
**PRASA PROJECT**


APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1


# SELF INSPECTION SHEET

**CONFIDENTIAL INFORMATION**

This document and the information contemplated therein have to be considered as Confidential Information pursuant to the provisions of Clause 25 of the MSA, and treated as such.

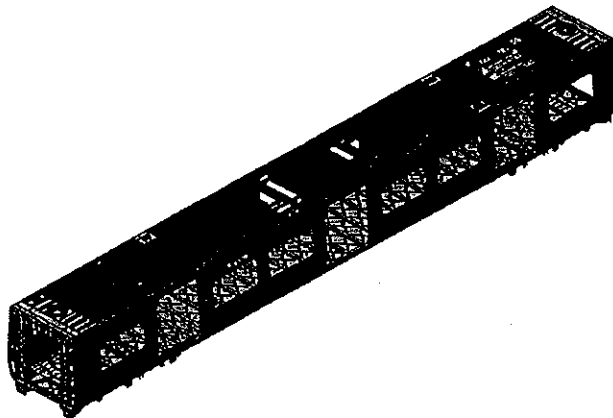
**APPLICATION REFERENCE**

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 	
				TC1	Ma	M1	M2	M3	Tc2			
<input type="checkbox"/>	DTR313744/57/3	AAD0001413325	CARBODYSHELL M2 ASSEMBLY	CB1210				X			PRA.CB1210.DTR313744 97/3.V25	YES
<input type="checkbox"/>												
REV	DATE	MODIFICATION CONTENT	RESPONSIBLE			NAME	DATE					
0	10/01/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba		10/01/2018						
			CHECKER	Nosizo Pindela		10/01/2018						
			COMPILER	Thanyani Mathegu		10/01/2018						
1	2018/05/18	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba		2018/05/18						
			CHECKER	Nosizo Pindela		2018/05/18						
			REVISED BY	Ramokone Motama		2018/05/18						
2	2018/07/04	Certain dimensional checks moved to CB1220 and CB1230	APPROVER	Itumeleng Modiba		2018/07/04						
			CHECKER	Nosizo Pindela		2018/07/04						
			REVISED BY	Ramokone Motama		2018/07/04						
3	2018/12/12	Added dimensional check points to CB1210	APPROVER	Itumeleng Modiba		12/12/2018						
			CHECKER	Nosizo Pindela		12/12/2018						
			REVISED BY	Ramokone Motama		12/12/2018						
5	22/01/2019	As per Baseline 10.2	APPROVER	Itumeleng Modiba		22/01/2019						
			CHECKER	Nosizo Pindela		22/01/2019						
			REVISED BY	Vanessa Ntuli		22/01/2019						
6	13/03/2019	Added D1 and D2 on Self - Inspection	APPROVER	Itumeleng Modiba		13/03/2019						
			CHECKER	Nosizo Pindela		13/03/2019						
			REVISED BY	Nosizo Pindela		13/03/2019						
10	21/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba		21/08/2019						
			CHECKER	Nosizo Pindela		21/08/2019						
			REVISED BY	Nosizo Pindela		21/08/2019						
15	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela		06/08/2020						
			CHECKER	Bongane Masina								
			REVISED BY	Bongane Masina								
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela		19/04/2021						
			CHECKER	Bongane Masina								
			REVISED BY	Bongane Masina								
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING	APPROVER	Mbhombi collins		17/08/2021						
			CHECKER	Mpho Mulaudzi								
			REVISED BY	Mpho Mulaudzi								
25	21/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombi collins		21/02/2022						
			CHECKER	Andani Muthelo								
			REVISED BY	Andani Muthelo								
26	14/04/2023	Addition of welding consumable traceability	APPROVER	Ntuli Vanessa		14/04/2023						
			CHECKER	Mohlampe Amogelang								
			REVISED BY	Mohlampe Amogelang								
27	27/07/2023	Added verification of loaded parts	APPROVER	Ngobeni Tyson		27/07/2023						
			CHECKER	Zwane Ntokoza								
			REVISED BY	Mohlampe Amogelang								
28	07/11/2023	Addition of welder traceability	APPROVER	Ngobeni Tyson		07/11/2023						
			CHECKER	Andani Muthelo								
			REVISED BY	Ntokoza Zwane								
TRAINSET	CAR	OPERATOR NAME& ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES							
TS212	M2	P. MALATSI 401764	18/07/24	SI.CB1210.247.V28	17							

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB1210.247.V28
		Date 07/11/2023	
Car: M2	NCR:	Work station: CB1210	



Safety Related



## I - Documentation and Instruments Control

### I.1 - Documentation Control

Document	DTR	Revision	Observation	Signature/Date (Manufacturing)	Signature/Date (Quality)
DTR31374497/3	0 1 2 3 4 5	Y28	✓	NK	18/02/24

### I.2 - Instruments Control


#### Monitoring and Measuring Instrument Control - Used for Special Process

Instrument	Serial number	Calibration or Verification Validation Date	Signature/Date (Manufacturing)	Signature/Date (Quality)
TUBULAR	22316	07/02/23	✓	
LASER TAPE	125425921	01/03/23	✓	
SONA TAPE	ENBTP0084	31/03/23	✓	18/02/24

### I.3 - Consumables

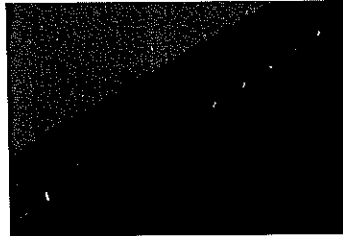
#### Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 LSI	314018-74097	MIG	✓	
ER 308 L	299687-70322	TIG	✓	18/02/24

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### Welder traceability

Roof ring welds



LHS

Boiler maker (Name & Sign): \_\_\_\_\_ Welder (Name & Sign): BOBBERT BAKK

END 1

RHS

Boiler maker (Name & Sign): \_\_\_\_\_ Welder (Name & Sign): BOBBERT BAKK

LHS

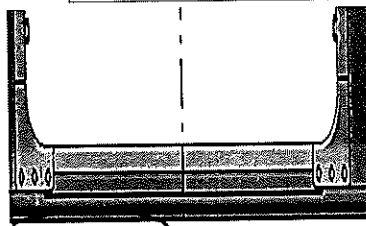
Boiler maker (Name & Sign): \_\_\_\_\_ Welder (Name & Sign): BOBBERT BAKK

END 2

RHS

Boiler maker (Name & Sign): \_\_\_\_\_ Welder (Name & Sign): BOBBERT BAKK

Door ring welds



LHS


Boiler maker (Name & Sign): Thabang Matabele

Welder (Name & Sign): Thabang Matabele

RHS


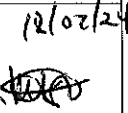
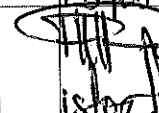
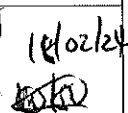

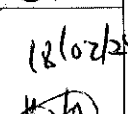

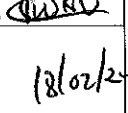
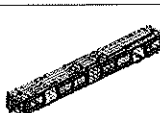

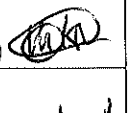
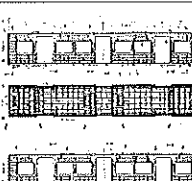

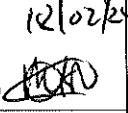

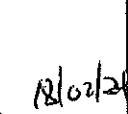
Boiler maker (Name & Sign): LUNGA MATA

Welder (Name & Sign): Thabang Matabele


	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB1210.247.V28
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## II - Self Inspection - Items to Check

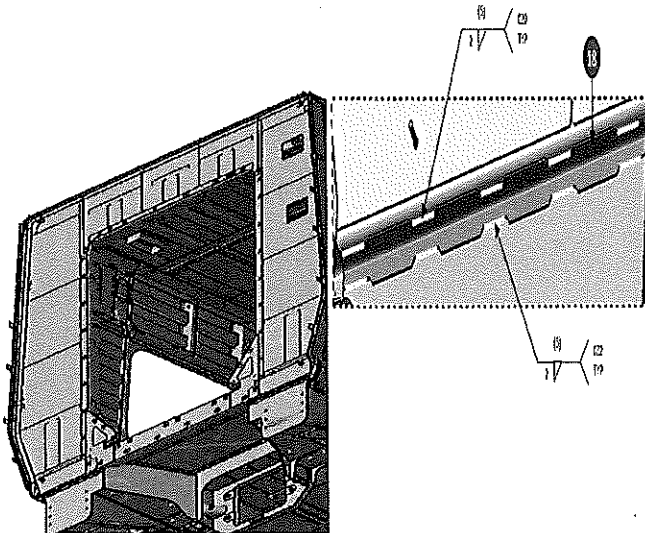
### II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls, Endframes, Roof and Underframe)	AA00001375051	✓	 18/02/24	 18/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓	 18/02/24	 18/02/24
03	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 e DTD0000210675	✓	 18/02/24	 18/02/24
04	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 18/02/24	 18/02/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 18/02/24	 18/02/24
06		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓	 18/02/24	 18/02/24
07	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	✓	 18/02/24	 18/02/24

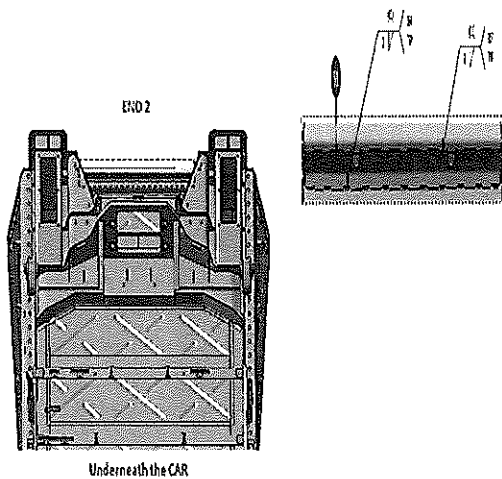
Handwritten signature and date: 18/02/24

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 26	Project: PRASA SI.CB1210.247.V28
		Date 07/11/2023	

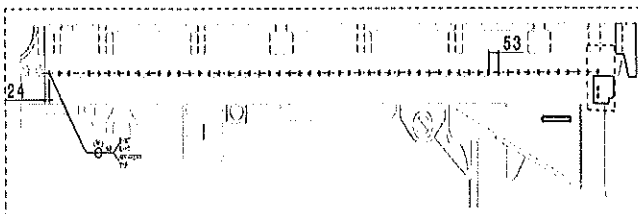
# EUFR Reinforcement Plates




END 1  
Boiler maker (Name & Sign): SEAN B  
Welder (Name & Sign): SIPHOKAZI

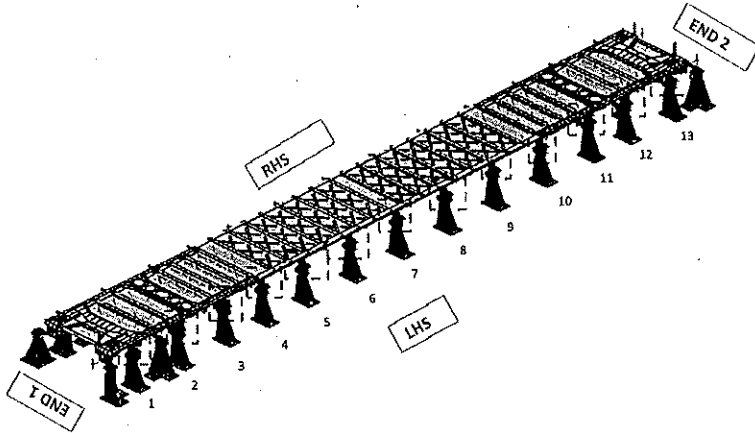


END 2  
Boiler maker (Name & Sign): IMELIO B  
Welder (Name & Sign): THEBING



FEDOLI  
OPERATOR: LAWRENCE JELGEN

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB1210.247.V28
		Date 07/11/2023	
<b>Specifications of Details for CBS measurement</b>			



Measure gap between jig pillar / chair and underframe = 0mm. No

After loading and clamping

Fill in the gap found on each jig pillars / chair and underframe should be 0mm.

	1	2	3	4	5	6	7	8	9	10	11	12	13
Left Hand Side													
Right Hand Side													

Signature Operations:

Date:

After Welding.

Fill in the gap found each jig pillars / chair and underframe should be 0mm.

	1	2	3	4	5	6	7	8	9	10	11	12	13
Left Hand Side													
Right Hand Side													

Signature Industrial Quality:

Date:



CARBODYSHELL M2 ASSEMBLY DTR31374497/3

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28

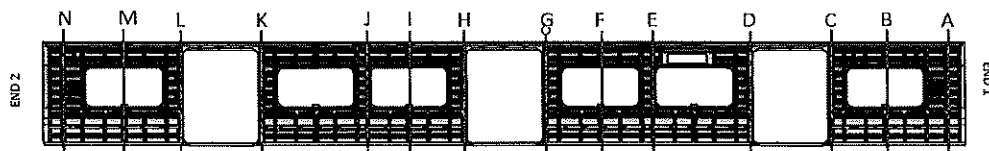
Date

07/11/2023

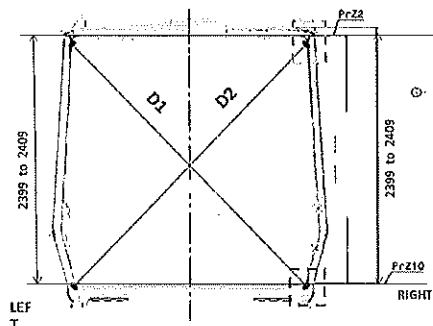
Project: PRASA

SI.CB1210.247.V28

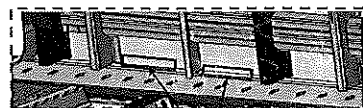
### Specifications of Details for CBS measurement



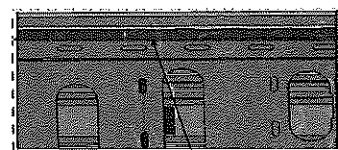
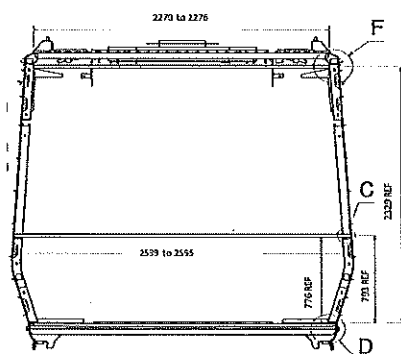
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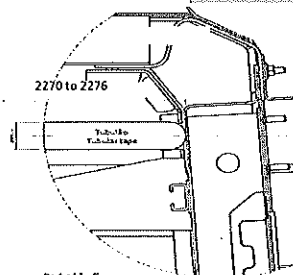
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.



Reinforcement area measurement positions on roof reinforcement area.

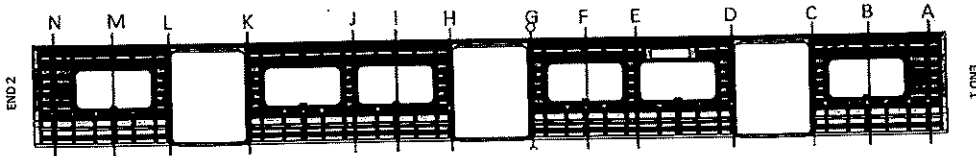


Detail F

Don't considering the reinforcement


Specifications of Details for CBS measurement


BEFORE WELDING



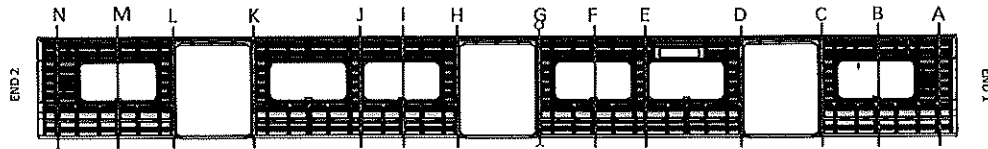
Note: The difference in Height values measured on the LHS and RHS should be  $\leq 2\text{MM}$  on each point.

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409 (LHS)	2399 to 2409 (RHS)	LHS-RHS $\leq 2$
A	3269	3268	1	2404	2405	1
B	3270	3270	0	2406	2405	1
C	3271	3269	2	2405	2404	1
D	3269	3269	0	2404	2404	0
E	3266	3267	1	2406	2404	2
F	3267	3269	2	2405	2406	1
G	3268	3269	1	2404	2405	1
H	3267	3266	1	2404	2406	2
I	3269	3267	0	2404	2404	0
J	3270	3268	2	2405	2403	2
K	3269	3268	1	2404	2406	2
L	3267	3267	0	2404	2404	0
M	3270	3271	1	2405	2404	1
N	3270	3271	1	2404	2404	0

  
4999/60  
18/02/24

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Specifications of Details for CBS measurement			

AFTER WELDING




Note: The difference in Height values measured on the LHS and RHS should be  $\leq 2\text{MM}$  on each point.

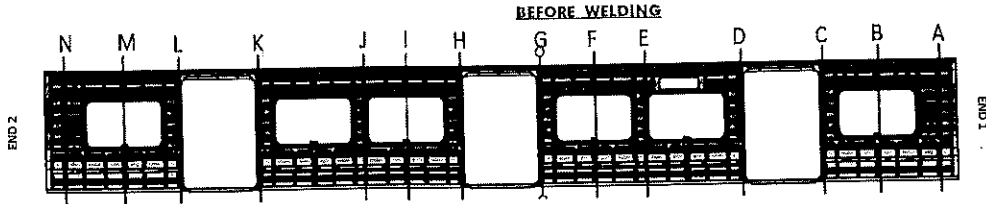
	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409 (LHS)	2399 to 2409 (RHS)	LHS-RHS $\leq 2$
A	3298	3296	2	2404	2405	1
B	3069	3268	1	2404	2404	0
C	3296	3297	1	2405	2406	1
D	3290	3298	2	2404	2403	1
E	3274	3272	2	2406	2404	2
F	3069	3270	1	2404	2404	0
G	3298	3296	2	2406	2404	2
H	3096	3299	3	2405	2404	1
I	3267	3266	1	2404	2405	1
J	3270	3271	1	2404	2406	2
K	3297	3298	1	2404	2404	0
L	3296	3298	2	2405	2404	1
M	3269	3269	0	2406	2405	1
N	3296	3296	0	2404	2404	0

*Handwritten signature and date:*  
4/11/2023  
12/02/24

*Handwritten signature and date:*  
12/02/24

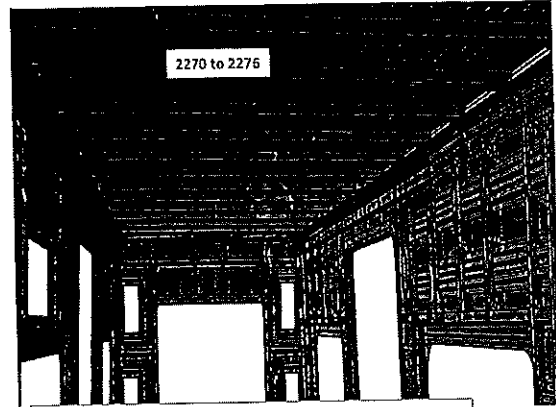
	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28 Date 07/11/2023	Project: PRASA SI.CB1210.247.V28
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**CBS measurement**

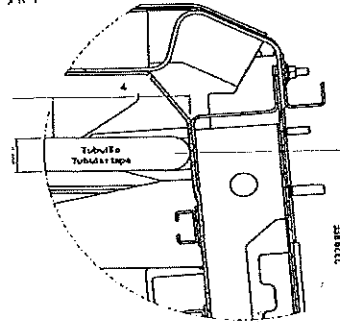
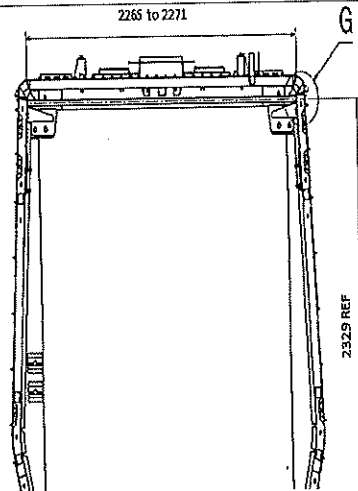


2270 to 2276

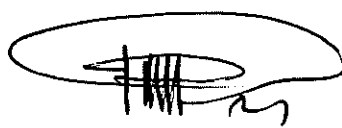
A	2276
B	2274
C	2274
D	2273
E	2276
F	2277
G	2275
H	2273
I	2275
J	2276
K	2274
L	2278
M	2274
N	2275




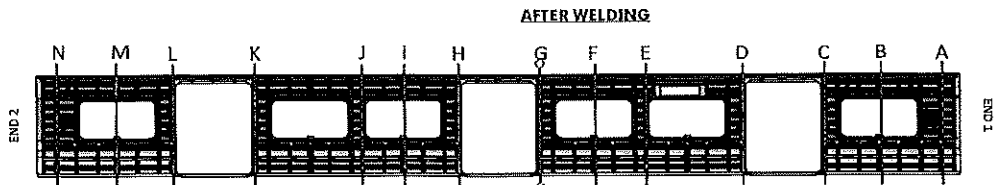
Do not consider reinforcement ( Take measurements top area of zee profile

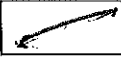
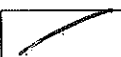
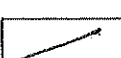
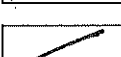

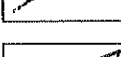
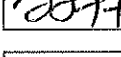
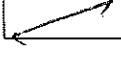
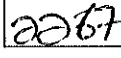
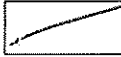
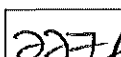

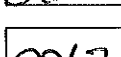
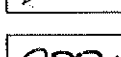


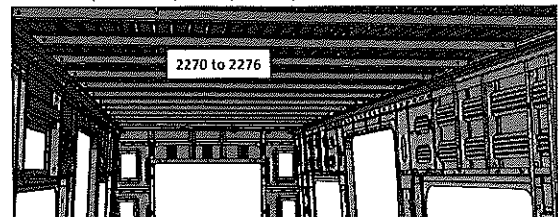
Detail G  
Considering the reinforcement plate

  
40996p  
18/02/24

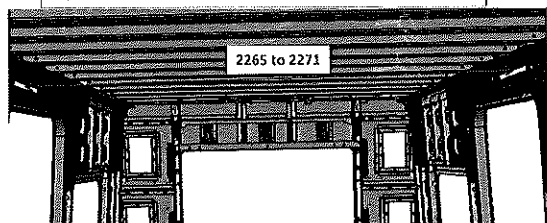
	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB1210.247.V28
		Date 07/11/2023	
		CBS measurement	



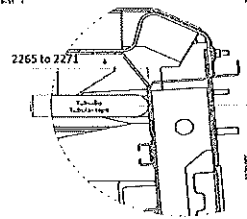
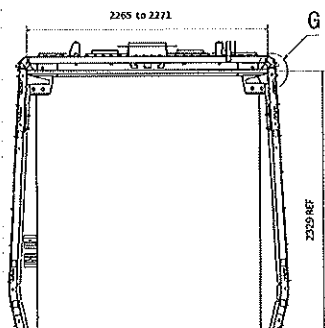
	2265 to 2271	2270 to 2276
A	2269	
B		2275
C	2265	
D	2268	
E		2276
F		2277
G	2268	
H	2267	
I		2275
J		2276
K	2266	
L	2267	
M		2274
N	2269	



Do not consider reinforcement ( Take measurements top area of zee profile



Take measurement close to radius ( considering reinforcement)



Detail G  
Considering the reinforcement plate

408964  
15/00/24

15/00/24



CARBODYSHELL M2 ASSEMBLY DTR31374497/3

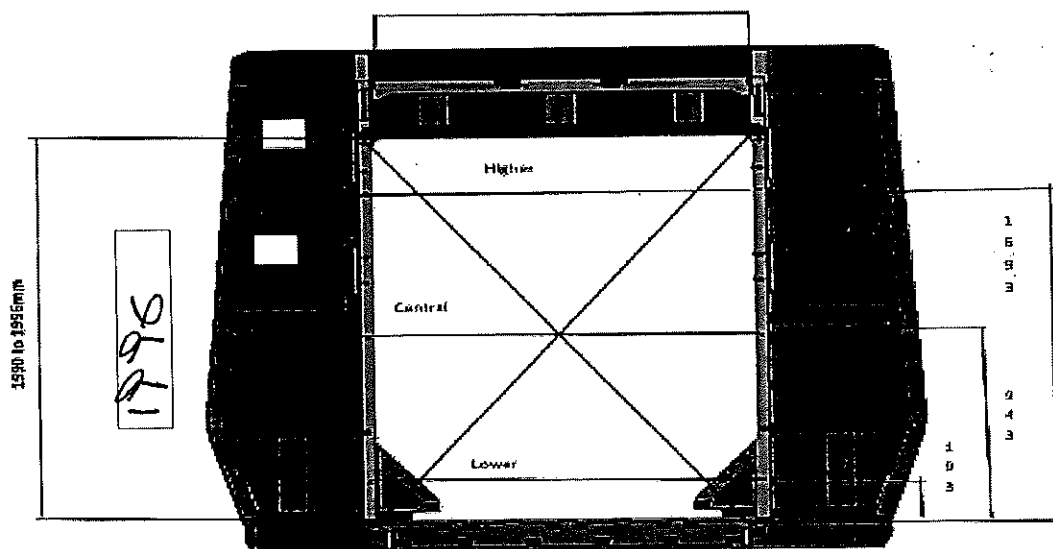
Rev.  
28  
Date  
07/11/2023

Project: PRASA  
SI.CB1210.247.V28

CBS measurement

End frame 1

1380 to 1382 mm



1380 to 1382 mm

DIAGONAL DIFFERENCE D1-D2 ≤ 3mm

Higher Dimension

1381

D1

1324/6

Central Dimension

1880

D2

24/5

Lower Dimension

1882

D1-D2

1

409964  
15/00/24

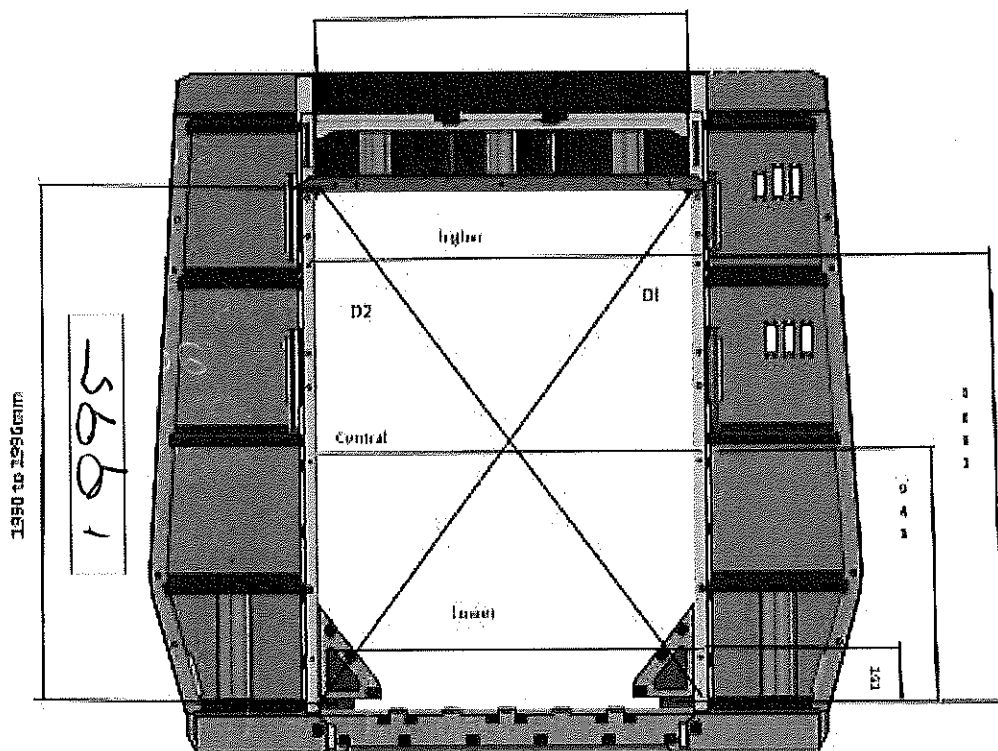


CARBODYSHELL M2 ASSEMBLY DTR31374497/3

Rev.  
28  
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End frame 2



1380 to 1382 mm

DIAGONAL DIFFERENCE  $D1-D2 \leq 3mm$

Higher Dimension

1381

D1

2415

Central Dimension

1380

D2

2415

Lower Dimension

1381

D1-D2

0

*Handwritten signature and date: 20/09/24*

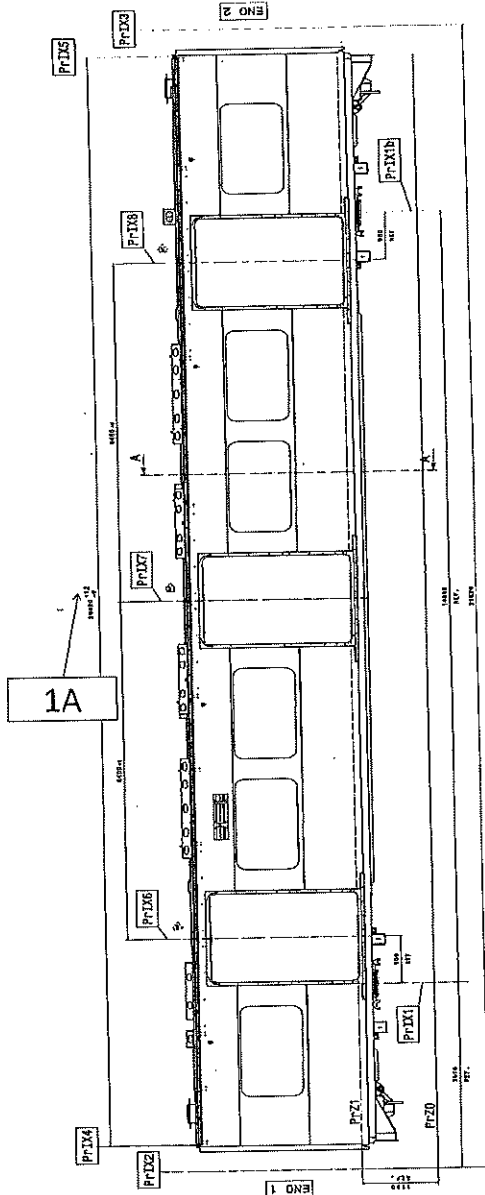


CARBODYSHELL M2 ASSEMBLY DTR31374497/3

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SI.CB1210.247.V28

### Specifications of Details for CBS measurement



LEFT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20615


RIGHT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20615

*[Handwritten signature]*  
4999pp  
10/02/2023


### Dye penetrant test

Dye-penetration test to be performed by quality personnel

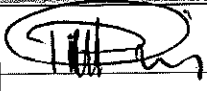
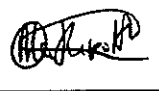


		CARBODYSHELL M2 ASSEMBLY DTR31374497/3		Rev. 28	Project: PRASA			
				Date 07/11/2023	SI.CB1210.247.V28			
Item	Description of the Issue				OK	Signature/Date (Manufacturing)		Signature/Date (Quality)
II.2 - Check List REX								
Check List Items								
Item	Picture/Drawing	Description	Criteria /Record	OK	Not OK	Not OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. How defects must be added on the REX					

Handwritten signature or mark.

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB1210.247.V28
		Date 07/11/2023	

### Self Inspection - Final Result

Is it the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)		DATE	NAME	SIGNATURE
HOLD POINT	(If activities are not complete, the missing activities must not impact the next stage)	15/02/24	P. MALATJi Operations	
	Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	15/02/24	Ridwan Industrial Quality	
	There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)			
	There are non-conformities impact the quality of the product and there is no corrective action defined yet)			

In case of "NO GO", describe blocking problems

In case of "NO GO", the operations manager must define below action plan to ensure "GO":

Item	Description	Responsible	Due date	Status

Operations

Quality



	<b>CARBODYSHELL M2 ASSEMBLY DTR31374497/2</b>	Rev.	<b>Project: PRASA</b>  <b>SI.CB1220.276.V29</b>	
		29		
		Date		
		28/10/2023		
Cat: M2	NCR:	Work station:	CB1220	

**Safety Related**

**I - Documentation and Instruments Control**

**L1 - Documentation Control**








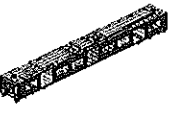


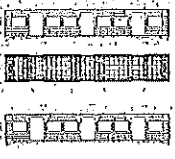


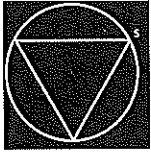






Document	Type of Rev.					Revision	Date	Status	Signature/Date (Manufacturing)	Signature/Date (Quality)
	1	2	3	4	5					
DTR31374497/2						29	20/06/24	✓	N/A	<div style="display: flex; justify-content: space-between;"> <div>  20/06/24 </div> <div>  20/06/24 </div> </div>


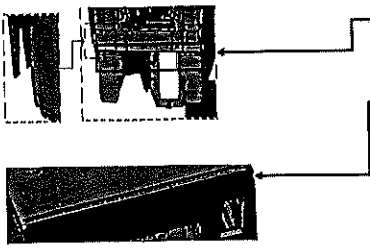
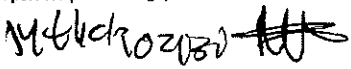
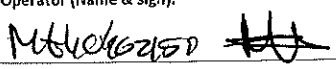
**L2 - Instruments Control**


Monitoring and Measuring Instrument Control - Used for Special Process					
Instrument	Serial number	Calibration or Verification Validation Date	Status	Signature/Date (Manufacturing)	Signature/Date (Quality)
Tubular Type measure	22713-1	29/11/2024	✓	 20/06/24	 20/06/24
	GIBELO	2024/04/05	✓		

**1.3 Consumables**

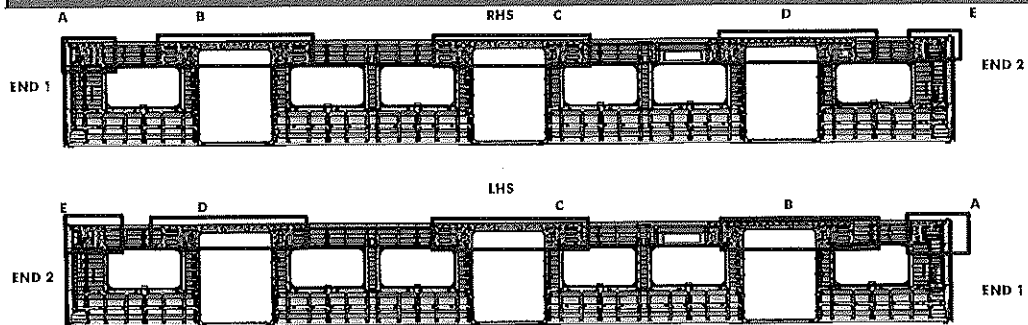
Welding Consumable Control - Used for Special Process					
Welding Material	Heat Number	Welding Process	Status	Signature/Date (Manufacturing)	Signature/Date (Quality)
308	223168	308 MIG	✓	 20/06/24	 20/06/24

		CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev. 29	Project PRASA		
			Date 28/10/2023			SI.CB1220.276.V29
<b>II - Self Inspection - Items to Check</b>						
II.1 - Items to check						
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB1220. DTR31374497/2 Verification of fitment for all reinforcement brackets	PRA.CB1220. DTR31374497/2	✓	 20/02/24	 20/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓	 20/02/24	 20/02/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 20/02/24	 20/02/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 20/02/24	 20/02/24
05		Functional dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below	✓	 20/02/24	 20/02/24
06		Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658	✓	 20/02/24	 20/02/24
07	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions  Specified Temperature Min - Max (°C) : 10°C - 35°C Relative humidity Min - Max (%) : 25% - 80%	Sealant Batch No: <u>117063</u> Exp Date: <u>16/2/24</u>  Actuals Temperature: <u>18</u> Humidity: <u>80</u>	✓	 20/02/24	 20/02/24
08	NA	Verification of sealant application in certain regions in the drawing	AAD0001413329	✓	 20/02/24	 20/02/24

	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project: PRASA
		29	
		Date	
		28/10/2023	
		SI.CB1220.276.V29	
SEALANT APPLICATION			
		AREA 1 & 2 END 1	
		Operator (Name & sign): 	
		Operator (Name & sign): 	


	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project PRASA SI.CB1220.276.V29
		29	
		Date	
		28/10/2023	

**II - Self Inspection - Items to Check**

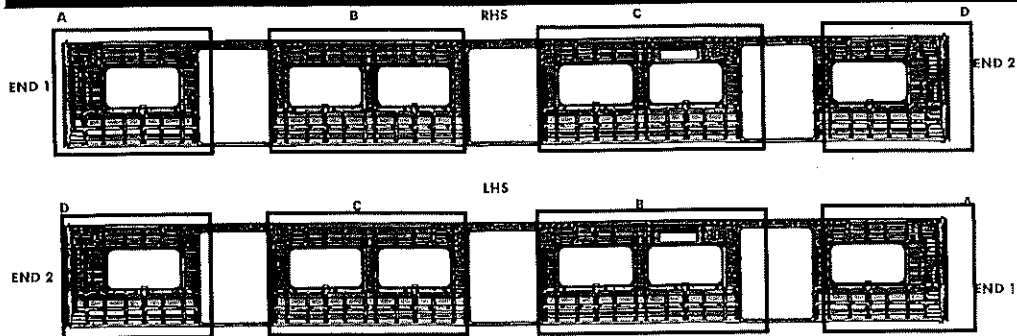


**REINFORCEMENT WELDING**

AREA	LHS	RHS
A	Operator (Name&sign): <u>LINDO [Signature]</u>	<u>[Signature]</u>
B	Operator (Name&sign): <u>LINDO [Signature]</u>	<u>[Signature]</u>
C	Operator (Name&sign): <u>[Signature] LINDO [Signature]</u>	<u>[Signature]</u>
D	Operator (Name&sign): <u>[Signature]</u>	<u>Thubai</u>
E	Operator (Name&sign): <u>[Signature]</u>	<u>Thubai</u>

	CARBODYSHELL M2 ASSEMBLY DTR313744972	Rev. 29	Project: PRASA SI.CB1220.276.V29
		Date 28/10/2023	

## II - Self Inspection - Items to Check



### BRACKETING

#### INSTALLATION

C-RAILS: Operator: Mthokozisi

DOOR MECHANISMS: Operator: Piscilla

TAPPING PADS: Operator: Mthokozisi

#### INSTALLATION & VERIFICATION

SEAT & LUGGAGE BRACKETS: Operator: Tebelo

SEAT BRACKETS VERIFICATION: Operator: Mthokozisi

### WELDING

#### AREA

#### LHS

A (Seat brackets) : Operator (Name&sign): Johny

(C-rails, Luggage and earth bushes) : Operator (Name&sign): Johny

B (Seat brackets) : Operator (Name&sign): Mthokozisi

(C-rails, Luggage and earth bushes) : Operator (Name&sign): Johny

C (Seat brackets) : Operator (Name&sign): K. Mthokozisi

(C-rails, Luggage and earth bushes) : Operator (Name&sign): Johny

D (Seat brackets) : Operator (Name&sign): Johny

(C-rails, Luggage and earth bushes) : Operator (Name&sign): Johny

#### RHS

A (Seat brackets) : Operator (Name&sign): Mthokozisi

(C-rails, Luggage and earth bushes) : Operator (Name&sign): Mthokozisi

B (Seat brackets) : Operator (Name&sign): Mthokozisi

(C-rails, Luggage and earth bushes) : Operator (Name&sign): Mthokozisi

C (Seat brackets) : Operator (Name&sign): K. Mthokozisi

(C-rails, Luggage and earth bushes) : Operator (Name&sign): K. Mthokozisi


D (Seat brackets) : Operator (Name&sign): Johny

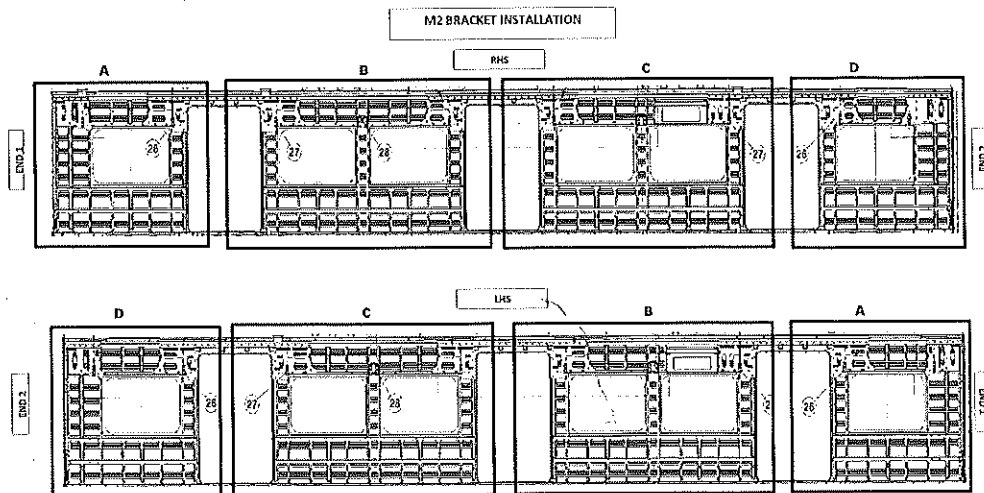
(C-rails, Luggage and earth bushes) : Operator (Name&sign): K. Mthokozisi

#### ENDS

END 1 TAPPING PADS WELDING: Operator (Name&sign): Johny

END 2 TAPPING PADS WELDING: Operator (Name&sign): Johny

	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project: PRASA
		28	
		Date	SI.CB1220.276.V29
		28/10/2023	




QUANTITIES (M2)

RHS

	SECTION	QUANTITY	OK	NOK
C-RAILS	A	8	/	
	B	8	/	
	C	8	/	
	D	2	/	
SEAT BRACKETS	A	13	/	
	B	21	/	
	C	21	/	
	D	13	/	
EARTH BUSH	A	2	/	
	B	4	/	
	C	5	/	
	D	3	/	


**ROOF ENDS:**  
 C-RAILS 2 OFF EACH END  
 EARTH BUSH 6 OFF EACH END

VERIFICATION BY: Mthokozisi 

LHS

	SECTION	QUANTITY	OK	NOK
C-RAILS	A	8	/	
	B	11	/	
	C	11	/	
	D	12	/	
SEAT BRACKETS	A	12	/	
	B	21	/	
	C	21	/	
	D	13	/	
EARTH BUSH	A	3	/	
	B	7	/	
	C	6	/	
	D	2	/	

**ROOF ENDS:**  
 C-RAILS 2 OFF EACH END  
 EARTH BUSH 6 OFF EACH END

VERIFICATION BY: Mthokozisi 

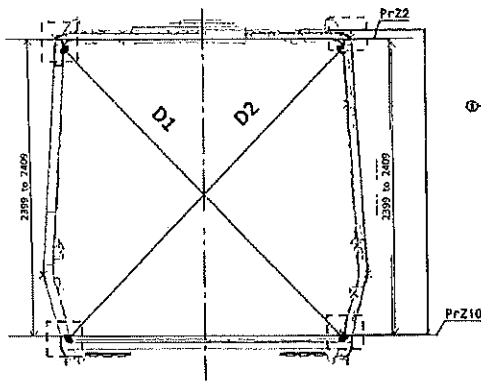


CARBODYSHELL M2 ASSEMBLY DTR31374497/2

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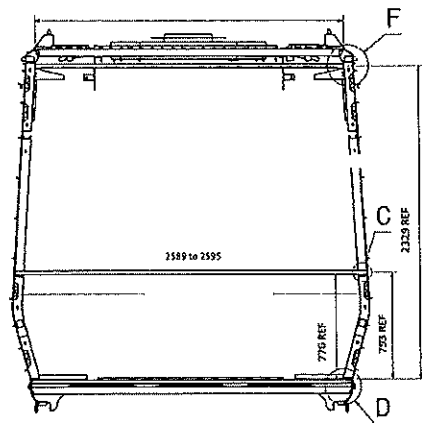
Measurement position on the internal structure



Measurement position on the internal structure



Measurement position on the internal structure



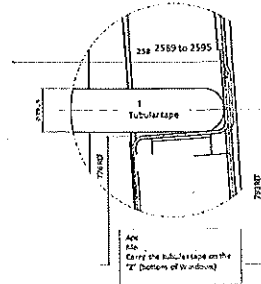
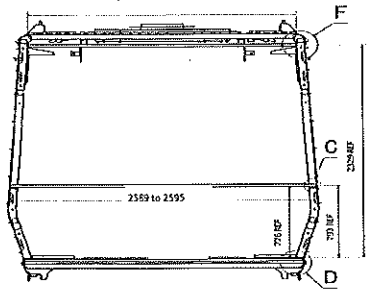


CARBODYSHELL M2 ASSEMBLY DTR31374497/2

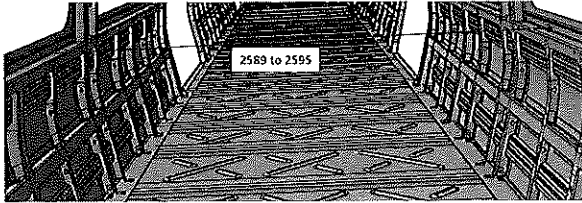
Rev.  
29  
Date  
28/10/2023

Project: PRASA

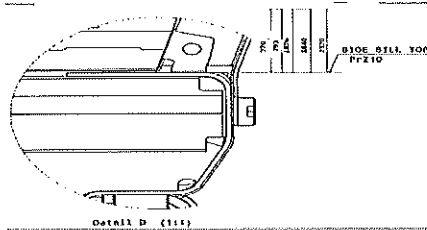
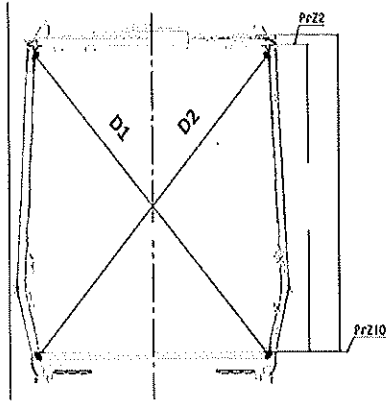
SI.CB1220.276.V29




Detail C



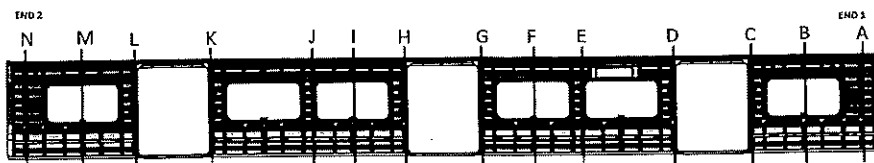
Take measurement close to  
radius



Detail D (1:1)


	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project: PRASA SI.CB1220.276.V29
		29	
		Date	
		28/10/2023	

CBS measurement

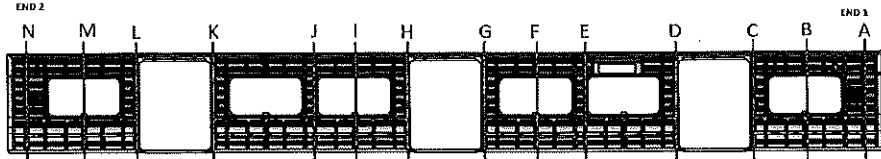


BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3296	3296	0	-
B	3269	3265	4	-
C	3295	3296	1	-
D	3298	3296	2	-
E	3267	3265	2	-
F	3265	3264	1	-
G	3298	3295	3	-
H	3298	3295	3	-
I	3266	3261	5	-
J	3267	3264	3	-
K	3295	3295	0	-
L	3295	3294	1	-
M	3266	3264	2	-
N	3299	3296	3	-

	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project: PRASA SI.CB1220.276.V29
		29	
		Date	
		28/10/2023	

**GBS measurement**



**AFTER WELDING**

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3200	3294	6	2595
B	3268	3263	5	2589
C	3298	3291	7	2589
D	3294	3294	0	2595
E	3268	3264	4	2595
F	3267	3260	7	2595
G	3297	3294	3	2595
H	3297	3264	3	2595
I	3264	3286	2	2590
J	3268	3264	2	2594
K	3200	3296	4	2595
L	3298	3297	1	2592
M	3268	3262	4	2590
N	3298	3293	5	2595



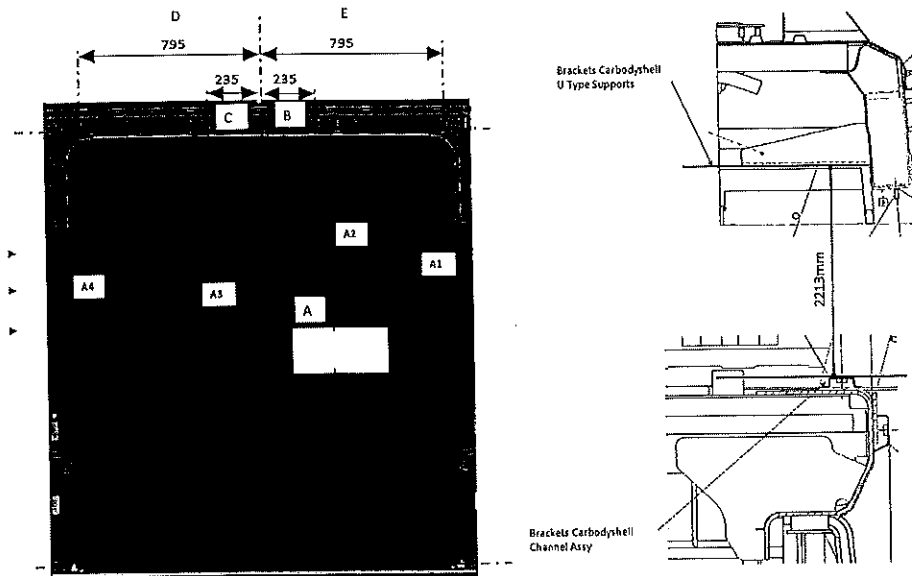
CARBODYSHELL M2 ASSEMBLY DTR31374497/2

Rev.  
29  
Date  
28/10/2023

Project: PRASA

SI.CB1220.276.V29

## Specifications of Details for CBS measurement CB1220

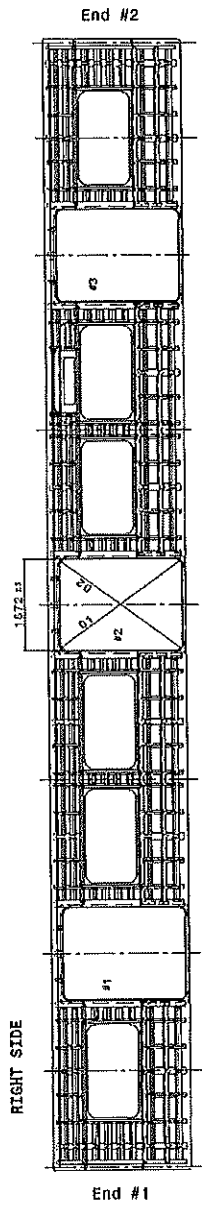


DOOR 1 - LHS		DOOR 2 - LHS		DOOR 3 - LHS	
VALUE	ACTUAL	VALUE	ACTUAL	VALUE	ACTUAL
A1 2230 to 2232	2232	A1 2230 to 2232	2233	A1 2230 to 2232	2232
A2 2230 to 2232	2232	A2 2230 to 2232	2233	A2 2230 to 2232	2232
A3 2230 to 2232	2232	A3 2230 to 2232	2233	A3 2230 to 2232	2232
A4 2230 to 2232	2232	A4 2230 to 2232	2233	A4 2230 to 2232	2233
B 234 to 236	235	B 234 to 236	235	B 234 to 236	235
C 234 to 236	235	C 234 to 236	235	C 234 to 236	235
D 794 to 796	795	D 794 to 796	795	D 794 to 796	795
E 794 to 796	795	E 794 to 796	795	E 794 to 796	795

DOOR 1 - RHS		DOOR 2 - RHS		DOOR 3 - RHS	
VALUE	ACTUAL	VALUE	ACTUAL	VALUE	ACTUAL
A1 2230 to 2232	2236	A1 2230 to 2232	2232	A1 2230 to 2232	2233
A2 2230 to 2232	2230	A2 2230 to 2232	2232	A2 2230 to 2232	2233
A3 2230 to 2232	2230	A3 2230 to 2232	2232	A3 2230 to 2232	2233
A4 2230 to 2232	2230	A4 2230 to 2232	2232	A4 2230 to 2232	2233
B 234 to 236	235	B 234 to 236	235	B 234 to 236	235
C 234 to 236	235	C 234 to 236	235	C 234 to 236	235
D 794 to 796	795	D 794 to 796	795	D 794 to 796	795
E 794 to 796	795	E 794 to 796	795	E 794 to 796	795

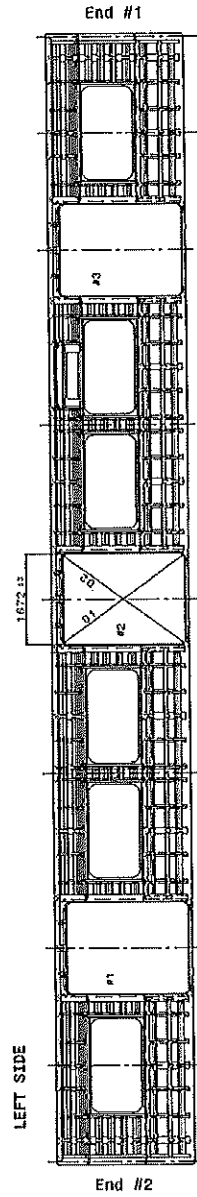
Specifications of Details for CBS measurement CB1220



Doors diagonal D1-D2 maximum difference ≤4mm

	#1	#2	#3
D1	2750	2751	2749
D2	2749	2749	2747
D1-D2	1	2	2

Doors length - 1672 ±3mm			
	#1	#2	#3
HIGHER DIMENSION	1672	1672	1673
CENTRAL DIMENSION	1673	1673	1674
LOWER DIMENSION	1671	1675	1672




Doors diagonal D1-D2 maximum difference ≤4mm


	#1	#2	#3
D1	2751	2750	2751
D2	2749	2748	2750
D1-D2	2	2	1

Vão de Portas - 1672 ±3mm

Vão de Portas - 1672 ±3mm			
	#1	#2	#3
DIENSÃO SUPERIOR	1672	1672	1672
HIGHER DIMENSION	1672	1673	1673
CENTRAL DIMENSION	1673	1672	1672
LOWER DIMENSION	1673	1672	1672

	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project: PRASA SI.CB1220.276.V29	
		20		
		Date		
		28/10/2023		


CBS measurement (Manufacturing)				
Dye penetrant test				
Dye-penetration test to be performed by quality personnel				
				

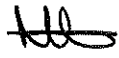

  

Item	Description of the issue	Signature/Date (Manufacturing)	Signature/Date (Quality)

II.2 - Check List REX							
Check List Items							
Item	Pictorial Drawing	Description	Cause/Effect	Signature/Date (Manufacturing)	Signature/Date (Quality)		
01	N/A	To complete REX	Refer to REX. New defects must be added on this REX				

	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev. 29	Project: PRASA SI.CB1220.276.V29	
		Date 28/10/2023		
		Self-Inspection - Final Result		

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT	GO	(If activities are not complete, the missing activities must not impact the next stage)		20/02/24	Mthomazi	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party		20/02/24	Ntokozo	
		There are activities pendings that impact/top the activities of the next process Obs: (To describe problems below)				
		There are non-conformities impact the quality of the product and there is no corrective action defined yet				

In case of "NO GO", describe blocking problems

In case of "NO GO", the operations manager must define below action plan to ensure "GO":

Item	Description	Responsible	Due date	Status

---

Operations

---

Quality




**PRASA PROJECT**



**APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1**

# SELF INSPECTION SHEET

**CONFIDENTIAL INFORMATION**  
 This document and the information contemplated therein have to be considered as Confidential Information pursuant to the provisions of Clause 25 of the MSA, and treated as such.

APPLICATION REFERENCE												
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 	
				TC1	M4	M1	M2	M3	TC2			
<input type="checkbox"/>	AA0000137497	AAD0001413329	CARBODY SHELL M2 ASSEMBLY	CB1230					X		PRA.CB1230.AA0000137497.V20	YES
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												

	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	2018/08/02	GIBELA NEW CREATION	APPROVER	Philippe Marques	2018/08/02
			CHECKER	Nosizo Pindela	2018/08/02
			COMPILER	Nosizo Pindela	2018/08/02
1	30/5/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	30/5/2018
			CHECKER	Nosizo Pindela	30/5/2018
			REVISED BY	Nosizo Pindela	30/5/2018
2	2018/05/07	Certain dimensional checks moved to CB1220	APPROVER	Itumeleng Modiba	2018/05/07
			CHECKER	Nosizo Pindela	2018/05/07
			REVISED BY	Ramokone Motama	2018/05/07
5	24/01/2019	As per Baseline 10.2	APPROVER	Itumeleng Modiba	24/01/2019
			CHECKER	Nosizo Pindela	24/01/2019
			REVISED BY	Vanessa Ntuli	24/01/2019
6	13/03/2019	Added Twist and Door Bracket Measurements Remove Door Measurements	APPROVER	Itumeleng Modiba	13/03/2019
			CHECKER	Nosizo Pindela	13/03/2019
			REVISED BY	Vanessa Ntuli	13/03/2019
10	23/03/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	23/03/2019
			CHECKER	Nosizo Pindela	23/03/2019
			REVISED BY	Nosizo Pindela	23/03/2019
15	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela	06/08/2020
			CHECKER	Bongane Masina	
			REVISED BY	Bongane Masina	
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	
			REVISED BY	Bongane Masina	
25	20/02/2022	New Baseline change 10.3.1	APPROVER	Collins Mbombhni	20/02/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Collins Mbombhni	14/06/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
27	26/07/2022	Threshold measurement addition	APPROVER	Collins Mbombhni	27/07/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
28	17/10/2022	Addition of traceability for sealant application	APPROVER	Collins Mbombhni	17/10/2022
			CHECKER	Ntokoza Zwane	
			REVISED BY	Amogelang Mohlampe	
29	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntokoza Zwane	
			REVISED BY	Amogelang Mohlampe	
30	06/11/2023	Added traceability on thresholds for boiler makers and welders	APPROVER	Ngobeni Tyson	06/11/2023
			CHECKER	Andani Muthelo	
			REVISED BY	Ntokoza Zwane	

TRAINSET	CAR	OPERATOR NAME & ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES
212	M02	472808 LEPATO	20/02/24	SI.CB1230.277.V29	11



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Car:

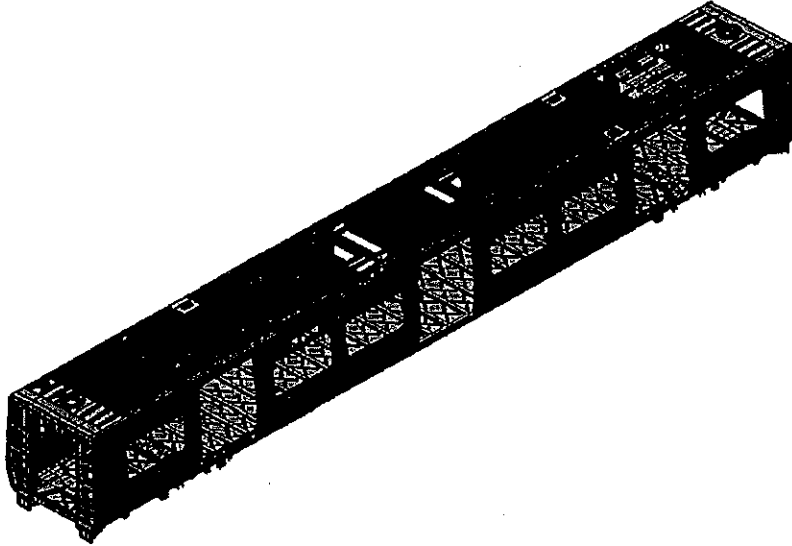
NCR:

Work station:

CB1230



Safety Related

**I - Documentation and Instruments Control****I.1 - Documentation Control**

Document	Type of car						Revision	Observation	OK	Signature/Date (Operations)	Signature/Date (Quality)
	T2	A1	A2	A3	A4	A5					
PRA.CB1230.AA00001374497		X					29		✓	N/A	20/02/24

**I.2 - Instruments Control****Monitoring and Measuring Instrument Control - Used for Special Process**

Instruments	Serial number	Calibration or Verification Validation Date			OK	Signature/Date (Operations)	Signature/Date (Quality)
Combination square	GIBSWD100	27	07	24	OK	20/02/24	20/02/24
Measuring tape	GIBTA0396	05	04	24	OK	20/02/24	20/02/24
TUBULAR	22713	26	06	24	OK	20/02/24	20/02/24
RULER	GIBST3054	27	09	24	OK	20/02/24	20/02/24

**1.3 Consumables****Welding Consumable Control - Used for Special Process**

Filler Material	Heat Number	Welding Process			OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 L1	1mm	31060	MIG	Welding	OK	20/02/24	20/02/24



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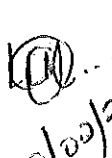
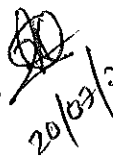


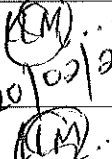
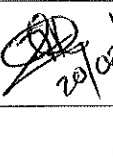
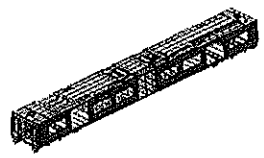

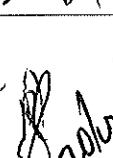
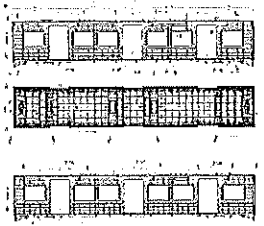


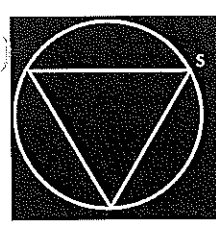
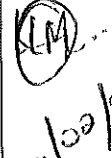

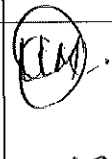

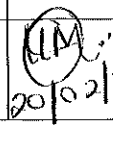
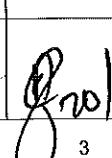
06/11/2023

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## II - Self Inspection - Items to Check

## II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK			Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB1230.AA00001374497 Verification of fitment for all brackets.	PRA.CB1230.AA00001374497	OK			 20/02/24	 20/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	OK			 20/02/24	 20/02/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	OK			 20/02/24	 20/02/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	OK			 20/02/24	 20/02/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	OK			 20/02/24	 20/02/24
06		Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS 018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	OK			 20/02/24	 20/02/24
07	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified:  Temperature Min - Max (I) Min-Max 10°C - 35°C Relative humidity Min - Max (I) Min-Max 25% - 60%	Sealant Batch No: <u>W70-05</u> Exp Date: <u>15/05/24</u>  Actuals Temperature: <u>18°C</u> Humidity: <u>68%</u>	OK			 20/02/24	 20/02/24
08	N/A	Verification of sealant application in regions of roof and sideframe.	Sealant applied in regions of roof and sideframe.	OK			 20/02/24	 20/02/24



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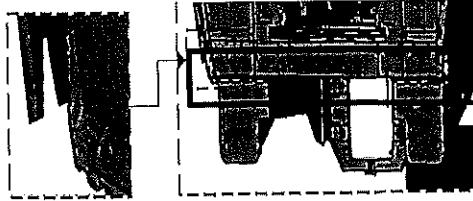
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### END 2 SEALANT

AREA 1



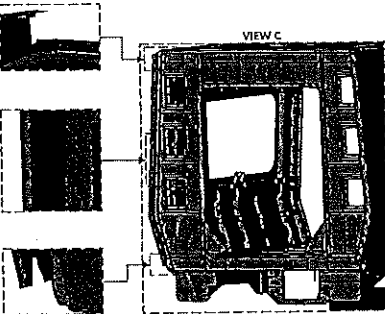
OPERATOR  
(Name & sign):

OPERATOR  
(Name & sign):

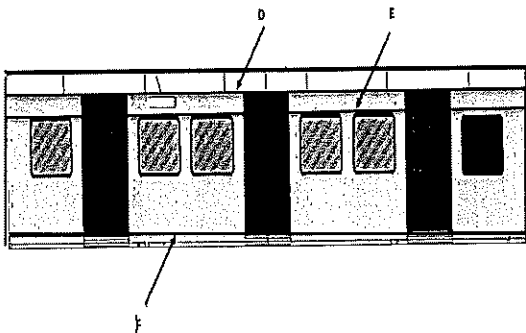
Boitumelo #10E

OPERATOR  
(Name & sign):

VIEW C



H



Area D,E,F,G,H,I

Operator (Name & sign): <sup>LHS</sup> D, E, F, G, H, I

Operator (Name & sign): Lerato

Operator (Name & sign): KLM...

Operator (Name & sign):

Operator (Name & sign):

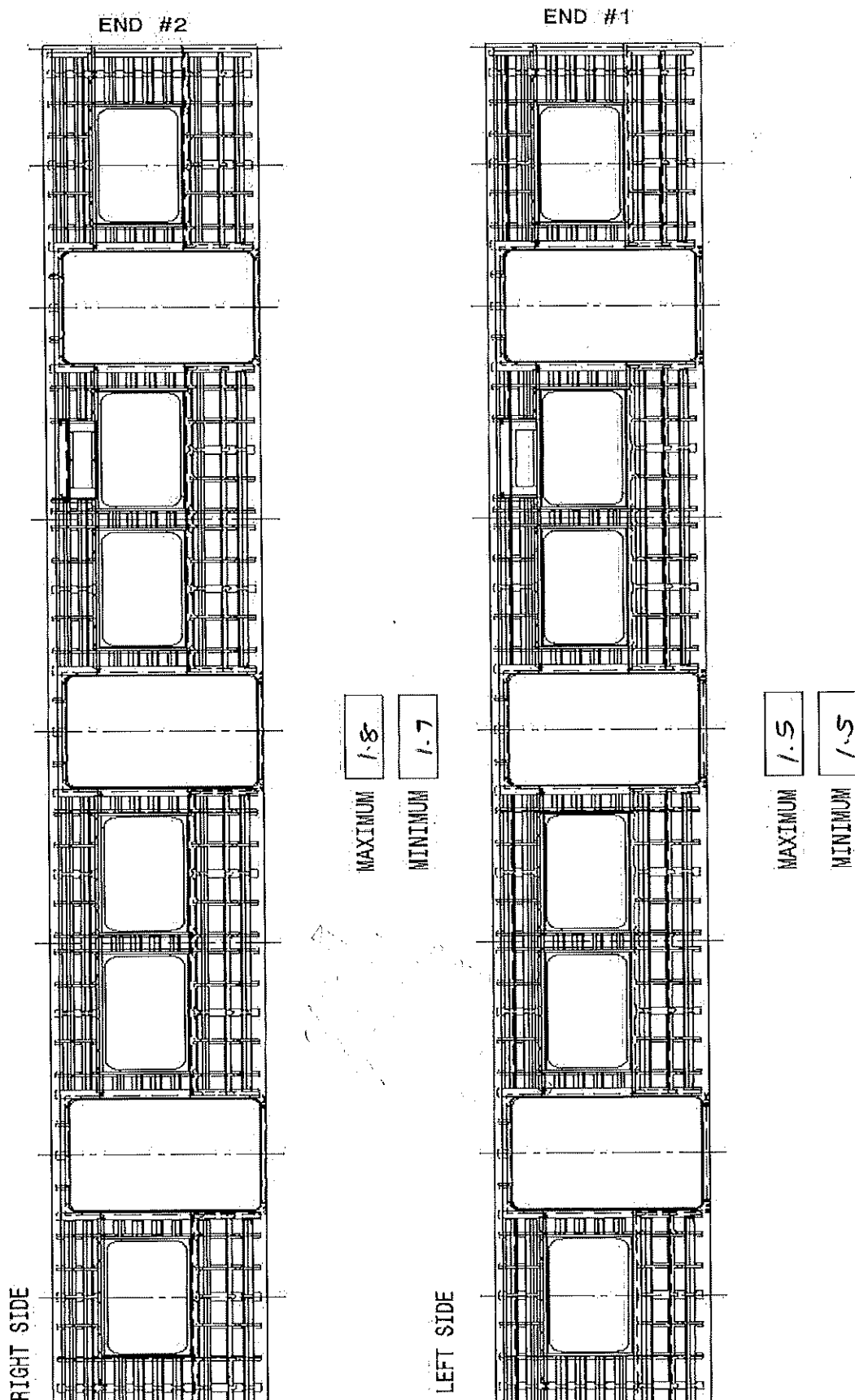
Operator (Name & sign):

<sup>RHS</sup> D, E, F, G, H, I

Buhle

## Specifications of Details for CBS measurement CB1230

latness side left and right maximum of 2mm in the valley to peak measured in 900mm. Record the maximum and minimum value found and indicate the corresponding region.





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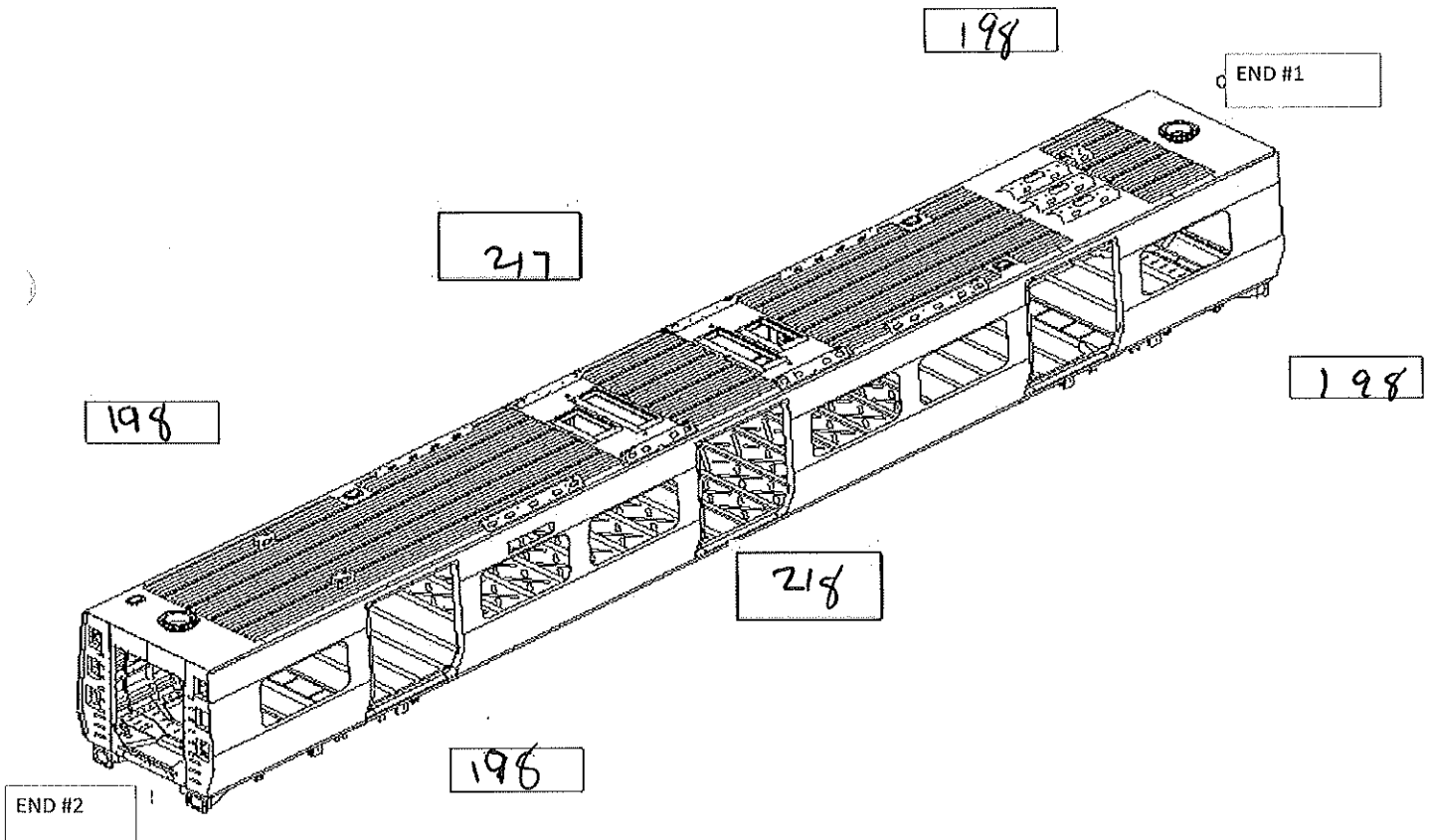
SI.CB1230.277.V29

END #1

END #2

## Specifications of Details for CBS measurement CB1230

Specified Camber for car out of jig is 18mm(-0mm + 2mm)



CAMBER

RIGHT

20

LEFT

19

E



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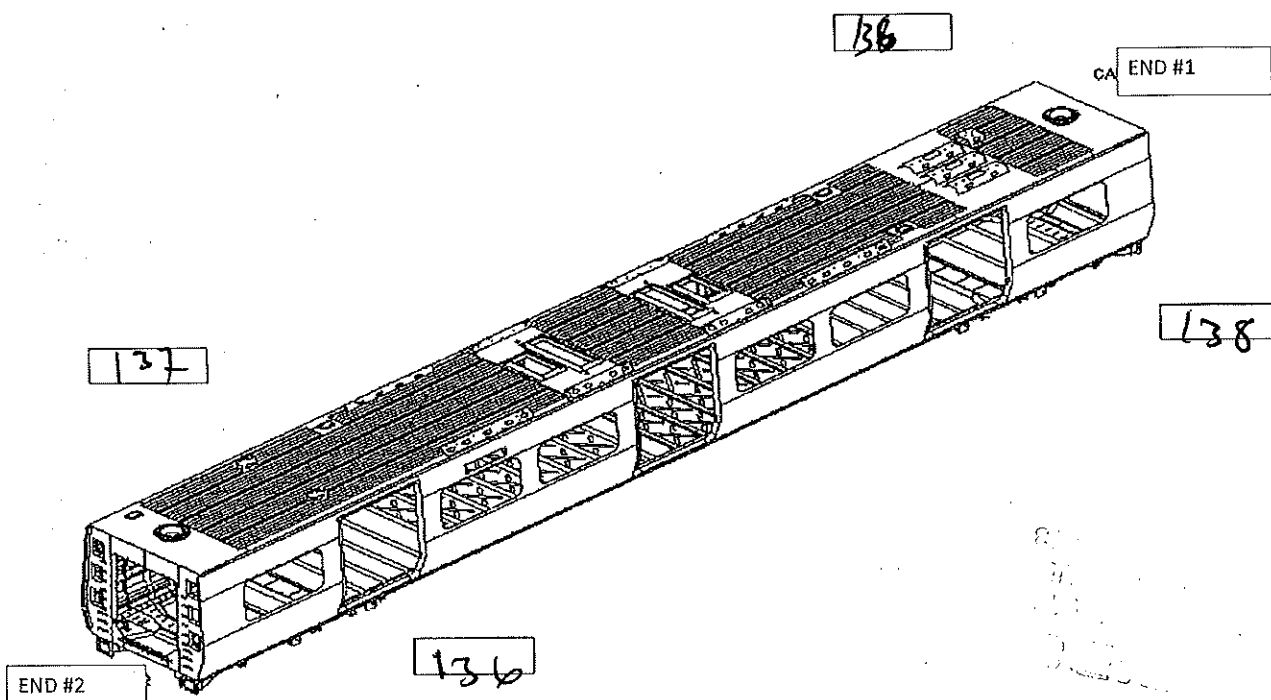
06/11/2023

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### Specifications of Details for CBS measurement CB1230

Twist measured in transversal and longitudinal = Maximum 3mm. Measure twist on air spring plates (LHS and RHS), both End 1 and End 2 following twist measurement document.



TWIST FOUND ON END 1

TRANVERSE

1

LONGITUDINAL

1

TWIST FOUND ON END 2

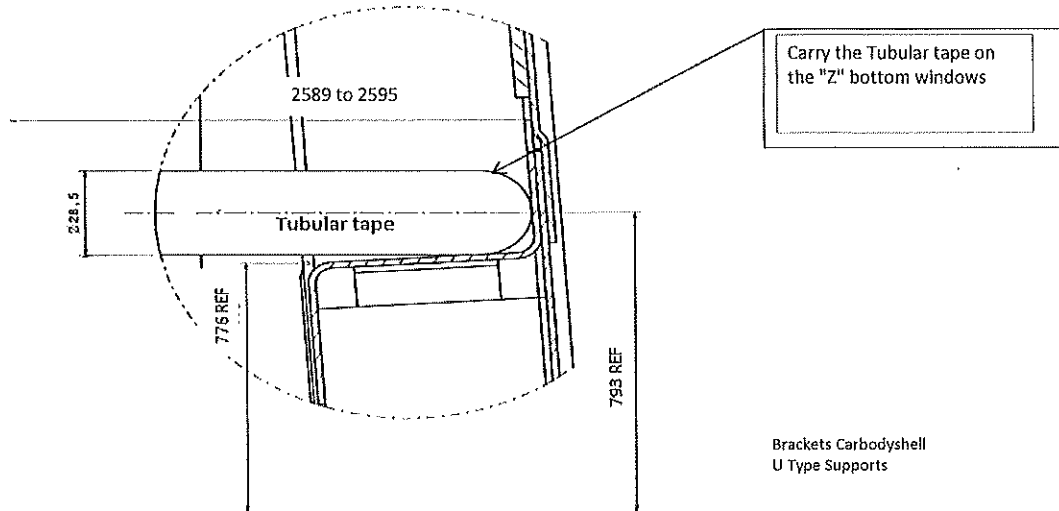
TRANVERSE

0

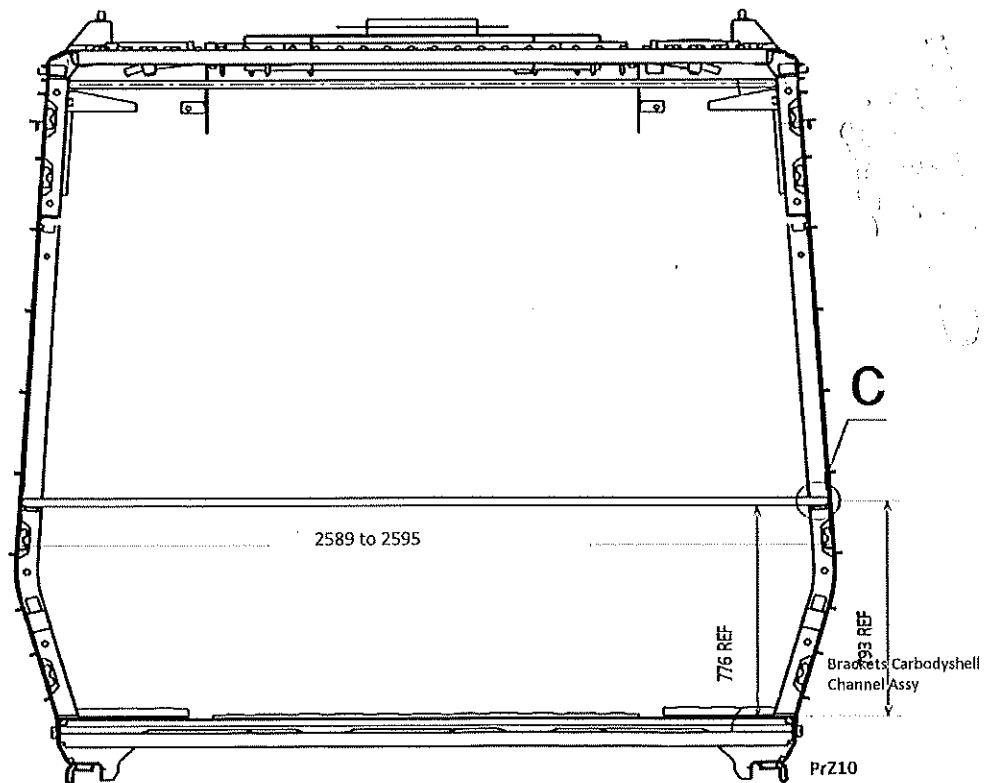
LONGITUDINAL

2

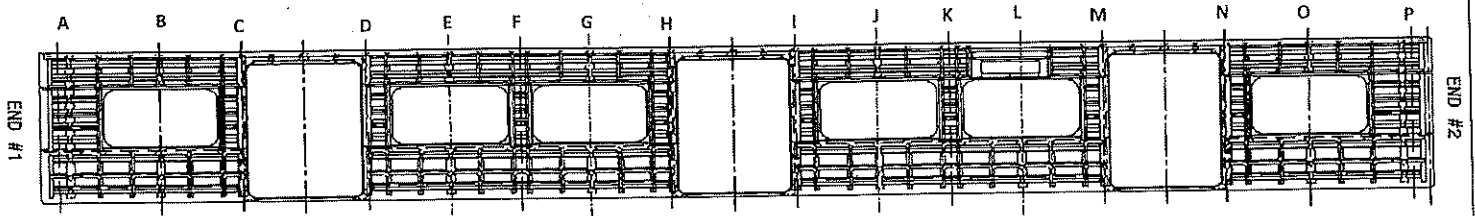
**Specifications of Details for CBS measurement CB1230**



**Detail C**

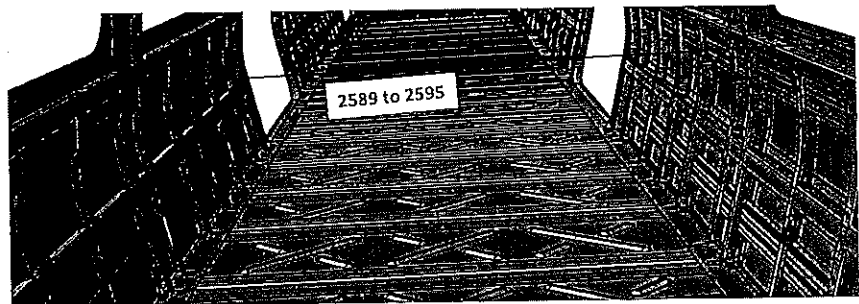


## Specifications of Details for CBS measurement CB1230



2589 to 2595mm

A	2591
B	2591
C	2590
D	2589
E	2592
F	2593
G	2594
H	2594
I	2594
J	2593
K	2589
L	2589
M	2591
N	2590
O	2589
P	2590



Threshold verification				Nominal value :38	
Door 1		Door 2		Door 3	
L	R	L	R	L	R
38	38	38	38	38	38
Door 4		Door 5		Door 6	
L	R	L	R	L	R
38	38	38	38	38	38

BOILER MAKER:

Boitumelo More

WELDER:

Mmathapelo Mda.



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## Dye penetrant test

Dye-penetration test to be performed by quality personnel





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## Specifications of Details for CBS measurement

Item	Description of the issue	OK	Signature/Date (Operations)	Signature/Date (Quality)

## II.2 - Check List REX

## Check List Items

Item	Picture/Drawing	Description	Criteria /Record	OK		Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX				



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## Self Inspection - Final Result

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT			(If activities are not complete, the missing activities must not impact the next stage!)	20/02/24	Lizato	(Signature)...
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	20/02/24	M. Tokar	(Signature)
			There are activities pending that impact/stop the activities of the next process Obs: (To describe problems below)			(Signature)
			There are non-conformities impact the quality of the product and there is no corrective action defined yet)			

In case of "NO GO", describe blocking problems

In case of "NO GO", the operations manager must define below action plan to ensure "GO":

Item	Description	Responsible	Due date	Status

Operations

Quality