
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	M3	M2	M1	TC2		
DTR3000152645	AAD0001241033	Carshell Assembly TC	CB1210	X						PRA.CB1210.DTR3022331 9/3.V25	YES

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	09/04/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	09/04/2018
			CHECKER	Nosizo Pindela	09/04/2018
			COMPILER	Thanyani Mathegu	06/04/2018
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	2018/06/18	MODIFICATION CONTENT	APPROVER	Itumeleng Modiba	2018/06/18
			CHECKER	Nosizo Pindela	2018/06/18
			REVISED BY	Ramokone Motama	2018/06/18
3	2018/12/12	Additional checkpoints	APPROVER	Itumeleng Modiba	2018/12/12
			CHECKER	Nosizo Pindela	2018/12/12
			REVISED BY	Ramokone Motama	2018/12/12
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	2019/11/03	Record D1 and D2 on Self - Inspection	APPROVER	Itumeleng Modiba	2019/11/03
			CHECKER	Nosizo Pindela	2019/11/03
			REVISED BY	Nosizo Pindela	2019/11/03
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	19/04/2020	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	Mathapo Kelebone	
			REVISED BY	Mohlampe Amogelang	
28	07/11/2023	Addition of welding traceability	APPROVER	Ngobeni Tyson	07/11/2023
			CHECKER	Andani Muthelo	
			REVISED BY	Ntokoze Zwane	

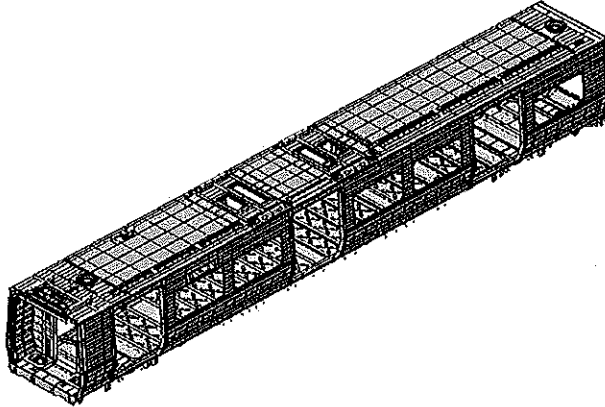
TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
233	TC2	Relongo 482833	14/06/24	SI.CB1210.322.V28	16

	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB1210.322.V28
		Date: 07/11/2023	

Car: TC1 & TC2	NCR:	Work station: CB1210
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Safety Related



I - Documentation and Instruments

I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	TC	MT	MS	MS	MA	TC						
DTR30223319/3						X			✓		N/A	

I.2 - Instruments Control


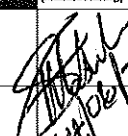
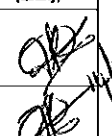
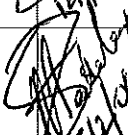
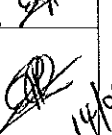
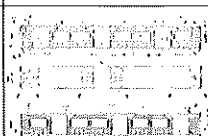
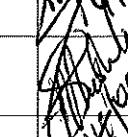
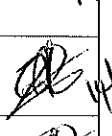

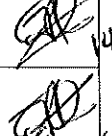
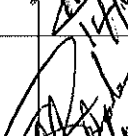
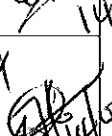

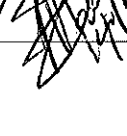
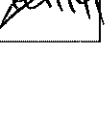


Monitoring and Measuring Instrument Control - Used for Special Process

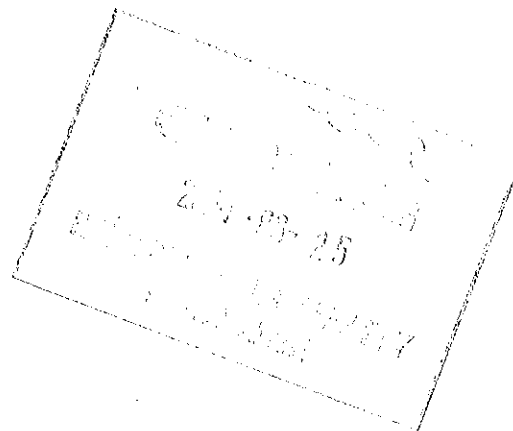
Instruments	Validation	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Tubular	32823-2	16/03/25	✓			
Lease tape	1251N25924	08/01/25	✓			
30m tape	4187P0102	18/11/24	✓			


1.3 Consumables

Welding Consumable Control - Used for Special Process

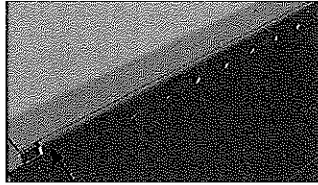
Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308LSI	314018-74077	Mig	✓			
ER 308 L	299687-7322	Tig	✓			

			Rev. V28	Project: PRASA		
DTR30223319/3 Carshell Assembly TC			Date- 07/11/2023	SI.CB1210.322.V28		
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)	DT00000284980	✓	 14/06/24	 14/06/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓	 14/06/24	 14/06/24
03		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓	 14/06/24	 14/06/24
04	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓	 14/06/24	 14/06/24
05	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 14/06/24	 14/06/24
06		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 14/06/24	 14/06/24
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-01B.	As the welding procedure IND-SAL-WMS-01B and DTD0000210658	✓	 14/06/24	 14/06/24



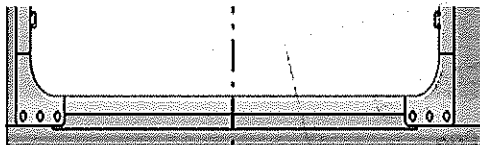
	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB1210.322.V28
		Date- 07/11/2023	
Welder traceability			

Roof ring welds




<u>LHS</u>	
Boiler maker (Name & Sign): <u>Cerald</u>	Welder (Name & Sign): <u>Thabang</u>
<u>RHS</u>	
Boiler maker (Name & Sign): <u>Tim Redder</u>	Welder (Name & Sign): <u>Thabang</u>

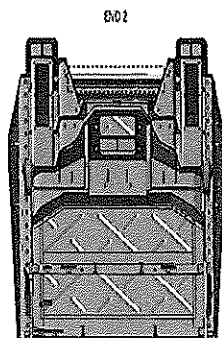
Door ring welds



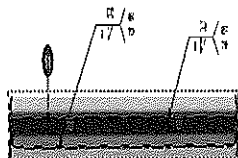
<p style="text-align: center;"><u>LHS</u></p> <p>Boiler maker (Name & Sign): <u>Cerald</u></p> <p>Welder (Name & Sign): <u>Cerald</u></p>	<p style="text-align: center;"><u>RHS</u></p> <p>Boiler maker (Name & Sign): <u>MITHOKUZISI</u></p> <p>Welder (Name & Sign): <u>MITHOKUZISI</u></p>
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	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA
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EUF Reinforcement Plates



Underneath the CAR



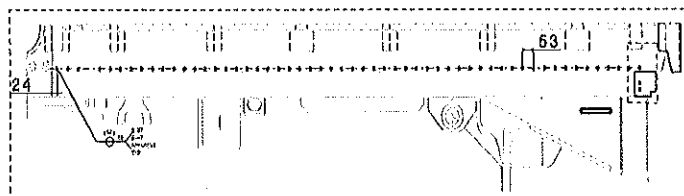
END 2

Boiler maker (Name & Sign):

Malatjie

Welder (Name & Sign):

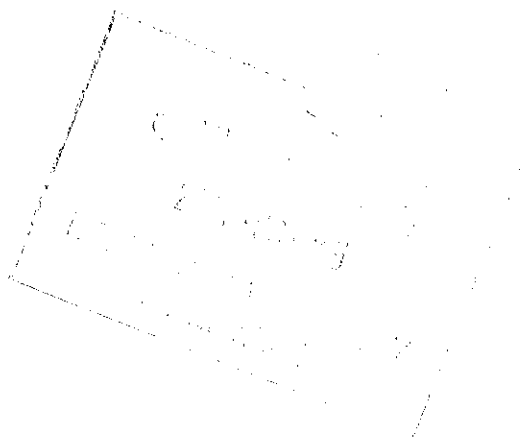
Gibb




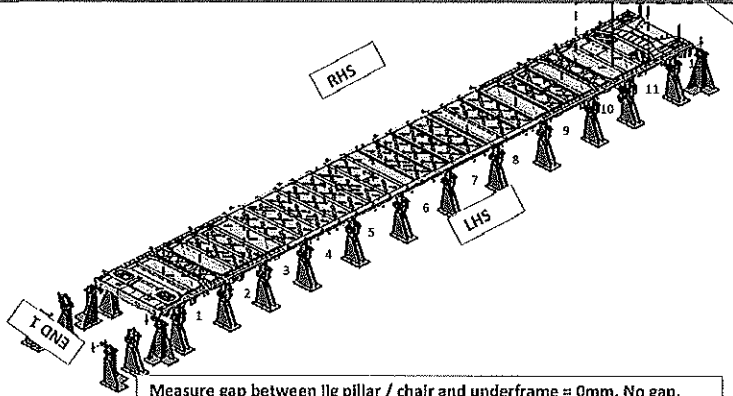
FEDOLI

Operator:

LAWRENCE J. J. J.



	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB1210.322.V28
		Date: 07/11/2023	
Specifications of Details for CBS measurement			



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

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


After Loading Underframe and Clamping.

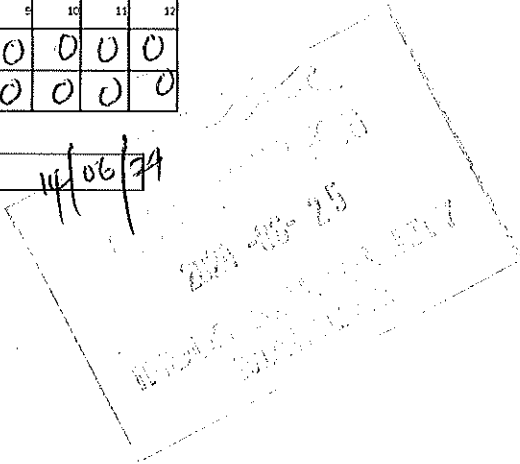
	1	2	3	4	5	6	7	8	9	10	11	12
Left Hand Side	0	0	0	0	0	0	0	0	0	0	0	0
Right Hand Side	0	0	0	0	0	0	0	0	0	0	0	0

Signature Operations:  Date: 14/06/24

After Welding.

	1	2	3	4	5	6	7	8	9	10	11	12
Left Hand Side	0	0	0	0	0	0	0	0	0	0	0	0
Right Hand Side	0	0	0	0	0	0	0	0	0	0	0	0

Signature Industrial Quality:  Date: 14/06/24





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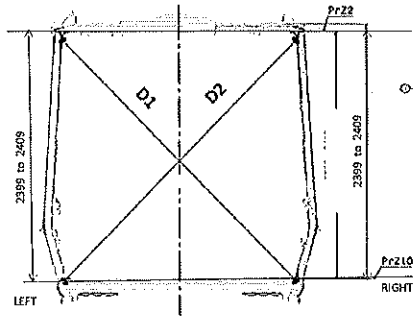
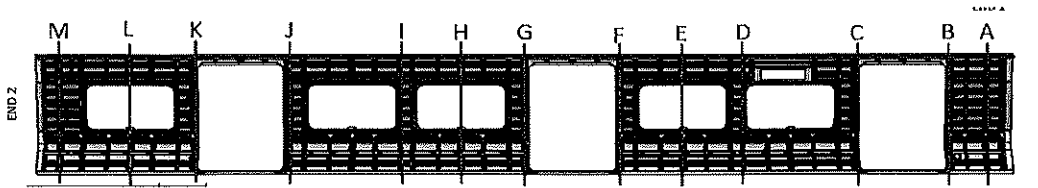
Date-

07/11/2023

Project: PRASA

SI.CB1210.322.V28

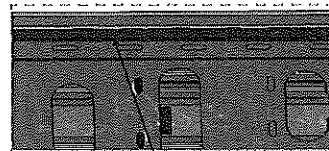
Specifications of Details for CBS measurement



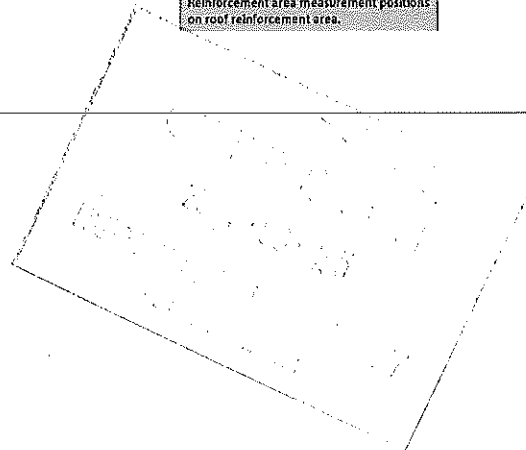
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.



Reinforcement area measurement positions on roof reinforcement area.





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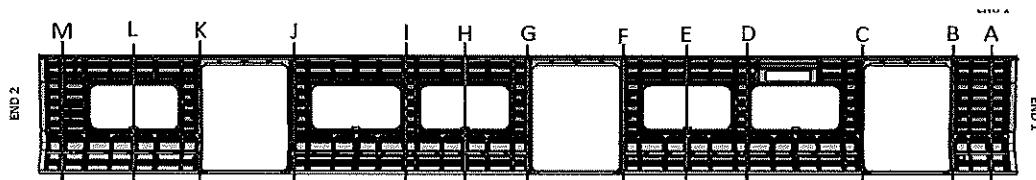
Date-

07/11/2023

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Specifications of Details for CBS measurement

BEFORE WELDING

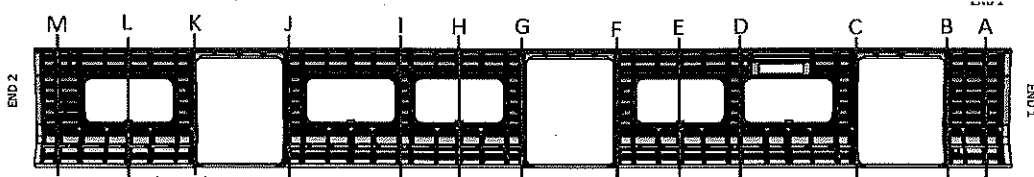


PME: The difference in Height values measured on the LHS and RHS should be $\leq 2\text{MM}$ on each point.

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3265	3266	1	2405	2406	1
B	3264	3266	2	2405	2405	0
C	3265	3264	1	2406	2406	0
D	3265	3265	0	2404	2405	1
E	3265	3267	2	2406	2404	2
F	3264	3265	1	2404	2405	1
G	3263	3265	2	2405	2405	0
H	3266	3267	1	2406	2405	1
I	3268	3267	1	2404	2403	1
J	3266	3266	0	2403	2405	2
K	3265	3266	1	2405	2406	1
L	3264	3267	3	2403	2405	2
M	3268	3267	1	2407	2408	1


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Specifications of Details for CBS measurement			

AFTER WELDING



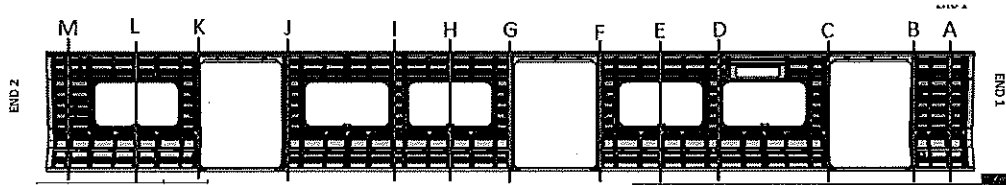
PME: The difference in Height values measured on the LHS and RHS should be $\leq 2\text{MM}$ on each point.

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3266	3265	1	2405	2404	1
B	3291	3293	2	2404	2405	1
C	3293	3293	0	2404	2404	0
D	3266	3266	0	2406	2405	1
E	3264	3265	1	2403	2403	2
F	3295	3297	2	2404	2404	0
G	3294	3296	2	2405	2406	1
H	3265	3264	1	2405	2405	0
I	3268	3265	1	2403	2405	2
J	3293	3295	2	2403	2404	1
K	3294	3295	1	2404	2405	1
L	3265	3266	1	2405	2404	2
M	3298	3296	2	2405	2407	2

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CBS measurement

BEFORE WELDING



2270 to 2276

2268 a 2274

A 2274

B 2269

C 2271

D 2278

E 2276

F 2272

G 2270

H 2275

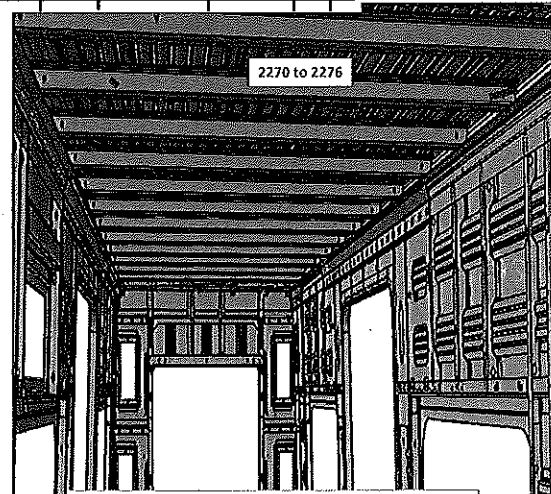
I 2276

J 2273

K 2274

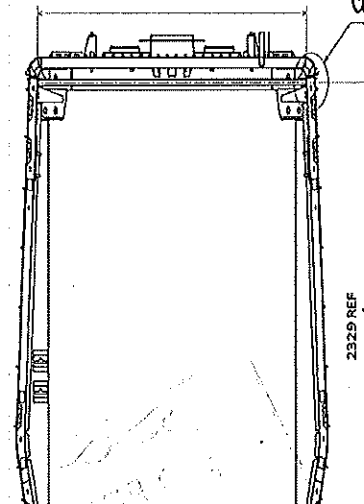
L 2271

M 2269



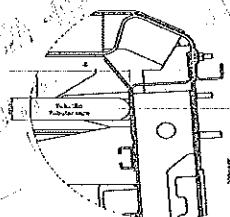
Do not consider reinforcement (Take measurements top area of zee profile

2265 to 2271



2329 REF

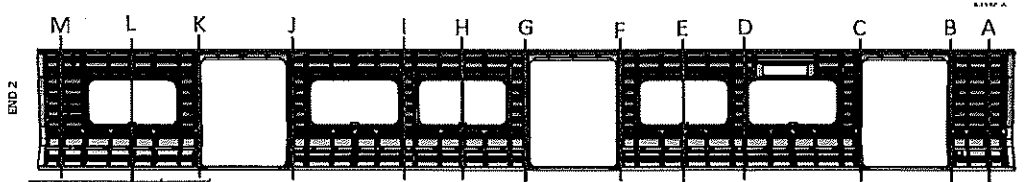
2265 to 2271



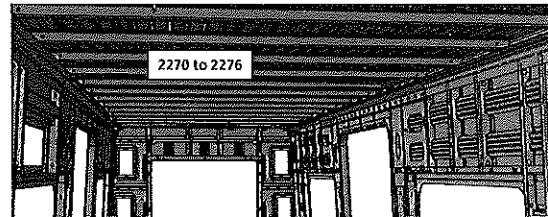
Detail 0
Consider in the reinforcement plate

Specifications of Details for CBS measurement

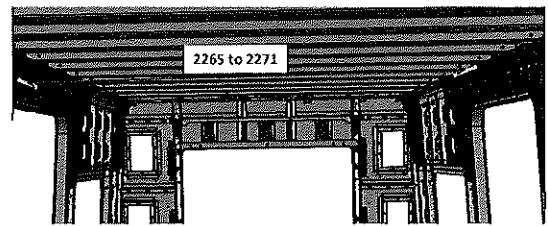
AFTER WELDING



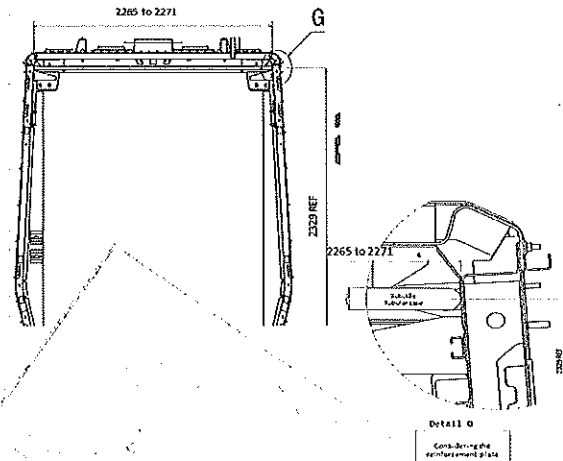
	2265 to 2271	2270 to 2276
A	N/A	2276
B	2270	N/A
C	2269	N/A
D	N/A	2275
E	N/A	2273
F	2268	N/A
G	2271	N/A
H	N/A	2273
I	N/A	2276
J	2268	N/A
K	2270	N/A
L	N/A	2274
M	2268	N/A



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

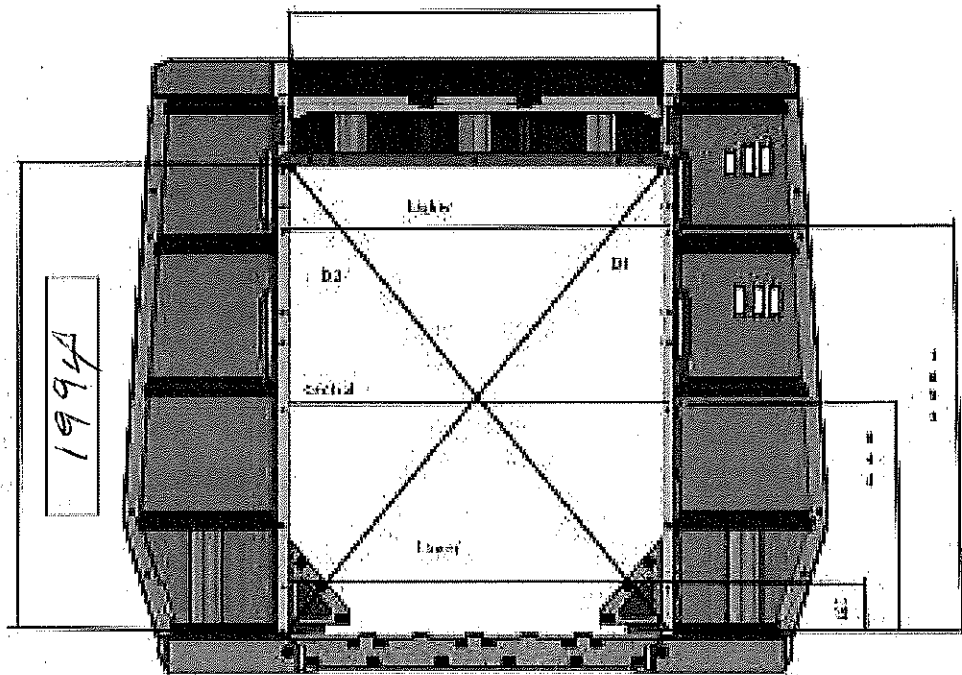


Take measurement close to radius (considering reinforcement)



Specifications of Details for CBS measurement

Endframe 2



11000 1200 mm

DIAGONAL DIFFERENCE D1-D2 = 30mm

Upper Dimension

1362

D1

2416

Central Dimension

1381

D2

2415

Lower Dimension

1381

D1-D2

1

Handwritten notes and stamps at the bottom right of the page, including a date stamp '2023-07-11' and a signature.

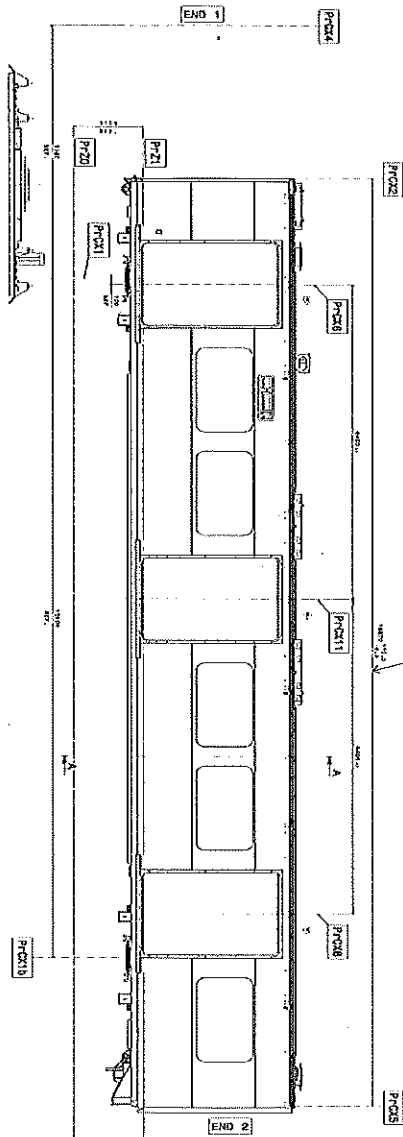


DTR30223319/3 Carshell Assembly TC

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Date-
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Specifications of Details for CBS measurement



1A

LEFT SIDE

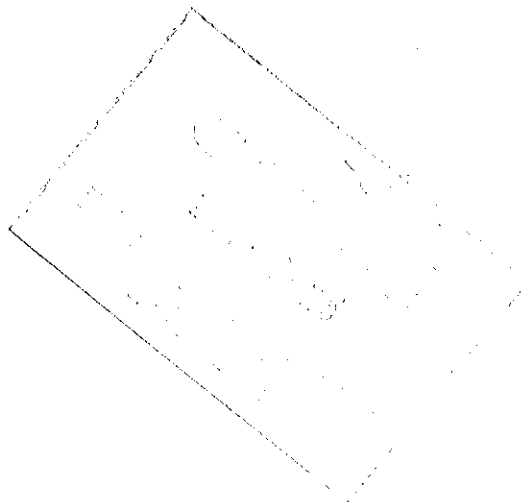
	LEFT SIDE	
	SPECIFICATION SIZE	ACTUAL SIZE
1A	18870 $\begin{matrix} +10.5 \\ -4.5 \end{matrix}$	18867


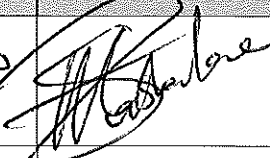

RIGHT SIDE

	RIGHT SIDE	
	SPECIFICATION SIZE	ACTUAL SIZE
1A	18870 $\begin{matrix} +10.5 \\ -4.5 \end{matrix}$	18867

Dye penetrant test

Dye-penetration test to be performed by quality personnel




		DTR30223319/3 Carshell Assembly TC		Rev. V28 Date- 07/11/2023	Project: PRASA SI.CB1210.322.V28	
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!	14/06/24	Operations		
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.	14/06/24	Amo 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!		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	Action	Responsible	Due date	Status	

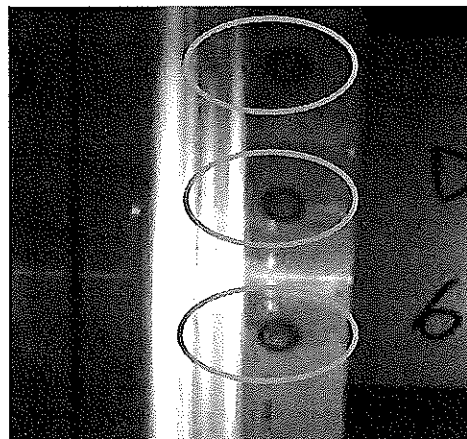
Operations


Quality



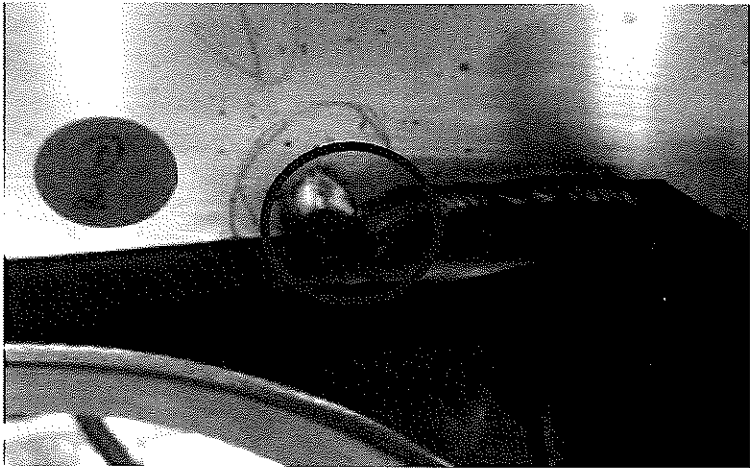
	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB1210.322.V28
		Date- 07/11/2023	


ANNEXURE A: Spot Welding Quality Acceptance Standard



	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB1210.322.V28
		Date- 07/11/2023	

ANNEXURE B: Arc Welding Quality Acceptance Standard

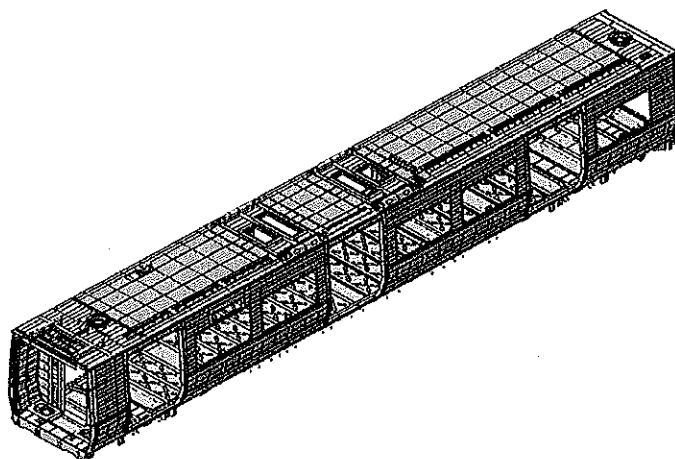


	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

Carro Car:	TC1, TC2	NCR:	Work station:	CB2220
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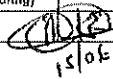


Safety Related





I - Documentation and Instruments

I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	TC1	M1	M2	M3	M4	TC2						
DTR30223319/2							29	28/10/2023	X		N/A	 15/06/24


I.2 - Instruments Control


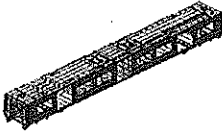
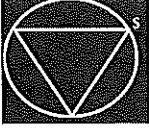
Monitoring and Measuring Instrument Control - Used for Special Process





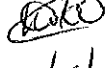
Instruments	Validation	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Tubula	32823-2	15/03/2024-15/03/2025	X		LSB 15/06/2024	 15/06/24
Measuring Tape	SiB7110432	17/04/2024-17/04/2025	X		LSB 15/06/2024	 15/06/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Welding 308 LS1	F221880	Mig	X		LSB 15/06/2024	 15/06/24

		DTR30223319/2 Carshell Assembly TC		Rev. 29 Date- 28/10/2023	Project: PRASA SI.CB2220.323.V29		
II - Control Activities of Production							
II.1 - Items to check							
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Not OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB2220.DTR30225487/2 Verification of fitment for all reinforcement brackets.	DTR30223319/2	✓		15/06/2024 LWP	15/06/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		15/06/2024 LWP	15/06/24
03	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓		15/06/2024 LWP	15/06/24
04	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		15/06/2024 LWP	15/06/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		15/06/2024 LWP	15/06/24
06	N/A	Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		15/06/2024 LWP	15/06/24
07		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	✓		15/06/2024 LWP	15/06/24
08	N/A	<p>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:</p> <p>Temperature Min - Max (I) Min-Max 10°C - 35°C</p> <p>Relative humidity Min - Max (I) 25% - 60%</p>	<p>Sealant Batch No. 13497 Exp Date: 13/06/24</p> <p>Actuals Temperature: 10 Humidity: 56</p>			15/06/24	15/06/24

		DTR30223319/2 Carshell Assembly TC		Rev. 29	Project: PRASA			
				Date- 28/10/2023	SI.CB2220.323.V29			
09	NA	Verification of sealant application in certain regions in the drawing.	AAD0001241033	✓			 15/06/24	 15/06/24
10	NA	Verification of sealant application on the roof and sidewall finishers	Sealant must be: -Applied straight and even (1.5mm) -Free of gaps, cracks, damage and debris (flashes, dirt, dust) Refer to Annexure B	✓			 15/06/24	 15/06/24

2024-06-25



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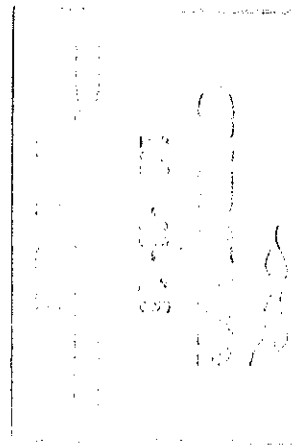
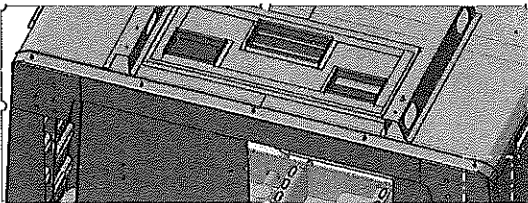
END 1
SEALANT


OPERATOR
(Name & sign):

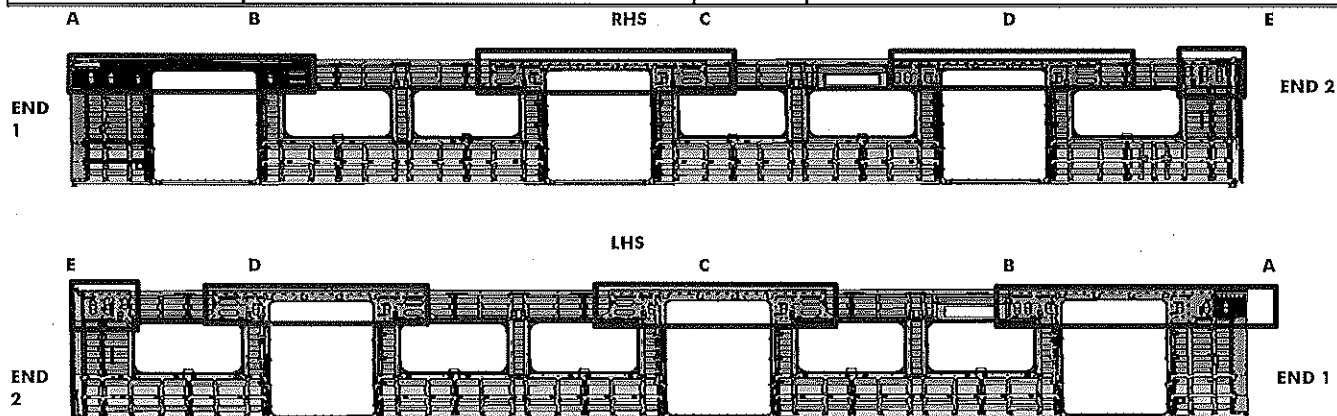
Mthobane: *[Signature]*

OPERATOR
(Name & sign):


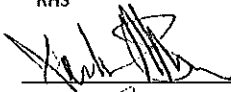

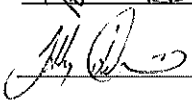
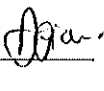
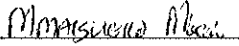
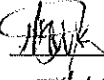

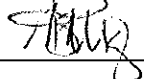

Mthobane: *[Signature]*

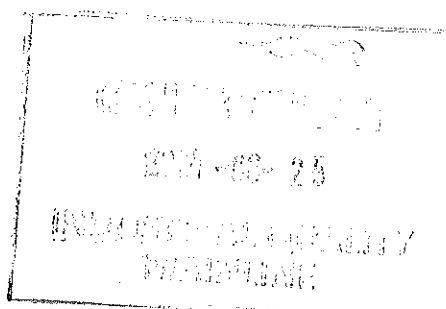



	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
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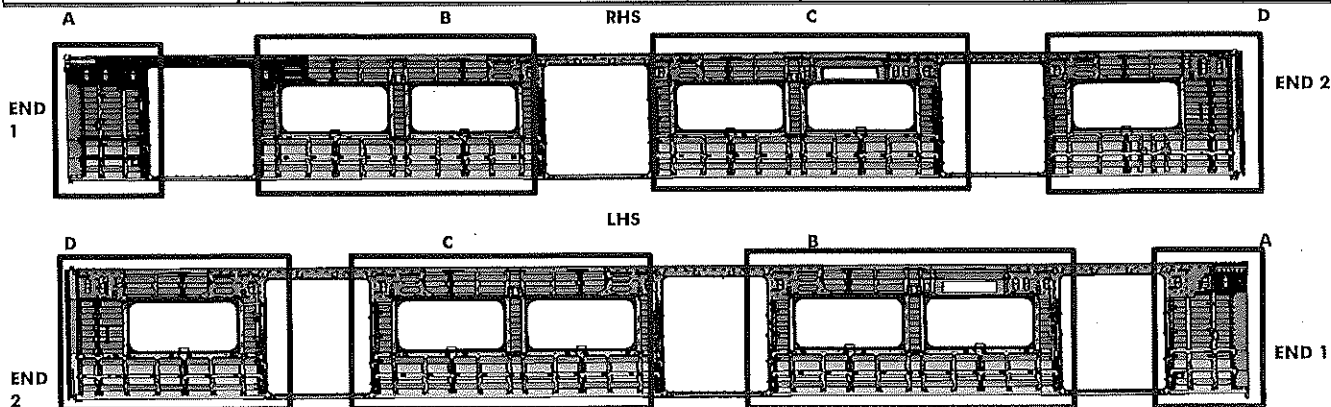


REINFORCEMENT WELDING

AREA	LHS	RHS
A	Operator (Name&sign): <u></u>	<u></u>
B	Operator (Name&sign): <u>LINDO </u>	<u></u>
C	Operator (Name&sign): <u>Notedung </u>	<u>Monsieur Mba </u>
D	Operator (Name&sign): <u></u>	<u></u>
E	Operator (Name&sign): <u></u>	<u></u>




	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
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BRACKETING

C-RAILS:	Operator:	INSTALLATION <u>Mthokozisi</u>
	Operator:	
DOOR MECHANISMS:	Operator:	<u>Mthokozisi</u>
	Operator:	
TAPPING PADS	Operator:	<u>THULANI</u>
	Operator:	
SEAT & LUGGAGE BRACKETS:	Operator:	INSTALLATION & VERIFICATION <u>Lemi</u>
	Operator:	
SEAT BRACKETS VERIFICATION:	Operator:	<u>Lemi</u>
	Operator:	

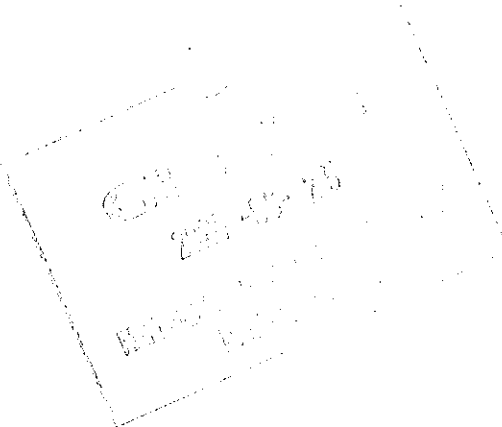
AREA	WELDING	
	LHS	RHS
A (Seat brackets)	Operator (Name&sign): <u>N/A</u>	Operator (Name&sign): <u>N/A</u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign): <u>[Signature]</u>	Operator (Name&sign): <u>[Signature]</u>
B (Seat brackets)	Operator (Name&sign): <u>S. MATHAN</u>	Operator (Name&sign): <u>S. MATHAN</u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign): <u>S. MATHAN</u>	Operator (Name&sign): <u>S. MATHAN</u>
C (Seat brackets)	Operator (Name&sign): <u>Sibiga</u>	Operator (Name&sign): <u>THULANI</u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign): <u>Sibiga</u>	Operator (Name&sign): <u>THULANI</u>
D (Seat brackets)	Operator (Name&sign): <u>Sibiga</u>	Operator (Name&sign): <u>THULANI</u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign): <u>Sibiga</u>	Operator (Name&sign): <u>THULANI</u>

	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

ENDS

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

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





DTR30223319/2 Carshell Assembly TC

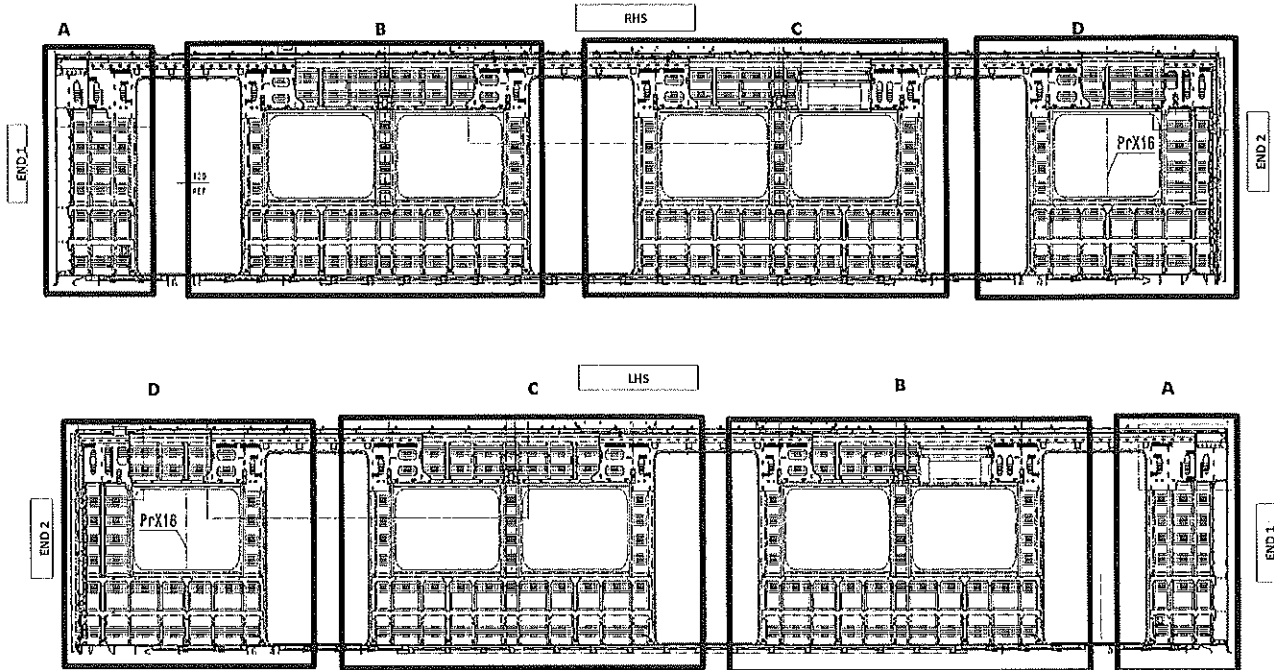
Rev.
29

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28/10/2023

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TC BRACKET INSTALLATION



QUANTITIES (TC)

RHS

	SECTION	QUANTITY	OK	NOK
C-RAILS	A	4	✓	
	B	4	✓	
	C	8	✓	
	D	12	✓	
SEAT BRACKETS	A	0	✓	
	B	21	✓	
	C	21	✓	
	D	13	✓	
EARTH BUSH	A	1	✓	
	B	4	✓	
	C	5	✓	
	D	4	✓	

ROOF ENDS:

CRAILS 2 OFF END 2
EARTH BUSH 4 OFF END 2

VERIFICATION BY:

LHS

	SECTION	QUANTITY	OK	NOK
C-RAILS	A	4	✓	
	B	8	✓	
	C	4	✓	
	D	6	✓	
SEAT BRACKETS	A	0	✓	
	B	21	✓	
	C	21	✓	
	D	13	✓	
EARTH BUSH	A	1	✓	
	B	4	✓	
	C	4	✓	
	D	2	✓	

ROOF ENDS:

CRAILS 2 OFF END 2
EARTH BUSH 4 OFF END 2

VERIFICATION BY:



DTR30223319/2 Carshell Assembly TC

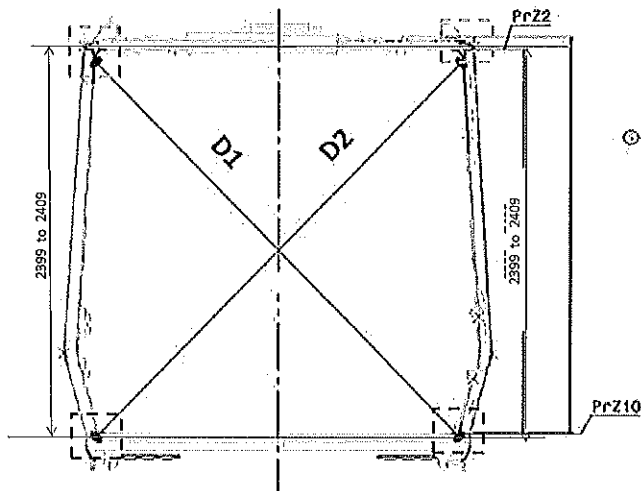
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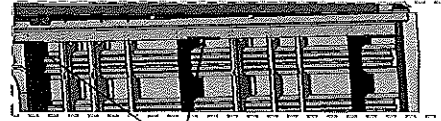
Date-

SI.CB2220.323.V29

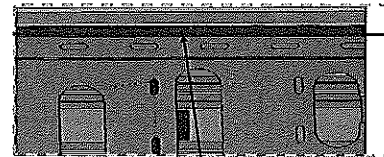
28/10/2023



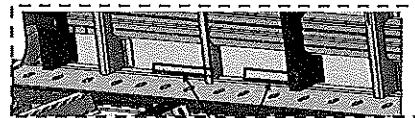
Take measurement close to radius



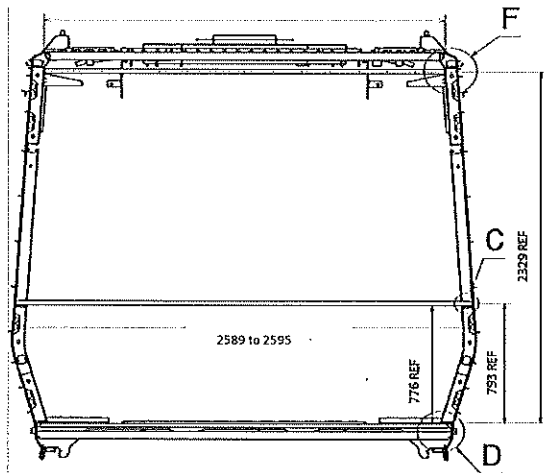
Measurement positions on roof rail and sidewall omega corner.



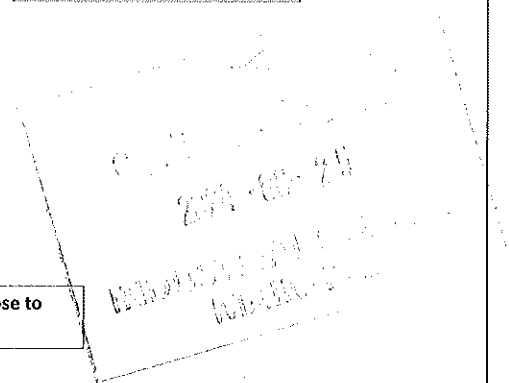
Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.



Take measurement close to radius





DTR30223319/2 Carshell Assembly TC

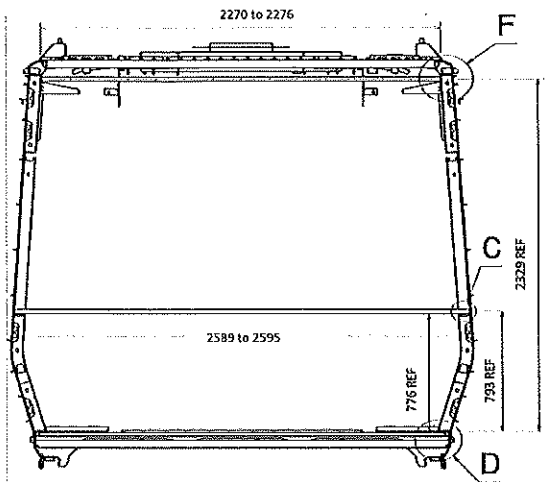
Rev.
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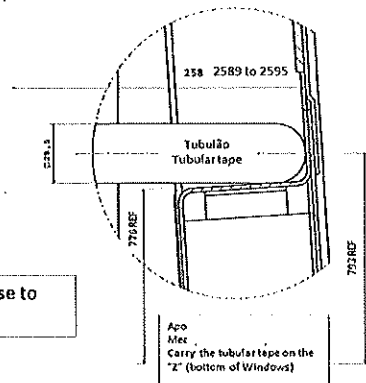
Date-

SI.CB2220.323.V29

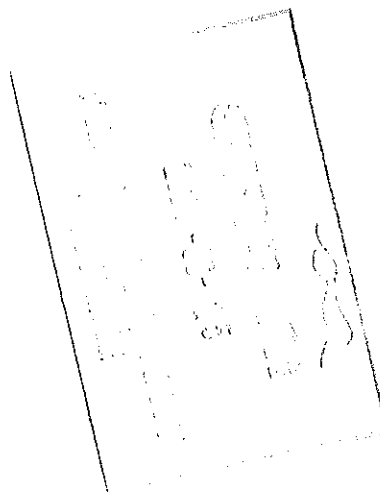
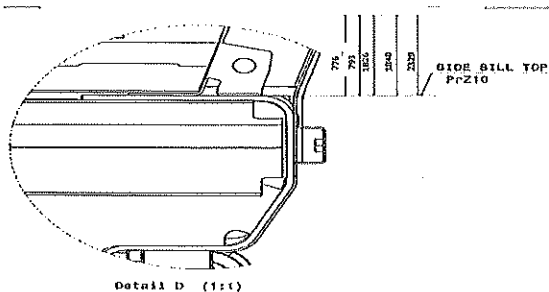
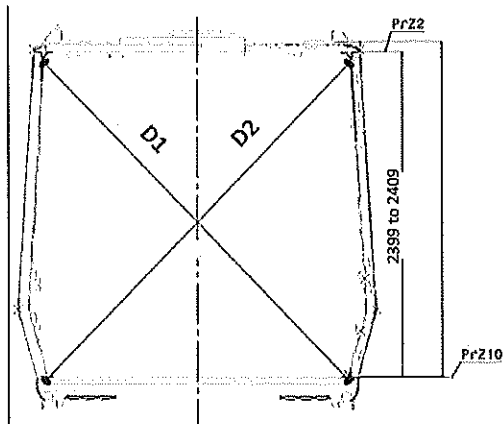
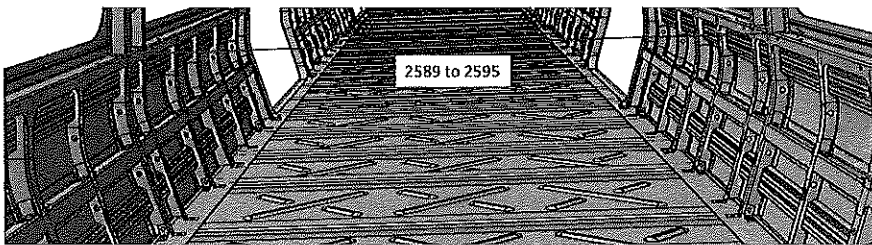
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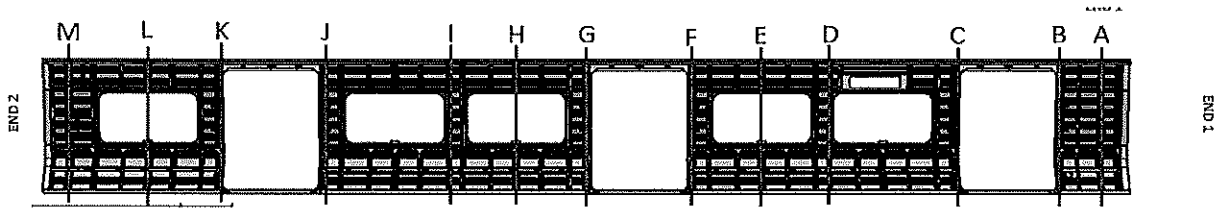


Take measurement close to
radius



Detail C

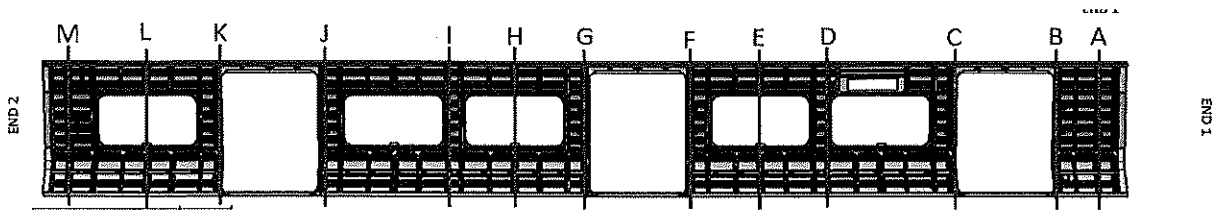




BEFORE WELDING


	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3297	3298	1	
B	3294	3296	2	
C	3292	3296	4	
D	3264	3265	1	
E	3266	3263	3	
F	3296	3291	5	
G	3296	3296	0	
H	3263	3266	3	
I	3262	3266	4	
J	3298	3294	4	
K	3298	3293	5	
L	3260	3266	0	
M	3296	3296	0	

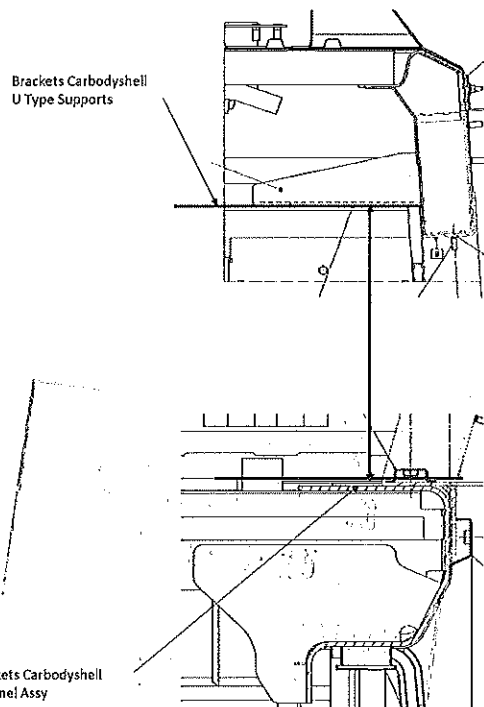
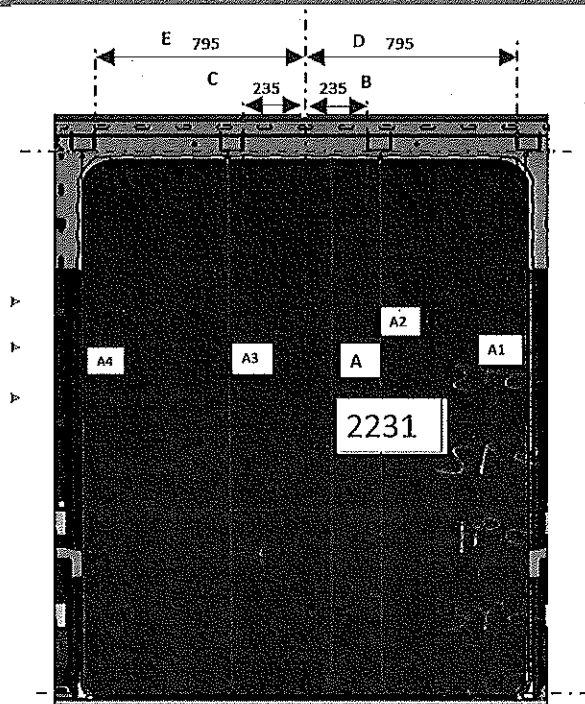
2023-09-25
 223-03-25
 E. BOUTIN
 MANAGER



AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3292	3293	1	2593
B	3294	3296	2	2592
C	3291	3292	5	2591
D	3268	3265	3	2592
E	3266	3261	5	3292
F	3296	3291	5	2591
G	3297	3293	4	2595
H	3266	3261	5	2594
I	3262	3267	5	2595
J	3295	3295	0	2593
K	3295	3298	3	2592
L	3265	3266	1	2595
M	3297	3295	2	2595

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		Date-	
		28/10/2023	
Specifications of Details for CBS measurement			



DOOR 1 - LHS		
	VALUE	ACTUAL
A1	2230 to 2232	2231
A2	2230 to 2232	2232
A3	2230 to 2232	2231
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	2230
A3	2230 to 2232	2231
A4	2230 to 2232	2230
B	234 to 236	234
C	234 to 236	234
D	794 to 796	794
E	794 to 796	796

DOOR 3 - LHS		
	VALUE	ACTUAL
A1	2230 to 2232	2231
A2	2230 to 2232	2230
A3	2230 to 2232	2231
A4	2230 to 2232	2230
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	795

DOOR 1 - RHS		
	VALUE	ACTUAL
A1	2230 to 2232	2231
A2	2230 to 2232	2232
A3	2230 to 2232	2231
A4	2230 to 2232	2231
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	795

DOOR 2 - RHS		
	VALUE	ACTUAL
A1	2230 to 2232	2231
A2	2230 to 2232	2230
A3	2230 to 2232	2231
A4	2230 to 2232	2230
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	795

DOOR 3 - RHS		
	VALUE	ACTUAL
A1	2230 to 2232	2231
A2	2230 to 2232	2232
A3	2230 to 2232	2231
A4	2230 to 2232	2231
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	795



DTR30223319/2 Carshell Assembly TC

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29

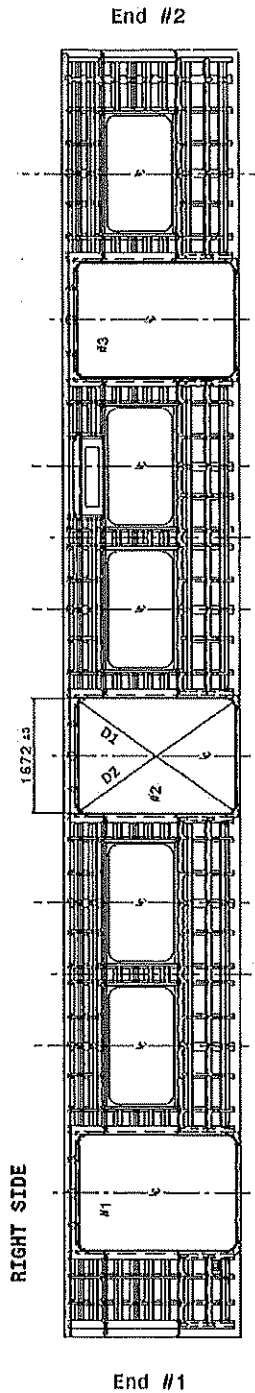
Project: PRASA

Date-

SI.CB2220.323.V29

28/10/2023

Specifications of Details for CBS measurement

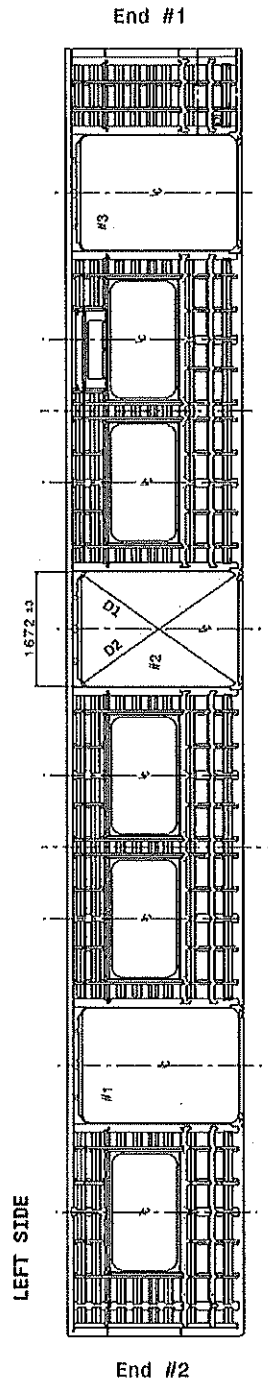


Doors diagonal D1-D2 maximum difference ≤4mm

	#1	#2	#3
D1	2748	2748	2748
D2	2746	2747	2749
D1-D2	2	2	1

Doors Length - 1672 ±3mm

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



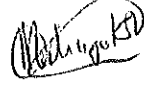


Diagonal de montac - diferença D1-D2 <4mm

	#1	#2	#3
D1	2747	2748	2748
D2	2749	2749	2746
D1-D2	2	1	2

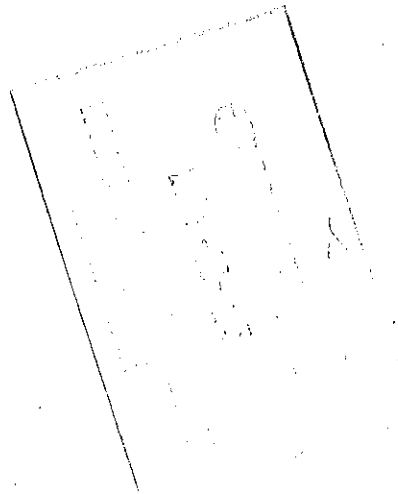
Vão de Portas - 1672 ±3mm

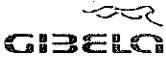
	#1	#2	#3
DIMENSÃO SUPERIOR	1671	1672	1672
HIGHER DIMENSION	1672	1672	1671
CENTRAL DIMENSION	1671	1671	1672
LOWER DIMENSION	1671	1671	1672

	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.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!	15/06/2024	Levi	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	15/06/24	Kelebone	
	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	Action	Responsble	Due date	Status

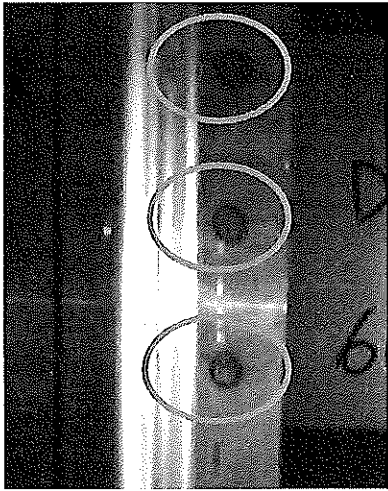
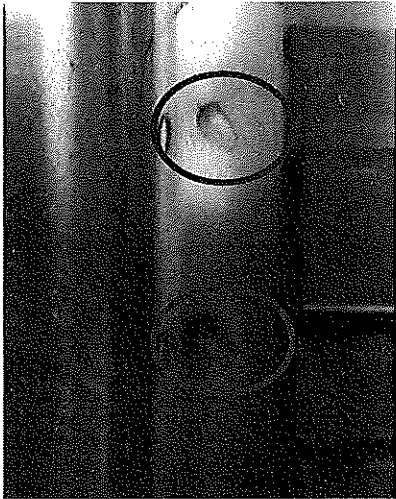
Operations


Quality



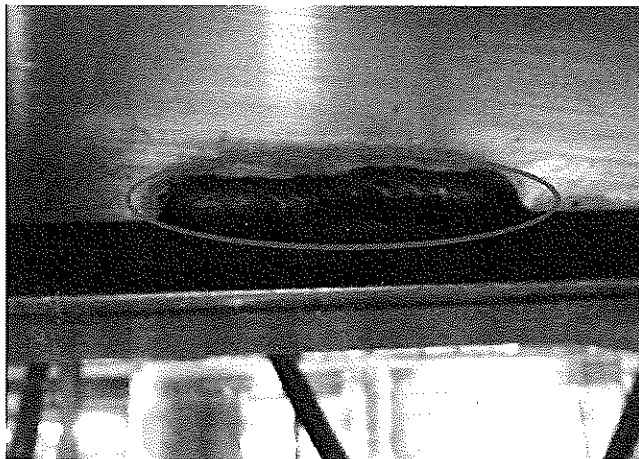
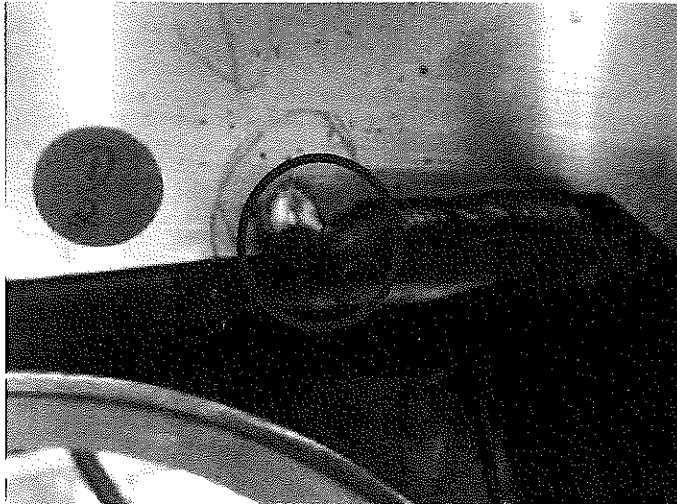
	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	


ANNEXURE A: Spot Welding Quality Acceptance Standard



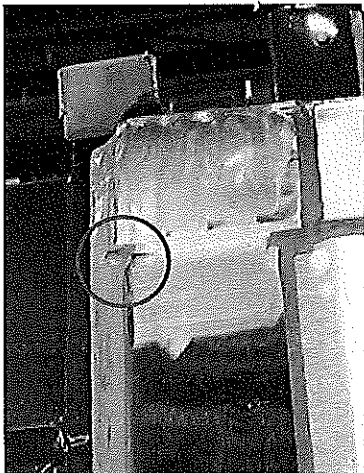
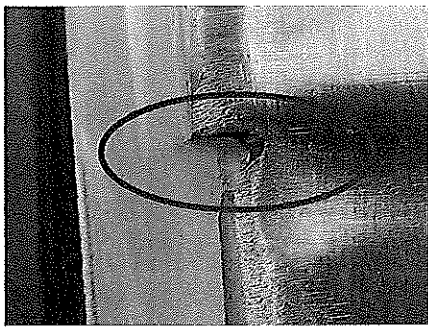
	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

ANNEXURE B: Arc Welding Quality Acceptance Standard



	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

ANNEXURE B: Sealant



GIBELA

PRASA PROJECT

APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

SELF INSPECTION SHEET

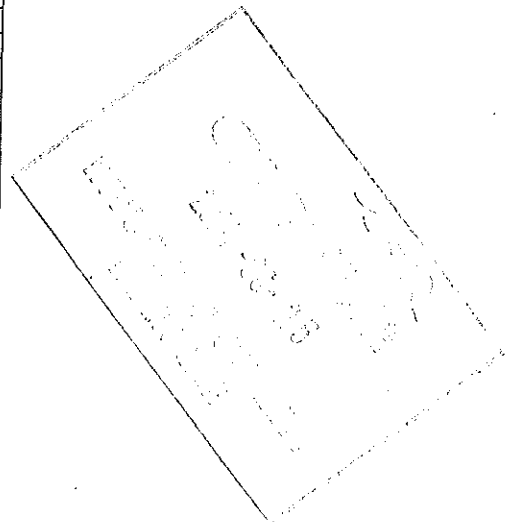
CONFIDENTIAL INFORMATION

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 ?
<input type="checkbox"/> DTR1000151555	AAD0001211553	DT00000223319 Carshell Assembly TC	CB1230	TC	MA	MI	MF	MS	TC	<input checked="" type="checkbox"/>
									PRA.CB1230.DT0000012 23319.V20	YES

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	06/04/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	09/04/2018
			CHECKER	Nosizo Pindela	09/04/2018
			COMPILER	Thanyani Mathegu	06/04/2018
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	05/07/2018	Certain dimensional checks moved to CB1220	APPROVER	Itumeleng Modiba	05/07/2018
			CHECKER	Nosizo Pindela	05/07/2018
			COMPILER	Ramekone Motama	05/07/2018
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
			COMPILER	Nosizo Pindela	13/03/2019
7	17/09/2019	Added Cab Fire Barrier Flatness Measurements	APPROVER	Itumeleng Modiba	17/09/2019
			CHECKER	Nosizo Pindela	17/09/2019
			COMPILER	Nosizo Pindela	17/09/2019
10	20/09/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	20/09/2019
			CHECKER	Nosizo Pindela	20/09/2019
			COMPILER	Nosizo Pindela	20/09/2019
15	28/01/2021	New Baseline 10.2.6	APPROVER	Timothy Malmela	28/01/2021
			CHECKER	Bongane Masina	28/01/2021
			COMPILER	Bongane Masina	28/01/2021
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Malmela	19/04/2021
			CHECKER	Bongane Masina	19/04/2021
			COMPILER	Bongane Masina	19/04/2021
25	20/04/2022	New Baseline change 10.3.1	APPROVER	Collins Mhombhi	20/04/2022
			CHECKER	Andani Muthelo	20/04/2022
			COMPILER	Andani Muthelo	20/04/2022
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Collins Mhombhi	14/06/2022
			CHECKER	Andani Muthelo	
			COMPILER	Andani Muthelo	
27	26/07/2022	Threshold measurements addition	APPROVER	Collins Mhombhi	26/07/2022
			CHECKER	Andani Muthelo	
			COMPILER	Andani Muthelo	
28	17/10/2022	Addition of traceability for sealant application	APPROVER	Collins Mhombhi	17/10/2022
			CHECKER	Ntokozo Zwane	
			COMPILER	Amogelang Mhlanga	
29	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntokozo Zwane	
			COMPILER	Amogelang Mhlanga	
30	06/11/2023	Added traceability for thresholds for boiler makers and welders	APPROVER	Tyson Ngobeni	06/11/2023
			CHECKER	Andani Muthelo	
			COMPILER	Ntokozo Zwane	
TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
233	TC2	Sihle 426955	20/06/24	SI.CB1230.324.V28	14





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06/11/2023

SI.CB1230.324.V29

Carro
Car:

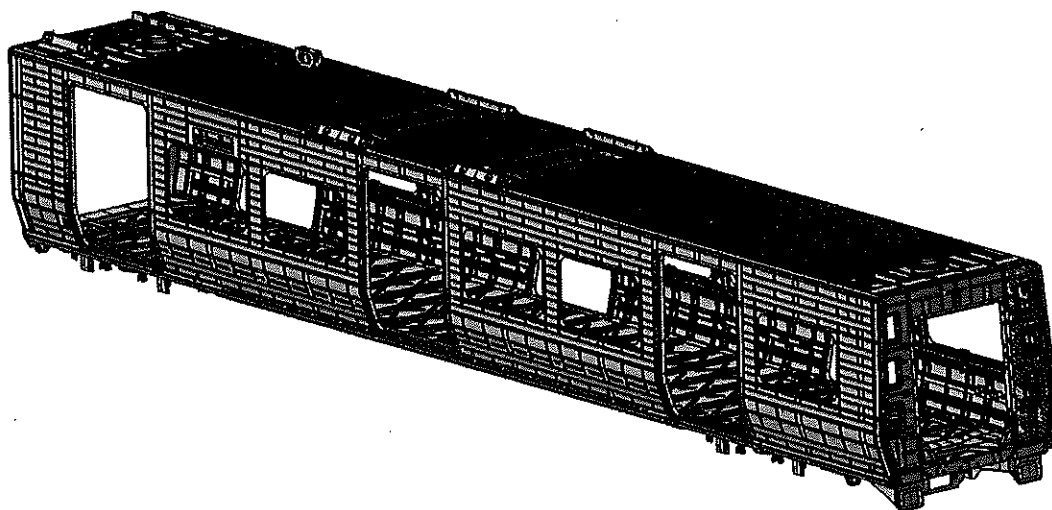
NCR:

Work station:

CB1230



Safety Related



I - Documentation and Instruments

I.1 - Documentation Control

Document	Type of car					Revision	Observation	OK	NOK	Signature/Date (Operations)	Signature/Date (Quality)
	TC1	M1	M2	M3	M4						
DT00000223319	X					30		01		N/A	20/06/24

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Validation	Calibration or Verification Validation Date	OK	NOK	Signature/Date (Operations)	Signature/Date (Quality)
Tubular	22713	20/06/25	OK		20/06/24	20/06/24
Measuring tape	G1B0744	24/04/25	OK		20/06/24	20/06/24
Combination Square	G1B0072	27/07/24	OK		20/06/24	20/06/24
















1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
308 LSI	180310	mig welding	OK		20/06/24	20/06/24
308	227104	mig welding	OK		20/06/24	20/06/24

II - Control Activities of Production

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Not OK	Remarks	Signature/Date (Operations)	Signature/Date (Quality)						
01	N/A	Assembly according to Instruction Engineering n° DT00000223319	DT00000223319	OK			 20/06/24	 20/06/24						
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	OK			 20/06/24	 20/06/24						
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 DTD0000210675	OK			 20/06/24	 20/06/24						
04	N/A	Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	OK			 20/06/24	 20/06/24						
05 	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	OK			 20/06/24	 20/06/24						
06	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: <table><tr><td>Temperature Min - Max (1)</td><td>Min-Max</td><td>10°C - 35°C</td></tr><tr><td>Relative humidity Min - Max (1)</td><td>Min-Max</td><td>25% - 80%</td></tr></table>	Temperature Min - Max (1)	Min-Max	10°C - 35°C	Relative humidity Min - Max (1)	Min-Max	25% - 80%	Sealant Batch No: <u>152 70-03</u> Exp Date: <u>07 / 09 / 24</u> Actuals Temperature: <u>16°C</u> Humidity: <u>54%</u>	OK			 20/06/24	 20/06/24
Temperature Min - Max (1)	Min-Max	10°C - 35°C												
Relative humidity Min - Max (1)	Min-Max	25% - 80%												
07	N/A	Verification of sealant application in regions of roof and sideframe finishers.	Sealant must be: -Applied straight and even (1,5mm) -Free of gaps,cracks,damage and debris (flashes, dirt, dust) Refer to Annexure B	OK			 20/06/24	 20/06/24						



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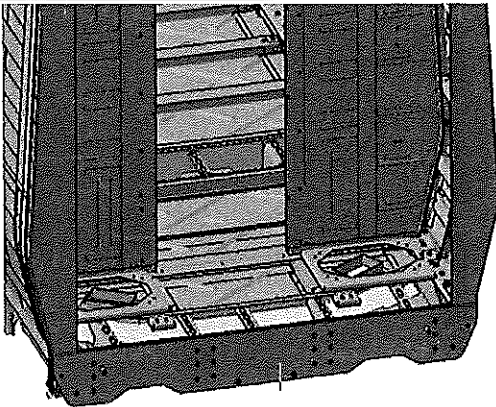
Date-

06/11/2023

Project: PRASA

SI.CB1230.324.V29

VIEW A



**END 1
SEALANT**

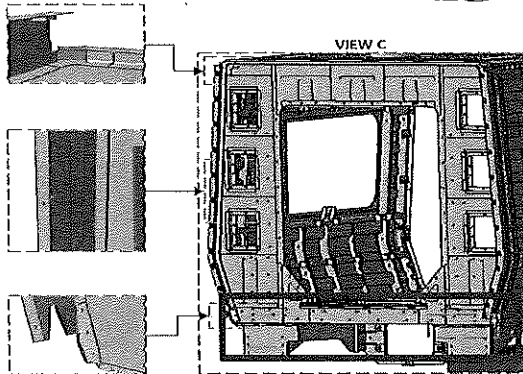
OPERATOR
(Name & sign):

Sihle

OPERATOR
(Name & sign):

Norshlanhla

END 2



OPERATOR
(Name&sign):

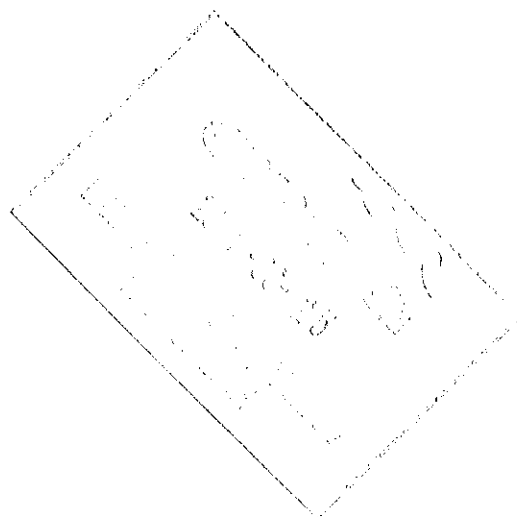
LERDY

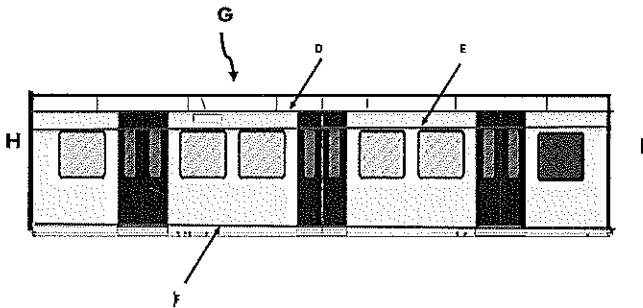
OPERATOR
(Name&sign):

LERDY

OPERATOR
(Name&sign):

LERDY





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

Operator (Name & sign) : (F)^{LHS}(H I)^{bottom}

RHS
D,E,F,G,H,I

Operator (Name & sign) : Sihle

Sihle

Operator (Name & sign) : [Signature]

[Signature]

Operator (Name & sign) : Khenolo

Khenolo

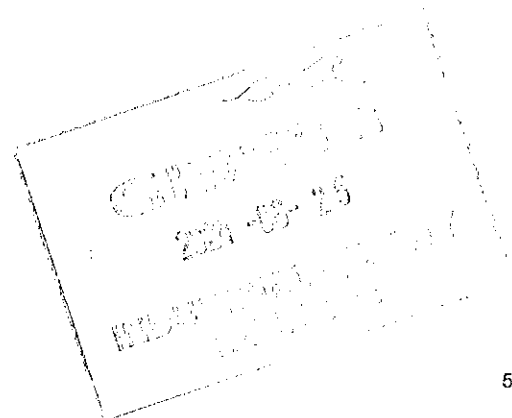
Operator (Name & sign) : [Signature]

[Signature]

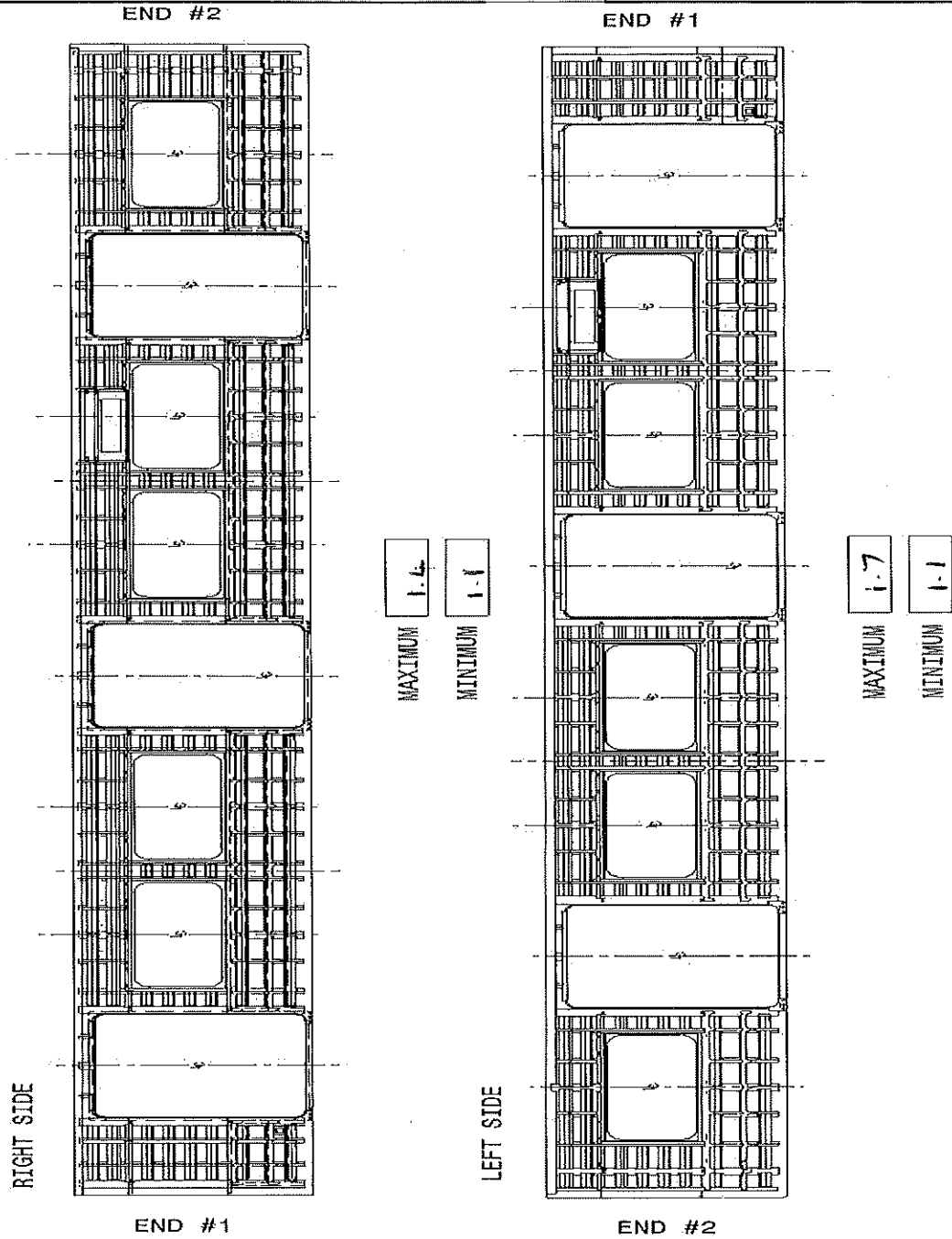
Operator (Name & sign) : D.E.G (H I) top

[Signature]

LERATO

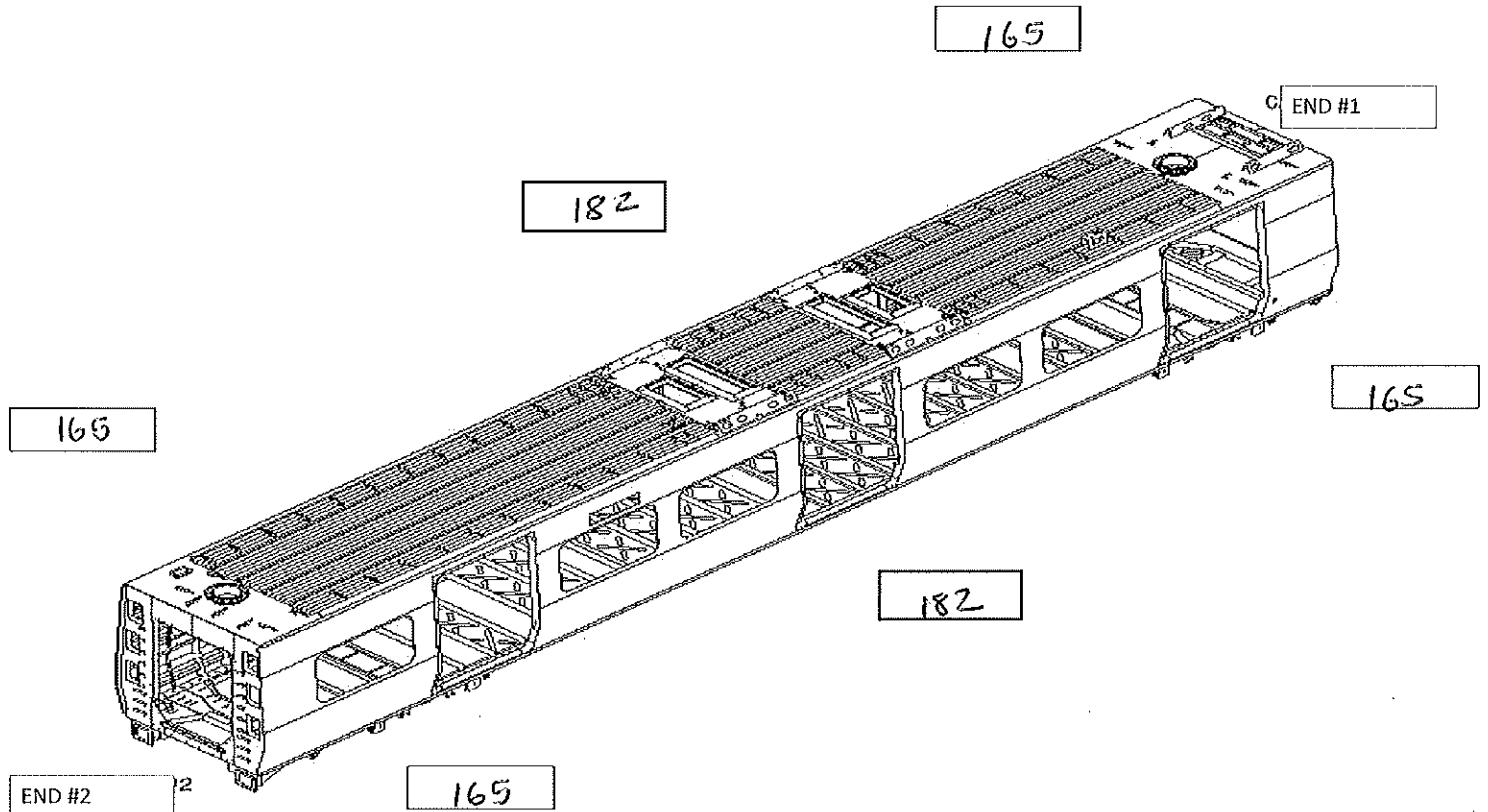


Flatness side left and right maximum of 2mm in the valley to peak measured in 900mm. Recod the maximum and minimum value foundand indicate the corresponding region.



Specifications of Details for CBS measurement CB1230

Specified Camber for car out of jig is 16mm (-0mm + 2mm)



MEASURED CAMBER VALUES

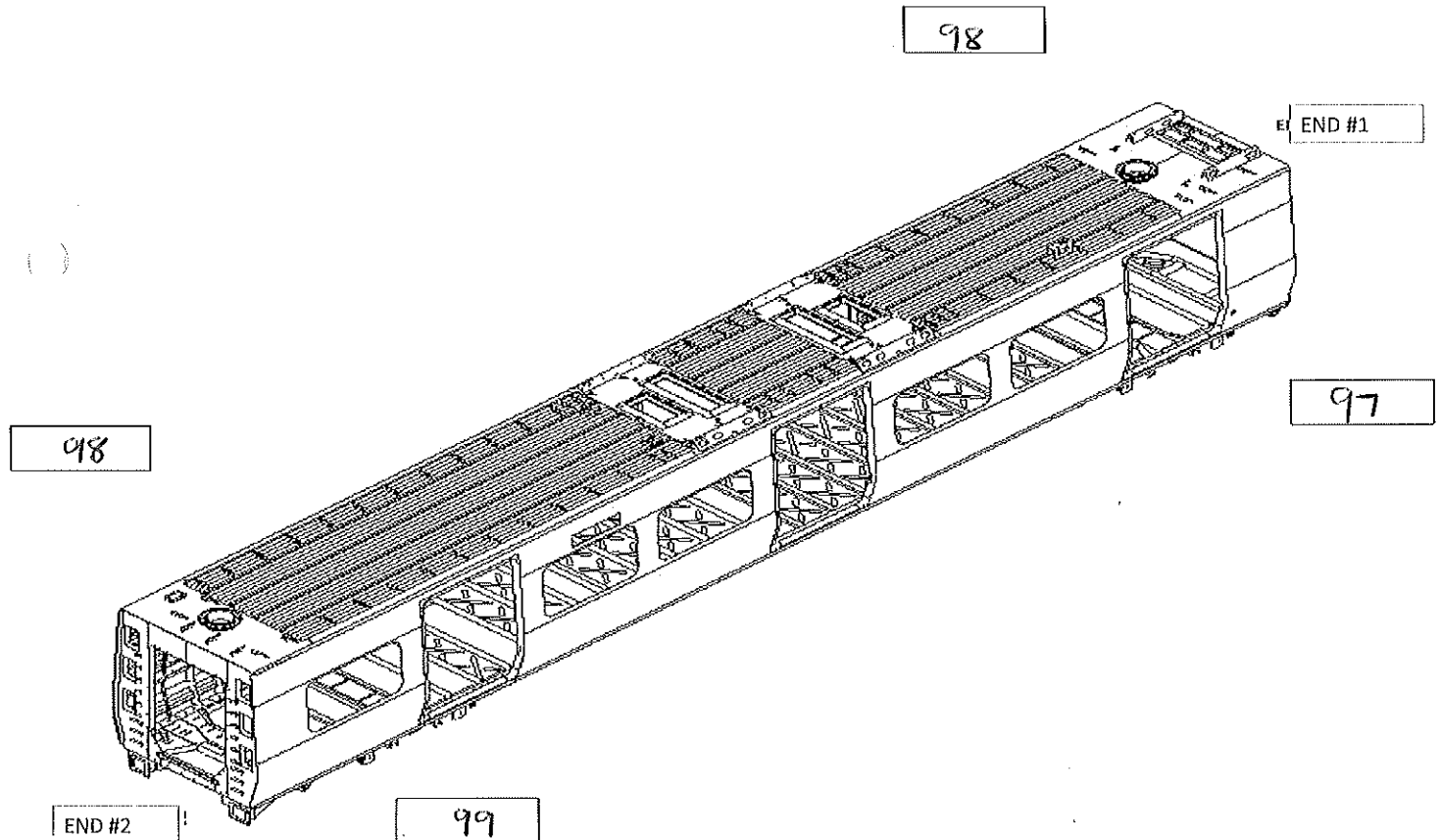
RIGHT - 17
LEFT - 17

Dj

2024-03-25
2024-03-25
2024-03-25

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.



MEASURED TWIST VALUES END 1

LATERAL

1

LONGITUDINAL

1

2

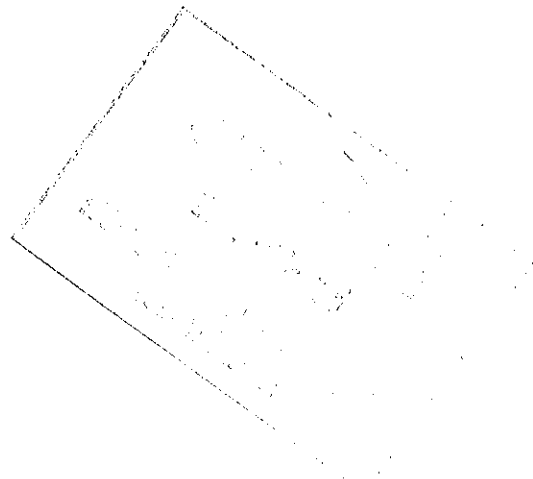
MEASURED TWIST VALUES END 2

LATERAL

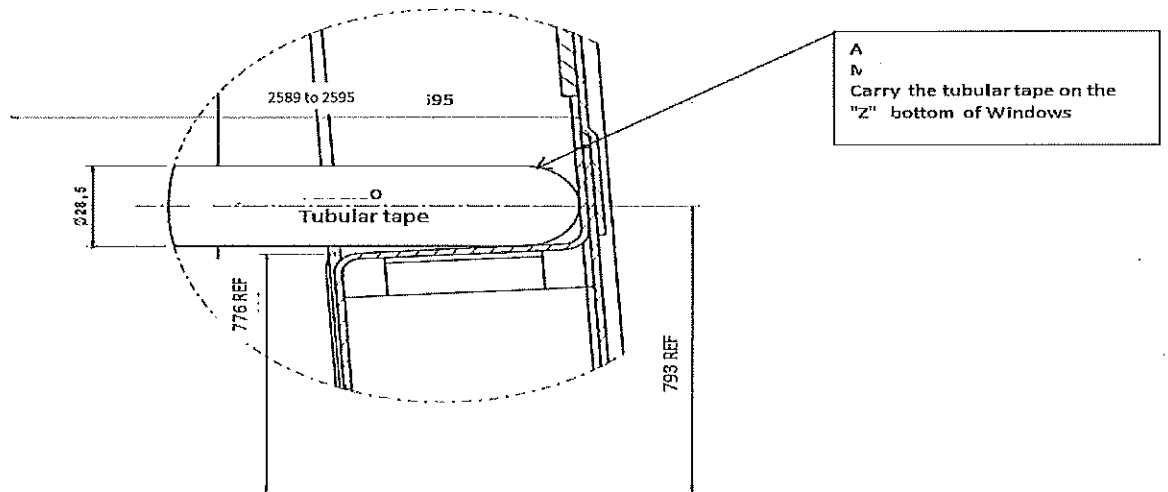
1

LONGITUDINAL

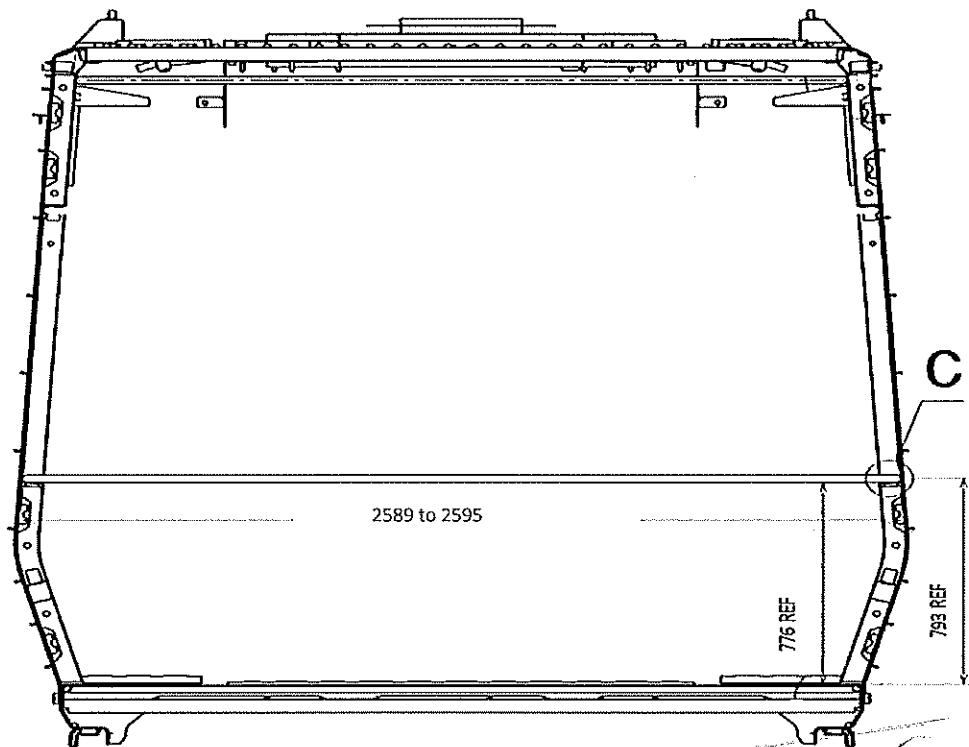
0



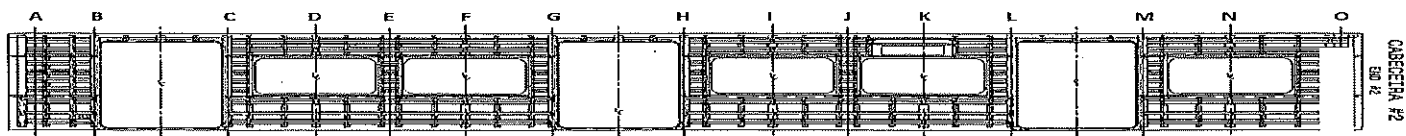
Details for measuring on the CB1230 stage, after completion of activities



Detail C

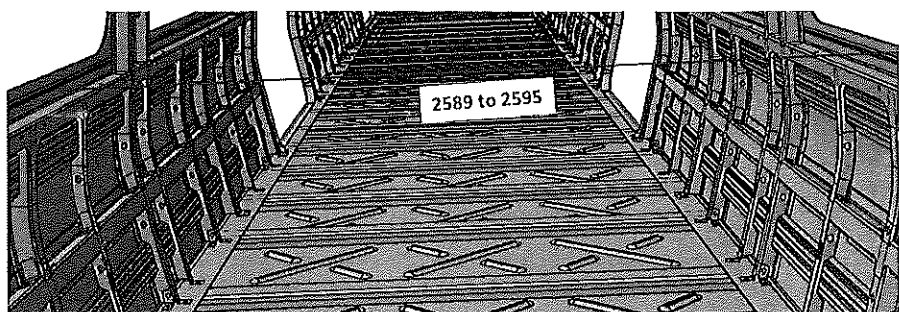


Specifications of Details for CBS measurement


LATERAL DIREITA
Right Side

2589 to 2595mm

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

M. Mathapeto

W. de la.

WELDER:

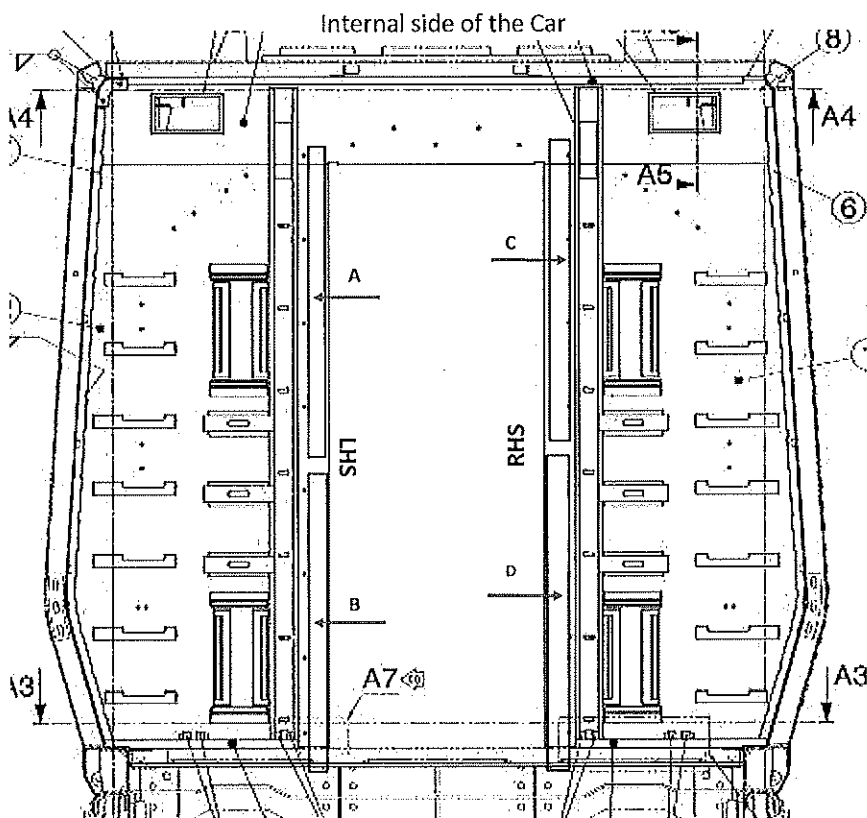
M. Mathapeto

W. de la.

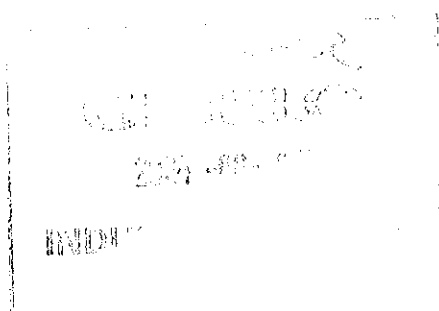
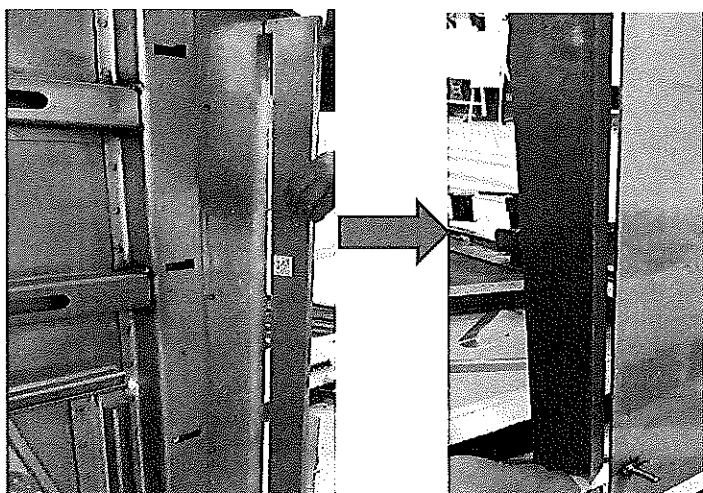
Specifications of Details for CBS measurement

Measure the flatness on the Cab Fire Barrier after installation and welding. Measure positions A, B, C and D using 1000mm flatness ruler and taper gauge.

Specified Maximum Flatness deviation on Cab Fire Barrier = 2mm



Measured Values			
	Minimum	Maximum	Deviation
A	9.5	10.5	1
B	9.8	10.2	0.4
C	10.4	11.0	0.6
D	8.5	9.5	1





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Dye penetrant test

Dye-penetration test to be performed by quality personnel

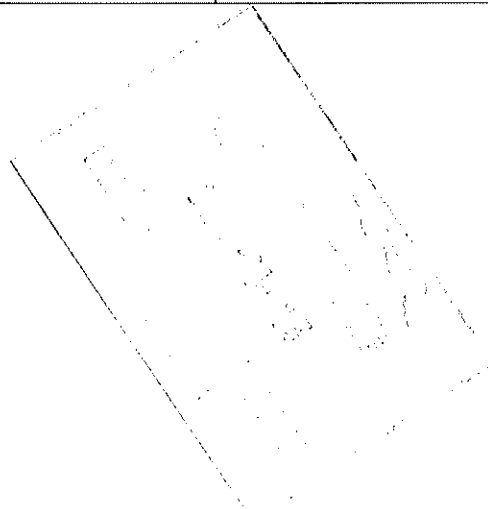


Item	Description of the issue	OK	Signature/Date (Operations)	Signature/Date (Quality)

II.2 - Check List REX

Check List Items

Item	Picture/Drawing	Description	Criteria /Record	OK	Not OK	Remarks	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX					





DT00000223319 Carshell Assembly TC

Rev.
30Date-
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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

GO

If activities are not complete, the missing activities must not impact the next stage!

20/06/24

Siwe

Operations

Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)

20/06/2024

AMOGELANG

Industrial Quality

NO GO

There are activities pending 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

HOLD POINT

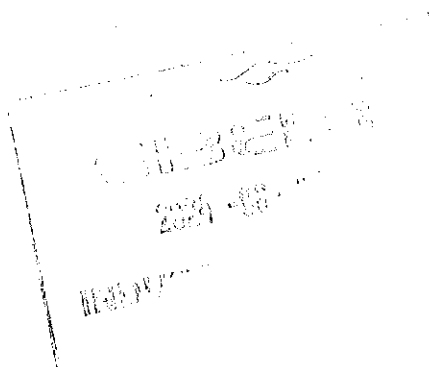
In case of "NO GO", describe blocking problems

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

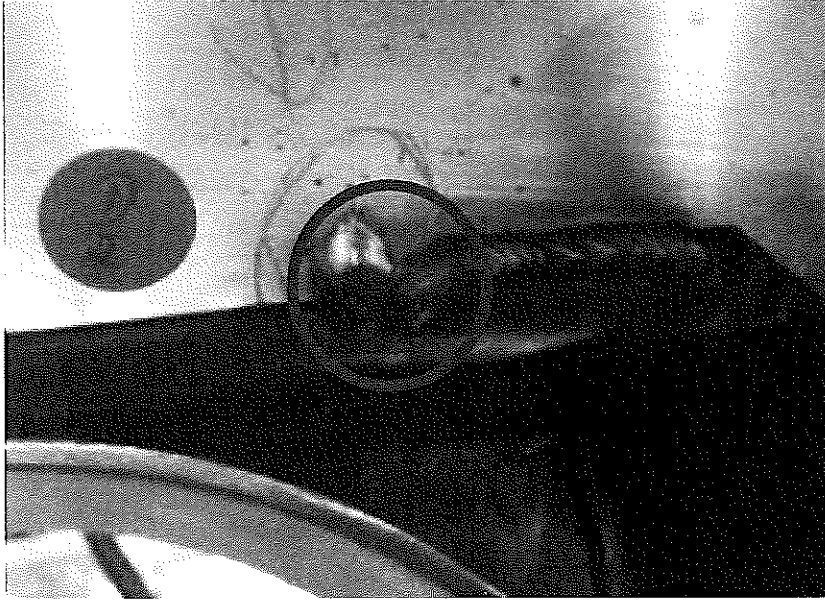
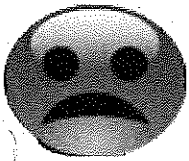
Item	Description	Action	Responsible	Due date	Status


Operations

Quality



ANNEXURE A: Arc Welding Quality Acceptance Standard



	DT00000223319 Carshell Assembly TC	Rev. 30 Date- 06/11/2023	Project: PRASA SI.CB1230.324.V29
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ANNEXURE B: SEALANT

