

GIBELA

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

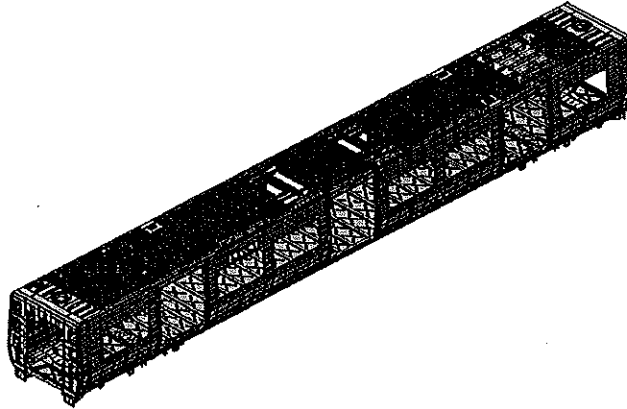
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 
				TC1	M6	M1	M2	M3	TC2		
<input type="checkbox"/> DTR313744/97/3	AAD0001413329	CARBODYSHELL M2 ASSEMBLY	cb2210				X			PRA.cb2210.DTR313744 97/3.V25	YES
<input type="checkbox"/>											
REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	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 cb2210	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	06/08/2020						
			REVISED BY	Bongane Masina	06/08/2020						
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021						
			CHECKER	Bongane Masina	19/04/2021						
			REVISED BY	Bongane Masina	19/04/2021						
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING	APPROVER	Mbhombi collins	17/08/2021						
			CHECKER	Mpho Mulaudzi	17/08/2021						
			REVISED BY	Mpho Mulaudzi	17/08/2021						
25	21/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombi collins	21/02/2022						
			CHECKER	Andani Muthelo	21/02/2022						
			REVISED BY	Andani Muthelo	21/02/2022						
26	14/04/2023	Addition of welding consumable traceability	APPROVER	Ntuli Vanessa	14/04/2023						
			CHECKER	Mohlampe Amogelang	14/04/2023						
			REVISED BY	Mohlampe Amogelang	14/04/2023						
27	27/07/2023	Added verification of loaded parts	APPROVER	Ngobeni Tyson	27/07/2023						
			CHECKER	Zwane Ntokozo	27/07/2023						
			REVISED BY	Mohlampe Amogelang	27/07/2023						
28	07/11/2023	Addition of welder traceability	APPROVER	Ngobeni Tyson	07/11/2023						
			CHECKER	Andani Muthelo	07/11/2023						
			REVISED BY	Ntokozo Zwane	07/11/2023						
TRAINSET	CAR	OPERATOR NAME& ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES						
B229	M2	Timeleng 41008	28.05.24	SI.CB2210.247.V28	17						

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB2210.247.V28
		Date 07/11/2023	

Car: M2	NCR:	Work station: CB2210
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Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	T1	M1	M2	M3	M4	D						
DTR31374497/3							28		OK		N/A 23/05/24	28/05/24

I.2 - Instruments Control


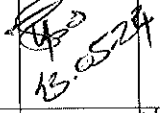

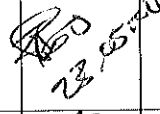

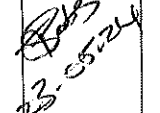

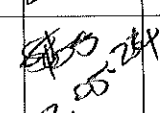
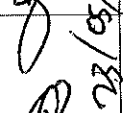
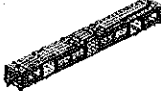
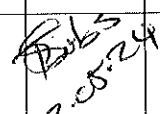
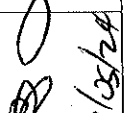
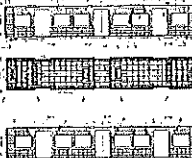
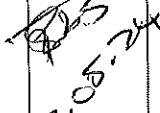

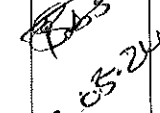
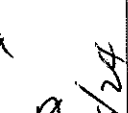
Monitoring and Measuring Instrument Control - Used for Special Process

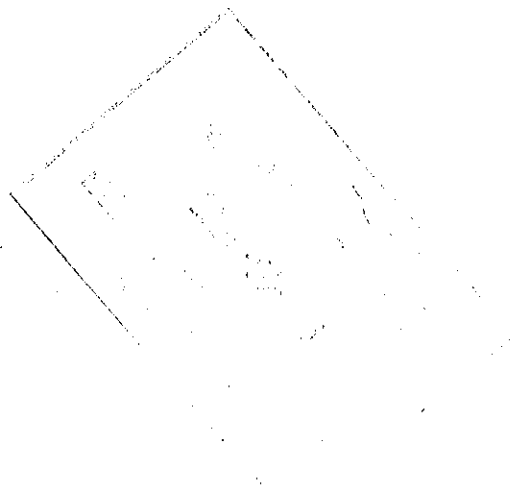
Instruments	Serial number	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
TUBULAR	32828-2	15/03/25	OK		23/05/24	
LASER TAPE	125725924	08/01/25	OK		23/05/24	
(30m) TAPE	4115TP0102	18/11/24	OK		23/05/24	25/05/24


I.3 - Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Serial Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308LSI	314018-74097	MIG			23/05/24	
ER 308L	299687-70322	TIG			23/05/24	23/05/24

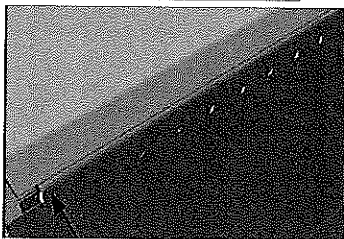
		CARBODYSHELL M2 ASSEMBLY DTR31374497/3		Rev. 28 Date 07/11/2023	Project: PRASA SI.CB2210.247.V28	
II - Self Inspection - Items to Check						
II.1 - Items to check						
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls, Endframes, Roof and Underframe)	AA00001375051	✓	 23.05.24	 23/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓	 23.05.24	 23/05/24
03	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 a DTD0000210675	✓	 23.05.24	 23/05/24
04	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 23.05.24	 23/05/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 23.05.24	 23/05/24
06		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓	 23.05.24	 23/05/24
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.	✓	 23.05.24	 23/05/24



	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB2210.247.V28
		Date 07/11/2023	

Welder traceability

Roof ring welds



LHS

Boiler maker (Name & Sign): LUNGA MP Welder (Name & Sign): GIPB L

END 1

RHS

Boiler maker (Name & Sign): GERARD MP Welder (Name & Sign): GIPB L

LHS

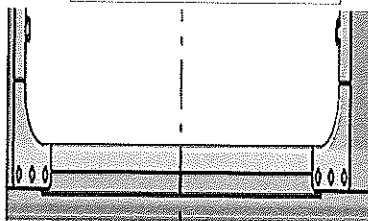
Boiler maker (Name & Sign): LUNGA MP Welder (Name & Sign): GIPB L

END 2

RHS

Boiler maker (Name & Sign): GERARD MP Welder (Name & Sign): GIPB L

Door ring welds



LHS

Boiler maker (Name & Sign): Innocent MP

Welder (Name & Sign): MITIKORISIC MP


RHS

Boiler maker (Name & Sign): Innocent MP

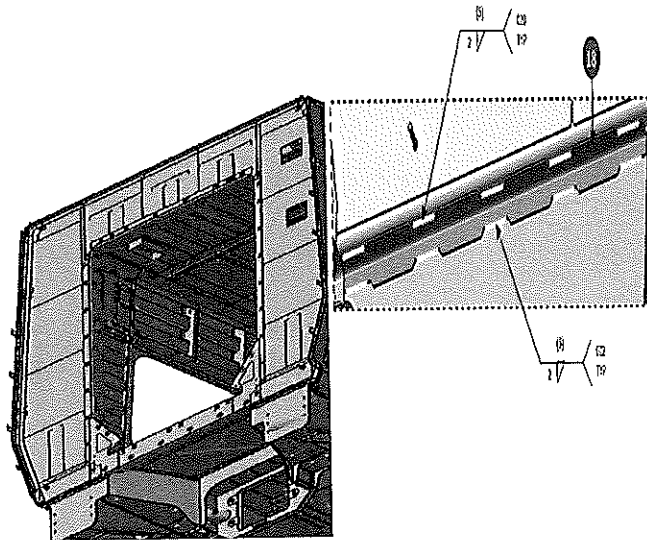
Welder (Name & Sign): MITIKORISIC MP

2023-08-08

2023-08-08

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28 Date 07/11/2023	Project: PRA5A SI.CB2210.247.V28

EUF Reinforcement Plates



END 1

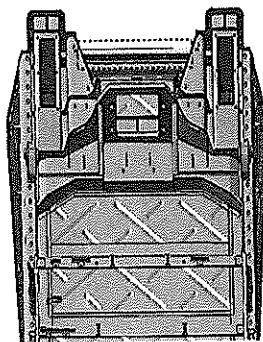
Boiler maker (Name & Sign):

Tim Ender

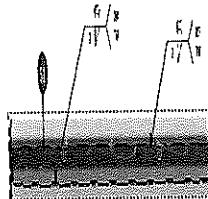
Welder (Name & Sign):

SIPHOKAZI

END 2



Underneath the CAR



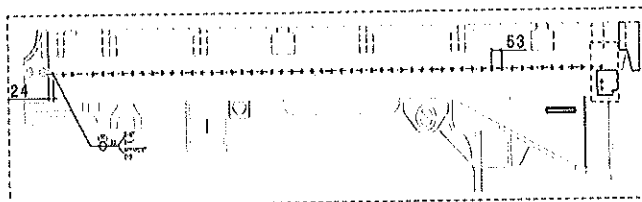
END 2

Boiler maker (Name & Sign):

Lebogang Makhabe

Welder (Name & Sign):

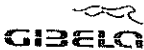
SIPHOKAZI

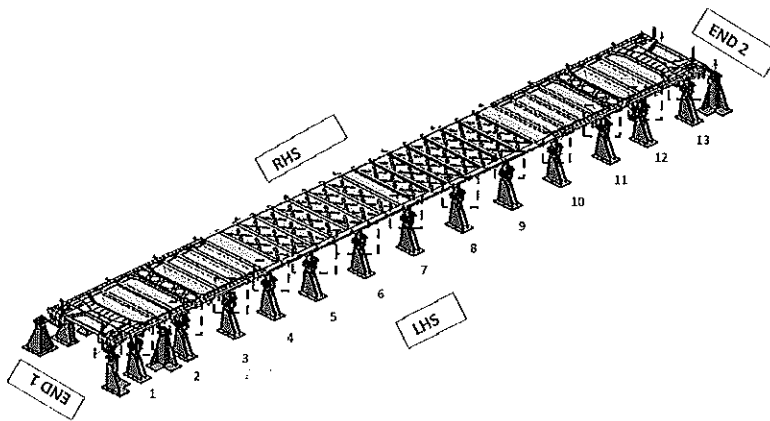


FEDOLI

Operator:

LAWRENCE

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev.	Project: PRASA SI.CB2210.247.V28
		28	
		Date	
		07/11/2023	
Specifications of Details for CBS measurement			



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	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Hand Side	0	0	0	0	0	0	4	5	3	0	0	0	0

Signature Operations:

Date: 28.05.24

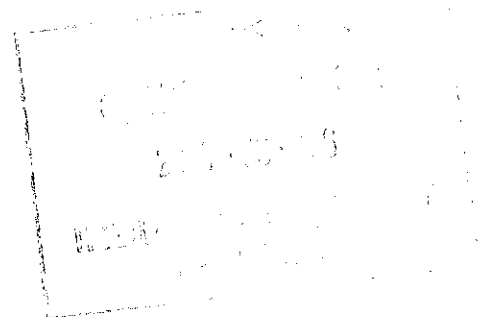
After Welding.

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	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Hand Side	0	0	0	0	0	0	4	5	3	0	0	0	0

Signature Industrial Quality:

Date: 23/05/24





CARBODYSHELL M2 ASSEMBLY DTR31374497/3

Rev.

28

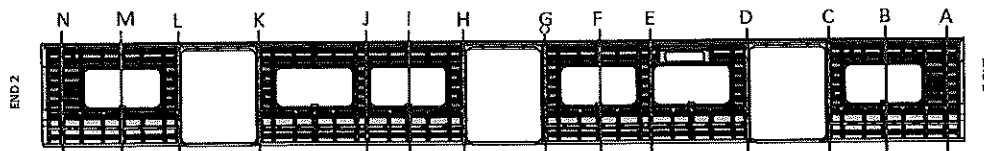
Date

07/11/2023

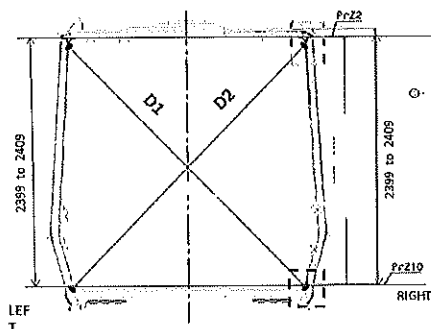
Project: PRA5A

SI.CB2210.247.V28

Specifications of Details for CBS measurement



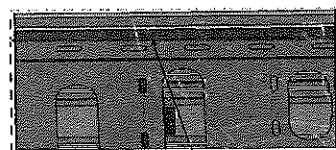
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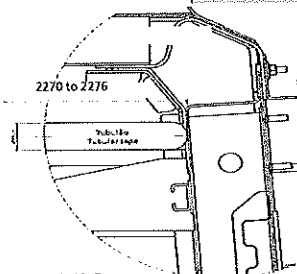
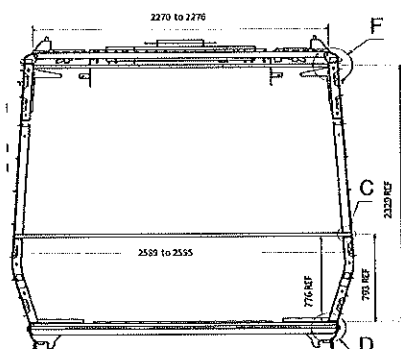
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.




Reinforcement area measurement positions on roof reinforcement area.

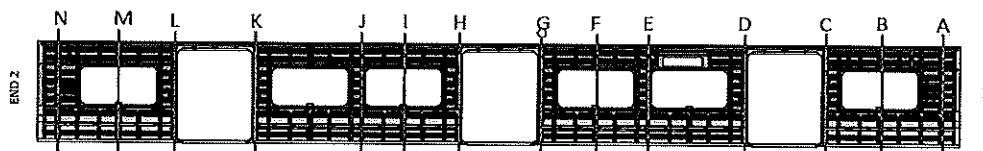


Detail F

Don't considering D's reinforcement

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28 Date 07/11/2023	Project: PRASA SI.CB2210.247.V28
Specifications of Details for CBS measurement			

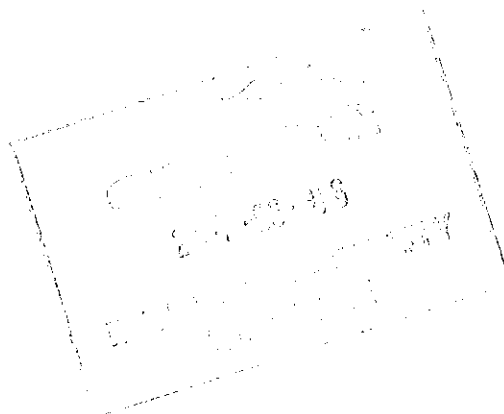
BEFORE WELDING




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 ≤ 2
A	3268	3268	0	2406	2406	0
B	3270	3271	1	2407	2408	2
C	3269	3268	1	2406	2406	0
D	3268	3268	0	2408	2406	1
E	3271	3271	0	2407	2406	1
F	3270	3269	1	2408	2406	2
G	3267	3268	1	2406	2406	0
H	3268	3268	0	2406	2406	0
I	3270	3272	2	2407	2405	2
J	3272	3270	2	2407	2407	0
K	3268	3269	1	2406	2406	0
L	3268	3268	0	2408	2406	1
M	3270	3269	1	2407	2406	1
N	3269	3268	2	2406	2406	0

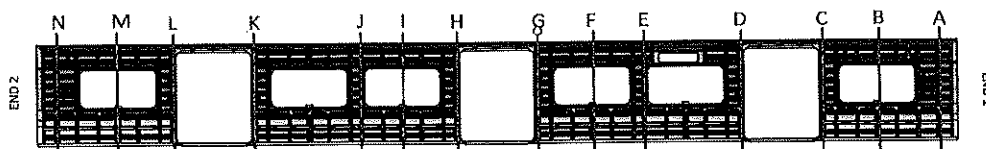
28.05.24



	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB2210.247.V28
		Date	
		07/11/2023	


Specifications of Details for CBS measurement


AFTER WELDING

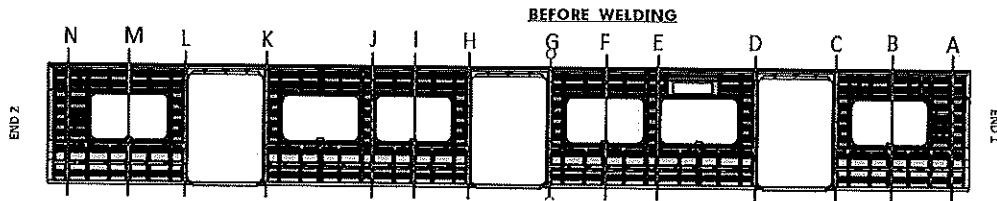


Note: The difference in Height values measured on the LHS and RHS should be $\leq 2\text{MM}$ on each point.

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409 (LHS)	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3295	3295	0	2406	2406	0
B	3268	3266	2	2407	2406	1
C	3297	3296	1	2406	2406	0
D	3296	3296	0	2407	2407	0
E	3271	3270	1	2407	2408	1
F	3269	3267	2	2408	2406	2
G	3296	3296	0	2406	2406	0
H	3297	3297	0	2406	2406	0
I	3269	3270	1	2407	2406	1
J	3294	3294	0	2407	2407	0
K	3295	3295	0	2406	2406	0
L	3296	3296	0	2406	2406	0
M	3270	3269	1	2408	2406	2
N	3267	3267	0	2406	2406	0

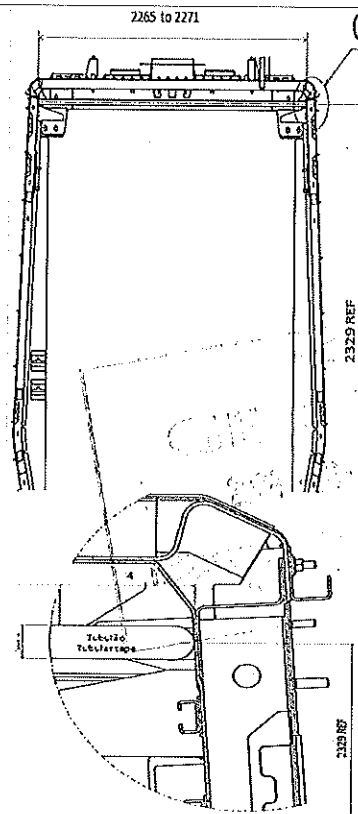
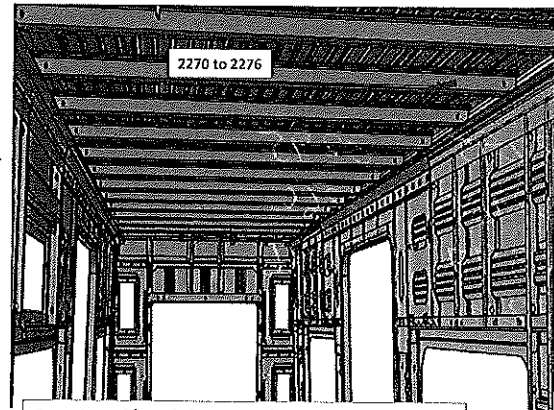

28.08.24

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28 Date 07/11/2023	Project: PRASA SI.CB2210.247.V28
CBS measurement			




2270 to 2276

A	2270
B	2272
C	2271
D	2270
E	2275
F	2274
G	2270
H	2271
I	2273
J	2275
K	2270
L	2270
M	2273
N	2270

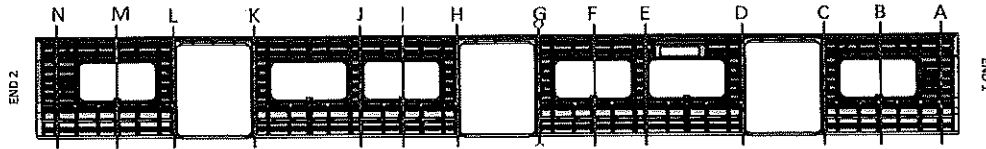


Detail G
Considering the reinforcement plate

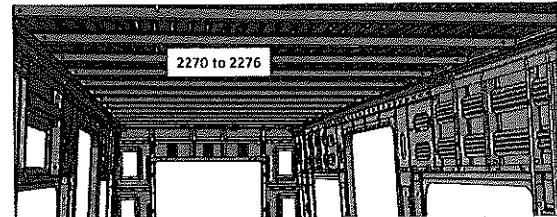
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28.05.24

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI,CB2210.247.V28
		Date 07/11/2023	
		CBS measurement	

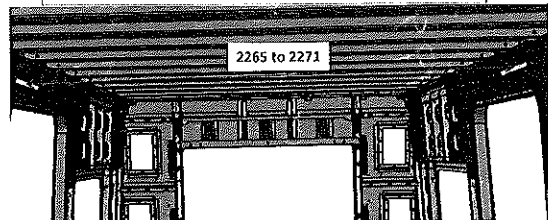
AFTER WELDING



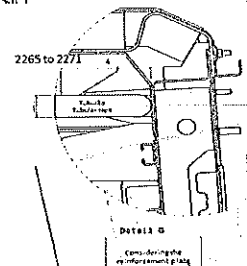
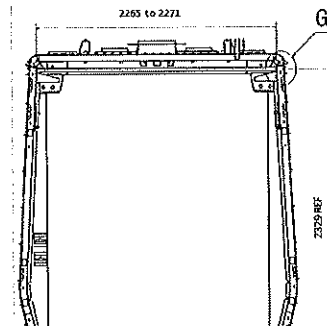
	2265 to 2271	2270 to 2276
A	2268	N/A
B	N/A	2273
C	2267	N/A
D	2268	N/A
E	N/A	2275
F	N/A	2272
G	2269	N/A
H	2268	N/A
I	N/A	2273
J	N/A	2276
K	2268	N/A
L	2267	N/A
M	N/A	2274
N	2268	N/A



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



Take measurement close to radius (considering reinforcement)



28.05.24

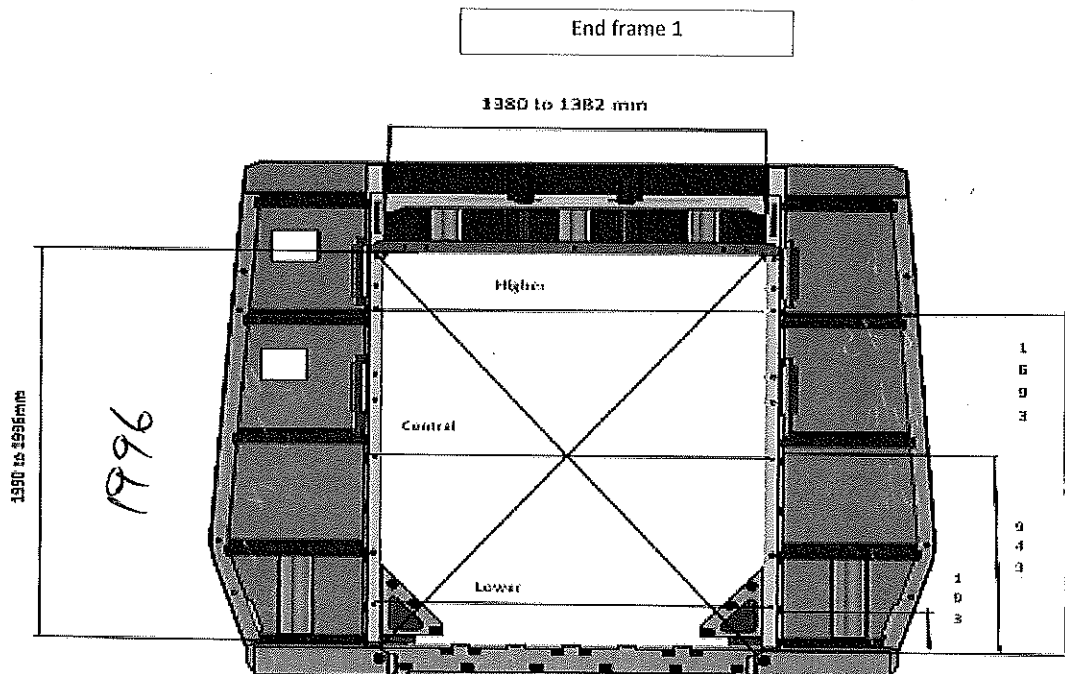


CARBODYSHELL M2 ASSEMBLY DTR31374497/3

Rev.
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Date
07/11/2023

Project: PRASA
SI.CB2210.247.V28

CBS measurement



1380 to 1382 mm

DIAGONAL DIFFERENCE D1-D2 ≤ 3mm

Higher Dimension

1381

D1

2417

Central Dimension

1380

D2

2415

Lower Dimension

1381

D1-D2

2

23.05.24

23.05.24



CARBODYSHELL M2 ASSEMBLY DTR31374497/3

Rev.

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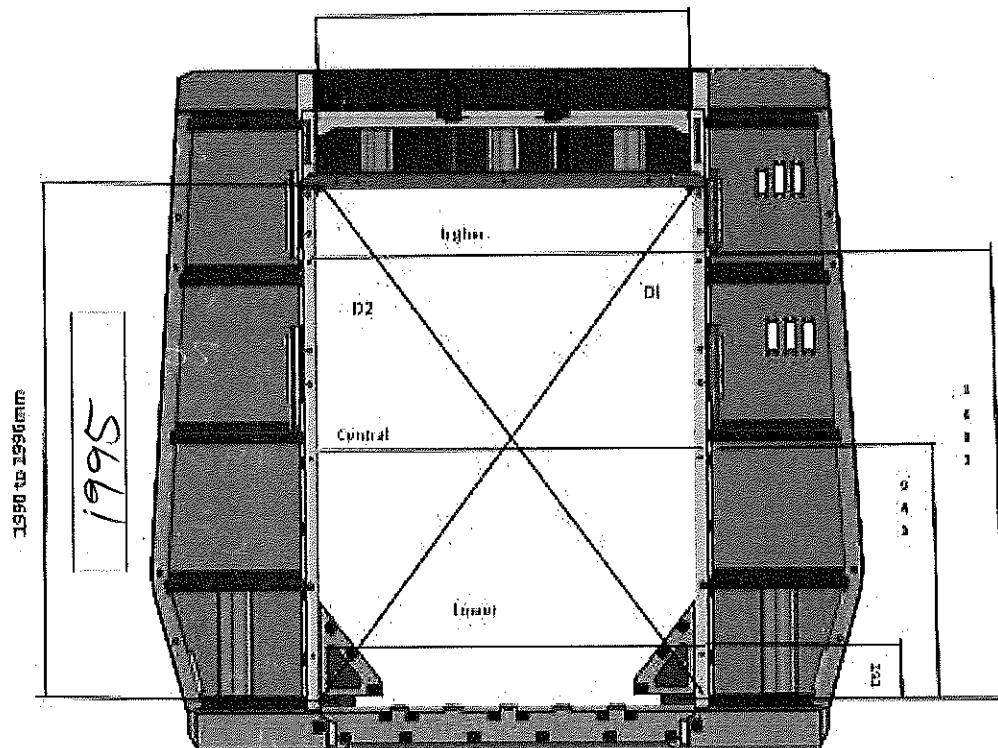
Project: PRASA

SI.CB2210.247.V28

Date

07/11/2023

End frame 2



1380 to 1382 mm

DIAGONAL DIFFERENCE D1-D2 ≤ 3mm

Higher Dimension

1382

D1

2416

Central Dimension

1881

D2

2417

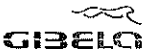
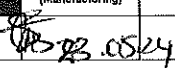
Lower Dimension

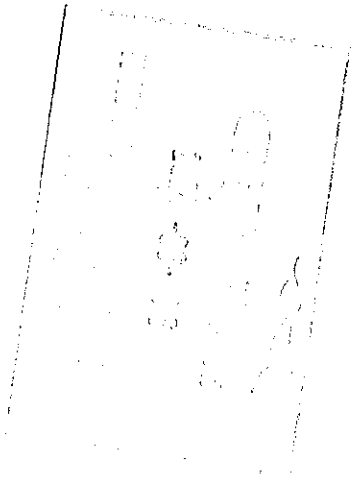
1381


D1-D2

1

28.05.24

		CARBODYSHELL M2 ASSEMBLY DTR31374497/3		Rev. 28	Project: PRASA		
				Date 07/11/2023	SI.CB2210.247.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		Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX			 23.05.24	



	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB2210.247.V28
		Date 07/11/2023	

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)		28.05.24	Turneco	[Signature]
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)		23/05/24	Ntokoro	[Signature]
	NO GO	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

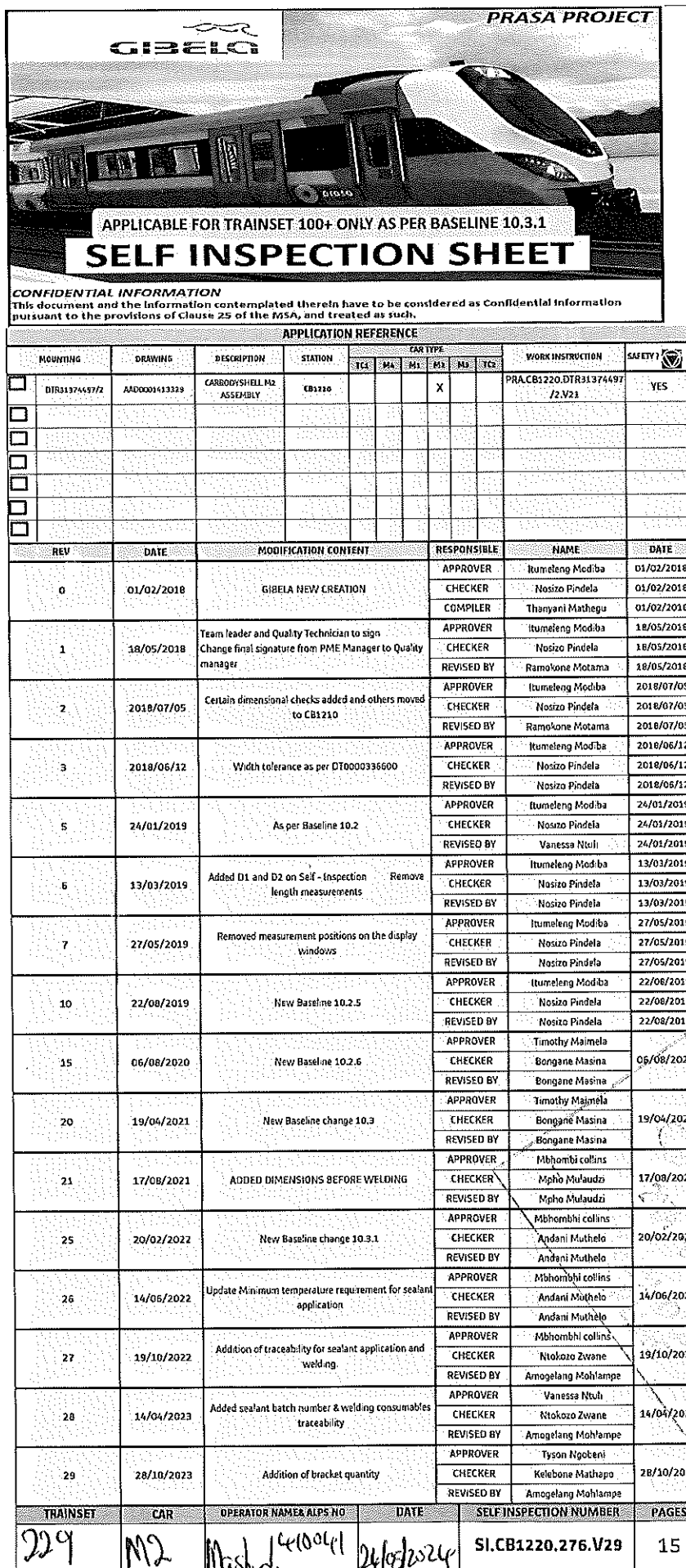
In case of "NO GO", the operations manager must define below action plan to ensure "GO":



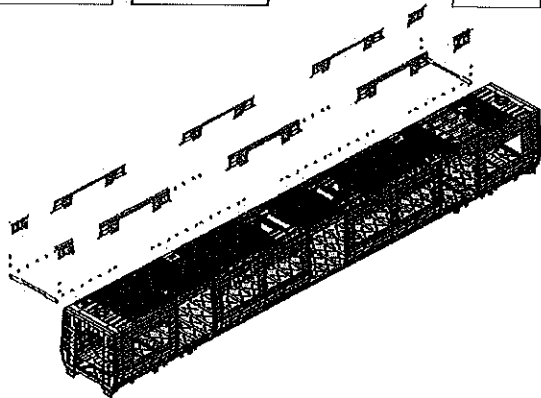







Item	Description	Responsible	Due date	Status

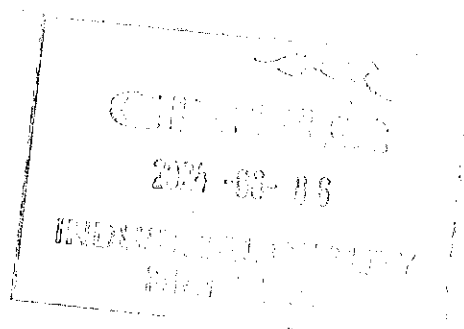
Operations








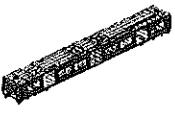


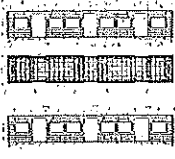


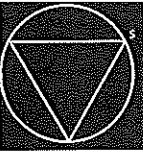






Quality

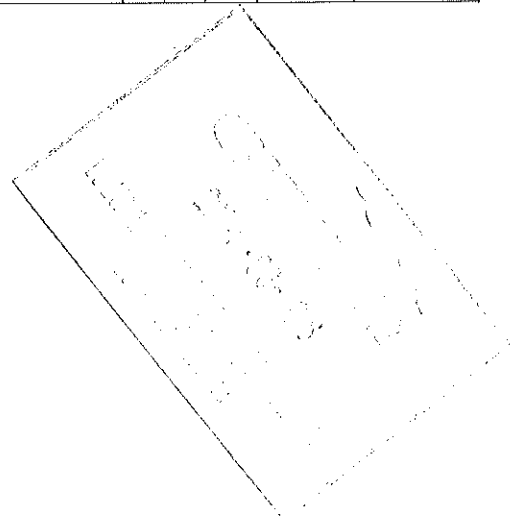




	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project: PRASA															
		28																
		Date	SI.CB1220.276.V29															
28/10/2023																		
Car: M2	NCR:	Work station:	CB1220															
 Safety Related																		
																		
I - Documentation and Instruments Control																		
I.1 - Documentation Control																		
Document	Type of car	Revision	Observation	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)												
DTR31374497/2	<table border="1"> <tr> <th>1</th> <th>2</th> <th>3</th> <th>4</th> <th>5</th> <th>6</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	1	2	3	4	5	6									✓	N/A	 24/05/24
1	2	3	4	5	6													
I.2 - Instruments Control																		
Monitoring and Measuring Instrument Control - Used for Special Process																		
Instrument/s	Serial number	Calibration or Verification Validation Date	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)													
Tubular	32823-3	15/03/2025	✓		 24/05/24													
Measuring tape	613170399	16/04/2025	✓		 24/05/24													
1.3 Consumables																		
Welding Consumable Control - Used for Special Process																		
Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)													
308 1.0mm		MIG	✓		 24/05/24													



		CARBODYSHELL M2 ASSEMBLY DTR31374497/2		Rev. 29 Date 28/10/2023	Project: PRASA SI.CB1220.276.V29	
		II - Self Inspection - Items to Check				
		II.1 - Items to check				
Item	Pictura/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 flange for all reinforcement brackets.	PRA CB1220. DTR31374497/2	✓	 24/05/24	 24/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓	 24/05/24	 24/05/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0600	✓	 24/05/24	 24/05/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 24/05/24	 24/05/24
05		Functional dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓	 24/05/24	 24/05/24
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.	✓	 24/05/24	 24/05/24
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 Temperature Min - Max (°C) 10°C - 35°C Relative humidity Min - Max (%) 25% - 65%	Sealant Batch No: B2497 Exp Date: 01/06/24 Actuals Temperature: 20 Humidity: 25	✓	 24/05/24	 24/05/24
08	NA	Verification of sealant application in certain regions in the drawing	AAD0001413329	✓	 24/05/24	 24/05/24





CARBODYSHELL M2 ASSEMBLY DTR31374497/2

Rev.

29

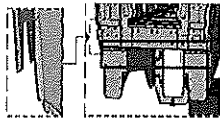
Date

28/10/2023

Project: PRASA

SI.CB1220.276.V29

SEALANT APPLICATION



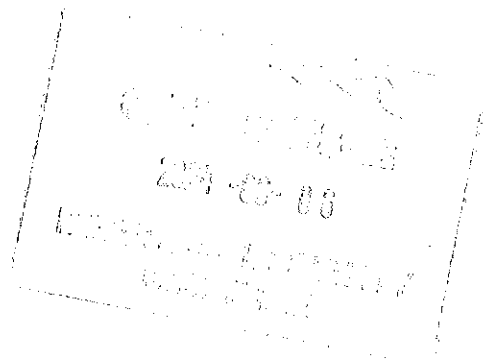
AREA 1 & 2 END 1


Operator (Name & sign):

Mthellozi

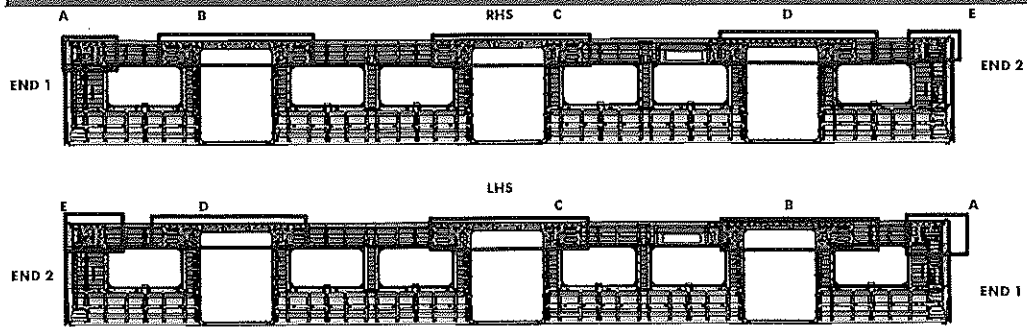
Operator (Name & sign):

Mthellozi

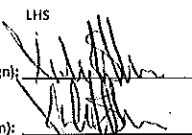
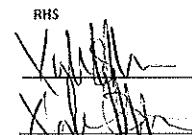
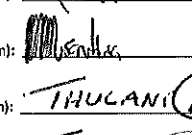
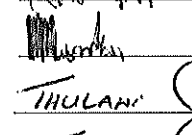

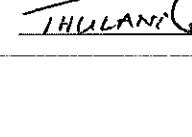






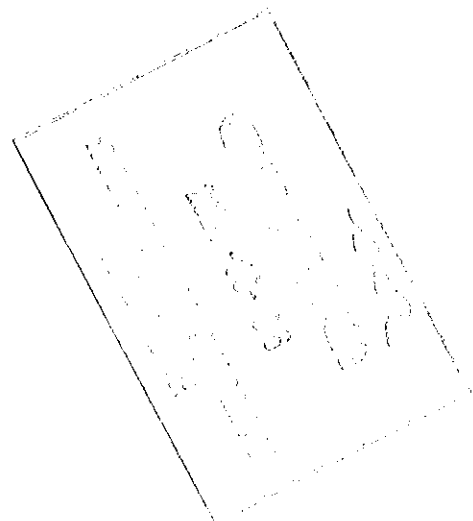
	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project: PRA5A SI.CB1220.276.V29
		29	
		Date	
		28/10/2023	


II - Self Inspection - Items to Check

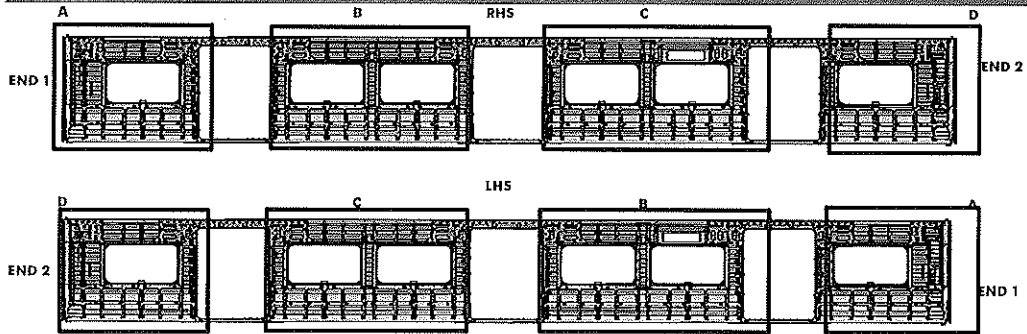


REINFORCEMENT WELDING

AREA	LHS	RHS
A	Operator (Name&sign): 	
B	Operator (Name&sign): 	
C	Operator (Name&sign): 	
D	Operator (Name&sign): THULANI 	THULANI 
E	Operator (Name&sign): THULANI 	THULANI 




	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project: PRASA
		29	
		Date	SI.CB1220.276.V29
		28/10/2023	
II - Self Inspection - Items to Check			



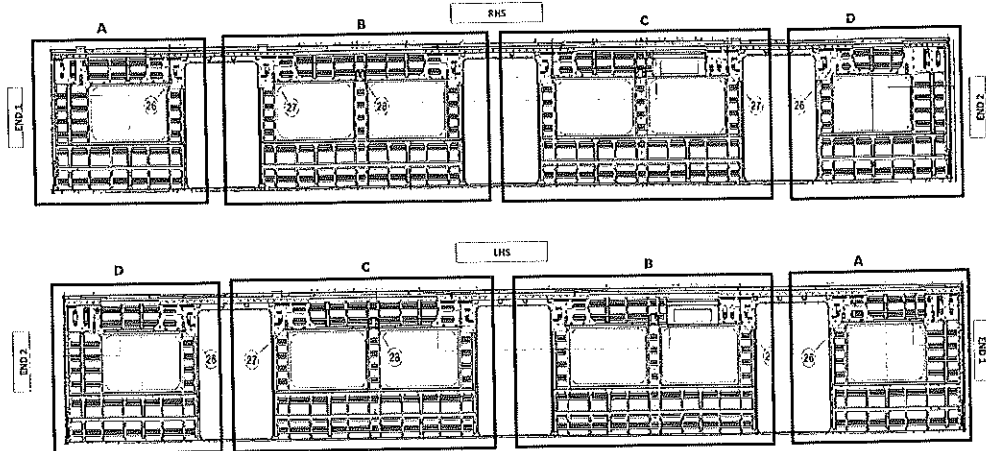
BRACKETING

		INSTALLATION	
C-RAILS:	Operator:	<u>Prisella</u>	<u>[Signature]</u>
	Operator:	<u>[Signature]</u>	<u>[Signature]</u>
DOOR MECHANISMS:	Operator:	<u>Levi</u>	<u>[Signature]</u>
	Operator:	<u>[Signature]</u>	<u>[Signature]</u>
TAPPING PADS	Operator:	<u>Levi</u>	<u>[Signature]</u>
	Operator:	<u>[Signature]</u>	<u>[Signature]</u>
		INSTALLATION & VERIFICATION	
SEAT & LUGGAGE BRACKETS:	Operator:	<u>ASANDA</u>	<u>[Signature]</u>
	Operator:	<u>[Signature]</u>	<u>[Signature]</u>
SEAT BRACKETS VERIFICATION:	Operator:	<u>Mthobozis</u>	<u>[Signature]</u>
	Operator:	<u>[Signature]</u>	<u>[Signature]</u>
WELDING			
AREA	LHS	RHS	
A (Seat brackets)	: Operator (Name&sign):	<u>[Signature]</u>	<u>[Signature]</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>[Signature]</u>	<u>[Signature]</u>
B (Seat brackets)	: Operator (Name&sign):	<u>[Signature]</u>	<u>[Signature]</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>[Signature]</u>	<u>[Signature]</u>
C (Seat brackets)	: Operator (Name&sign):	<u>[Signature]</u>	<u>THULANI</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>[Signature]</u>	<u>[Signature]</u>
D (Seat brackets)	: Operator (Name&sign):	<u>THULANI</u>	<u>THULANI</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>THULANI</u>	<u>THULANI</u>
ENDS			
END 1 TAPPING PADS WELDING:	Operator (Name&sign):	<u>[Signature]</u>	<u>[Signature]</u>
END 2 TAPPING PADS WELDING:	Operator (Name&sign):	<u>[Signature]</u>	<u>[Signature]</u>



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

M2 BRACKET INSTALLATION



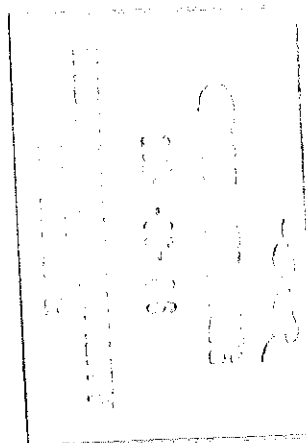
QUANTITIES (M2)

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: Mashud

LHS				
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	9	✓	
	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: Mashud



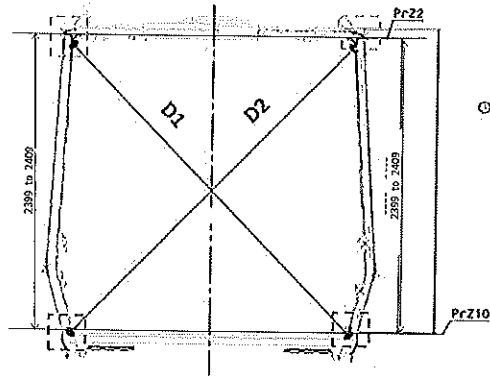


CARBODYSHELL M2 ASSEMBLY DTR31374497/2

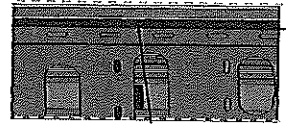
Rev.
29
Date
28/10/2023

Project: PRASA

SI.CB1220.276.V29



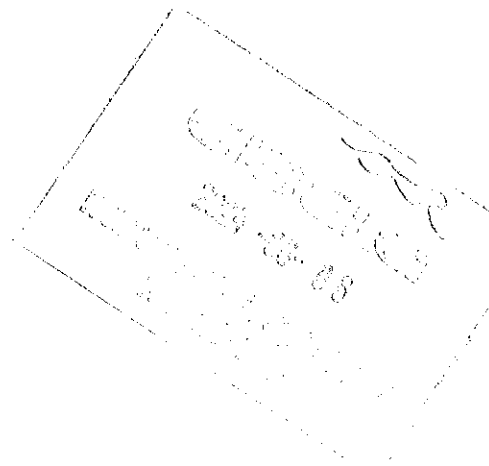
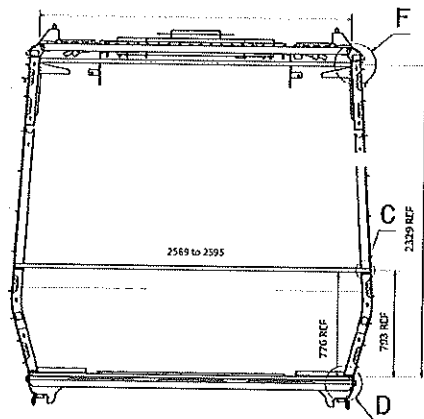
Measurement positions on roof rail and sidewall omega corner.



Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.



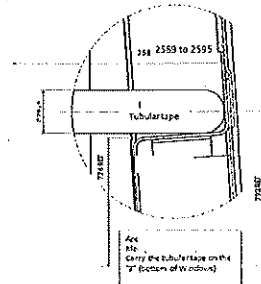
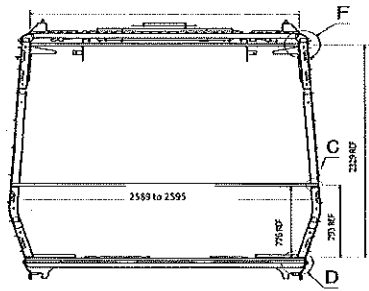


CARBODYSHELL M2 ASSEMBLY DTR31374497/2

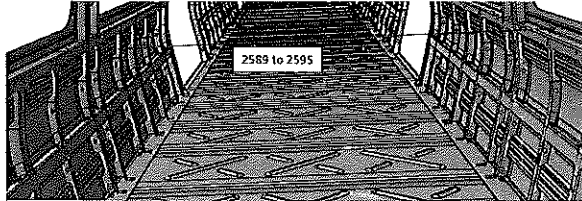
Rev.
29
Date
26/10/2023

Project: PRASA

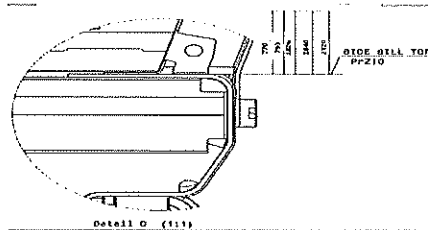
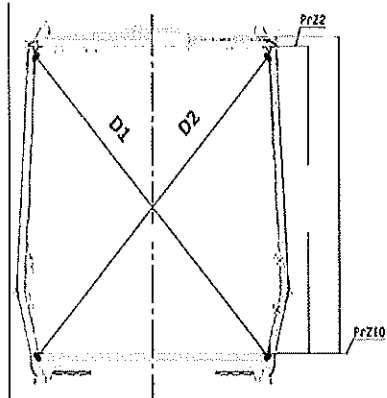
SI.CB1220.276.V29



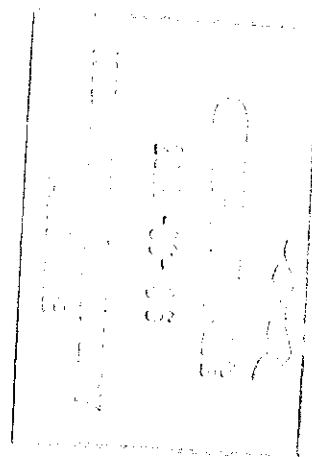
Detail C



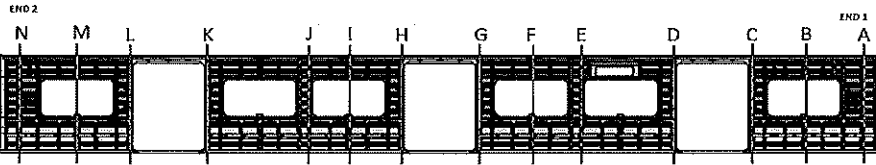
Take measurement close to radius



Detail C (1:1)

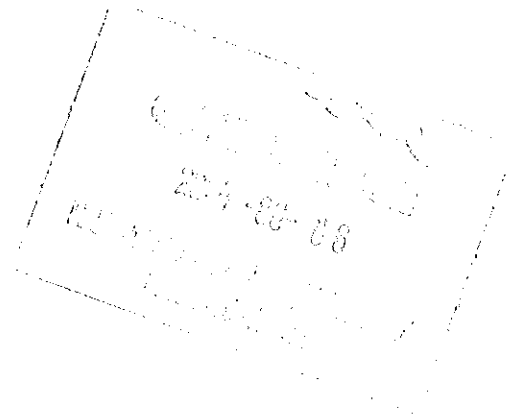


CBS measurement

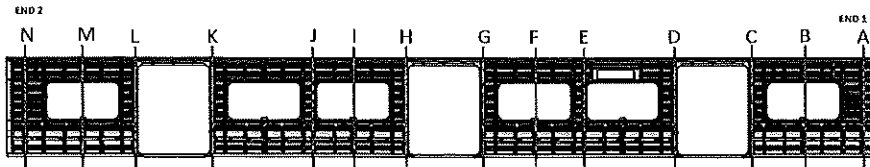


BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3295	3293	2	—
B	3265	3268	3	—
C	3296	3295	1	—
D	3295	3297	2	—
E	3260	3260	0	—
F	3266	3262	6	—
G	3300	3298	2	—
H	3300	3297	3	—
I	3265	3261	4	—
J	3266	3263	3	—
K	3299	3295	4	—
L	3294	3299	5	—
M	3265	3270	5	—
N	3300	3295	5	—

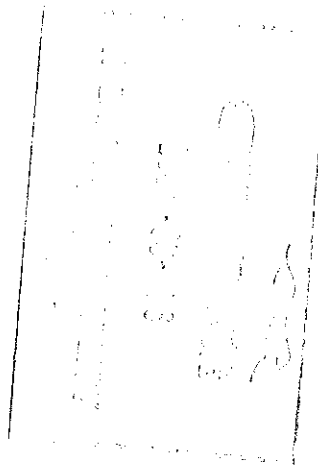


CBS measurement

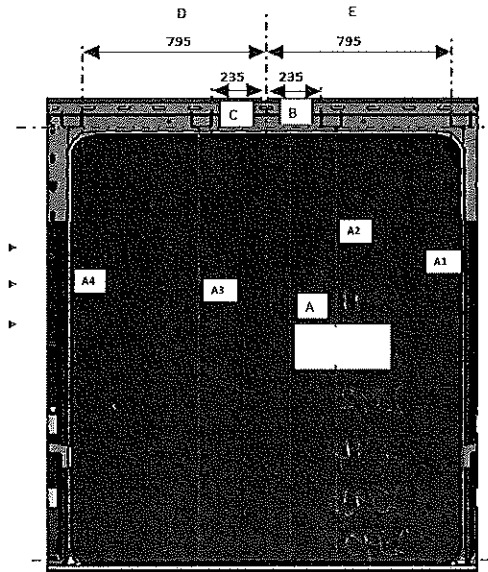
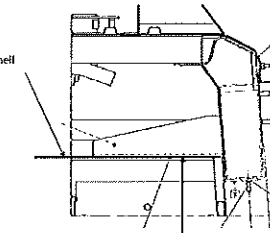
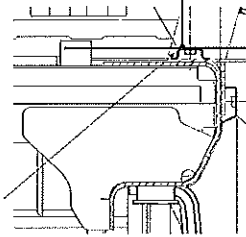


AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3294	3296	2	2591
B	3267	3265	2	2594
C	3297	3296	1	2592
D	3298	3296	2	2594
E	3261	3261	0	2595
F	3268	3264	4	2590
G	3299	3297	2	2593
H	3300	3298	2	2593
I	3263	3261	4	2595
J	3267	3264	3	2592
K	3294	3298	4	2594
L	3298	3292	6	2594
M	3270	3266	4	2592
N	3299	3295	4	2595



Specifications of Details for CBS measurement CB1220


Brackets Carbodyshell
U Type Supports

Brackets Carbodyshell
Channel Assy


DOOR 1 - LHS

	VALUE	ACTUAL
A1	2230 to 2232	2232
A2	2230 to 2232	2232
A3	2230 to 2232	2232
A4	2230 to 2232	2232
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	795

DOOR 2 - LHS

	VALUE	ACTUAL
A1	2230 to 2232	2231
A2	2230 to 2232	2232
A3	2230 to 2232	2232
A4	2230 to 2232	2231
B	234 to 236	234
C	234 to 236	235
D	794 to 796	796
E	794 to 796	795

DOOR 3 - LHS

	VALUE	ACTUAL
A1	2230 to 2232	2233
A2	2230 to 2232	2232
A3	2230 to 2232	2232
A4	2230 to 2232	2232
B	234 to 236	235
C	234 to 236	235
D	794 to 796	796
E	794 to 796	795

DOOR 1 - RHS

	VALUE	ACTUAL
A1	2230 to 2232	2232
A2	2230 to 2232	2231
A3	2230 to 2232	2231
A4	2230 to 2232	2232
B	234 to 236	235
C	234 to 236	234
D	794 to 796	796
E	794 to 796	794

DOOR 2 - RHS

	VALUE	ACTUAL
A1	2230 to 2232	2233
A2	2230 to 2232	2232
A3	2230 to 2232	2232
A4	2230 to 2232	2233
B	234 to 236	235
C	234 to 236	235
D	794 to 796	796
E	794 to 796	795

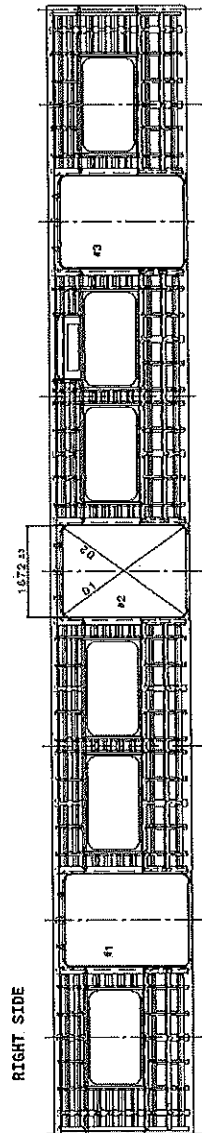
DOOR 3 - RHS

	VALUE	ACTUAL
A1	2230 to 2232	2233
A2	2230 to 2232	2232
A3	2230 to 2232	2232
A4	2230 to 2232	2231
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	796

2024-08-08
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CHINA

Specifications of Details for CBS measurement CB1220

End #2



RIGHT SIDE

End #1

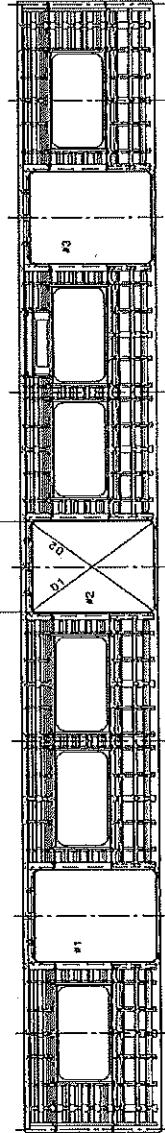
Doors diagonal D1-D2 maximum difference ≤4mm

	#1	#2	#3
D1	0769	0761	0769
D2	0768	0768	0768
D1-D2	1	2	1

Doors length - 1672 ±3mm

	#1	#2	#3
HIGHER DIMENSION	1670	1671	1673
CENTRAL DIMENSION	1671	1670	1672
LOWER DIMENSION	1671	1671	1672

End #1



LEFT SIDE


End #2


4mm

	#1	#2	#3
D1	0769	0761	0768
D2	0767	0750	0769
D1-D2	2	3	1

Vão de Portas - 1672 ±3mm


	#1	#2	#3
DIENSÃO SUPERIOR	1670	1673	1673
HIGHER DIMENSION	1670	1672	1673
CENTRAL DIMENSION	1669	1672	1672
LOWER DIMENSION			


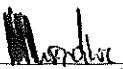
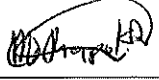
	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project: PRASA		
		29			
		Date	SI.CB1220.276.V29		
		28/10/2023			

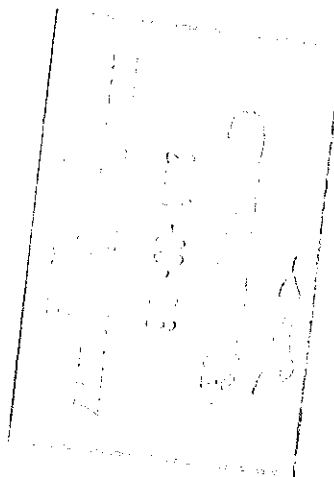
CBS measurement (Manufacturing)				
Dye penetrant test				
Dye-penetration test to be performed by quality personnel				
				


Item	Description of the Issue	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)

B.2 - Check List REX							
Check List Items							
Item	Picture/Drawing	Description	Criteria/Record	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)	
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX				

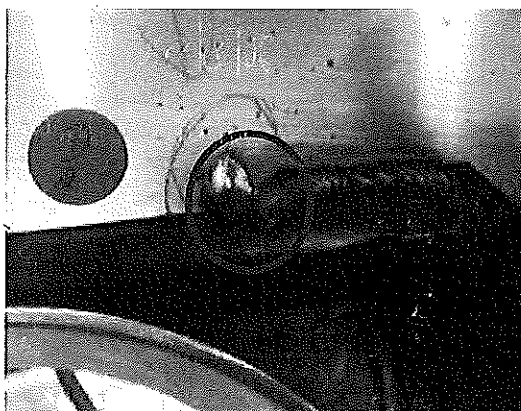

2024-08-08
RECEIVED
2024-08-08

	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project: PRASA		
		29			
		Date	SI.CB1 220.276.V29		
		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)	24/05/2024	Mashmeh Operations	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party	24/05/24	Rechnow Industrial Quality	
		There are activities pending 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		



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

ANNEXURE A: Arc Welding Quality Acceptance Standard



GIBELA

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 ?
				TCA	MA	M1	M2	M3	TCL		
<input type="checkbox"/>	AA00001374497	AA00001413329	CARBODYSHELL M2 ASSEMBLY	CB1230				X		PRA CB1230 AA00001374497.V20	YES
<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		23/08/2019					
			CHECKER	Nosizo Pindela		23/08/2019					
			REVISED BY	Nosizo Pindela		23/08/2019					
15	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela		06/08/2020					
			CHECKER	Bongane Masina		06/08/2020					
			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 Mhombhli		20/02/2022					
			CHECKER	Andani Muthelo							
			REVISED BY	Andani Muthelo							
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Collins Mhombhli		14/06/2022					
			CHECKER	Andani Muthelo							
			REVISED BY	Andani Muthelo							
27	26/07/2022	Threshold measurement addition	APPROVER	Collins Mhombhli		27/07/2022					
			CHECKER	Andani Muthelo							
			REVISED BY	Andani Muthelo							
28	17/10/2022	Addition of traceability for sealant application	APPROVER	Collins Mhombhli		17/10/2022					
			CHECKER	Ntokozo Zwane							
			REVISED BY	Amogelang Mohlampe							
29	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli		14/04/2023					
			CHECKER	Ntokozo 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	Ntokozo Zwane							
TRAINSET	CAR	OPERATOR NAME & ALPS NO		DATE		SELF INSPECTION NUMBER		PAGES			
229	MO 2	mmathapelo 483004		25/08/24		SI.CB1230.277.V29		11			



CARBODYSHELL M2 ASSEMBLY AA00001374497

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06/11/2023

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Car:

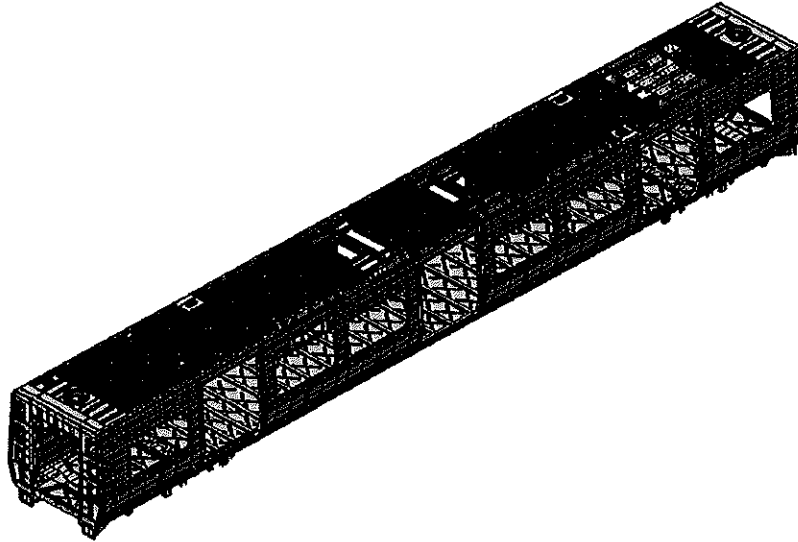
NCR:

Work station:

CB1230



Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK	NOK	N/A	Signature/Date (Operations)	Signature/Date (Quality)
	TC	M1	M2	M3	M4	TC2							
PRA.CB1230.AA00001374497			✓				29	OK	✓			25/06/24	25/04/24

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial number	Calibration or Verification Validation Date	OK	NOK	Signature/Date (Operations)	Signature/Date (Quality)
Tube	3023 -3	15/03/25	✓		25/05/25	
Measuring Tape	413094	26/04/24	✓		25/05/24	23/01/24
Combination square	413092	27/07/24	✓		25/05/24	


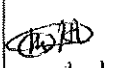

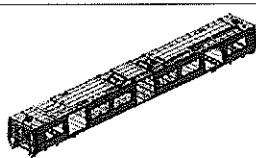

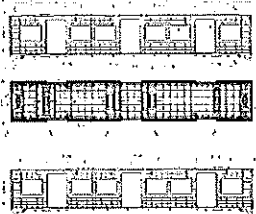

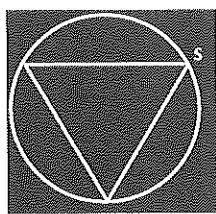
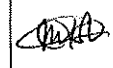


1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
308LSi	373771	MIG	✓		25/06/24	25/04/24

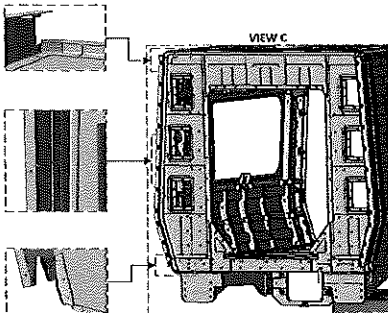
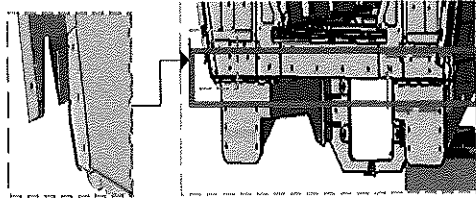
II - Self Inspection - Items to Check

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	NOT OK	REWORK	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering nº PRA.CB1230.AA00001374497 Verification of fitment for all brackets.	PRA.CB1230.AA00001374497	✓			M. S. da 25/05/24	 25/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓			M. S. da 25/05/24	 25/05/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓			M. S. da 25/05/24	 25/05/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓			M. S. da 25/05/24	 25/05/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓			M. S. da 25/05/24	 25/05/24
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.	✓			M. S. da 25/05/24	 25/05/24
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 (1) Min-Max 10°C - 35°C Relative humidity Min - Max (1) Min-Max 25% - 80%	Sealant Batch No: 112240 Exp Date: 1/11/24 Actuals Temperature: 14°C Humidity: 56%	✓			M. S. da 25/05/24	 25/05/24
08	N/A	Verification of sealant application in regions of roof and sideframe.	Sealant applied in regions of roof and sideframe.	✓			M. S. da 25/05/24	 25/05/24

24

AREA 1



END 2 SEALANT


OPERATOR
(Name & sign):

Leroy 

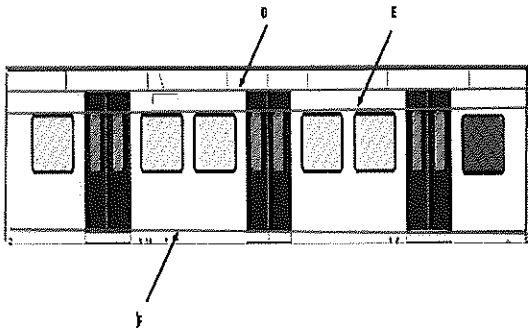
OPERATOR
(Name & sign):

Leroy 

OPERATOR
(Name & sign):

Leroy 

H



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

Operator (Name & sign):

LHS
D,E,F,G,H,I

Operator (Name & sign):

Sihle

Operator (Name & sign):

Ishenolo

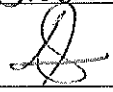
Operator (Name & sign):

Tshenolo

Operator (Name & sign):

Sihle

Operator (Name & sign):



RHS

D,E,F,G,H,I

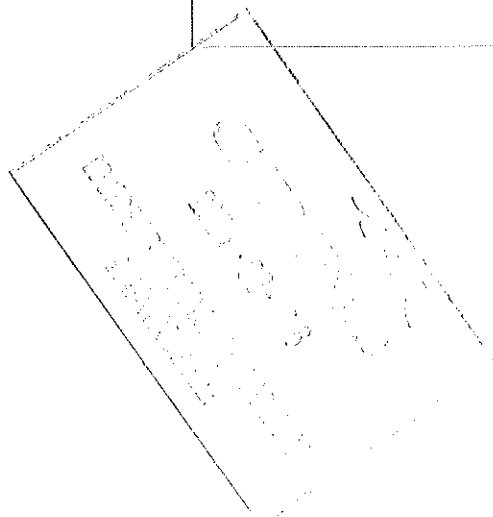
Tshenolo

Sihle



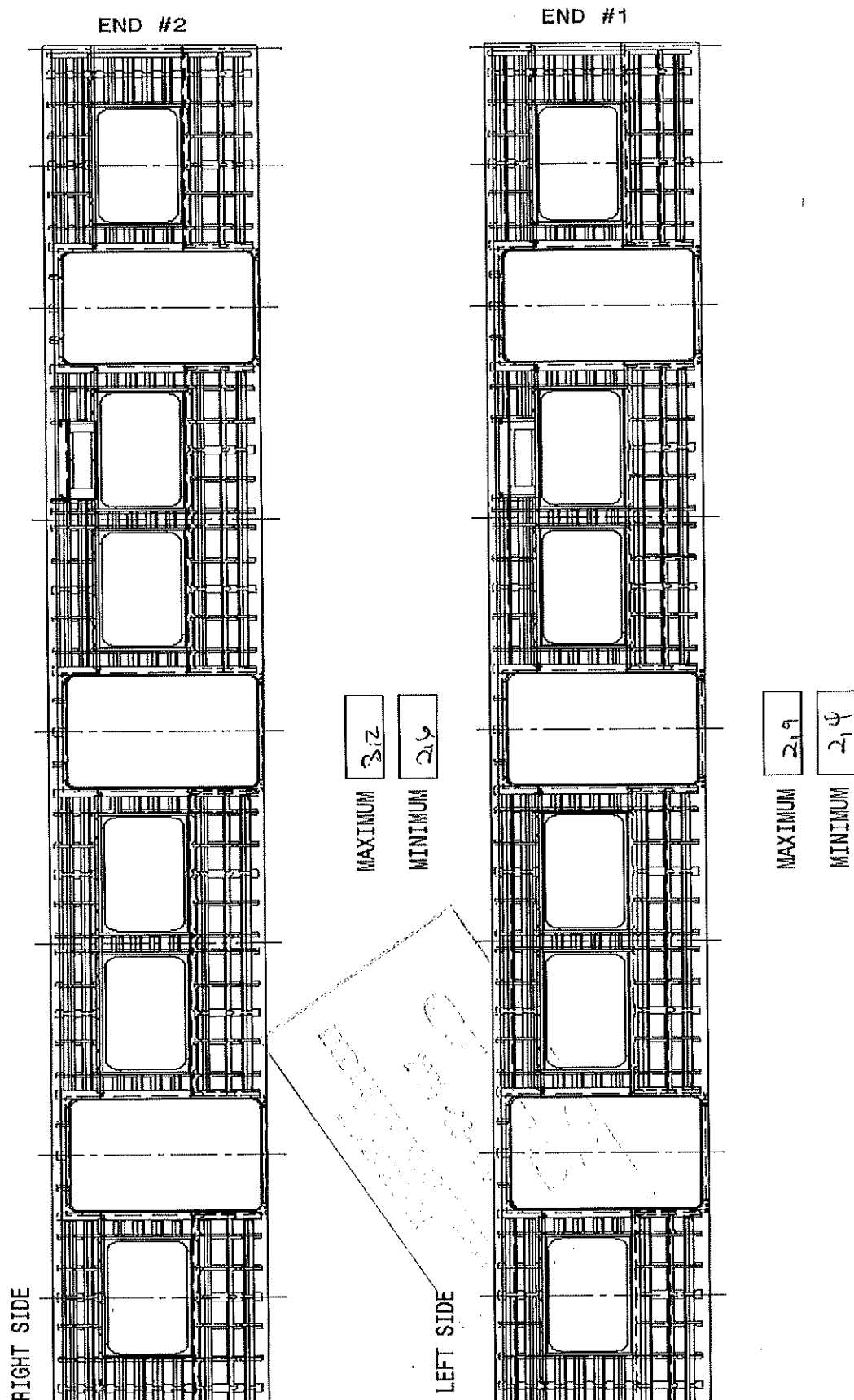
Ishenolo

Tshenolo



Specifications of Details for CBS measurement CB1230

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





CARBODYSHELL M2 ASSEMBLY AA00001374497

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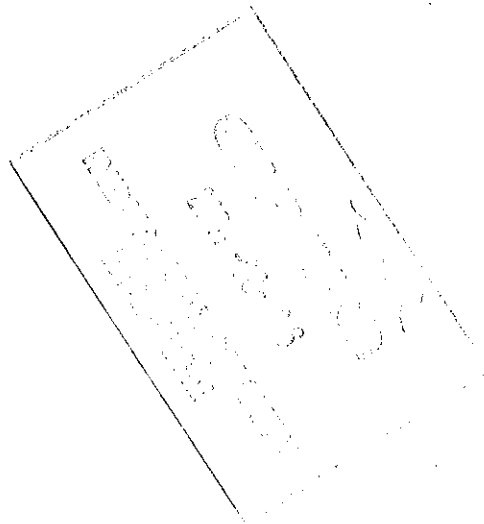
06/11/2023

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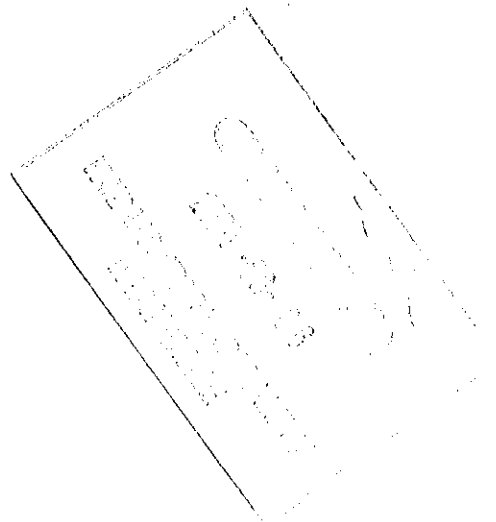
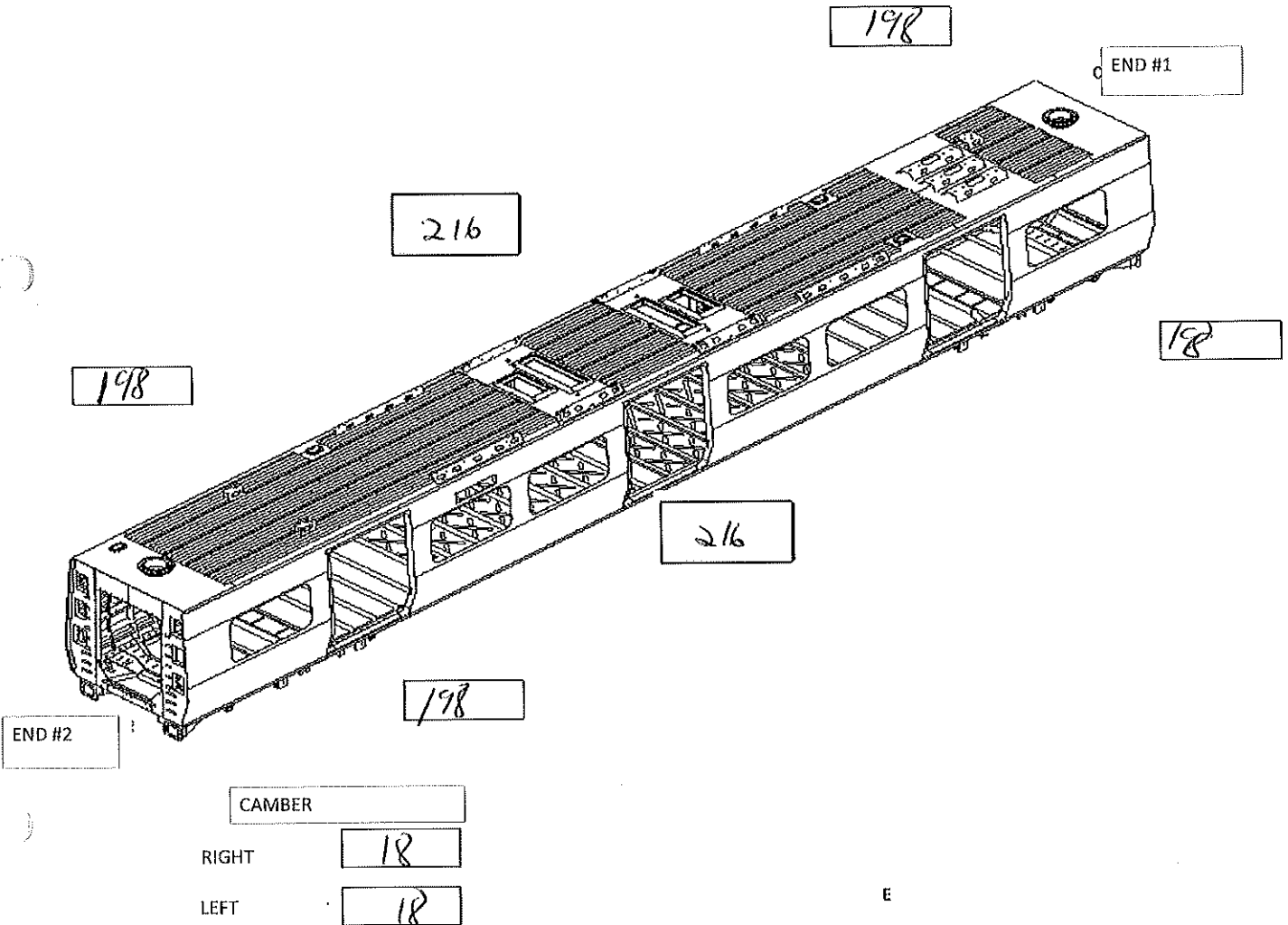
END #1

END #2



Specifications of Details for CBS measurement CB1230

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





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30

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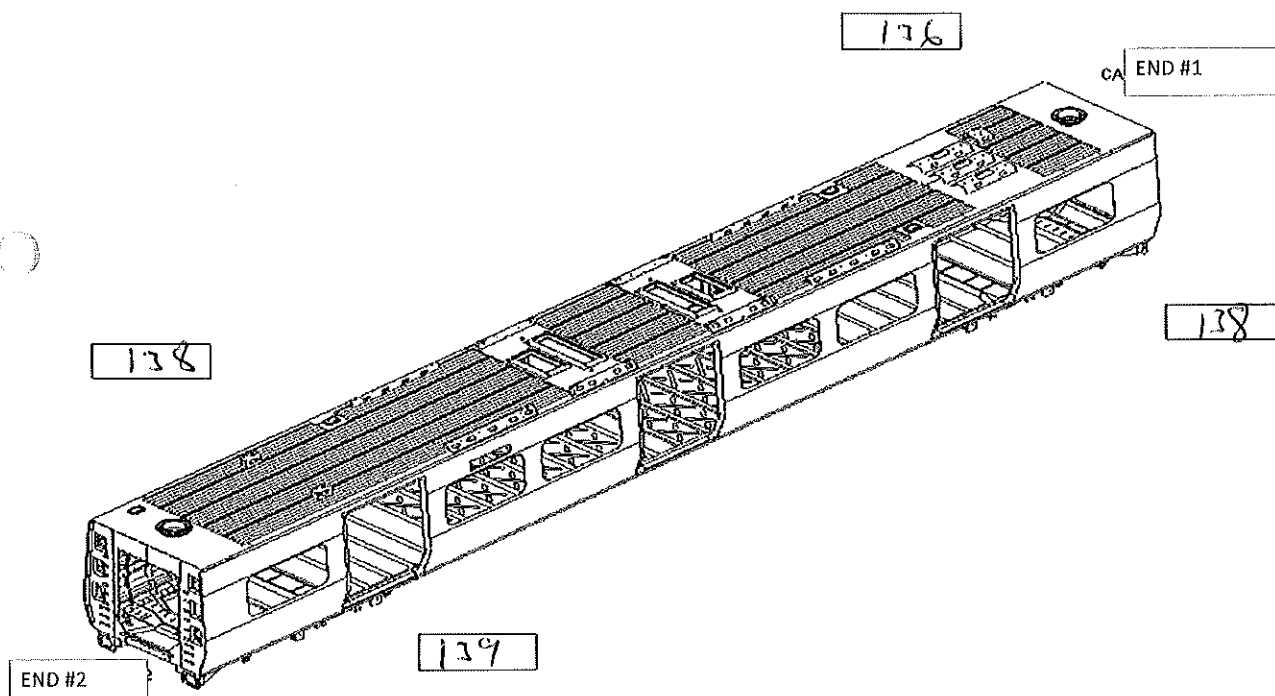
06/11/2023

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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

2

LONGITUDINAL

1

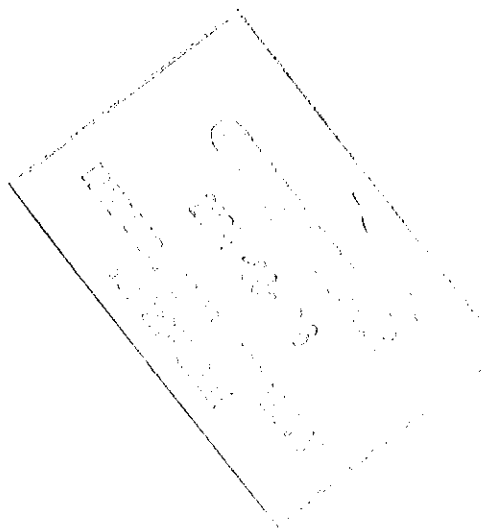
TWIST FOUND ON END 2

TRANVERSE

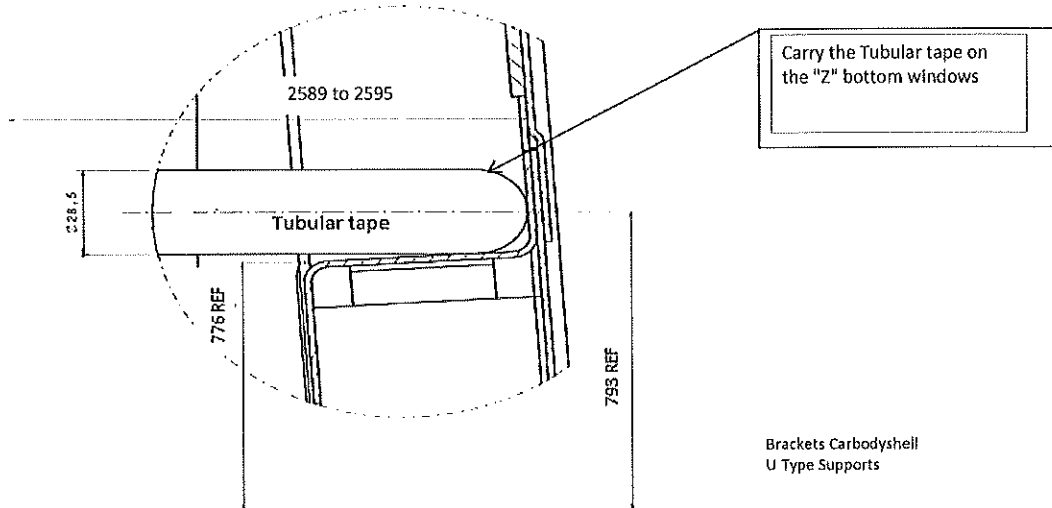
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LONGITUDINAL

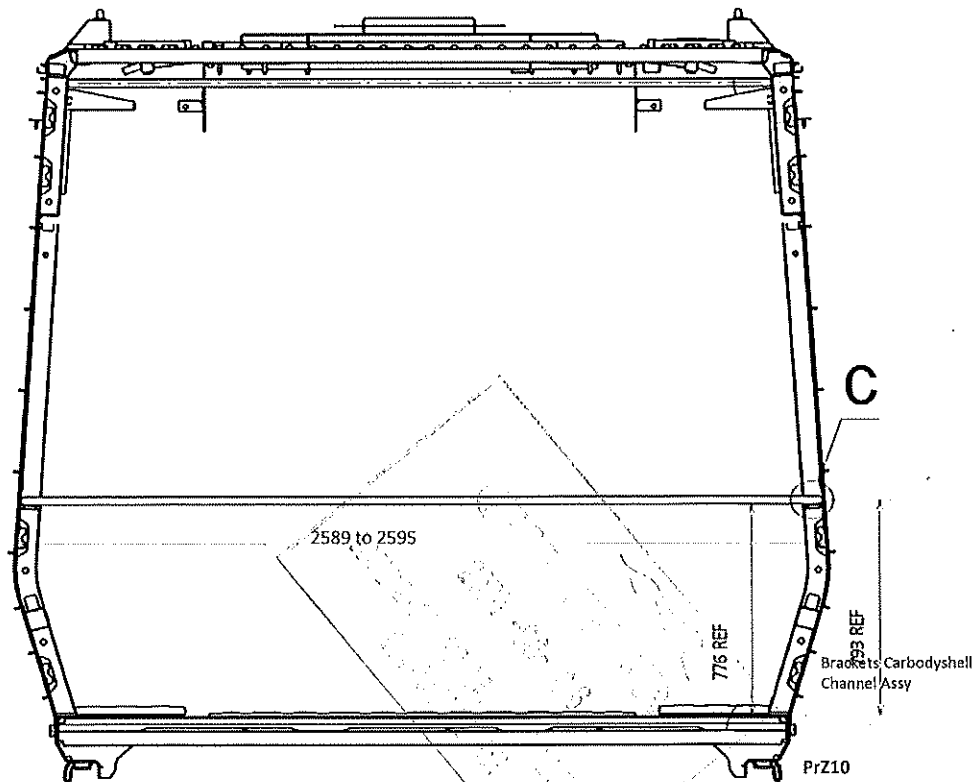
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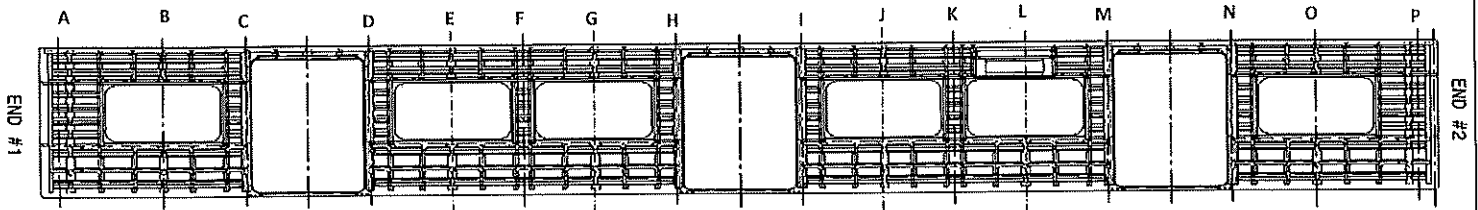
Specifications of Details for CBS measurement CB1230



Detail C

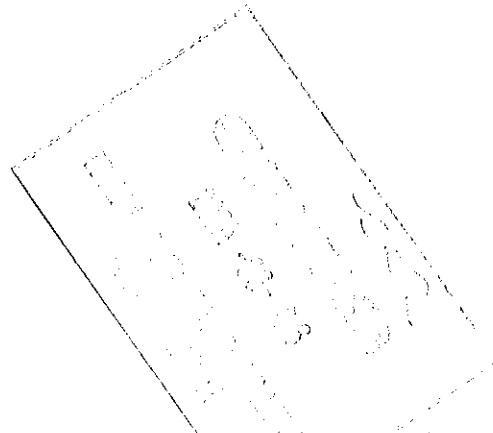
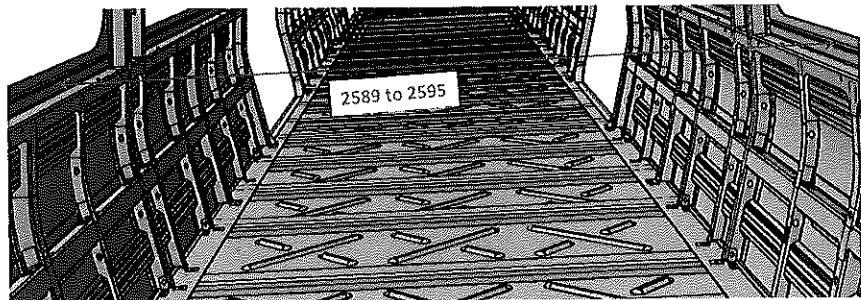


Specifications of Details for CBS measurement CB1230



2589 to 2595mm

A	2595
B	2593
C	2589
D	2588
E	2592
F	2590
G	2593
H	2590
I	2589
J	2594
K	2594
L	2592
M	2593
N	2589
O	2592
P	2596



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:

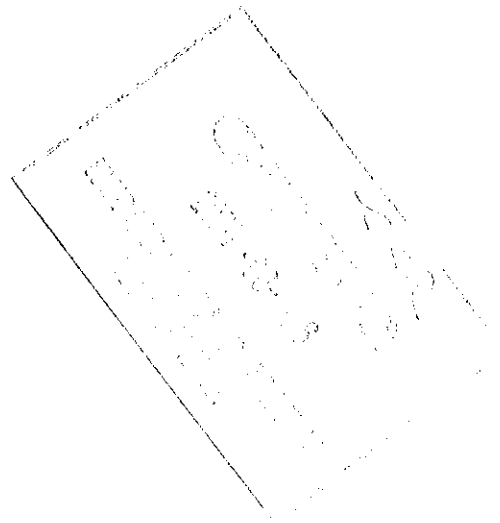
kgoso

WELDER:

mmachapelo

Welda

	CARBODYSHELL M2 ASSEMBLY AA00001374497	Rev.	Project: PRASA
		30	
		Date	
		06/11/2023	SI.CB1230.277.V29





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Rev.
30

Date

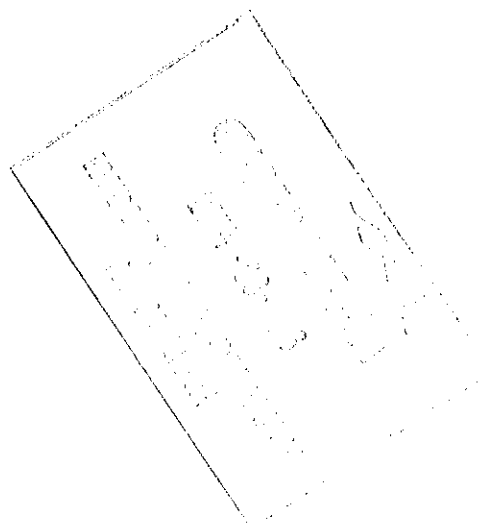
06/11/2023

Project: PRASA

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Dye penetrant test

Dye-penetration test to be performed by quality personnel





CARBODYSHELL M2 ASSEMBLY AA00001374497

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Date
06/11/2023

Project: PRASA

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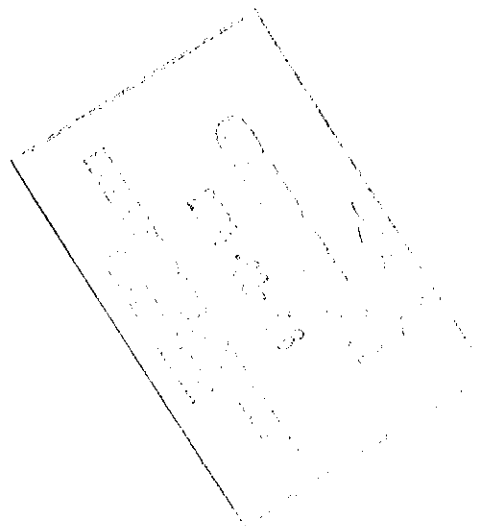
Specifications of Details for CBS measurement


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	NOX	REWORK	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX					



	CARBODYSHELL M2 ASSEMBLY AA00001374497	Rev. 30	Project: PRASA SI.CB1230.277.V29
		Date	
		06/11/2023	

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)	05/05/24	mmethopelo Operations	11/16/24
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	25/05/24	Richmond Industrial Quality	
		NO-GO	There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)		Operations	
			There are non-conformities impact the quality of the product and there is no corrective action defined yet)		Industrial Quality	

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

