3 times (start, middle, end) of coil/plate	Indent & T.C.	To be as per indent/design requirement			
		c)	Grade	By means of suitable m/c / test equipment in house lab/NABL approved lab	Complete Lot	Every lot	Indent & T.C.	To be as per indent/design requirement		Complete Lot	Every lot
		d)	Mechanical Properties		Complete Lot	Every lot	Indent & T.C.	To be as per prescribed specification		Complete Lot	Every lot
		e)	Chemical Properties		Complete Lot	Every lot	Indent & T.C.	To be as per prescribed specification		Complete Lot	Every lot
		f)	Bend Test		Complete Lot	Every lot	Indent & T.C.	To be as per prescribed specification		Complete Lot	Every lot
		g)	Testing of Mechanical & Chemical Properties and Bend Testing		One/Lot	Every lot	Prescribed specification	To be as per prescribed specification		Format no....	2 (1 to be tested & 1 to be stored)
3	Raw Material & Final Product Storage	a)	Condition of storage area	visual	Complete lot	Daily	WD-01-CRF-08 with latest alt.	Covered area and protection from water	Format no---	AUDIT	
		b)	Availability of Racks/Packing					Proper racks and packing to be available			
		c)	Condition of Material					To be free from damages, dents & rust.			
4	Selection of coil for slitting	a)	Condition of Coil	Visual	Complete coil/plate	Every coil/ plate	-	Coil/plate to be free from damage & rust	Format no---	AUDIT	

S. No	Component s/ Operation /Product/ Process		Charcteristics/ Parameters	Mode of inspection/ equipments	Internal inspection sample		Ref documents/ specifications	Acceptance criteria	Documents of records	RDSO inspection Sample	
					Size	Frequency				Size	Frequ ency
5	Handling of coil/plates/Sections till despatch	a)	Care during movement	Visual	Every coil/plate/Section	Every coil/plate/section	-	No damage/dent to occur	Format no---	AUDIT	
6	Coil/plate slitting	a)	Coil/Plate width	Measuring Tape/ Steel Rule/Vernier	One per Coil/Plate	3 times (start, middle, end) of coil/plate	Design requirement	To be as per design requirement	Format no---	AUDIT	
		b)	Edge condition	Visual	Complete slitted Coil/Plate	Every slitted Coil/Plate	Should be smooth	To be free from burrs, sharp edges			
7	Setting of rolls on mill	a)	Correctness of rolls	Visual/Measuring Tape/ Steel Rule/Vernier	Every rolling mill	Twice in one shift		All rolls to be as per design requirement	Format no---	AUDIT	
8	In-process Inspection	a)	Profile of the section	Measuring tape, Vernier, Bevel protactor, Radius gauge	1 no.	3 times (start,middle, end) of coil/plate	Respective RDSO/P.O. drawing/check sheet	To be as per respective RDSO/P.O. drawing/check sheet	Format no---	AUDIT	
		b)	Marking of Coil/plate no.	Visual	1 no.	Every coil/plate	-	To be same as the selected coil	Format no---	AUDIT	
9	Post Roll Forming Operations	a)	Drilling	Vernier/Gauge	1 no.	Every section	Respective RDSO/P.O. drawing/check sheet	To be as per respective RDSO/P.O. drawing/check sheet	Format no---	AUDIT	
		b)	Notching	Visual							
		c)	Edge Preparation	Visual							
		d)	Profile cutting	Visual							
10	Welding	a)	Weld Preparation, Fixtures, Welding machine and current/voltage, welding electrodes, weld cleaning and condition of weld	Visual, Radiography (if, prescribed)	10%	Every lot	WPS, issued by RDSO	To be as per WPS, issued by RDSO	Format no---	5% (Minimum two set)	Each lot
11	Final Inspection	a)	Profile of the section	Measuring tape, Vernier, Bevel protactor, Radius gauge	10%	Every lot	Respective RDSO/P.O. drawing/check sheet	To be as per respective RDSO/P.O. drawing/check sheet	Format no---	5% (Minimum two set)	Each lot
		b)	Edge condition	Visual	10%	Every lot	Respective RDSO/P.O. drawing/check sheet	To be as per respective RDSO/P.O. drawing/check sheet and free from burrs & sharp edges	Format no---	5% (Minimum two set)	Each lot
		c)	Drilling	Plug Gauge/ Vernier	1 no.	Every section	Respective RDSO/P.O. drawing/check sheet	To be as per respective RDSO/P.O. drawing/check sheet	Format no---	AUDIT	
		d)	Notching	Visual							
		e)	Edge Preparation	Visual							
		f)	Profile cutting	Visual							

S. No	Component s/Operation/ Product/ Process		Characteristics/ parameters	Mode of inspection/ Equipments	Internal inspection sample		Reference documents/ specification	Acceptance criteria	Documents of records	RDSO inspection sample	
					Size	Frequency				Size	Frequen cy
12	Marking	a)	Correctness of marking	Visual	10%	Every lot	-	Month and year to be current and Coil No. to be same as Original No.	Format no---	5% (Minimum two set)	Each lot
		b)	Legibility of Marking	Visual	10%	Every lot	-	To be legible	Format no---	5% (Minimum two set)	Each lot
13	Linking of punched Coil No. with Grade of Material	a)	Material Properties	Visual	10%	Every lot	T.C. and lab Results	To be as per respective RDSO specification	Format no---	5% (Minimum two set)	Each lot
14	Packing of sections	a)	Condition of Packing	Visual	10%	Every lot	-	Packing to be sturdy and Marking on Packing should contain complete identification details of the Products	Format no---	Minimum Two packs	Each lot
		b)	Marking on Packing								
		c)	Condition of Packed Products								