
**PRASA PROJECT**

APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

# SELF INSPECTION SHEET


**CONFIDENTIAL INFORMATION**

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

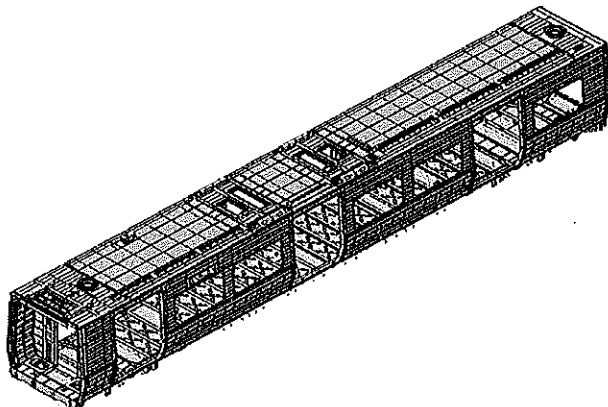
**APPLICATION REFERENCE**

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE							WORK INSTRUCTION	SAFETY ?
				TC1	M4	M1	M2	M3	TC2			
DTR3000152645	AAD0001241033	Carshell Assembly TC	CB2110	(X)						X	PRA.CB2210.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	06/08/2020
			REVISED BY	Bongane Masina	06/08/2020
20	19/04/2020	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	Mathapo Kelebone	27/07/2023
			REVISED BY	Mohlampe Amogelang	27/07/2023
28	07/11/2023	Addition of welding 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 NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
234	TC1	LUNGA 471497	16/06/2024	SI.CB2210.322.V28	16

	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA
		Date- 07/11/2023	SI.CB2210.322.V28

Car: TC1 & TC2	NCR:	Work station: CB2210
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### I - Documentation and Instruments

#### I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	TC1	TC2	TC3	TC4	TC5	TC6						
DTR30223319/3	✓								✓		N/A	16/06/24

#### I.2 - Instruments Control

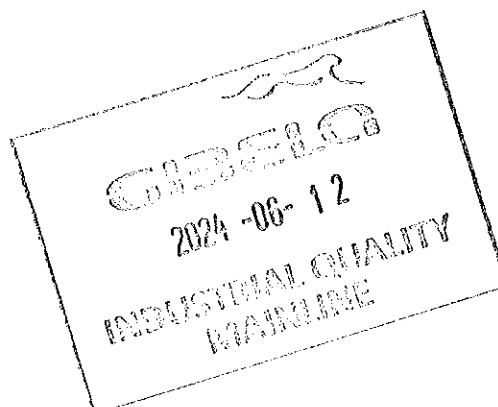
##### Monitoring and Measuring Instrument Control - Used for Special Process


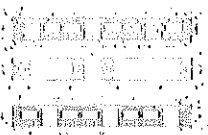
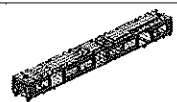
Instruments	Validation	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
TURKULAR	32825-7	15/05/24	✓		16/06/24	16/06/24
OM TAPE	418TP 0084	14/05/24	✓		16/06/24	16/06/24
LASER TAPE	125425924	08/01/24	✓		16/06/24	16/06/24

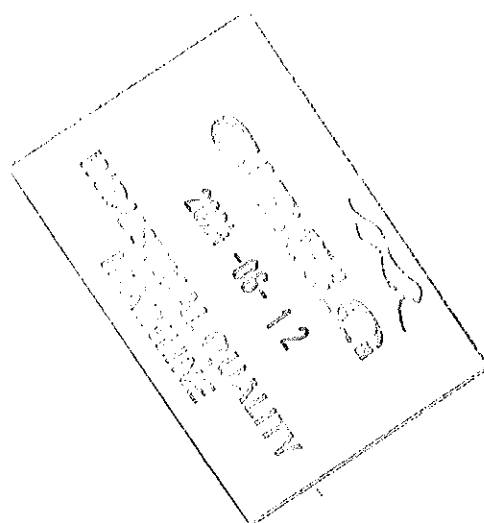
#### 1.3 Consumables


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

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
AUT ROD 308LSI	E221880	MIG	✓		16/06/24	16/06/24
ER 309 LSI	318394	MIG	✓		16/06/24	16/06/24

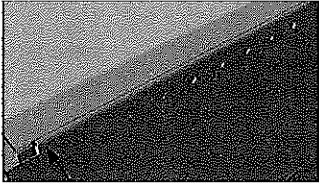


		DTR30223319/3 Carshell Assembly TC		Rev. V28	Project: PRASA	
				Date- 07/11/2023	SI.CB2210.322.V28	
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK		Signature/Date (Manufacturing)
01	N/A	Verification of correct parts loaded (Sidewalls, Endframes, Roof and Underframe)	DT00000284980	✓		16/06/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		16/06/24
03		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		16/06/24
04	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓		16/06/24
05	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		16/06/24
06		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		16/06/24
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-018.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658	✓		16/06/24



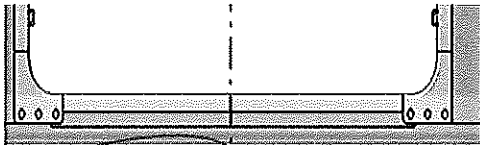
	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB2210.322.V28
		Date- 07/11/2023	
Welder traceability			

Roof ring welds

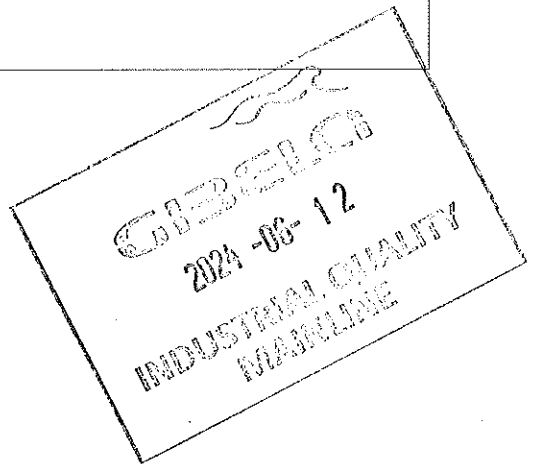


LHS		END 1
Boiler maker (Name & Sign): <u>Lunga [Signature]</u>	Welder (Name & Sign): <u>MTHOKOZISI [Signature]</u>	
RHS		
Boiler maker (Name & Sign): <u>Tim [Signature]</u>	Welder (Name & Sign): <u>MTHOKOZISI [Signature]</u>	


LHS		END 2
Boiler maker (Name & Sign): <u>Lunga [Signature]</u>	Welder (Name & Sign): <u>MTHOKOZISI [Signature]</u>	
RHS		
Boiler maker (Name & Sign): <u>Tim [Signature]</u>	Welder (Name & Sign): <u>MTHOKOZISI [Signature]</u>	



LHS	RHS
Boiler maker (Name & Sign): <u>Tetogo [Signature]</u>	Boiler maker (Name & Sign): <u>Tetogo [Signature]</u>
Welder (Name & Sign): <u>MTHOKOZISI [Signature]</u>	Welder (Name & Sign): <u>MTHOKOZISI [Signature]</u>






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

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.

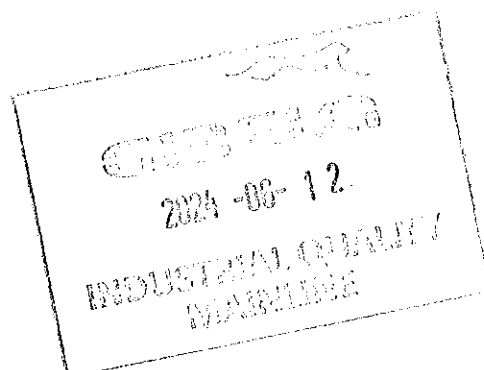
	1	2	3	4	5	6	7	8	9	10	11	12
Left Hand Side				N	1A							
Right Hand Side												

Signature Operations:  Date: 16/06/24

After Welding.

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

Signature Industrial Quality:  Date: 16/06/24



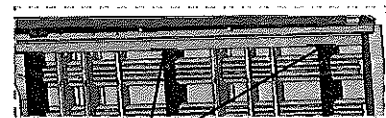
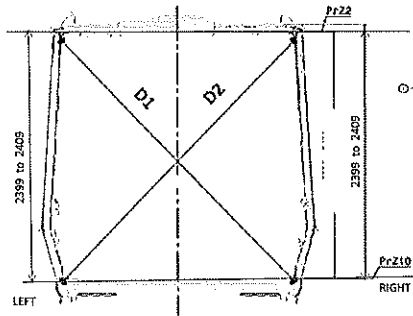
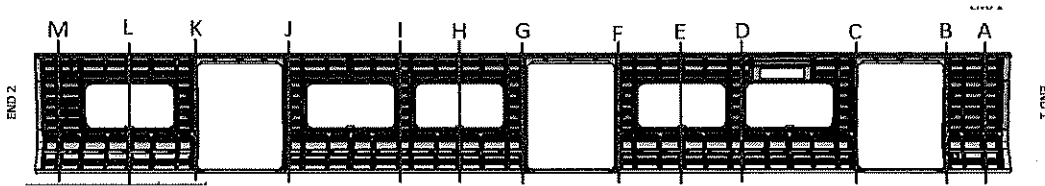


DTR30223319/3 Carshell Assembly TC

Rev.  
V28  
Date-  
07/11/2023

Project: PRASA  
SI.CB2210.322.V28

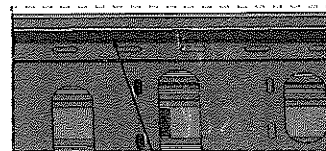
### Specifications of Details for CBS measurement



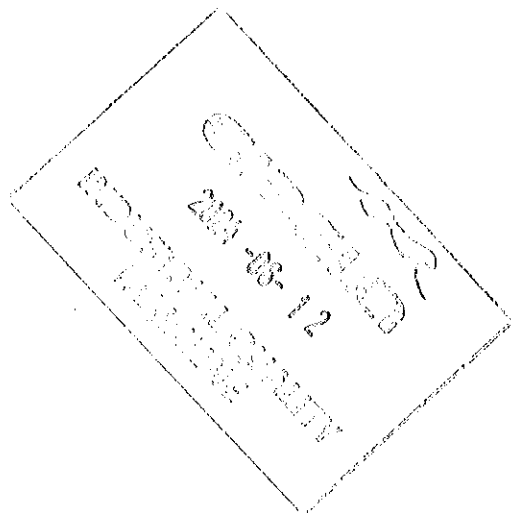
Measurement positions on roof rail and sidewall omega corner.




Measurement positions on sidewall and side sill corner.

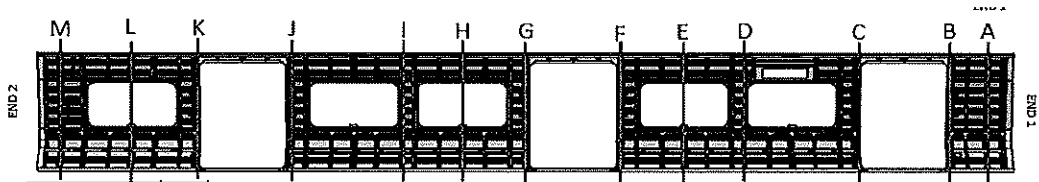


Reinforcement area measurement positions on roof reinforcement area.



	DTR30223319/3 Garshell Assembly TC	Rev. V28	Project: PRASA SI.CB2210.322.V28
		Date- 07/11/2023	
Specifications of Details for CBS measurement			

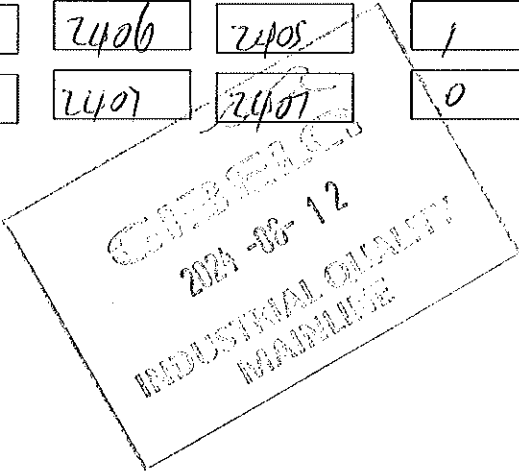
BEFORE WELDING




PME: The difference in Height values measured on the LHS and RHS should be ≤ 2MM on each point.

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3269	3269	0	2405	2405	0
B	3268	3268	0	2404	2406	2
C	3268	3269	1	2406	2405	1
D	3265	3266	1	2405	2405	0
E	3266	3264	2	2407	2406	1
F	3268	3269	1	2406	2406	0
G	3269	3269	0	2405	2407	2
H	3265	3266	1	2406	2405	1
I	3266	3266	0	2405	2405	0
J	3270	3269	1	2406	2404	2
K	3268	3268	0	2405	2405	0
L	3263	3269	4	2406	2405	1
M	3269	3268	1	2407	2407	0

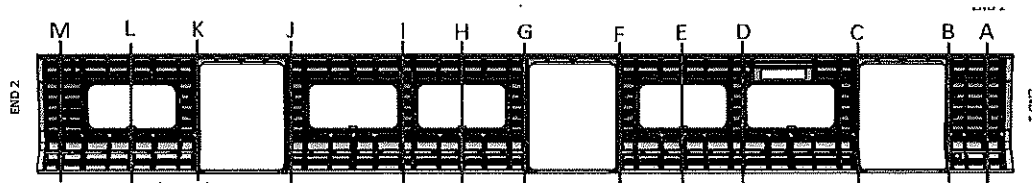
16/06/24





	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI,CB2210,322,V28
		Date- 07/11/2023	
Specifications of Details for CBS measurement			

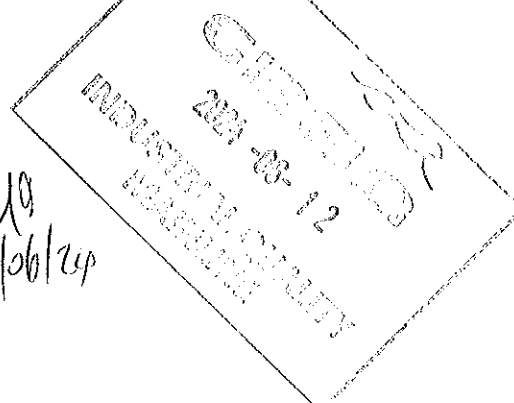
AFTER WELDING




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 $\leq 2$
A	3268	3269	1	2408	2404	1
B	3294	3295	1	2406	2405	1
C	3295	3295	2	2405	2405	0
D	3265	3265	0	2404	2406	2
E	3265	3264	1	2405	2406	1
F	3294	3296	2	2406	2405	1
G	3295	3294	1	2405	2405	0
H	3266	3265	1	2406	2406	0
I	3266	3266	0	2405	2407	2
J	3294	3294	0	2406	2405	1
K	3295	3295	0	2405	2405	0
L	3268	3265	3	2406	2405	1
M	3294	3295	1	2406	2407	1

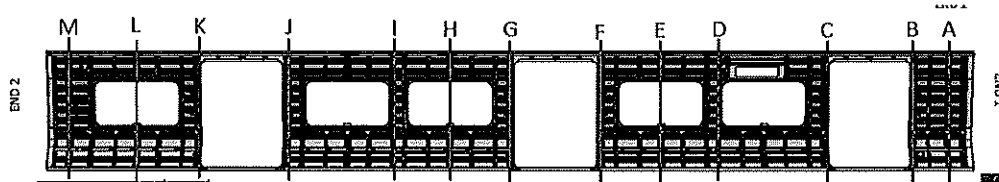
16/06/23



	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA
		Date- 07/11/2023	SI.CB2210.322.V28

CBS measurement

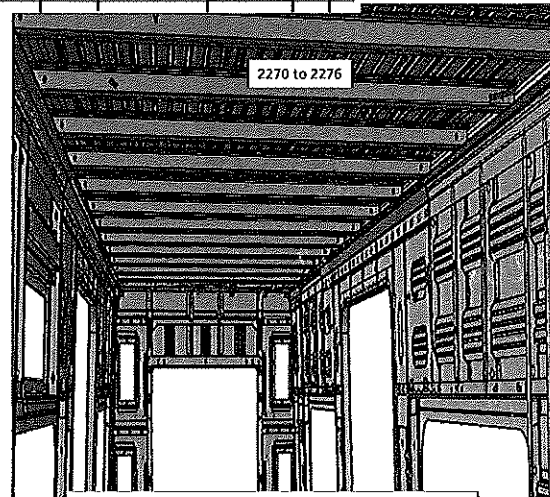
BEFORE WELDING



2270 to 2276

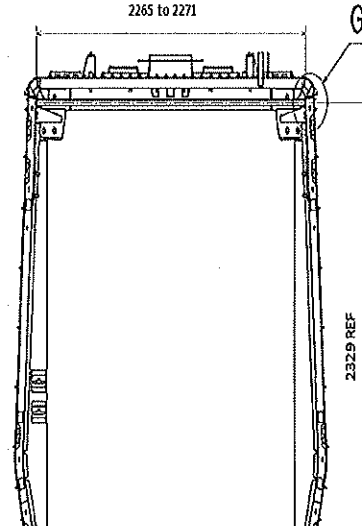
2268 a 2274

A	2275
B	2272
C	2273
D	2278
E	2276
F	2272
G	2274
H	2276
I	2277
J	2272
K	2271
L	2275
M	2272



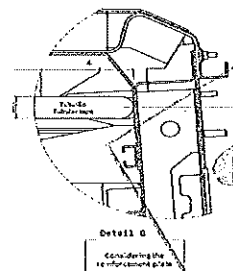
Do not consider reinforcement ( Take measurements top area of zee profile

2265 to 2271



10/10  
16/06/24

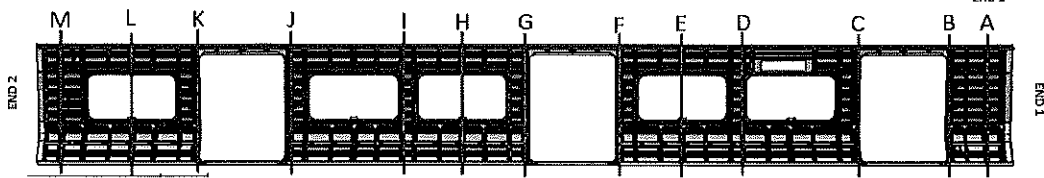
2265 to 2271



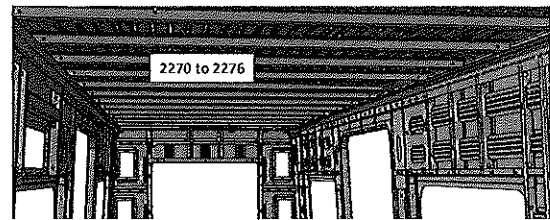
2024-08-12  
INDUSTRIAL QUALITY  
WASHLINE

## Specifications of Details for CBS measurement

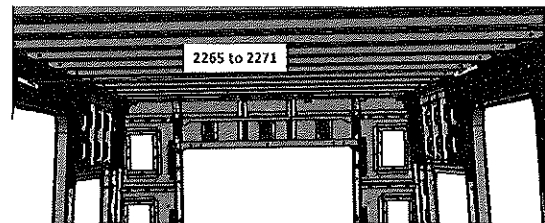
## AFTER WELDING



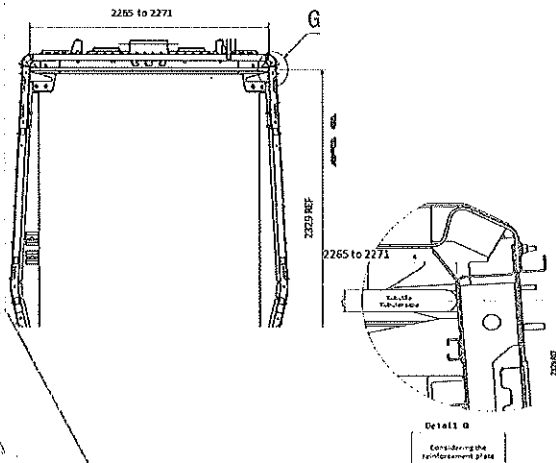
	2265 to 2271	2270 to 2276
A	N/A	2274
B	2268	N/A
C	2268	N/A
D	N/A	2276
E	N/A	2275
F	2268	N/A
G	2269	N/A
H	N/A	2276
I	N/A	2276
J	2269	N/A
K	2266	N/A
L	N/A	2273
M	2265	N/A



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



Take measurement close to radius ( considering reinforcement )



16/06/24



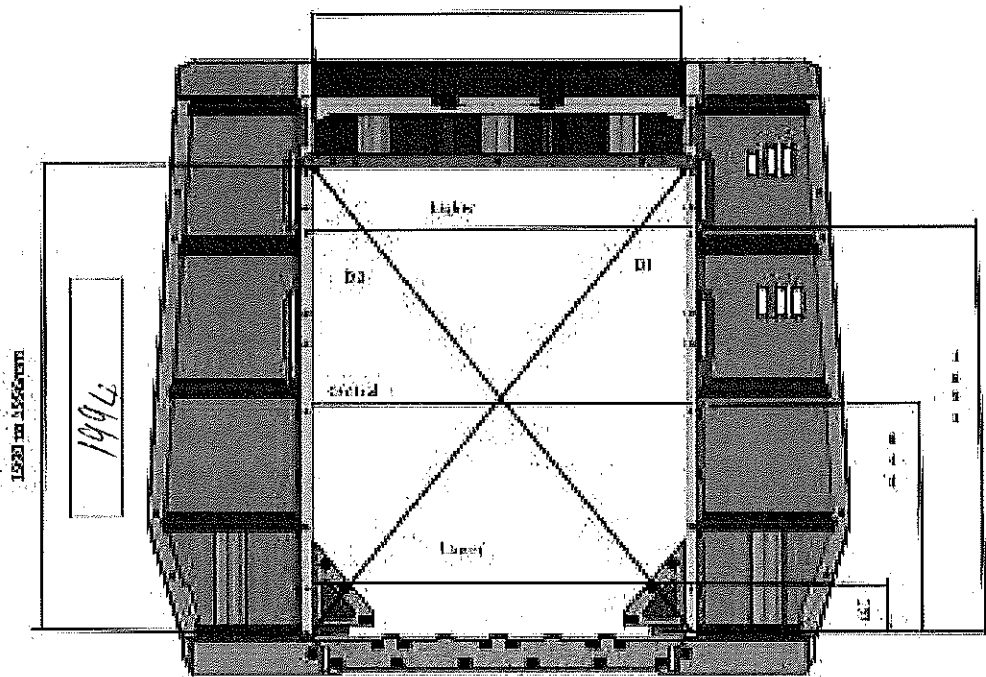
DTR30223319/3 Carshell Assembly TC

Rev.  
V28  
Date:  
07/11/2023

Project: PRASA  
SI.CB2210.322.V28

Specifications of Details for CBS measurement

Endframe 2



3110 mm x 3110 mm

DIAGONAL DIFFERENCE D1-D2 ≤ 30mm

Blade Clearance

1382

D1

2415

Central Diameter

1381

D2

2414

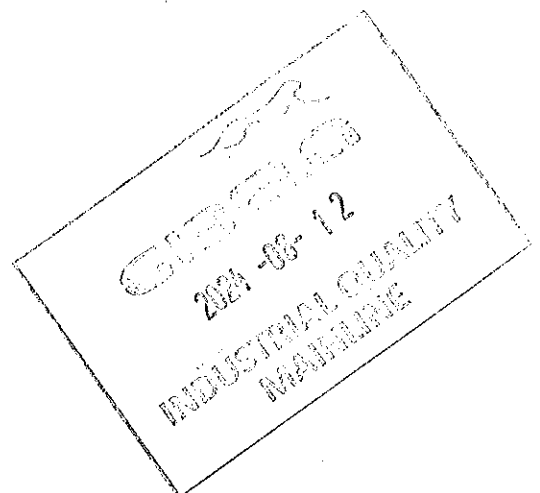
Inner Diameter

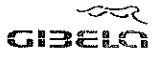
1381

D1-D2

1

16/06/24



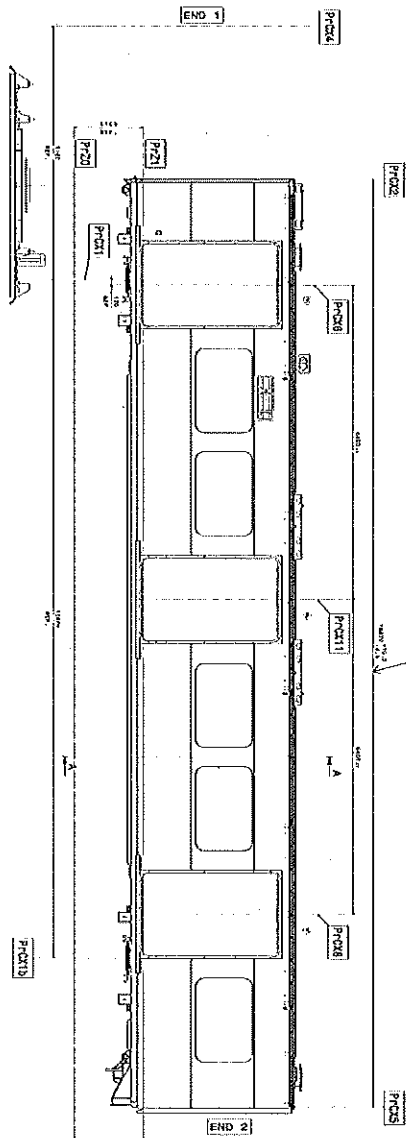


DTR30223319/3 Carshell Assembly TC

Rev.  
V28  
Date-  
07/11/2023

Project: PRASA  
SI.CB2210.322.V28

### Specifications of Details for CBS measurement

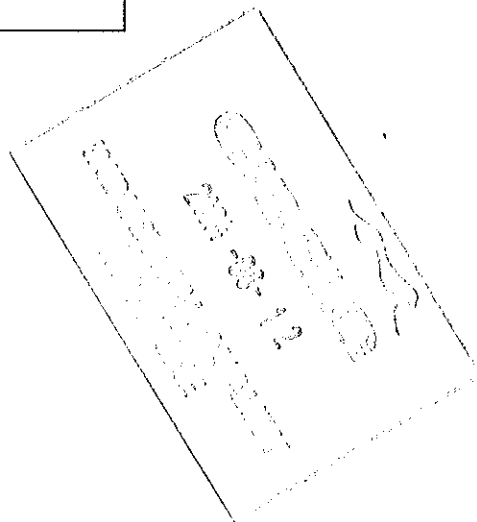



LEFT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	18870 $\begin{matrix} +10.5 \\ -4.5 \end{matrix}$	18871

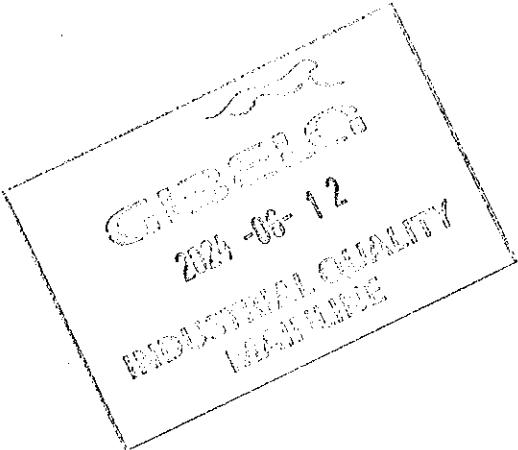
RIGHT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	18870 $\begin{matrix} +10.5 \\ -4.5 \end{matrix}$	18871




### Dye penetrant test

Dye-penetration test to be performed by quality personnel



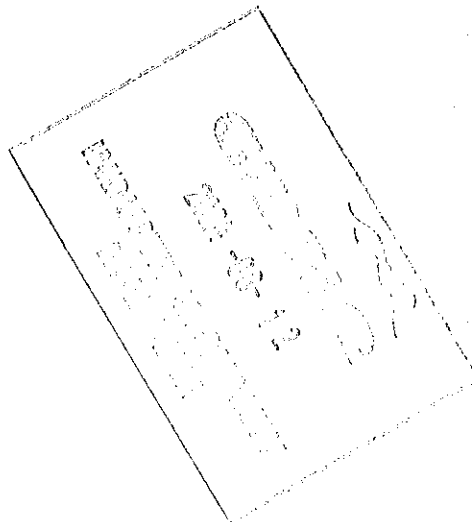
		DTR30223319/3 Carshell Assembly TC		Rev. V28	Project: PRASA			
				Date- 07/11/2023	SI.CB2210.322.V28			
Item	Description of the Issue				OK	Signature/Date (Manufacturing)		Signature/Date (Quality)
II.2 - Check List REX								
Check List Items								
Item	Picture/Drawing	Description	Criteria /Record	OK			Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX					




		DTR30223319/3 Carshell Assembly TC		Rev. V28	Project: PRASA SI.CB2210.322.V28	
				Date- 07/11/2023		
<b>Self Inspection - Final Result</b>						
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!	16/06/24	Lungu Operations		
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.	16/06/24	Andeani Quality		
	NO GO	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	Action	Responsible	Due date	Status	

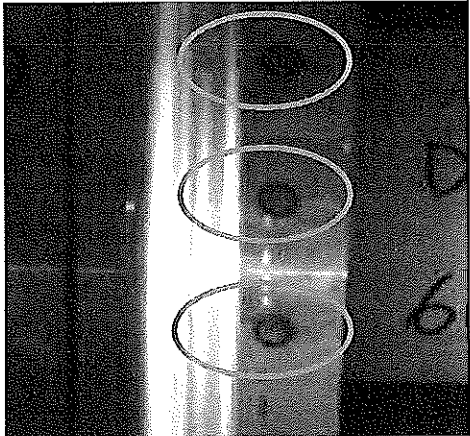
Operations

Quality




	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB2210.322.V28
		Date- 07/11/2023	

ANNEXURE A: Spot Welding Quality Acceptance Standard





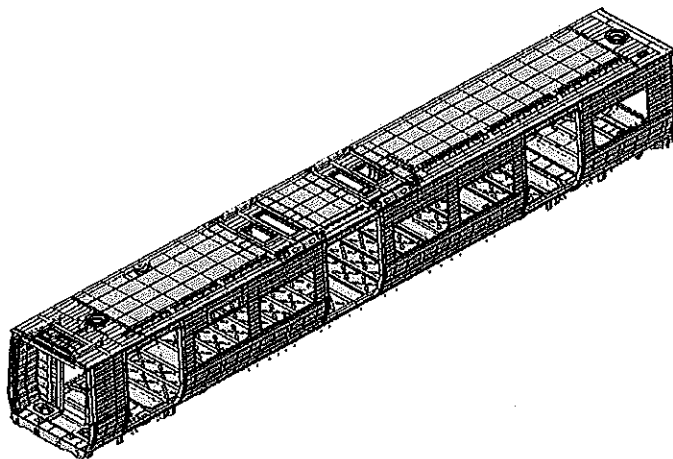


	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

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



### I - Documentation and Instruments

#### 1.1 - Documentation Control

Document	Type of car					Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	TC	M1	M2	M3	M4						
DTR30223319/2	✓					29	20/06/24	✓		N/A	20/06/24

#### 1.2 - Instruments Control

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


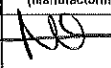
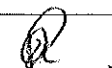
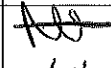

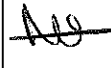

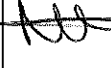

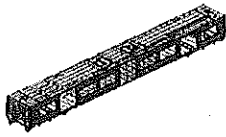
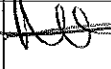
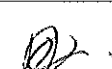
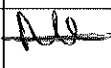
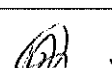

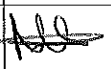
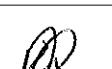
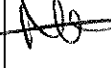

Instruments	Validation	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Tubular	32923-2	15/03/2025	✓		20/06/24	20/06/24
Tape Measure	GIBTA0231	2025/04/10	✓		20/06/24	20/06/24


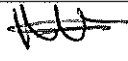



#### 1.3 Consumables

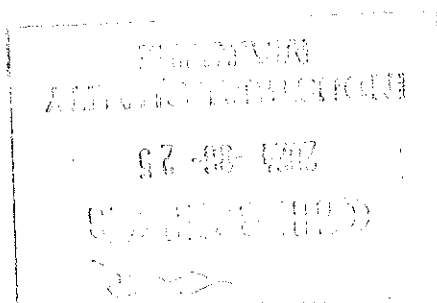
##### Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
308	3731779	308 MIG	✓		20/06/24	20/06/24

20/06/24  
 308 MIG  
 3731779  
 20/06/24

		DTR30223319/2 Carshell Assembly TC		Rev. 29 Date- 28/10/2023		Project: PRASA SI.CB2220.323.V29						
II - Control Activities of Production												
B.1 - Items to check												
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	NOT	Remark	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	/			 20/06/24	 20/06/24				
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	/			 20/06/24	 20/06/24				
03	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	/			 20/06/24	 20/06/24				
04	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	/			 20/06/24	 20/06/24				
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	/			 20/06/24	 20/06/24				
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.	/			 20/06/24	 20/06/24				
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	/			 20/06/24	 20/06/24				
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> <table border="1"> <tr> <td>Temperature Min - Max (°C)</td> <td>Min-Max</td> </tr> <tr> <td>Relative humidity Min - Max (%)</td> <td>Min-Max</td> </tr> </table>	Temperature Min - Max (°C)	Min-Max	Relative humidity Min - Max (%)	Min-Max	<p>Sealant Batch No: <u>B51437</u> Exp Date: <u>04/10/24</u></p> <p>Actuals Temperature: <u>10</u> Humidity: <u>38</u></p>	/			 20/06/24	 20/06/24
Temperature Min - Max (°C)	Min-Max											
Relative humidity Min - Max (%)	Min-Max											

		DTR30223319/2 Carshell Assembly TC		Rev. 29	Project: PRASA			
				Date-				
				28/10/2023				
09	NA	Verification of sealant application in certain regions in the drawing.	AAD0001241033	✓			 20/06/24	 20/06/24
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)  <b>Refer to Annexure B</b>	✓			 20/06/24	 20/06/24





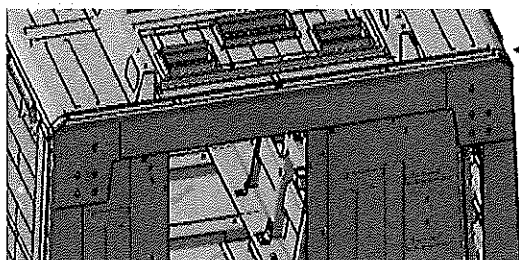
DTR30223319/2 Carshell Assembly TC

Rev.  
29

Project: PRASA

Date-  
28/10/2023

SI.CB2220.323.V29



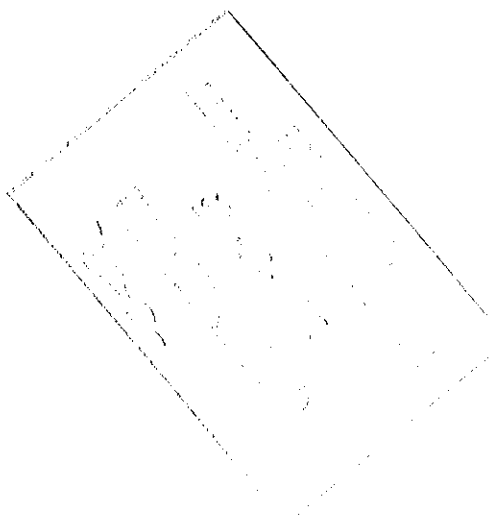
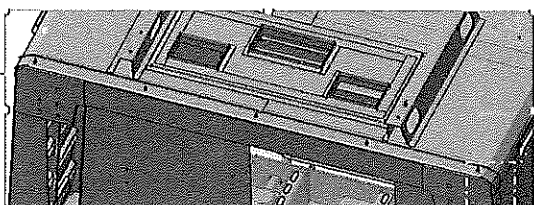
END 1  
SEALANT


OPERATOR  
(Name & sign):

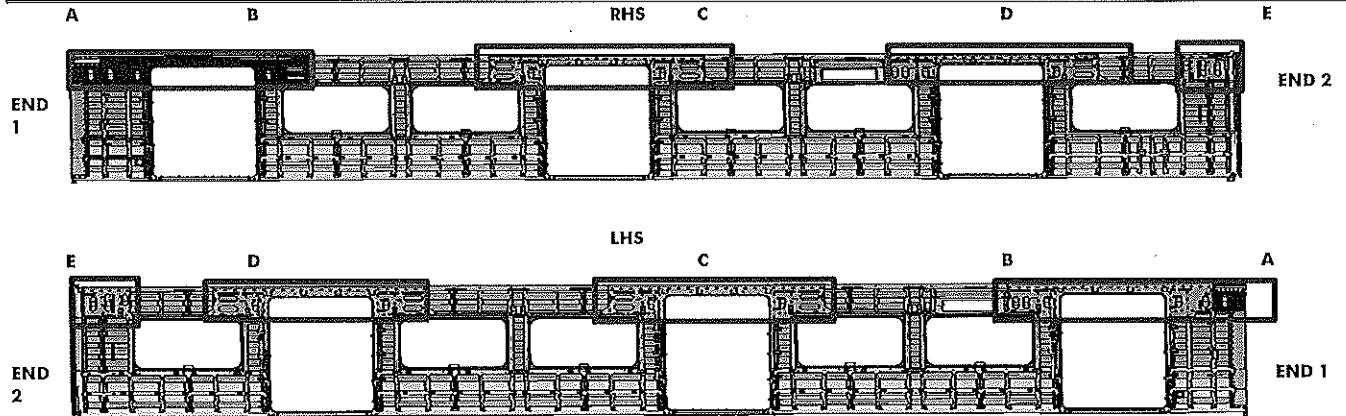
Mthelozi:

OPERATOR  
(Name & sign):




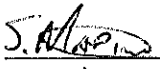

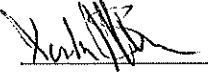
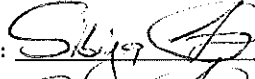
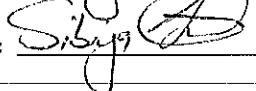
Mthelozi:

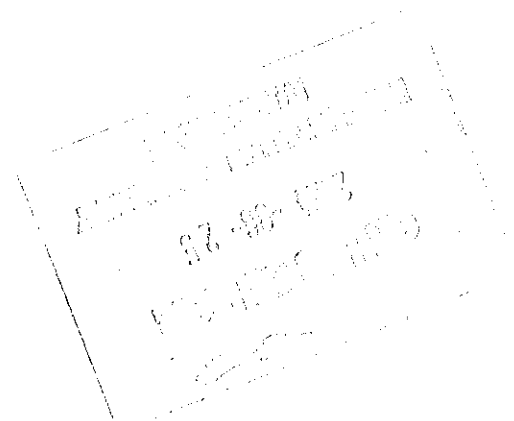



	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
		Date-	SI.CB2220.323.V29
		28/10/2023	



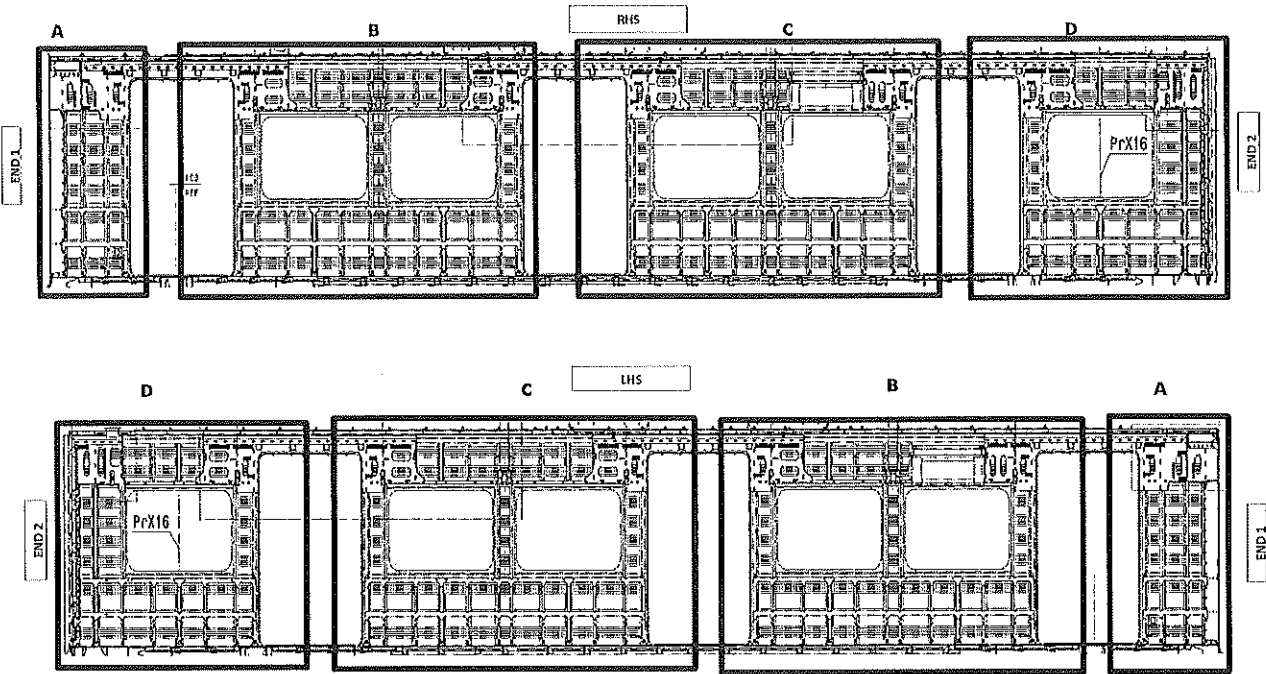
### REINFORCEMENT WELDING

AREA	LHS	RHS
A	Operator (Name&sign): <u>LINDO </u>	<u>LINDO </u>
B	Operator (Name&sign): <u></u>	<u>S. ALVARO </u>
C	Operator (Name&sign): <u>Xenia </u>	<u>Xenia </u>
D	Operator (Name&sign): <u>Sibya </u>	<u>  </u>
E	Operator (Name&sign): <u>Sibya </u>	<u>  </u>



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

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:

Mtholozi

LHS				
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	4	✓	
	B	6	✓	
	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:

Mtholozi

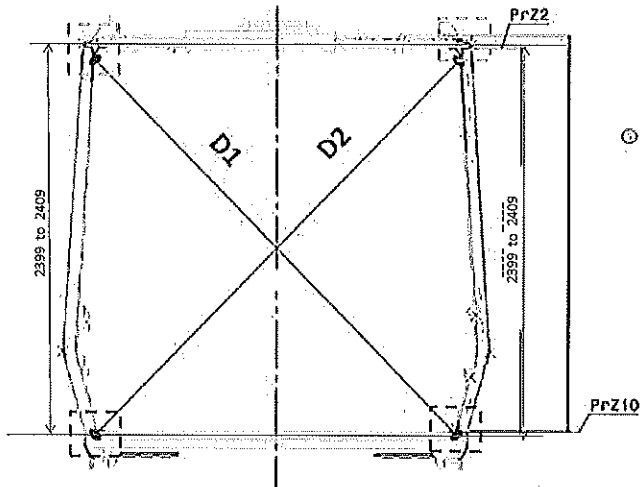


DTR30223319/2 Carshell Assembly TC

Rev.  
29  
Date-  
28/10/2023

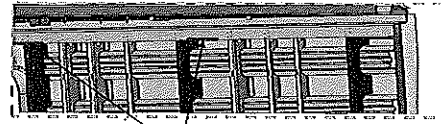
Project: PRASA

SI.CB2220.323.V29

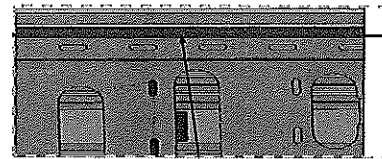


Take measurement close to radius

①



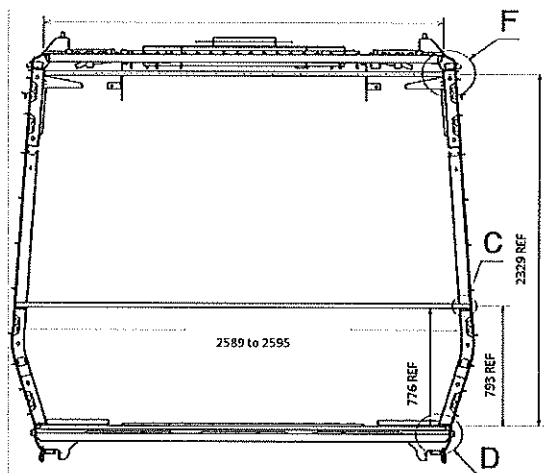
Measurement positions on roof rail and sidewall omega corner.



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

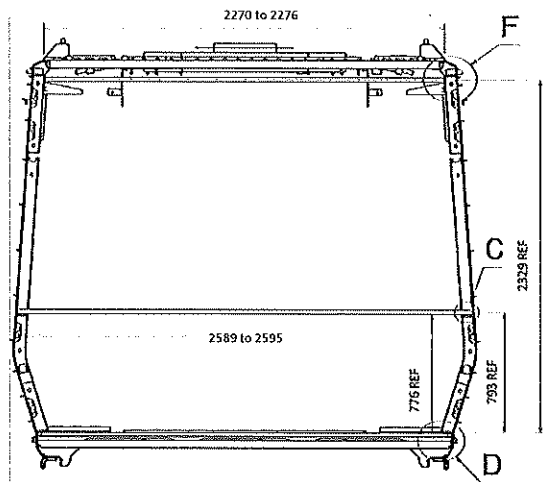
Rev.  
29

Project: PRASA

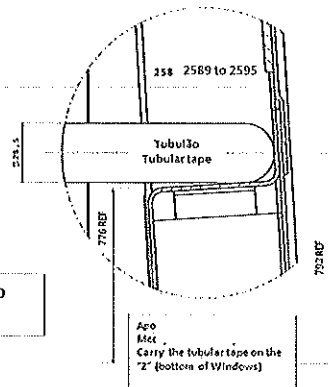
Date-

SI.CB2220.323.V29

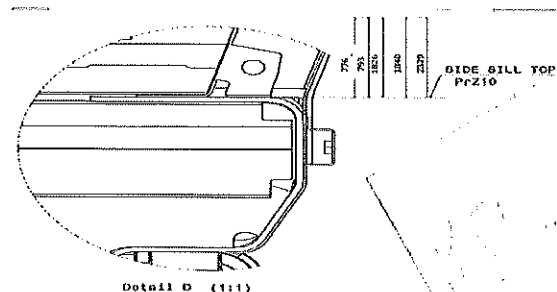
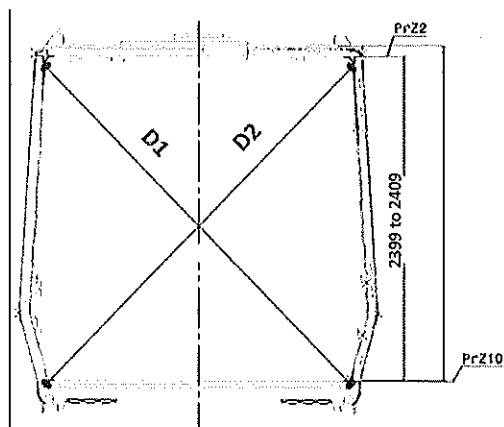
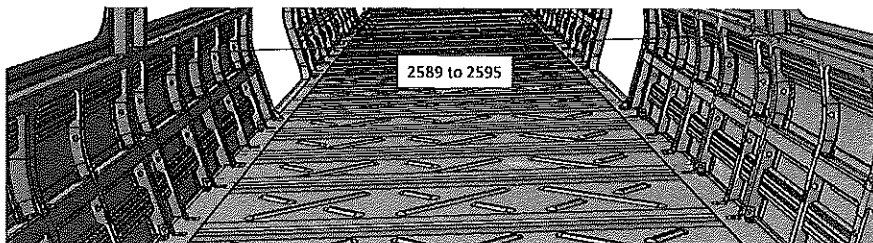
28/10/2023



Take measurement close to  
radius



Detail C





DTR30223319/2 Carshell Assembly TC

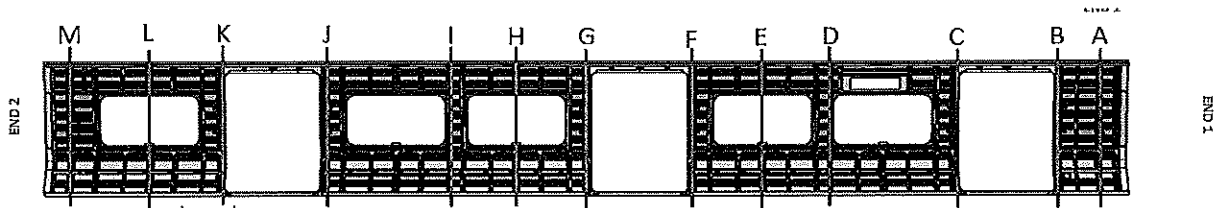
Rev.  
29

Project: PRASA

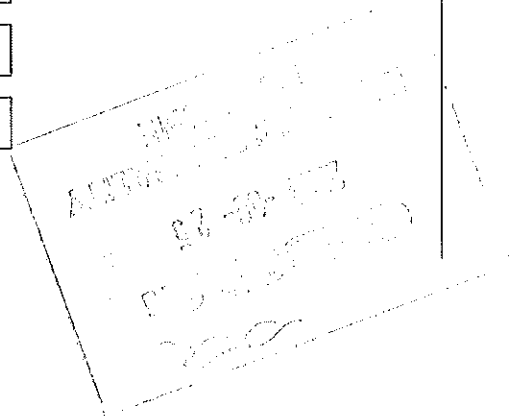
Date-

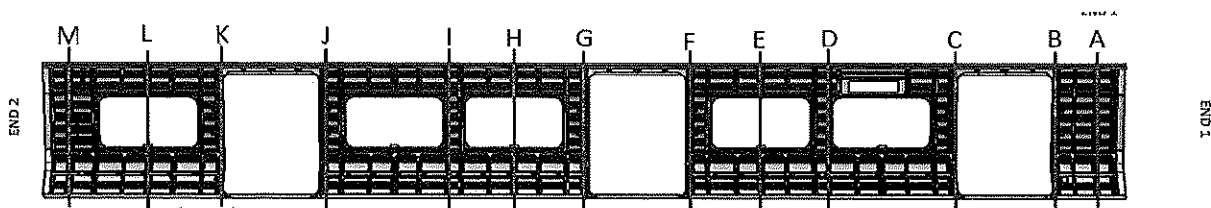
SI.CB2220.323.V29

28/10/2023

**BEFORE WELDING**

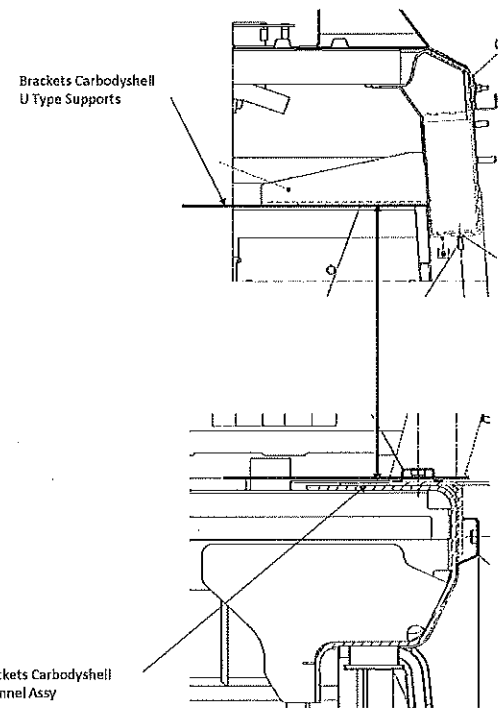
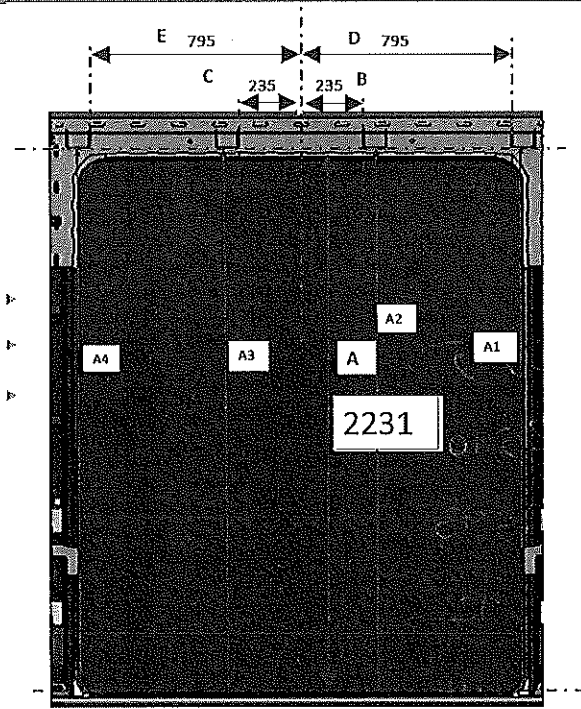
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3289	3287	2	-
B	3294	3293	1	-
C	3295	3293	2	-
D	3263	3263	0	-
E	3265	3263	2	-
F	3294	3298	4	-
G	3293	3298	5	-
H	3265	3264	1	-
I	3265	3263	2	-
J	3291	3298	7	-
K	3294	3297	3	-
L	3265	3265	0	-
M	3296	3294	2	-





### AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3255	3252	3	2595
B	3297	3298	1	2590
C	3293	3294	1	2593
D	3265	3263	2	2592
E	3263	3265	2	2594
F	3298	3294	4	2595
G	3298	3295	3	2593
H	3261	3265	4	2595
I	3262	3268	6	2591
J	3298	3291	7	2592
K	3297	3295	2	2593
L	3265	3265	0	2593
M	3291	3295	4	2595



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	2230
A2	2230 to 2232	2230
A3	2230 to 2232	2230
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

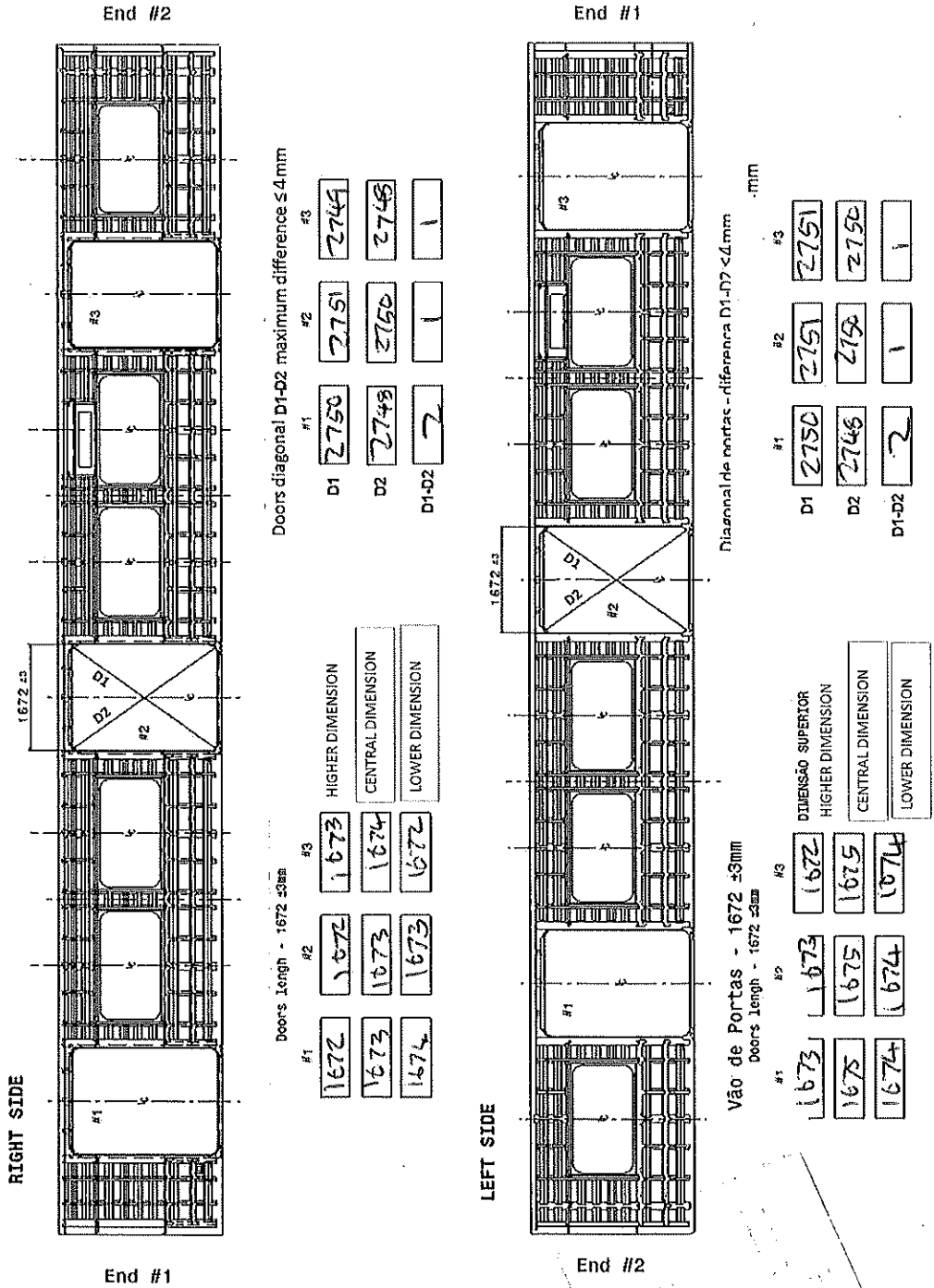
DOOR 3 - LHS		
	VALUE	ACTUAL
A1	2230 to 2232	2231
A2	2230 to 2232	2231
A3	2230 to 2232	2231
A4	2230 to 2232	2231
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	795


DOOR 1 - RHS		
	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 - RHS		
	VALUE	ACTUAL
A1	2230 to 2232	2230
A2	2230 to 2232	2230
A3	2230 to 2232	2230
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	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

Handwritten signature and date: 28/10/2023



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

Specifications of Details for CBS measurement

Dye penetrant test

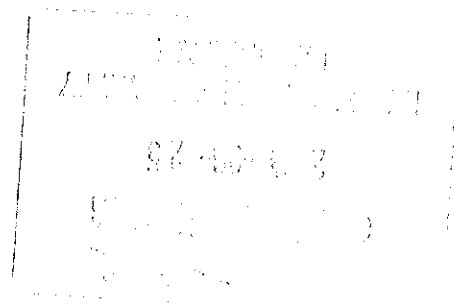
Dye-penetration test to be performed by quality personnel



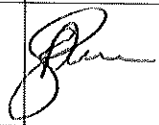


Item	Description of the issue	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)

II.2 - Check List REX

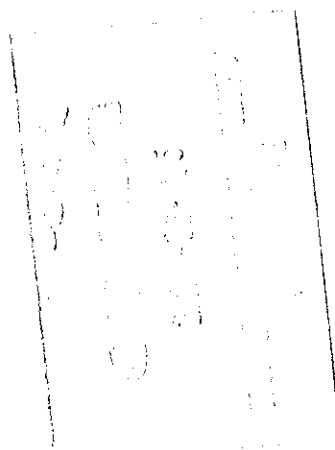
Check List Items								
Item	Picture/Drawing	Description	Criteria /Record	OK	NO	NO	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX					




	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29		
		Date-			
		28/10/2023			
<b>Self Inspection - Final Result</b>					
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)		DATE	NAME	SIGNATURE	
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!	20/06/24	Nthkhozis	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	20/06/24	Ntoko	
	NO GO	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	Action	Responsible	Due date	Status

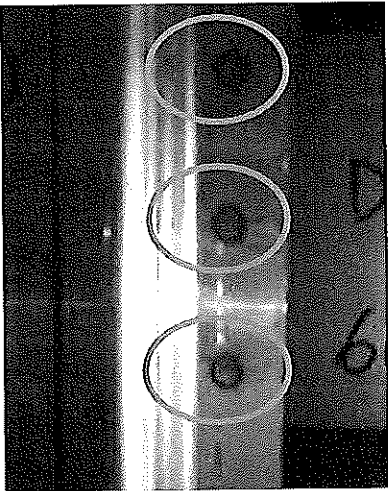
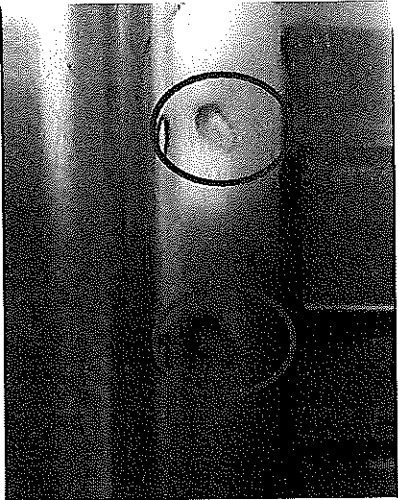
Operations

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







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 ?	
				TCL	MA	M1	M2	M3	TCL			
<input type="checkbox"/> DT00000123319	AD000123363	DT00000223319 Carshell Assembly TC	CB2130	<input checked="" type="checkbox"/>						X	PRA.CB2230.DT00000123319.V20	YES
<input type="checkbox"/>												

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 Mathagu	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	Ramokone 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 Maimela	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 Maimela	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 Mbhomahli	20/02/2022
			CHECKER	Andani Muthelo	20/02/2022
			COMPILER	Andani Muthelo	20/02/2022
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Collins Mbhomahli	14/06/2022
			CHECKER	Andani Muthelo	14/06/2022
			COMPILER	Andani Muthelo	14/06/2022
27	27/07/2022	Threshold measurements addition	APPROVER	Collins Mbhomahli	28/07/2022
			CHECKER	Andani Muthelo	28/07/2022
			COMPILER	Andani Muthelo	28/07/2022
28	19/10/2022	Addition of traceability for sealant application	APPROVER	Collins Mbhomahli	19/10/2022
			CHECKER	Ntokozi Zwane	19/10/2022
			COMPILER	Amogelang Mohlampe	19/10/2022
29	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntokozi Zwane	14/04/2023
			COMPILER	Amogelang Mohlampe	14/04/2023
30	06/11/2023	Added threshold traceability for boiler makers and welders	APPROVER	Tyson Ngobeni	06/11/2023
			CHECKER	Andani Muthelo	06/11/2023
			COMPILER	Ntokozi Zwane	06/11/2023

TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
234	TC1	Exale A20915	21/06/24	SI.CB2230.324.V29	12

APPROVED FOR RELEASE  
 21-06-2024  
 10:00 AM





DT00000223319 Carshell Assembly TC

Rev.  
30

Project: PRASA

Date-

06/11/2023

SI.CB2230.324.V29

Carro  
Car:

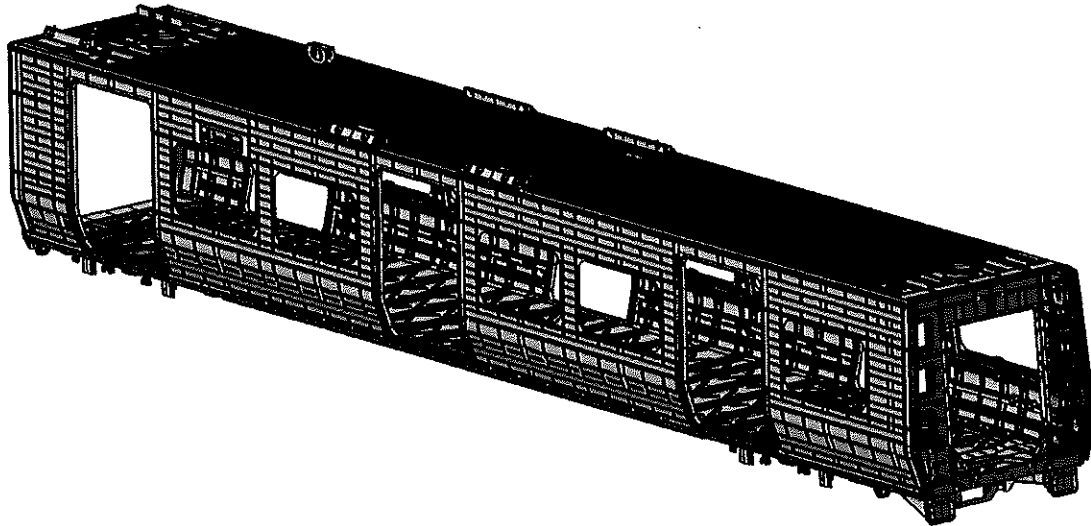
NCR:

Work station:

CB2230



Safety Related



## I - Documentation and Instruments

## I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK	NOK	Rework	Signature/Date (Operations)	Signature/Date (Quality)
	TC1	M1	M2	M3	M4	TC2							
DT00000223319	X						30		✓		N/A	21/06/24	21/06/24

## 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)
Measuring Tape	GIBTA0207	03/02/2025	✓		21/06/24	21/06/24
Tubular	12062-2	19/02/2025	✓		21/06/24	21/06/24
Ruler	GIBST3040	14/09/2024	✓		21/06/24	21/06/24
Combination Square	GIBCS0140	26/06/2024	✓		21/06/24	21/06/24

## 1.3 Consumables

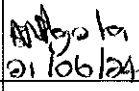
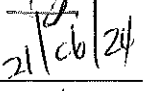
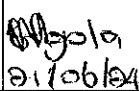
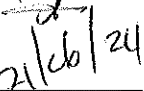
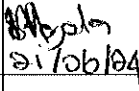
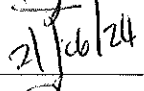
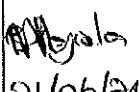
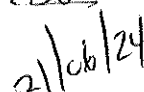
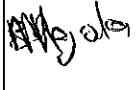
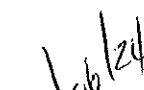


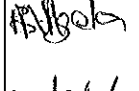

## Welding Consumable Control - Used for Special Process

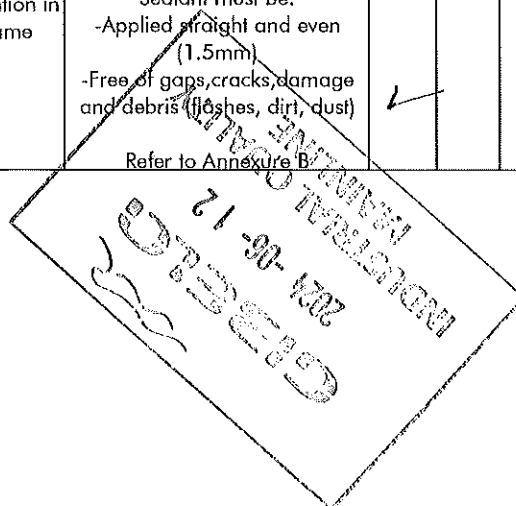
Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
308 LSi	213471	Mig Welding	✓		21/06/24	21/06/24
308 LSi	812221	Tig Welding	✓		21/06/24	21/06/24



## II - Control Activities of Production

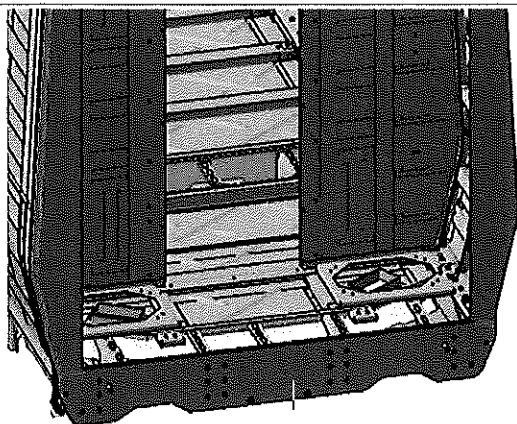
### II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	NOK	Re-work	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° DT00000223319	DT00000223319	✓			 21/06/24	 21/06/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓			 21/06/24	 21/06/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 DTD0000210675	✓			 21/06/24	 21/06/24
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.	✓			 21/06/24	 21/06/24
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	✓			 21/06/24	 21/06/24
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:  Temperature Min - Max (1) Min*Max 10°C - 35°C Relative humidity Min - Max (1) Min*Max 25% - 60%	Sealant Batch No: <u>B9391-502/24</u> Exp Date: <u>04/08/24</u>  Actuals Temperature: <u>14°C</u> Humidity: <u>48%</u>	✓			 21/06/24	 21/06/24
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	✓			 21/06/24	 21/06/24





**VIEW A**



**END 1  
SEALANT**

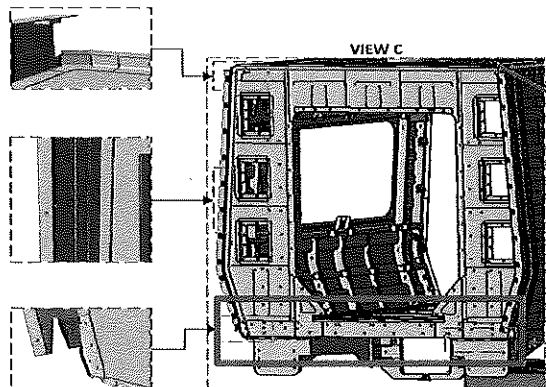
OPERATOR  
(Name & sign):

Tshenolo *[Signature]*

OPERATOR  
(Name & sign):

Tshenolo *[Signature]*

**VIEW C**



**END 2 SEALANT  
(VIEW C)**

OPERATOR  
(Name & sign):

Leroy *[Signature]*

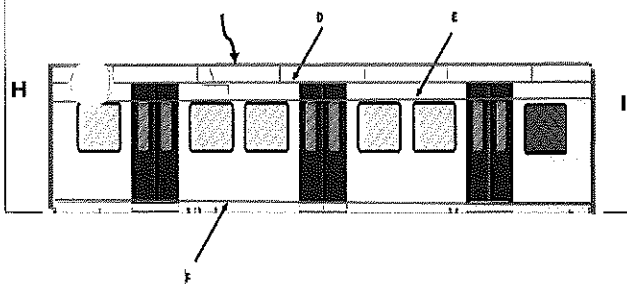
OPERATOR  
(Name & sign):

Leroy *[Signature]*

OPERATOR  
(Name & sign):

Leroy *[Signature]*

**G**



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

Operator(Name & sign):

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

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

Operator (Name & sign):

Lerato

Lerato

Operator (Name & sign):

*[Signature]*

*[Signature]*

Operator (Name & sign):

Nonhlanhla

Nonhlanhla

Operator (Name & sign):

*[Signature]*

*[Signature]*

Operator (Name & sign):

(F,H,I) BOTTOM  
Tshenolo

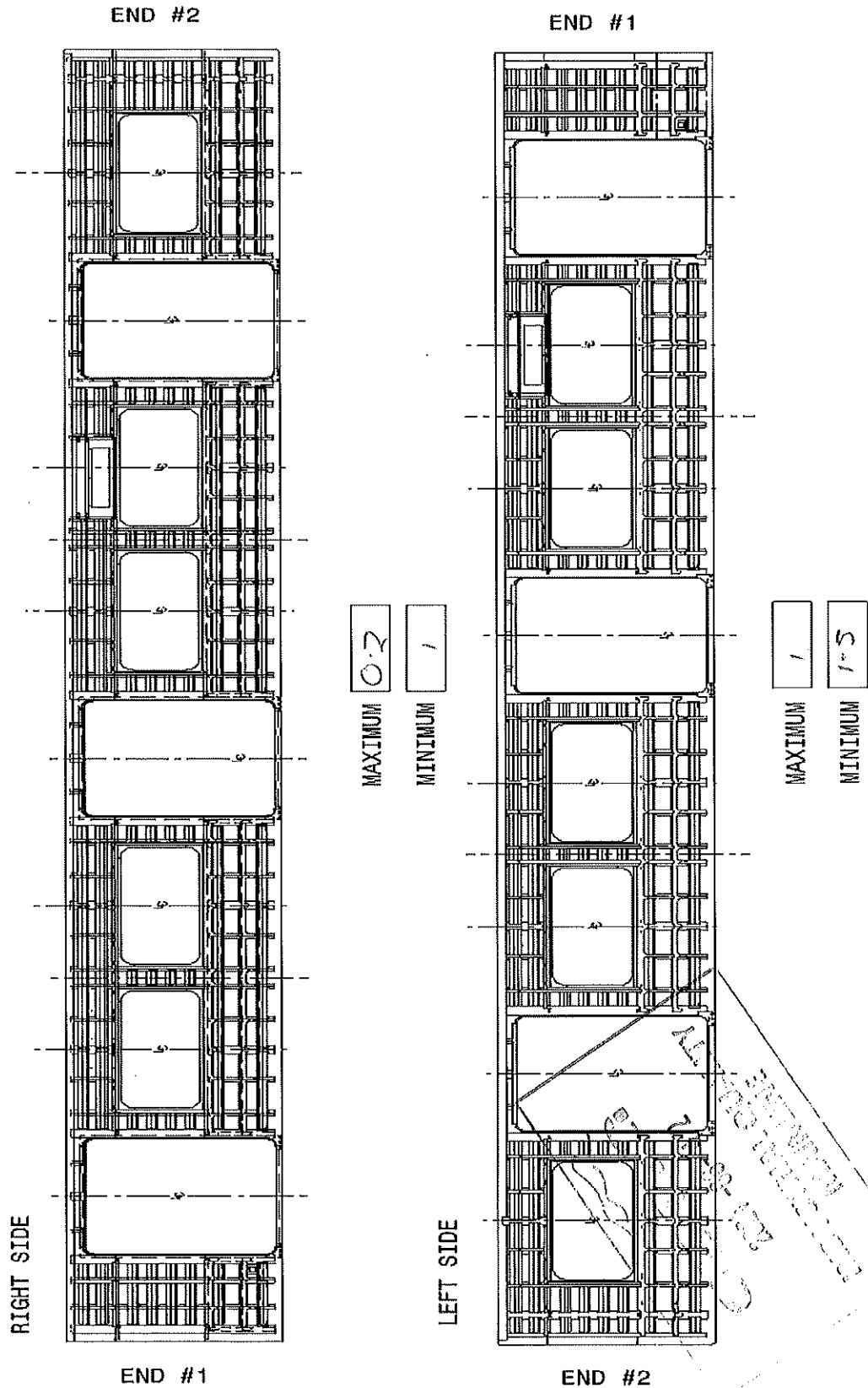
(F,H,I) BOTTOM  
Tshenolo





## Specifications of Details for CBS measurement CB2230

Flatness 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.



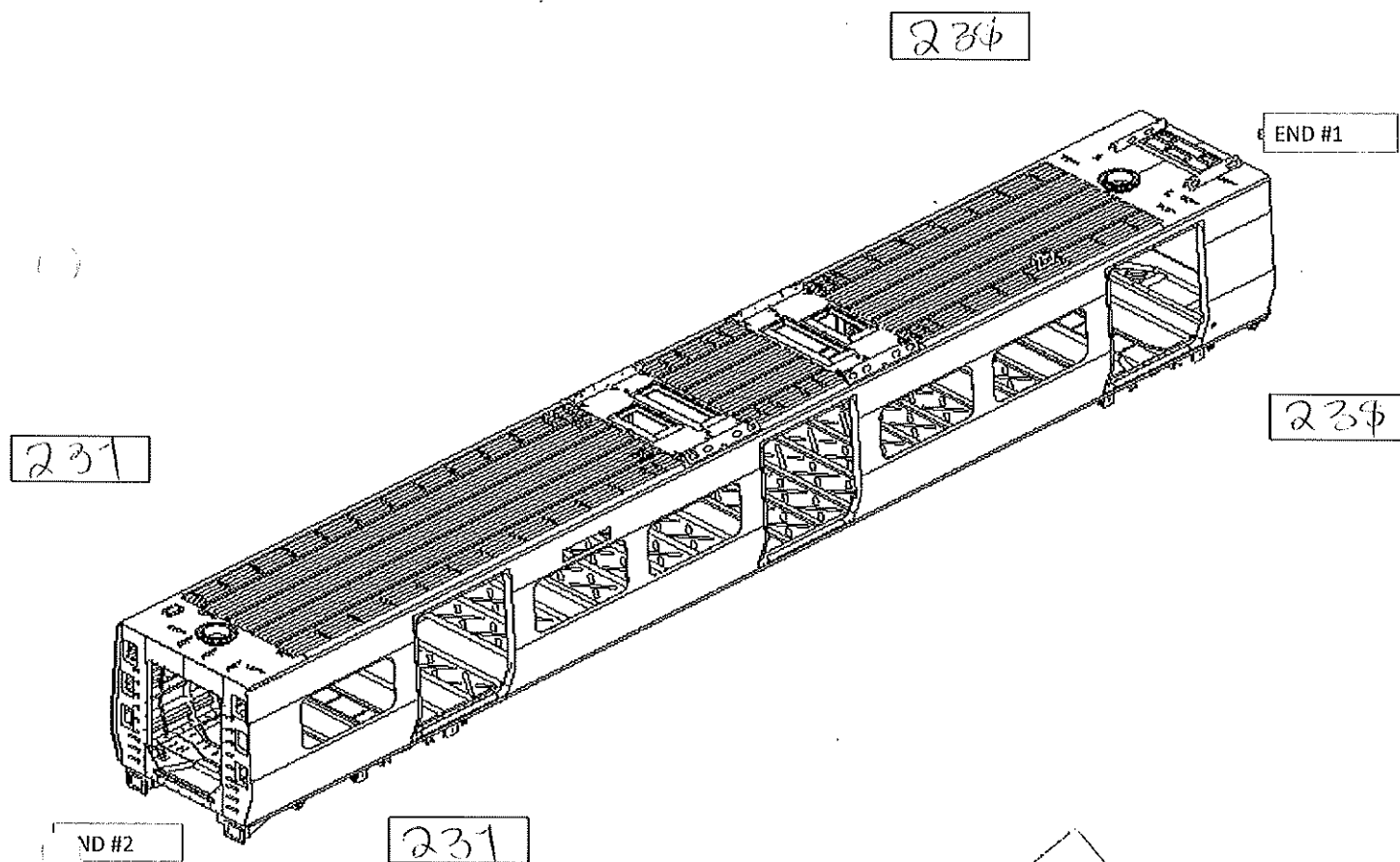






# Specifications of Details for CBS measurement CB2230

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

0

LONGITUDINAL

1

## MEASURED TWIST VALUES END 2

LATERAL

0.8

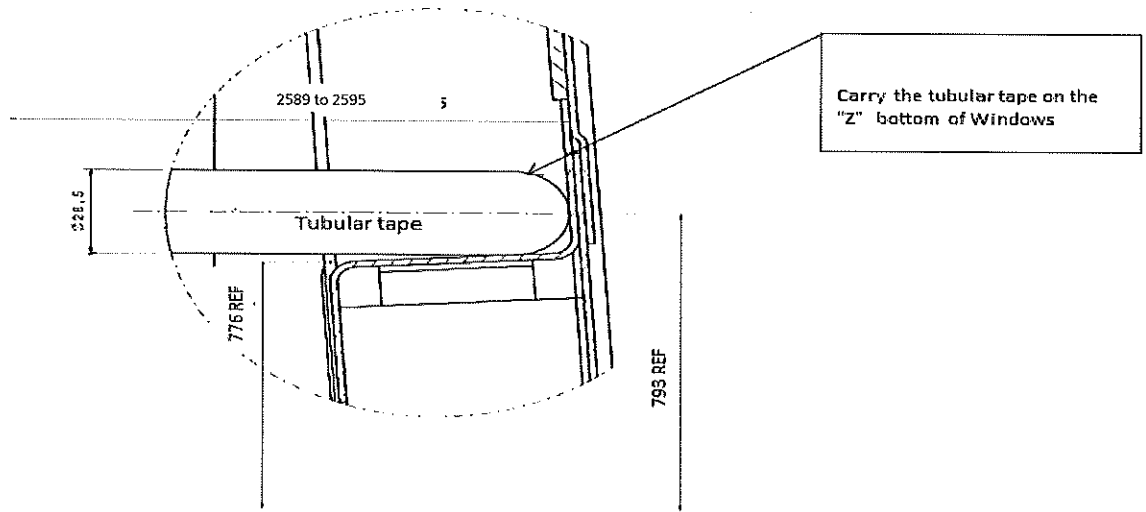
LONGITUDINAL

1.2

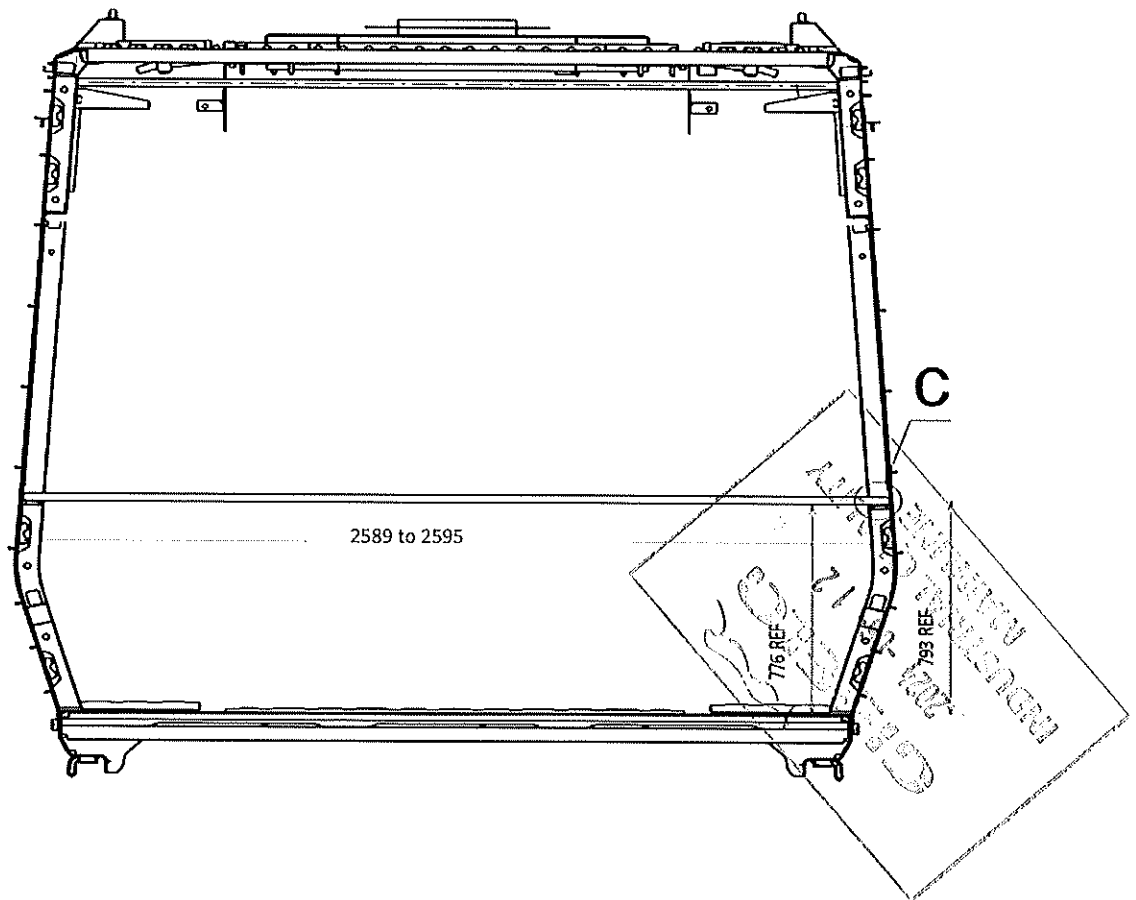
ALTAIR 3D MEASUREMENT  
2023-06-11 10:00:00  
SI.CB2230.324.V29



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



Detail C









DT00000223319 Carshell Assembly TC

Rev.  
30

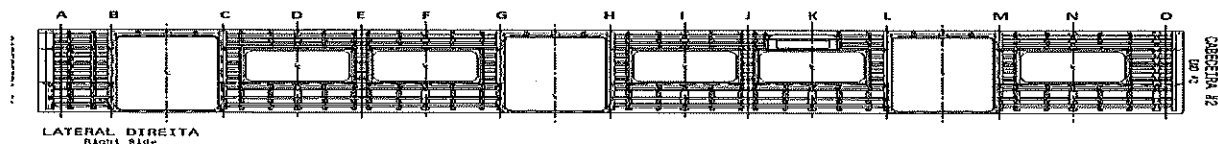
Date-

06/11/2023

Project: PRASA

SI.CB2230.324.V29

## Specifications of Details for CBS measurement



2589 to 2595mm

A	2595
B	2595
C	2595
D	2595
E	2592
F	2595
G	2594
H	2594
I	2595
J	2592
K	2595
L	2594
M	2595
N	2595
O	2595



## Threshold verification

Nominal value :38

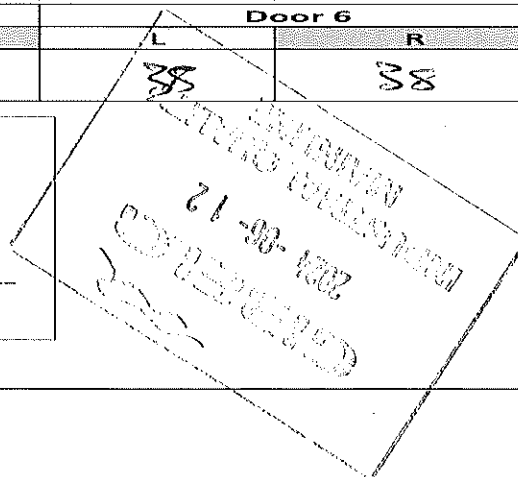
Door 1		Door 2		Door 3	
L	R	L	R	L	R
38	39	38	38	38	38
Door 4		Door 5		Door 6	
L	R	L	R	L	R
38	38	39	38	38	38

BOILER MAKER:

Sihle

WELDER:

Mogkuisa Enayonis

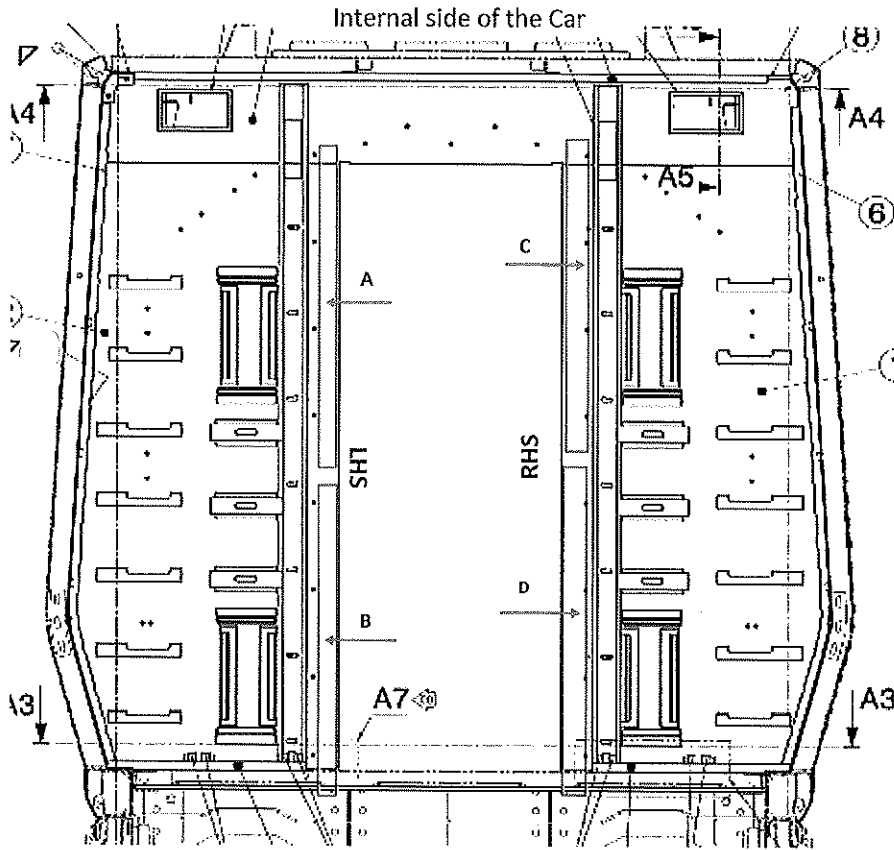




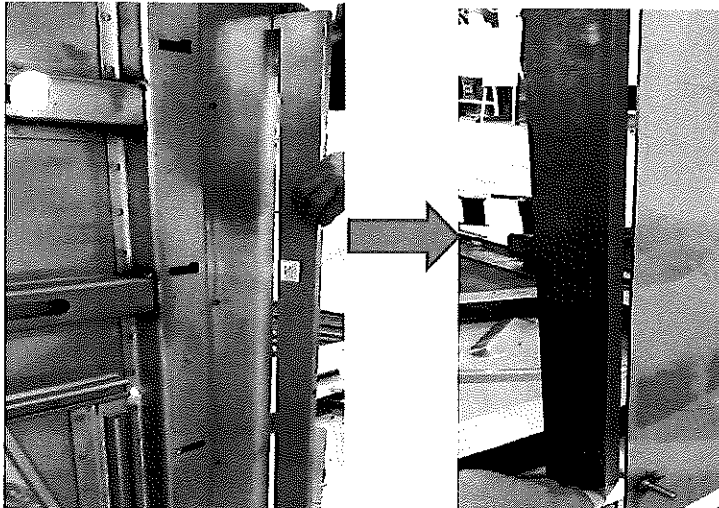
### Specifications of Details for CBS measurement

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	9.2	9.2	1
B	10.2	11.1	1.1
C	9.3	9.4	1.1
D	10.2	11.2	1







DT00000223319 Carshell Assembly TC

Rev.  
30

Date-  
06/11/2023

Project: PRASA

SI.CB2230.324.V29

## Dye penetrant test

Dye-penetration test to be performed by quality personnel

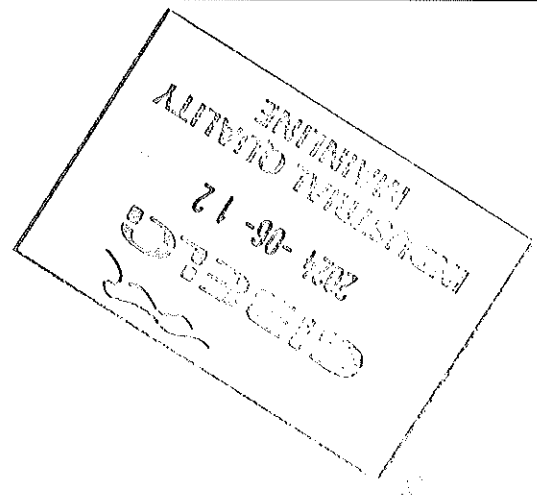


Item	Description of the issue	OK	Signature/Date (Operations)	Signature/Date (Quality)

### II.2 - Check List REX

#### Check List Items

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







DT00000223319 Carshell Assembly TC

Rev.  
30

Date-

06/11/2023

Project: PRASA

SI.CB2230.324.V29

## Self Inspection - Final Result

Is the car good to advance to the next workstation/process?  
(Approval of Operations Manager and Industrial Quality)

DATE

NAME

SIGNATURE

HOLD POINT

GO

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

21/06/24

Buhle  
Operations

[Signature]

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

21/06/24

Andani  
Industrial Quality

[Signature]

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

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

