



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	CB2210	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 final signature from PME Manager to Quality manager Change	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 Kelebene	
			REVISED BY	Mohlampe Amogelang	
28	07/11/2023	Addition of welding traceability	APPROVER	Ngobeni Tyson	07/11/2023
			CHECKER	Andani Muthelo	
			REVISED BY	Ntokozo Zwane	

TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
237	TC2	SEAN 410222	04/11/2024	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

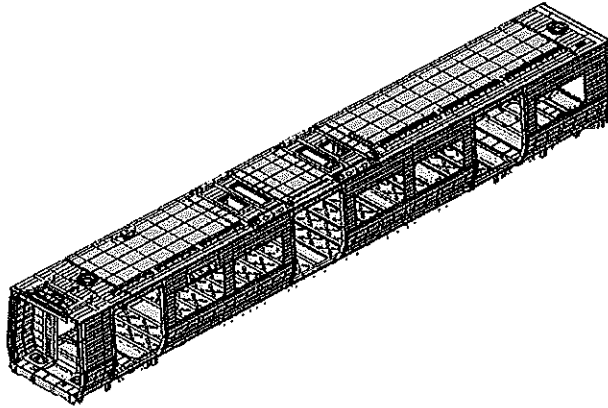
NCR:

Work station:

CB2210



Safety Related



I - Documentation and Instruments

I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
	T	E	M	S	M	T					
DTR30223319/3										N/A	<i>[Signature]</i> 04/07/24

I.2 - Instruments Control


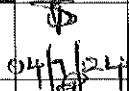
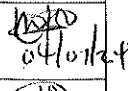
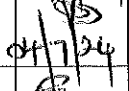
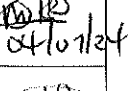
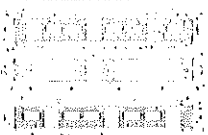
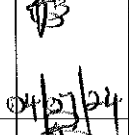
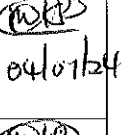
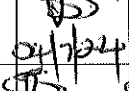
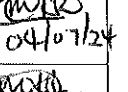
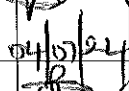
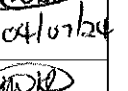

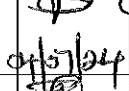
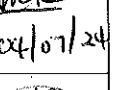

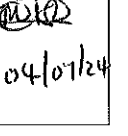
Monitoring and Measuring Instrument Control - Used for Special Process


Instruments	Validation	Calibration or Verification Validation Date	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
TUBULAR	32823-2	15/03/2024	✓	04/07/24	
30 M TAPE	GIB 1P0084	14/03/2024	✓	04/07/24	<i>[Signature]</i> 04/07/24
LASER TAPE	125425924	08/01/2024	✓	04/07/24	

1.3 Consumables

Welding Consumable Control - Used for Special Process

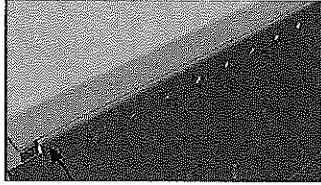
Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
308 LSi MIG	373779	MIG WELDING	✓	04/07/24	
309 LSi MIG	273471	MIG WELDING	✓	04/07/24	
308 L Tig	372201	TIG WELDING	✓	04/07/24	<i>[Signature]</i> 04/07/24

		<b>DTR30223319/3 Carshell Assembly TC</b>		<b>Rev. V28</b> <b>Date- 07/11/2023</b>		<b>Project: PRASA</b> <b>SI.CB2210.322.V28</b>	
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	✓		 04/07/24	 04/07/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		 04/07/24	 04/07/24
03		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		 04/07/24	 04/07/24
04	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 04/07/24	 04/07/24
05	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 04/07/24	 04/07/24
06		Cleaning of all Stoinless Steel Surface	According TO GIB-WEL - PROC.0002	✓		 04/07/24	 04/07/24
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	✓		 04/07/24	 04/07/24

	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA
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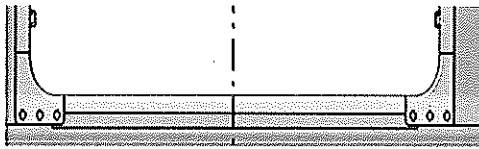
**Welder traceability**

Roof ring welds




<u>LHS</u>	
Boiler maker (Name & Sign): <u>Timew Bos</u>	Welder (Name & Sign): <u>BOBBETJ BASSA</u>
<u>RHS</u>	
Boiler maker (Name & Sign): <u>Tehogo Mastalere</u>	Welder (Name & Sign): <u>BOBBETJ BASSA</u>

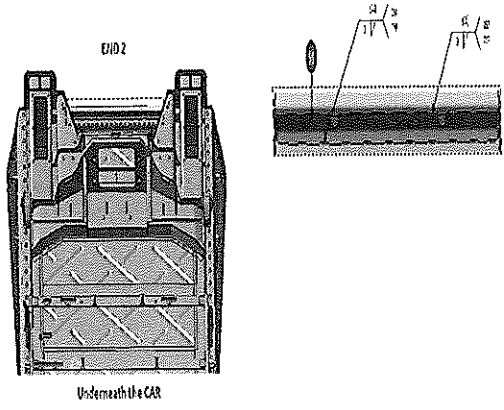
Door ring welds


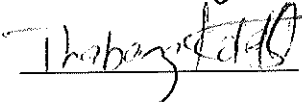


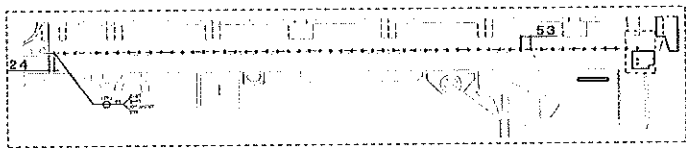
<u>LHS</u>	
Boiler maker (Name & Sign): <u>Tim Redden</u>	
Welder (Name & Sign): <u>BOBBETJ BASSA</u>	

<u>RHS</u>	
Boiler maker (Name & Sign): <u>Tehogo Mastalere</u>	
Welder (Name & Sign): <u>BOBBETJ BASSA</u>	

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

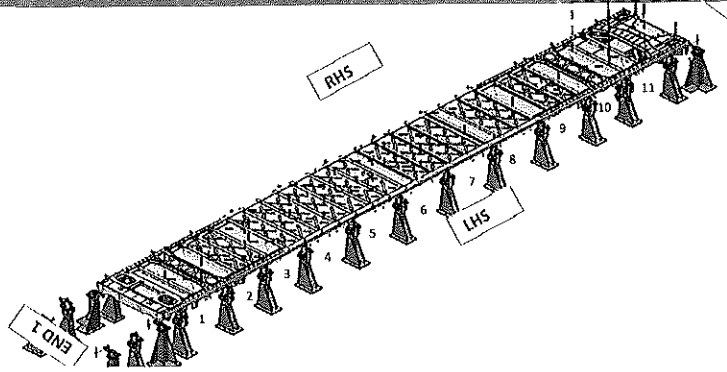



**END 2**  
Boiler maker (Name & Sign): JUSTICE   
Welder (Name & Sign): Thabang 



**FED01**  
Operator: Siphokazi

Specifications of Details for CBS measurement



	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRA5A SI.CB2210.322.V28
		Date- 07/11/2023	

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

Fill in the gap found on 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												
Right Hand Side												

Signature Operations:  Date: 04/07/2024

After Welding.

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

Signature Industrial Quality: \_\_\_\_\_ Date: \_\_\_\_\_



DTR30223319/3 Carshell Assembly TC

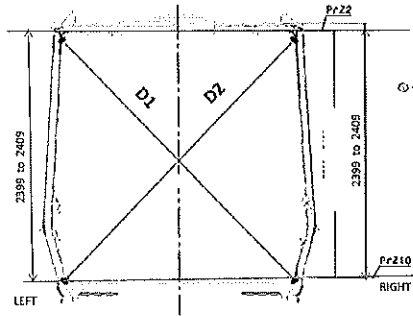
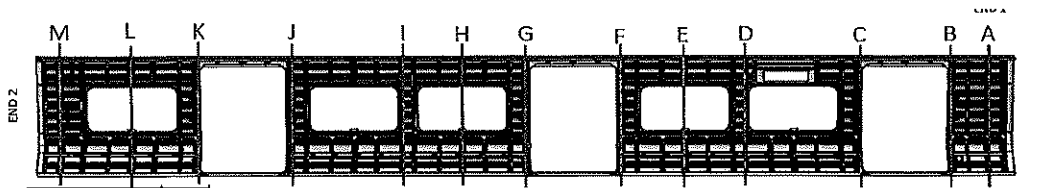
Rev. V28

Project: PRASA

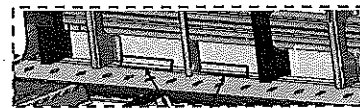
Date- 07/11/2023

SI.CB2210.322.V28

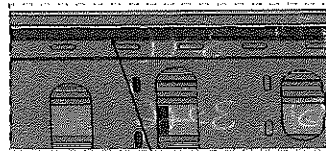
### Specifications of Details for GBS measurement



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.



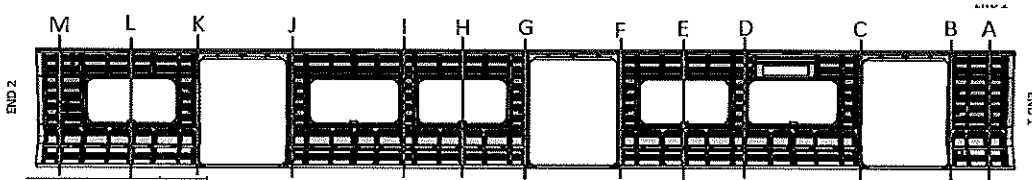
DTR30223319/3 Carshell Assembly TC

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SI.CB2210.322.V28

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 $\leq 2$
A	3266	3265	1	2405	2404	1
B	3265	3265	0	2405	2405	0
C	3266	3266	0	2406	2405	1
D	3267	3266	1	2406	2406	0
E	3266	3265	1	2405	2405	0
F	3265	3264	1	2406	2405	1
G	3266	3266	0	2405	2406	1
H	3265	3266	1	2406	2406	0
I	3266	3267	1	2406	2407	1
J	3265	3265	0	2405	2406	1
K	3265	3264	1	2406	2406	0
L	3267	3265	1	2406	2407	1
M	3267	3266	1	2407	2406	1

B  
04/07/2024



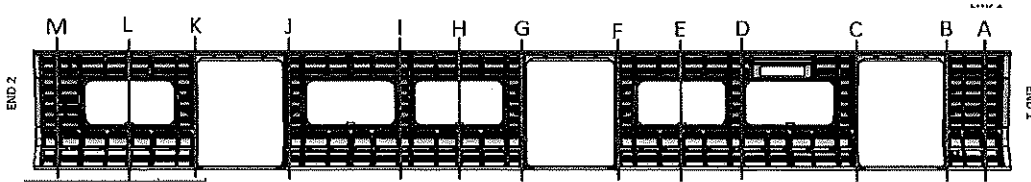
DTR30223319/3 Carshell Assembly TC

Rev. V28  
Date- 07/11/2023

Project: PRASA  
SI.CB2210.322.V28

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	3266	3265	1	2404	2405	1
B	3294	3294	0	2403	2406	1
C	3295	3295	0	2406	2405	1
D	3266	3266	0	2406	2406	0
E	3265	3266	1	2406	2406	0
F	3296	3295	1	2405	2406	1
G	3295	3294	1	2406	2405	1
H	3265	3264	1	2406	2406	0
I	3266	3267	1	2407	2406	1
J	3295	3296	1	2406	2406	0
K	3296	3295	1	2405	2406	1
L	3267	3266	1	2406	2407	1
M	3296	3297	1	2407	2408	1

04/07/2024



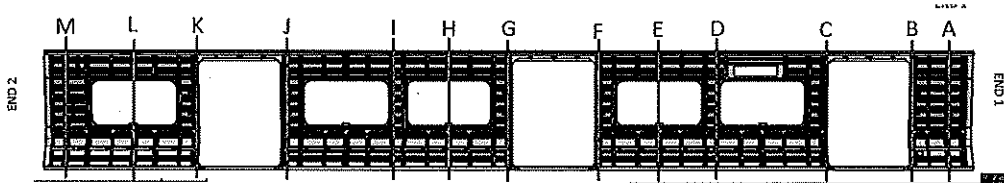
DTR30223319/3 Carshell Assembly TC

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Date- 07/11/2023

Project: PRASA  
SI.CB2210.322.V28

GBS measurement

BEFORE WELDING



2270 to 2276

2268 a 2274

A 2275

B 2274

C 2275

D 2276

E 2275

F 2274

G 2273

H 2275

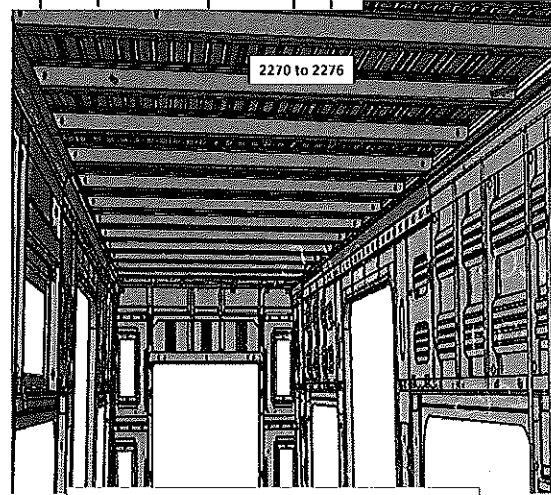
I 2276

J 2274

K 2275

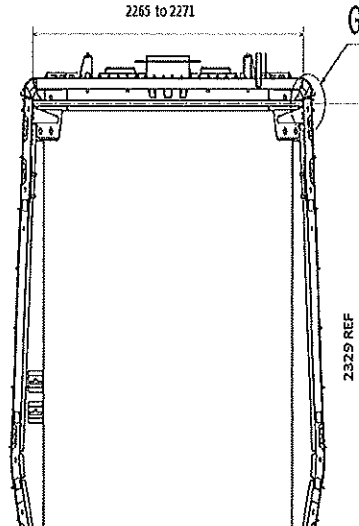
L 2276

M 2275

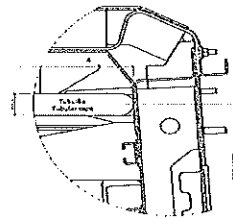


Do not consider reinforcement ( Take measurements top area of zee profile

2265 to 2271



2265 to 2271



Detail 0  
Considering the reinforcement plate.

Handwritten signature and date: 04/07/2024



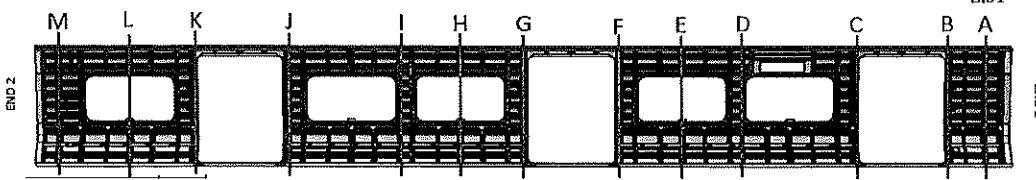
DTR30223319/3 Carshell Assembly TC

Rev. V28  
Date- 07/11/2023

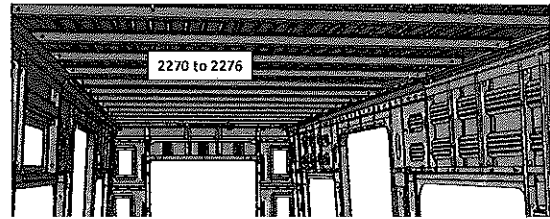
Project: PRASA  
SI.CB2210.322.V28

Specifications of Details for CBS measurement

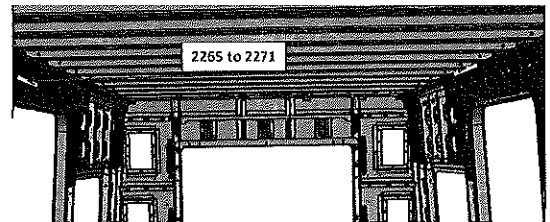
AFTER WELDING



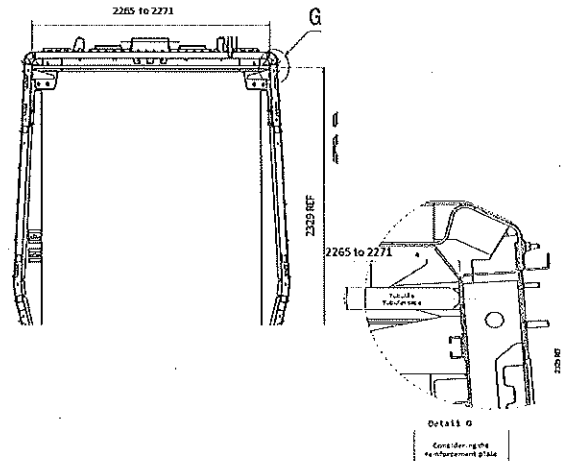
	2265 to 2271	2270 to 2276
A		2274
B	2269	
C	2268	
D		2273
E		2272
F	2267	
G	2266	
H		2273
I		2274
J	2267	
K	2266	
L		2275
M	2268	



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



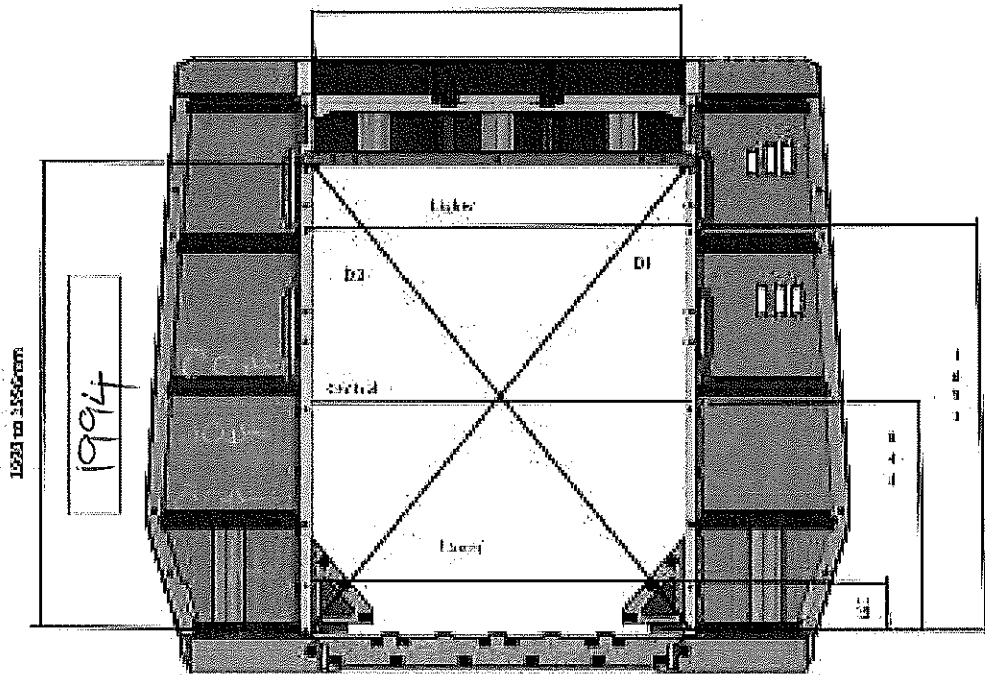
Take measurement close to radius ( considering reinforcement)



*[Signature]*  
04/07/2024

Specifications of Details for GBS measurement

Endframe 2



DIAGONAL DIFFERENCE D1-D2 = 3000

Upper Distance	D1
1382	2416
Central Distance	D2
1381	2415
Lower Distance	D1-D2
1380	1

*B*  
04/07/2024

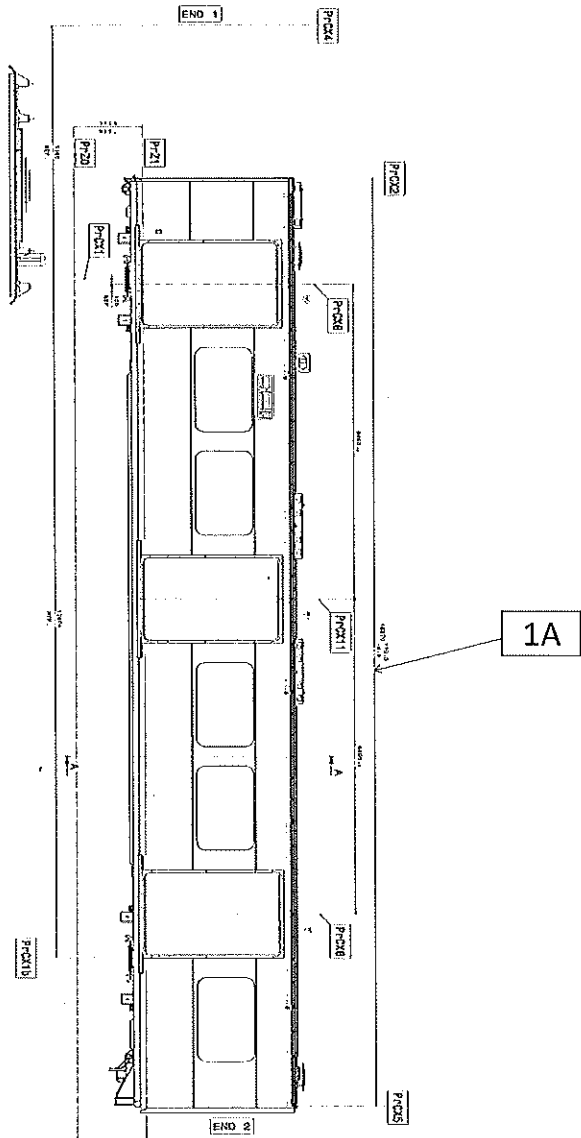


DTR30223319/3 Carshell Assembly TC

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 $\begin{matrix} +10.5 \\ -4.5 \end{matrix}$	18872

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

Dye penetrant test

Dye-penetration test to be performed by quality personnel



*[Handwritten signature]*  
04/07/2024





DTR30223319/3 Carshell Assembly TC

Rev. V28

Project: PRASA

Date- 07/11/2023

SI.CB2210.322.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	04/07/24	BEAN	
	If activities are not complete, the missing activities must not impact the next stage!		Operations	
	Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)		Quality	
	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":

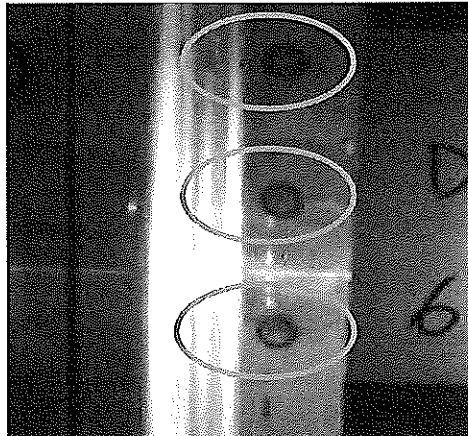
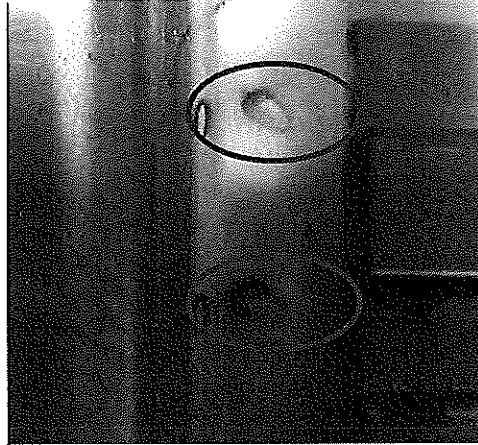
Item	Description	Action	Responsible	Due date	Status

Operations

Quality

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		Date- 07/11/2023	

**ANNEXURE A: Spot Welding Quality Acceptance Standard**







DTR30223319/2 Carshell Assembly TC

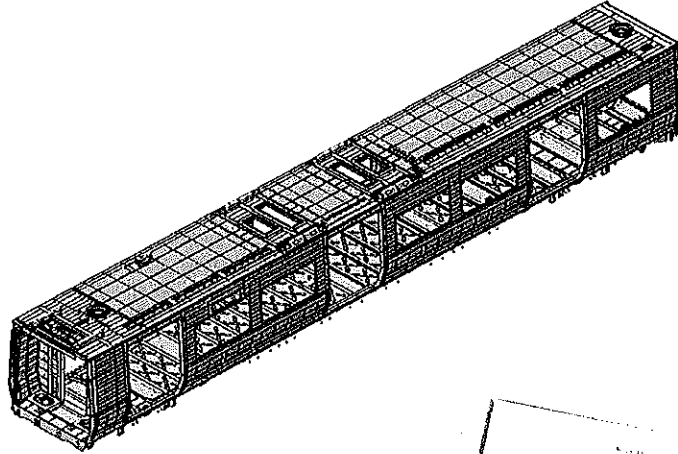
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Carro Car: TC1, TC2

NCR:

Work station: CB2220



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	05/02/24	✓	N/A	28-01/24

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)
Tubular	32423.2	15/03/2025	✓	[Signature]	28-01/24
Tape measure	GIBMA0431	2025/04/17	✓	[Signature]	28-01/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
308 LSI	313773	308 MEG	✓	[Signature]	28-01/24



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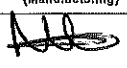

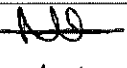



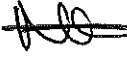

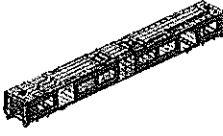
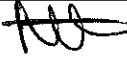



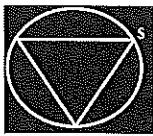




Date-


28/10/2023

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**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	✓		 05/07/24	 05/07/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		 05/07/24	 05/07/24
03	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 05/07/24	 05/07/24
04	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 05/07/24	 05/07/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 05/07/24	 05/07/24
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.	✓		 05/07/24	 05/07/24
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	✓		 05/07/24	 05/07/24
08	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 (H) 10°C - 35°C Relative humidity Min - Max (H) 25% - 60%	Sealant Batch No: <u>89387</u> Exp Date: <u>   </u> / <u>02</u> / <u>25</u> Actuals Temperature: <u>17</u> Humidity: <u>46</u>	✓		 05/07/24	 05/07/24

		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	✓		<del>AA</del> 05/07/24	<del>207</del> 05/01/24
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>	✓		<del>AA</del> 05/07/24	<del>207</del> 05/01/24

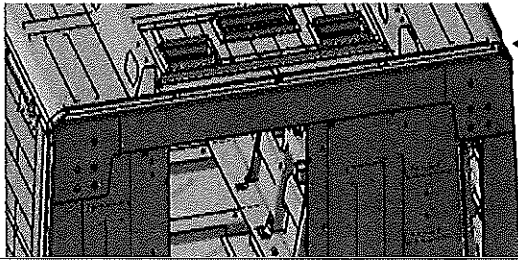
11/11/2023  
 P. S. S. S.  
 05/07/24  
 05/01/24



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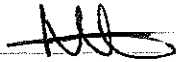


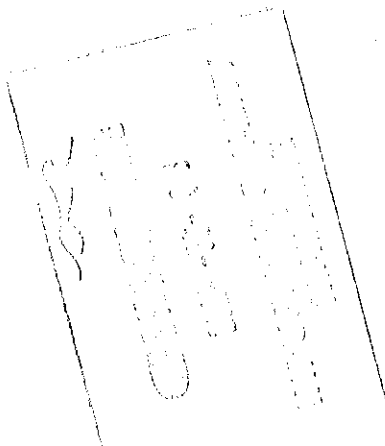
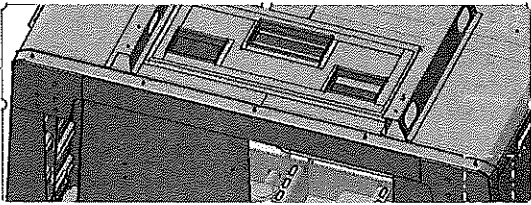
END 1  
SEALANT


OPERATOR  
(Name & sign):

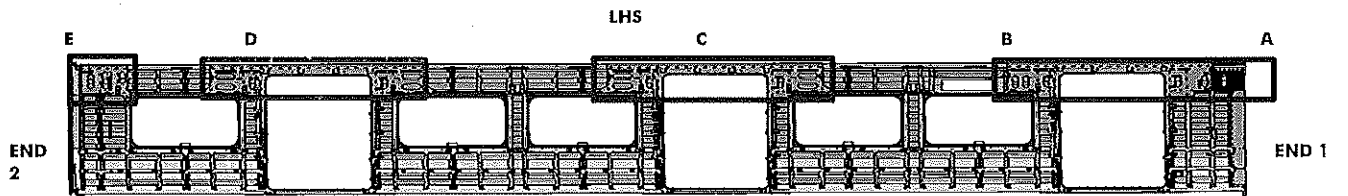
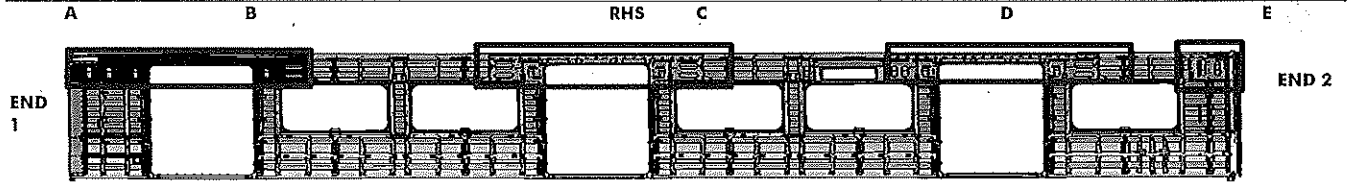
Mthokozi: 

OPERATOR  
(Name & sign):





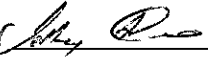
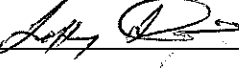
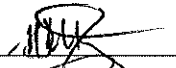

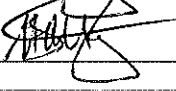

Mthokozi: 



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		Date- 28/10/2023	



**REINFORCEMENT WELDING**

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





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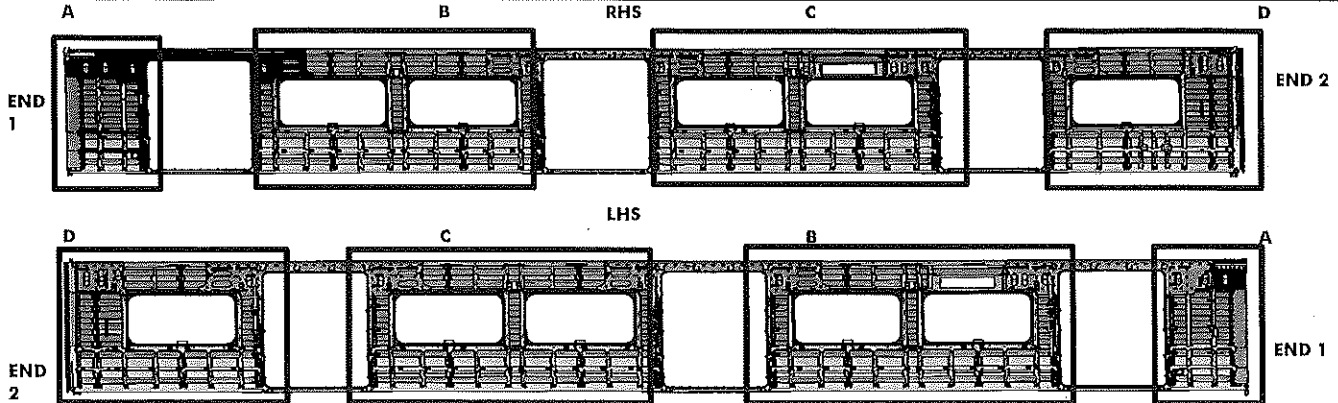
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**BRACKETING**

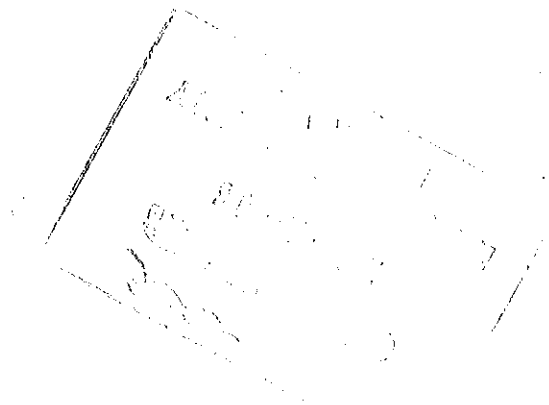
C-RAILS:	Operator:	INSTALLATION <u>THULANI</u>	
	Operator:	_____	
DOOR MECHANISMS:	Operator:	<u>Mandla Mchucku</u>	
	Operator:	_____	
TAPPING PADS	Operator:	<u>Makuhaga</u>	
	Operator:	_____	
		INSTALLATION & VERIFICATION	
SEAT & LUGGAGE BRACKETS:	Operator:	<u>Tetele</u>	
	Operator:	_____	
SEAT BRACKETS VERIFICATION:	Operator:	<u>Tetele</u>	
	Operator:	_____	
		WELDING	
AREA		LHS	RHS
A ( <del>Seat</del> brackets) END 1	Operator (Name&sign):	<u>LINDO</u>	<u>LINDO</u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign):	<u>LINDO</u>	<u>LINDO</u>
B (Seat brackets)	Operator (Name&sign):	<u>Mandla</u>	<u>Mandla</u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign):	<u>Sibya</u>	<u>Mamatshuwa Mhaka</u>
C (Seat brackets)	Operator (Name&sign):	<u>THULANI</u>	<u>THULANI</u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign):	<u>Mamatshuwa</u>	<u>Mamatshuwa Mhaka</u>
D (Seat brackets)	Operator (Name&sign):	<u>Sibya</u>	<u>Sibya</u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign):	<u>Mamatshuwa</u>	<u>Mamatshuwa Mhaka</u>

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		Date-	
		28/10/2023	

ENDS

END 1 TAPPING PADS WELDING: Operator (Name&sign): N/A

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





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Rev. 29

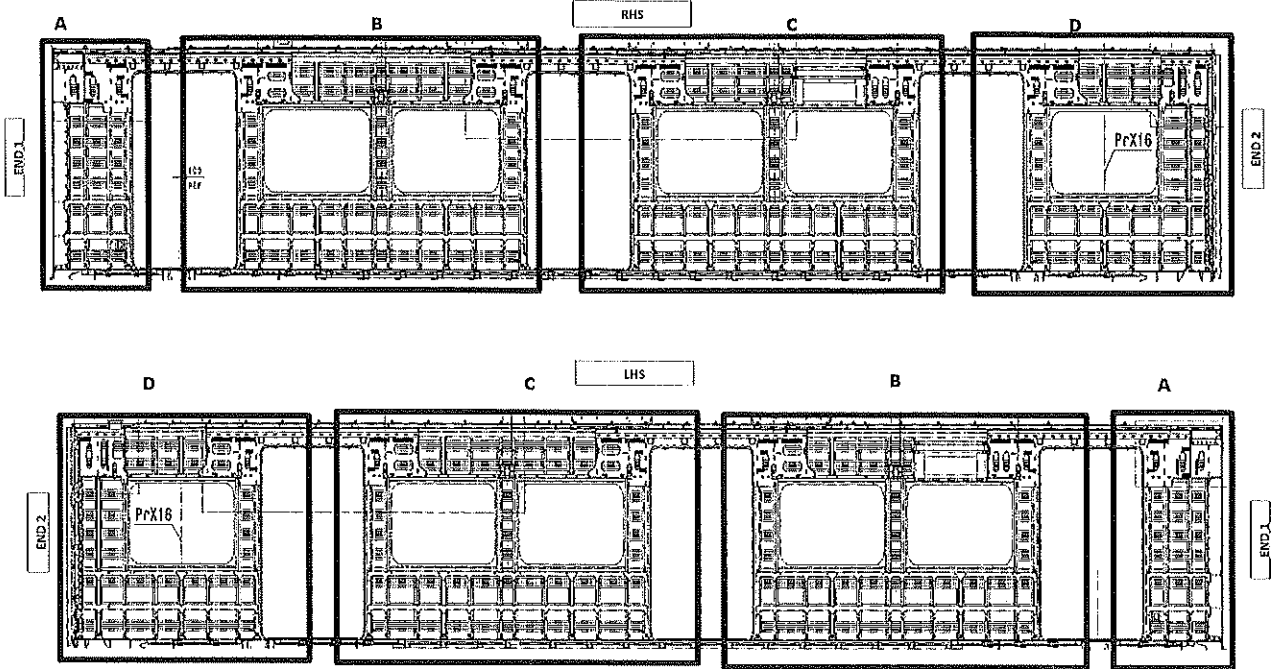
Project: PRASA

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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	/	X
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:

*Mthokozisi*

LHS

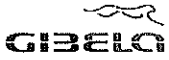
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	4	/	
	B	8	/	
	C	4	/	
	D	6	/	
SEAT BRACKETS	A	0	/	
	B	21	/	
	C	21	/	
	D	13	/	
EARTH BUSH	A	1	/	
	B	4	/	
	C	4	/	
	D	2	/	

ROOF ENDS:

CRAILS 2 OFF END 2  
EARTH BUSH 4 OFF END 2

VERIFICATION BY:

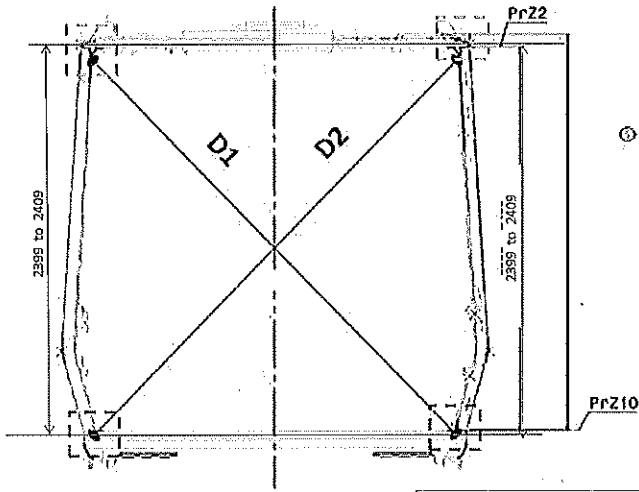
*Mthokozisi*



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Date-  
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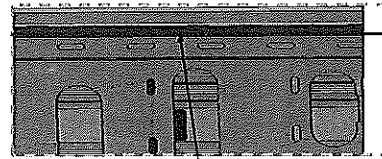
Project: PRASA  
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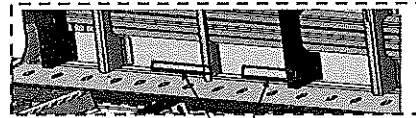
Take measurement close to radius



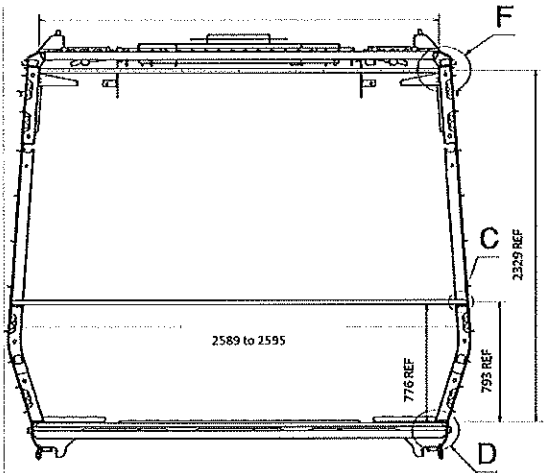
Measurement positions on roof rail and sidewall omega corner.



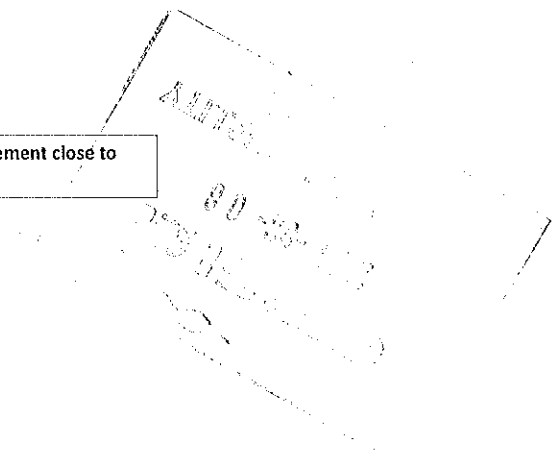
Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.



Take measurement close to radius

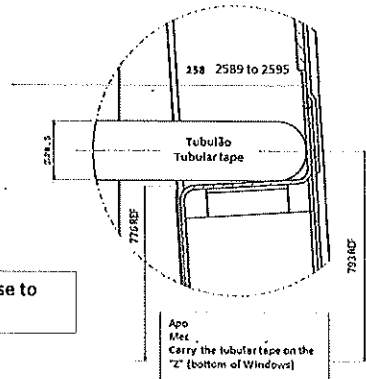
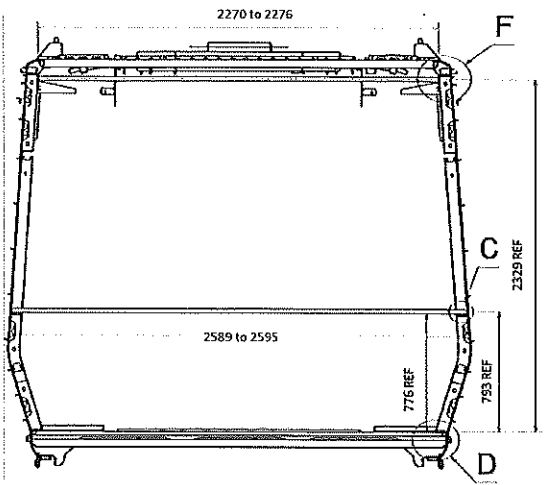




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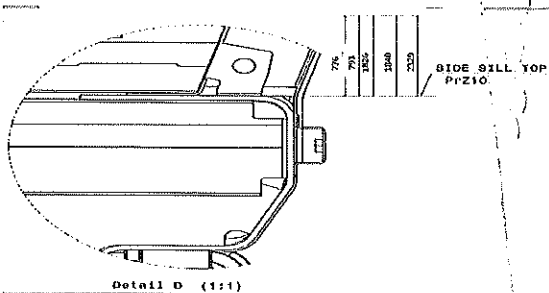
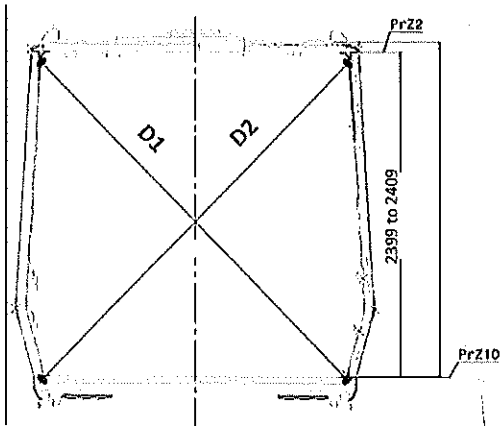
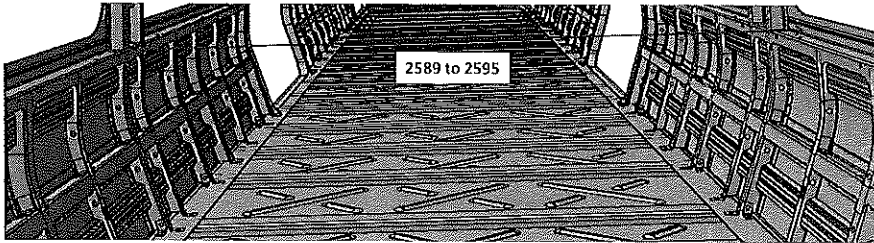
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Take measurement close to radius

Detail C

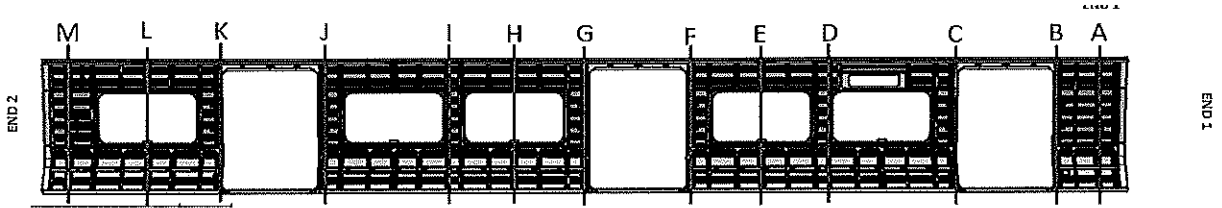




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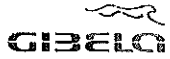
Project: PRASA  
SI.CB2220.323.V29



**BEFORE WELDING**

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3260	3262	2	-
B	3290	3290	0	-
C	3298	3291	7	-
D	3265	3263	2	-
E	3264	3263	1	-
F	3292	3294	2	-
G	3296	3291	5	-
H	3265	3260	5	-
I	3267	3261	6	-
J	3298	3295	3	-
K	3295	3292	3	-
L	3265	3265	0	-
M	3291	3295	4	-

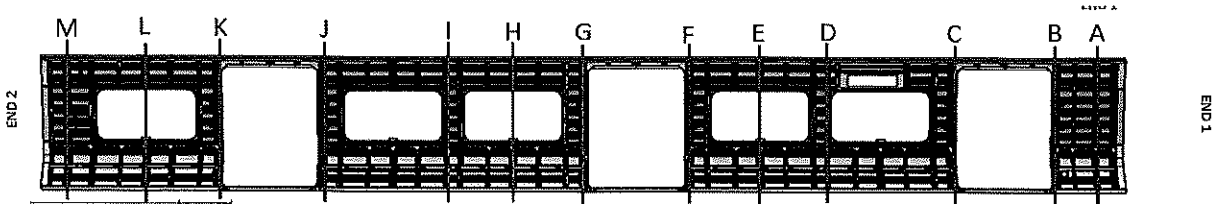




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AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3245	3245	0	2589
B	3290	3290	0	2589
C	3290	3297	7 *	2590
D	3262	3264	2	2595
E	3262	3263	1	2595
F	3294	3292	2	2593
G	3292	3292	0	2589
H	3260	3264	4	2595
I	3260	3266	6 *	2589
J	3294	3297	3	2594
K	3292	3295	3	2590
L	3264	3265	1	2595
M	3291	3298	7 *	2595

PME  
Buck  
OK at 12/07/2024

Handwritten notes and a signature in the bottom left corner.

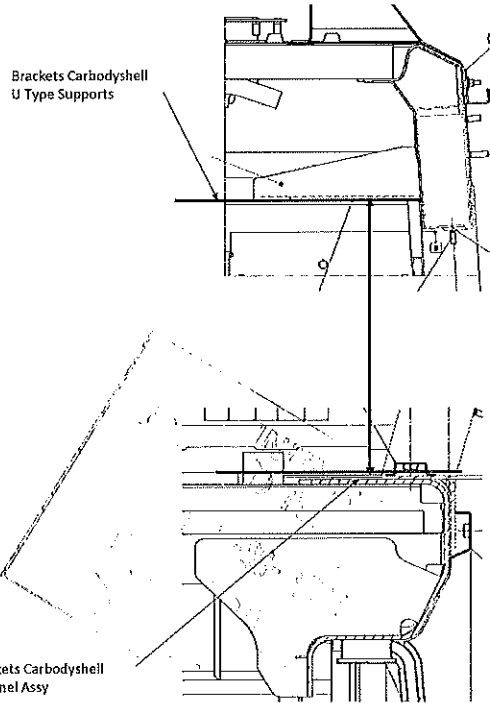
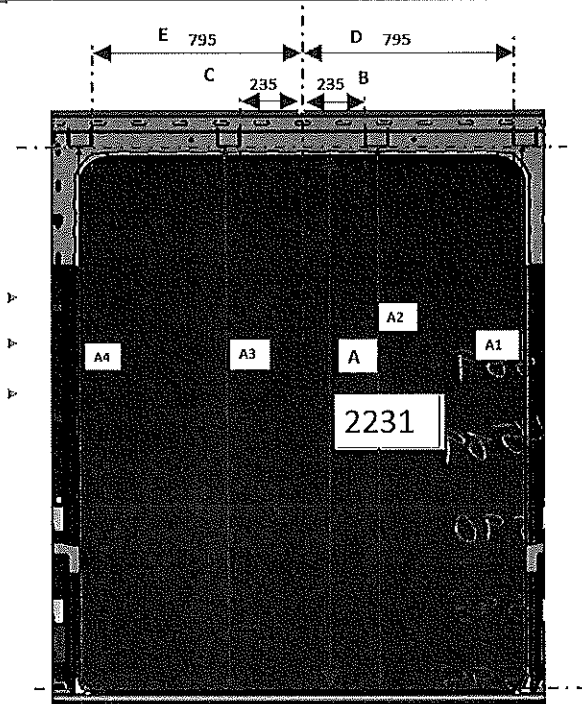


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Date  
28/10/2023

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Specifications of Details for CBS measurement



DOOR 1 - LHS

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

DOOR 2 - LHS

	VALUE	ACTUAL
A1	2230 to 2232	2231
A2	2230 to 2232	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 3 - LHS

	VALUE	ACTUAL
A1	2230 to 2232	2233
A2	2230 to 2232	2233
A3	2230 to 2232	2233
A4	2230 to 2232	2233
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	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 3 - RHS

	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

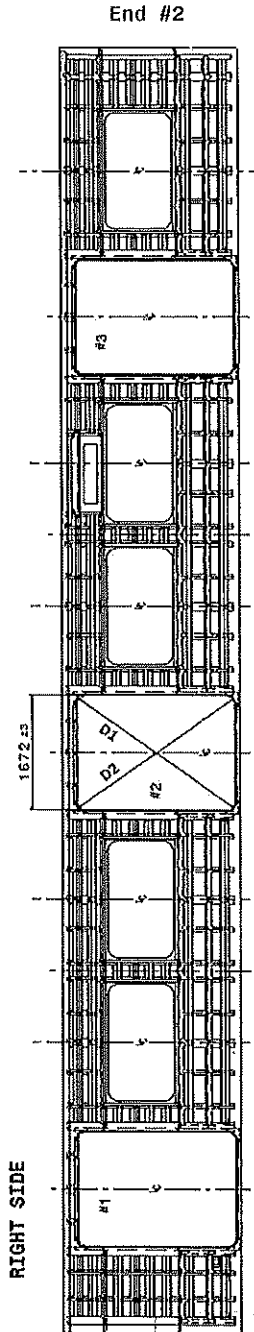


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Specifications of Details for CBS measurement

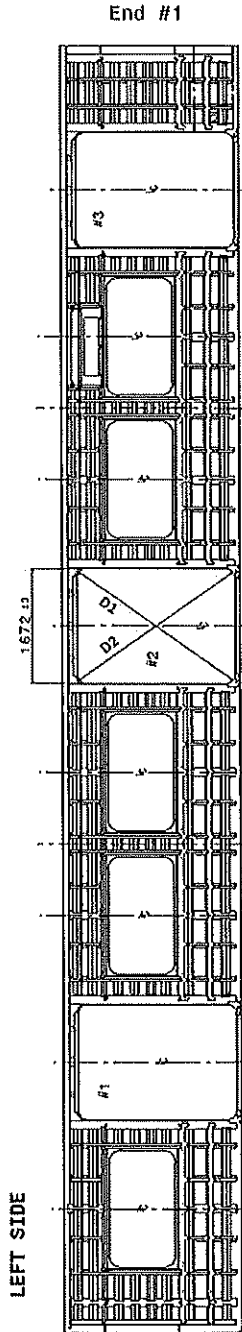


Doors diagonal D1-D2 maximum difference  $\leq 4$ mm

	#1	#2	#3
D1	2788	2744	2749
D2	2791	2800	2788
D1-D2	1	1	2

Doors length - 1672  $\pm 3$ mm

	#1	#2	#3
HIGHER DIMENSION	1673	1672	1672
CENTRAL DIMENSION	1674	1674	1674
LOWER DIMENSION	1671	1673	1673



Diagonal de portas - diferença D1-D2  $\leq 4$ mm

	#1	#2	#3
D1	2751	2748	2750
D2	2752	2749	2746
D1-D2	1	1	1

Vão de Portas - 1672  $\pm 3$ mm

	#1	#2	#3
DIMENSÃO SUPERIOR	1671	1672	1673
HIGHER DIMENSION	1673	1672	1673
CENTRAL DIMENSION	1674	1673	1673
LOWER DIMENSION	1674	1673	1673



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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	Not OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX				





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Date-

S1.CB2220.323.V29

28/10/2023

Self Inspection - Final Result

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)		DATE	NAME	SIGNATURE	
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!	05/07/24	M. Thokozi	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	05/07/24	M. Thokozi	
	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)			

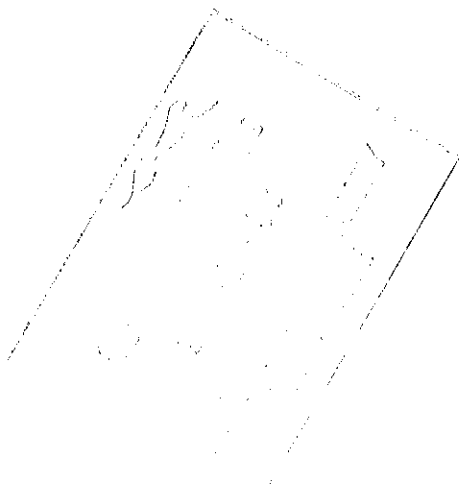
In case of "NO GO", describe blocking problems


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

Item	Description	Action	Responsible	Due date	Status

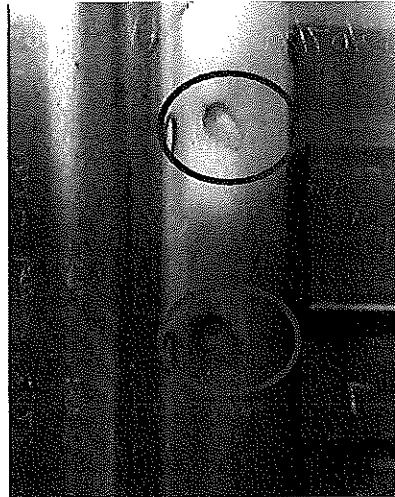
Operations

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**



GIBELA

PRASA PROJECT



APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

# SELF INSPECTION SHEET

**CONFIDENTIAL INFORMATION**

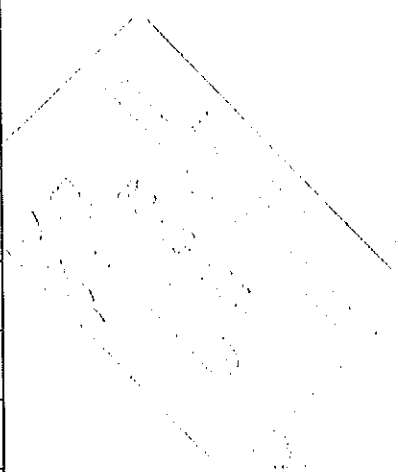
This document and the information contemplated therein have to be considered as Confidential Information pursuant to the provisions of Clause 25 of the MSA, and treated as such.

**APPLICATION REFERENCE**

FOUNDING	DRAWING	DESCRIPTION	STATION	CAR TYPE							WORK INSTRUCTION	SAFETY
				TCL	PA	ML	BL	BL	TCL	TCL		
DT0000113119	AAD001238113	DTE000011119 Carbody Assembly TC	CB1210	X							PRA.CB1230.DT00000123319.V20	YES

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	06/04/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	06/04/2018
			CHECKER	Nosizo Pindela	06/04/2018
			COMPILER	Thanyani Machege	06/04/2018
1	30/05/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	30/05/2018
			CHECKER	Nosizo Pindela	30/05/2018
			REVISED BY	Nosizo Pindela	30/05/2018
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 Mshombhi	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 Mshombhi	14/06/2022
			CHECKER	Andani Muthelo	
			COMPILER	Andani Muthelo	
27	26/07/2022	Threshold measurements addition	APPROVER	Collins Mshombhi	26/07/2022
			CHECKER	Andani Muthelo	
			COMPILER	Andani Muthelo	
28	17/10/2022	Addition of traceability for sealant application	APPROVER	Collins Mshombhi	17/10/2022
			CHECKER	Nickozo Zwane	
			COMPILER	Amogelang Moshampe	
29	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Nickozo Zwane	
			COMPILER	Amogelang Moshampe	
30	06/11/2023	Added traceability for thresholds for boiler makers and welders	APPROVER	Tyson Ngobeni	06/11/2023
			CHECKER	Andani Muthelo	
			COMPILER	Nickozo Zwane	

TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
237	TC 2	Nosizo Pindela 1127123	09/07/2021	SI.CB1230.324.V20	14





DT00000223319 Carshell Assembly TC

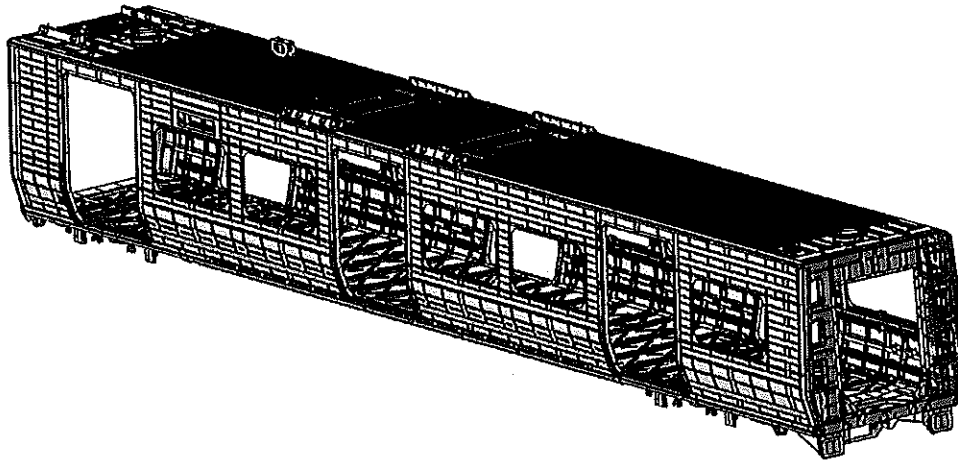
Rev. 30  
Date- 06/11/2023

Project PRASA  
SI.CB1230.324.V29

Carro Car.

NCR:

Work station: CB1230



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							
DT00000223319						30		✓		N/A	09/07/24	09/07/24

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	32823	15/07/2024	✓		09/07/24	09/07/24
Measuring Tape	668100397	27/07/2024	✓		09/07/24	09/07/24
Combination Square	41350012	22/07/2024	✓		09/07/24	09/07/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308LSI	211013-71077	MIG	✓		09/07/24	09/07/24
ER 308L	299607-71022	TIG	✓		09/07/24	09/07/24



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II - Control Activities of Production

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	NO	Remark	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering nº DT00000223319	DT00000223319	✓			<i>[Signature]</i> 09/07/2023	<i>[Signature]</i> 09/07/2023
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓			<i>[Signature]</i> 09/07/2023	<i>[Signature]</i> 09/07/2023
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 DTD0000210675	✓			<i>[Signature]</i> 09/07/2023	<i>[Signature]</i> 09/07/2023
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.	✓			<i>[Signature]</i> 09/07/2023	<i>[Signature]</i> 09/07/2023
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	✓			<i>[Signature]</i> 09/07/2023	<i>[Signature]</i> 09/07/2023
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 (H)    Min-Max    10°C - 35°C Relative Humidity Min - Max (H)    Min-Max    25% - 60%	Sealant Batch No: <u>24230442</u> Exp Date: <u>1/02/25</u>  Actuals Temperature: <u>10.1°C</u> Humidity: <u>48%</u>	✓			<i>[Signature]</i> 09/07/2023	<i>[Signature]</i> 09/07/2023
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	✓			<i>[Signature]</i> 09/07/2023	<i>[Signature]</i> 09/07/2023

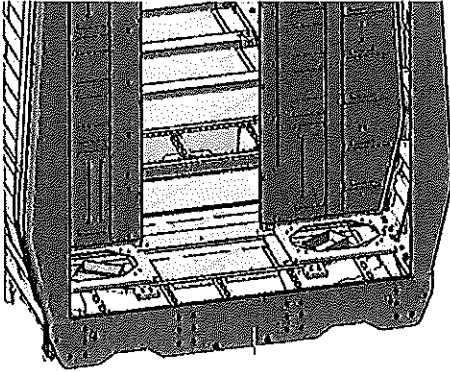


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30  
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06/11/2023

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SI.CB1230.324.V29

VIEW A



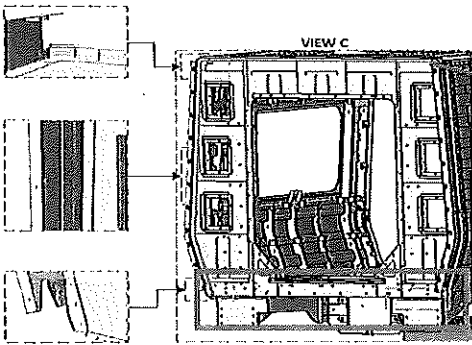
**END 1  
SEALANT**

OPERATOR  
(Name & sign):

LERAEO LHS

OPERATOR  
(Name & sign):

Tshenolo RHS



OPERATOR  
(Name&sign):

Leroy

OPERATOR  
(Name&sign):

OPERATOR  
(Name&sign):

Leroy



DT00000223319 Carshell Assembly TC

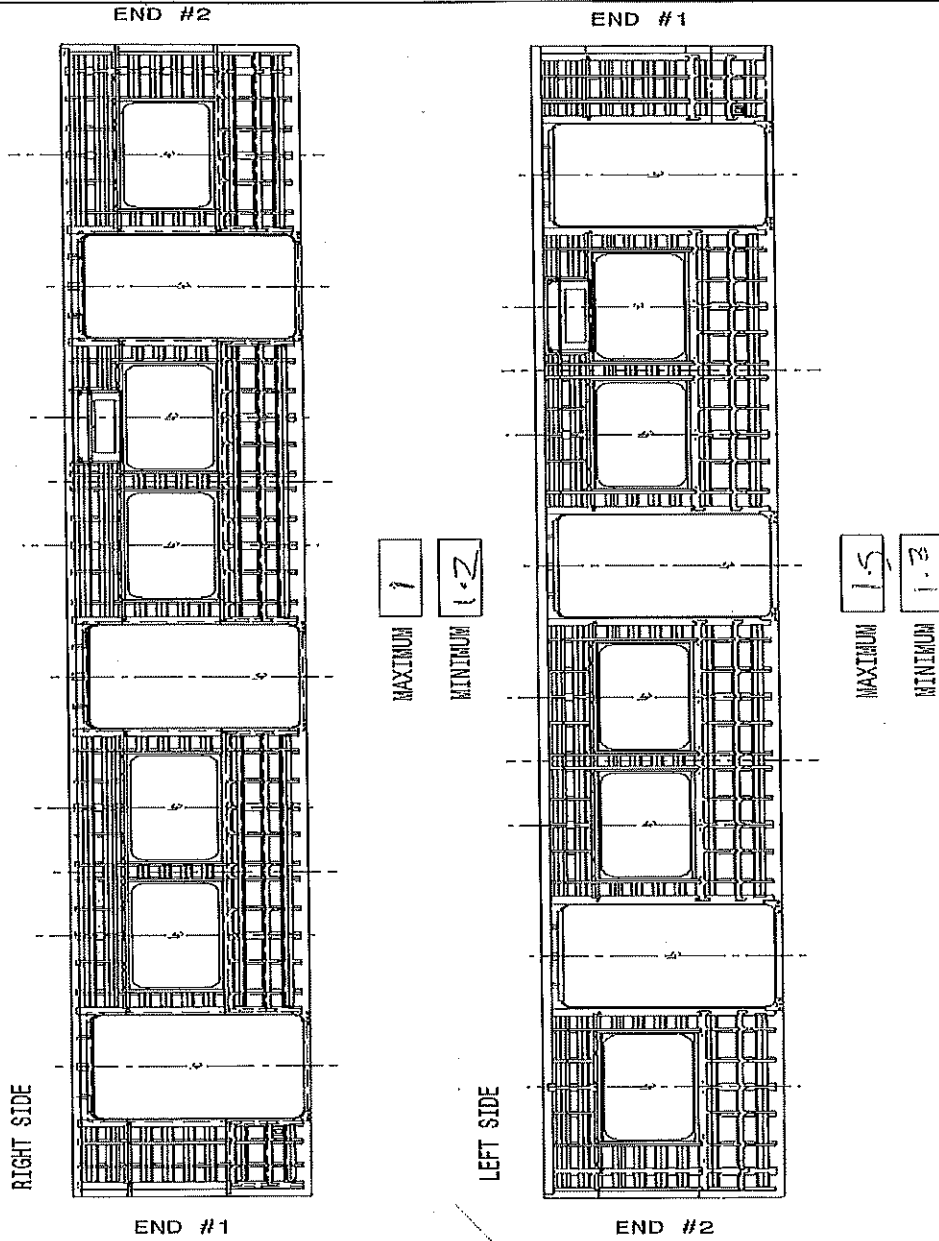
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Flatness side left and right maximum of 2mm in the valley to peak measured in 900mm. Recod the maximum and minimum value found and indicate the corresponding region.





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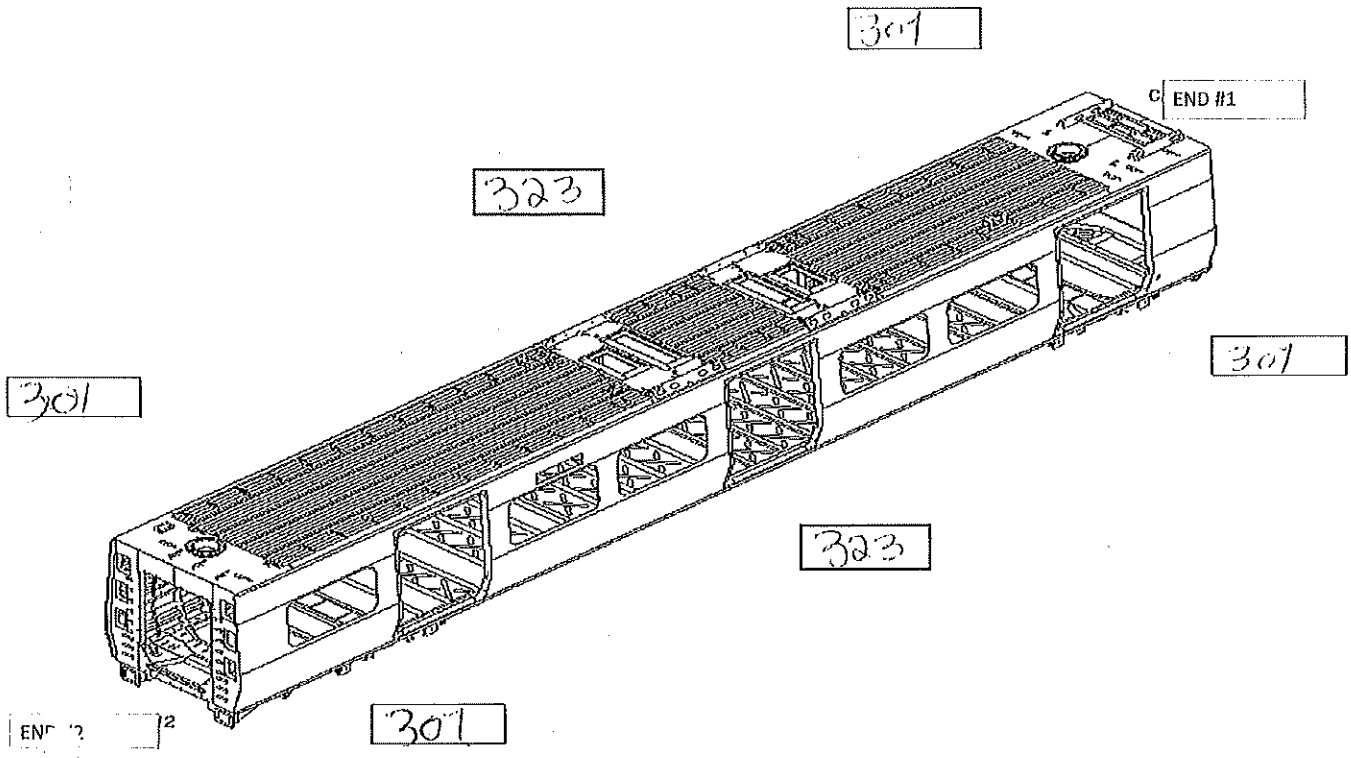
Project: PRASA

Date-  
06/11/2023

SI.CB1230.324.V29

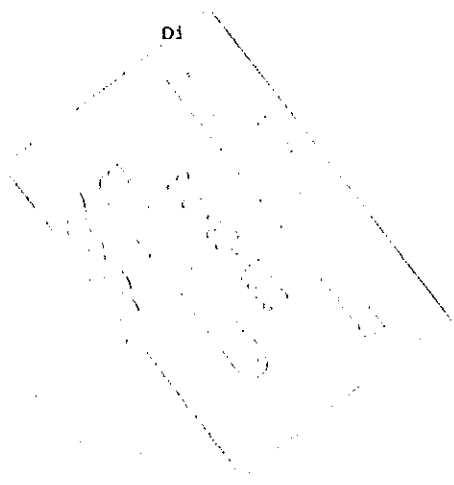
Specifications of Details for CBS measurement CB1230

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



MEASURED CAMBER VALUES

RIGHT →   
LEFT ←





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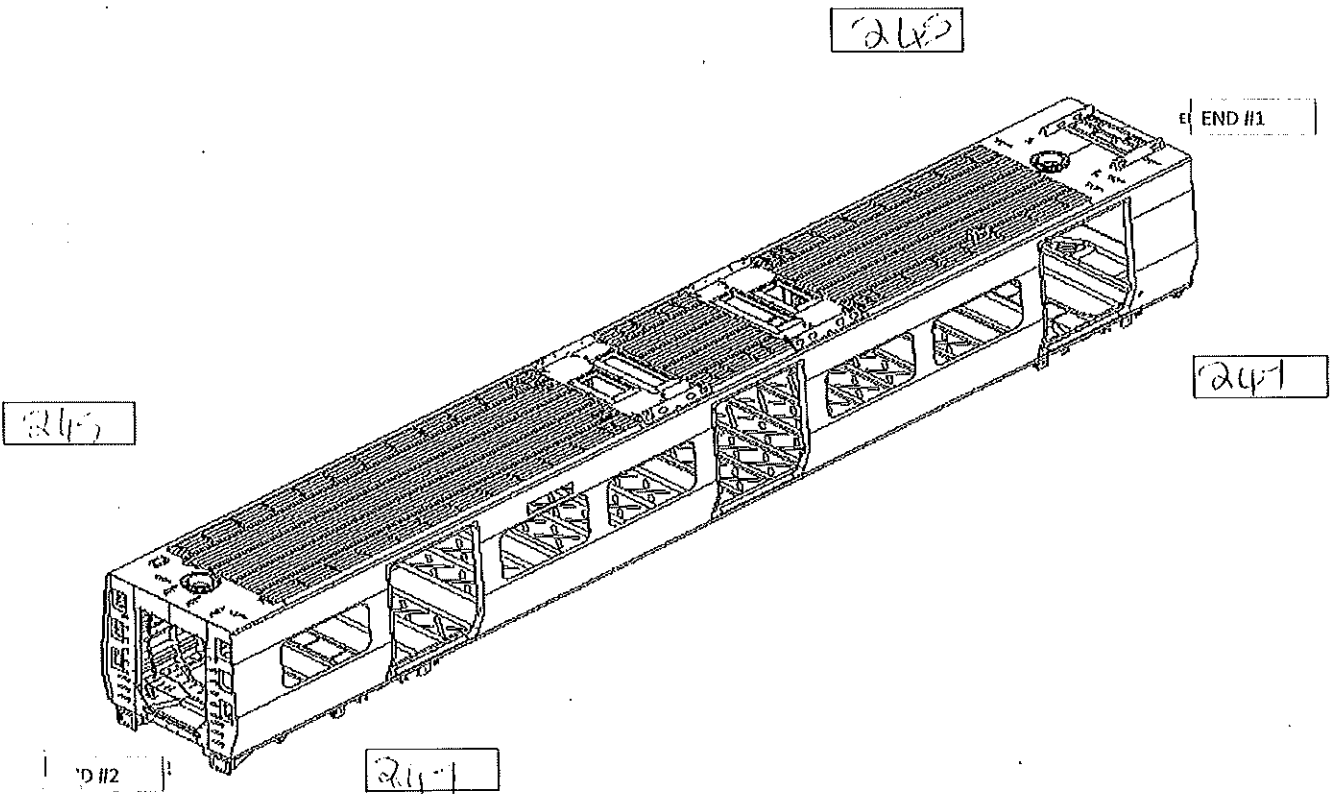
Date-

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Specifications of Details for CBS measurement CB1230

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



MEASURED TWIST VALUES END 1

LATERAL

2

LONGITUDINAL

1

0

MEASURED TWIST VALUES END 2

LATERAL

2

LONGITUDINAL

0



DT00000223319 Carshell Assembly TC

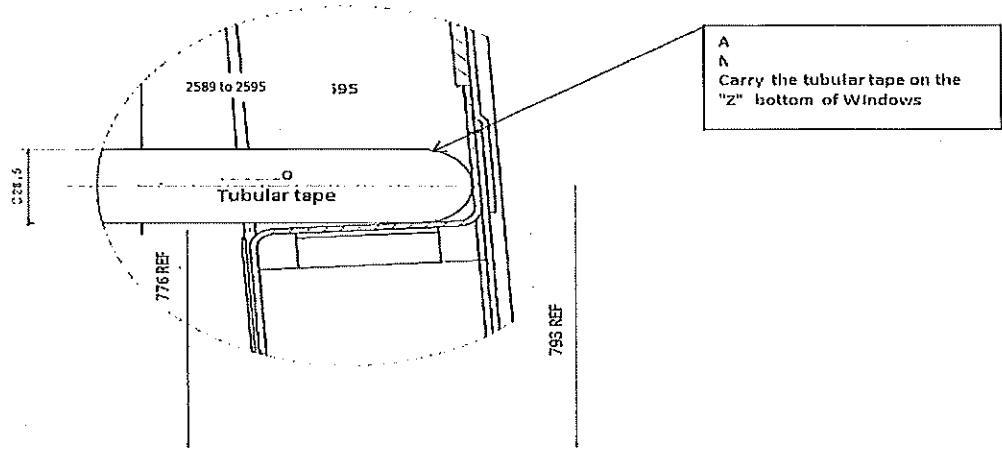
Rev.  
30

Project: PRASA

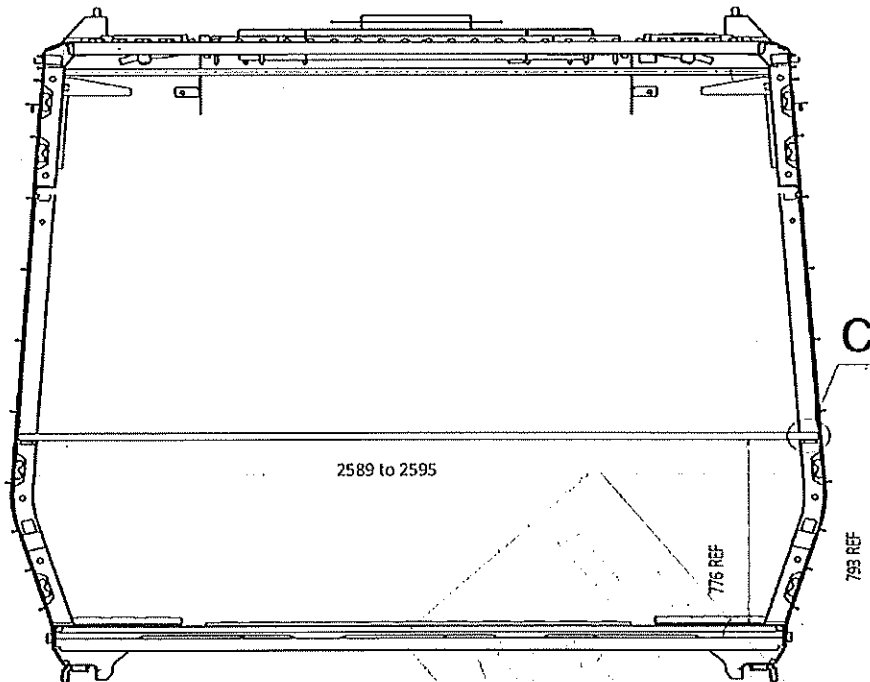
Date-  
06/11/2023

SI.CB1230.324.V29

Details for measuring on the GB1230 stage, after completion of activities



Detail C





DT00000223319 Carshell Assembly TC

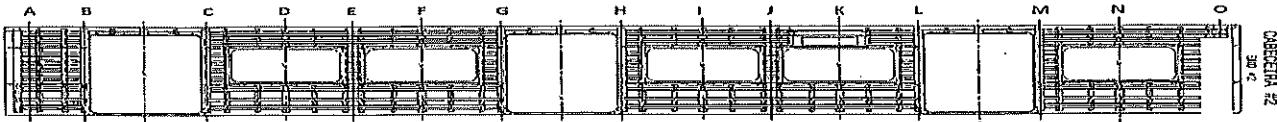
Rev. 30

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Date- 06/11/2023

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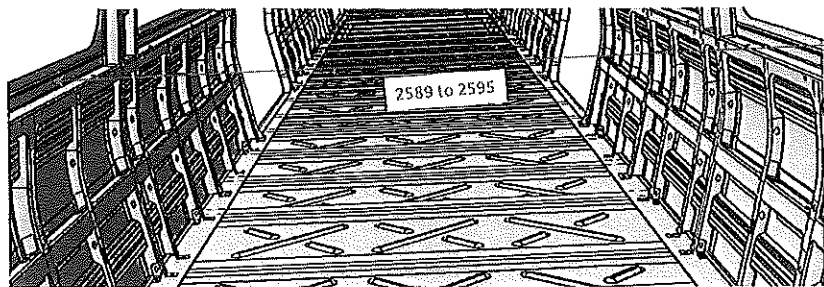
Specifications of Details for CBS measurement



LATERAL DIREITA

2589 to 2595mm

- A 2590
- B 2593
- C 2592
- D 2591
- E 2591
- F 2592
- G 2593
- H 2592
- I 2591
- J 2591
- K 2593
- L 2595
- M 2593
- N 2592
- O 2591



Threshold verification

Nominal value :38

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

BOILER MAKER: Montanholo (Signature)

WELDER: Zanete (Signature)



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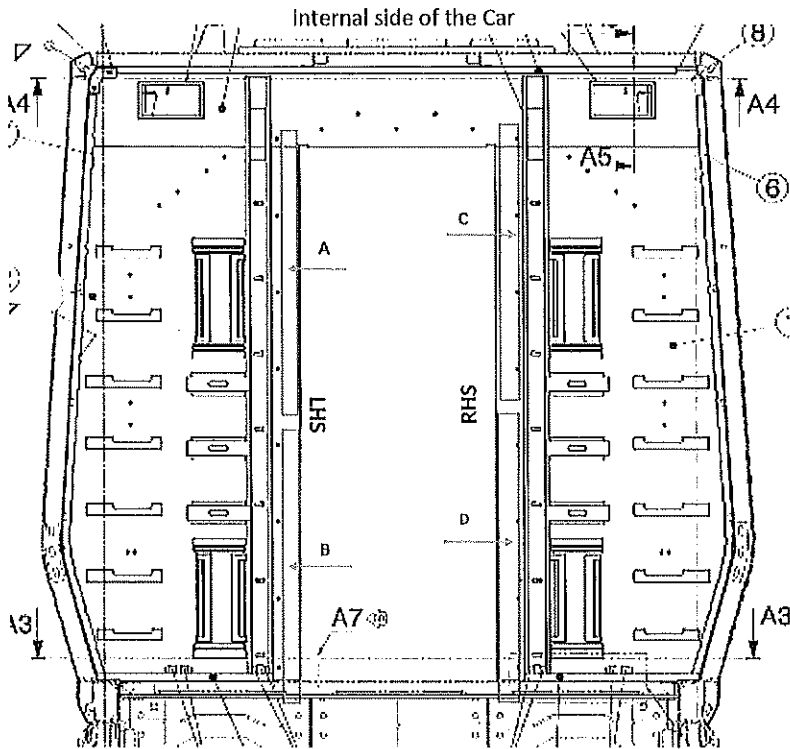
Date-  
06/11/2023

SI.CB1230.324.V29

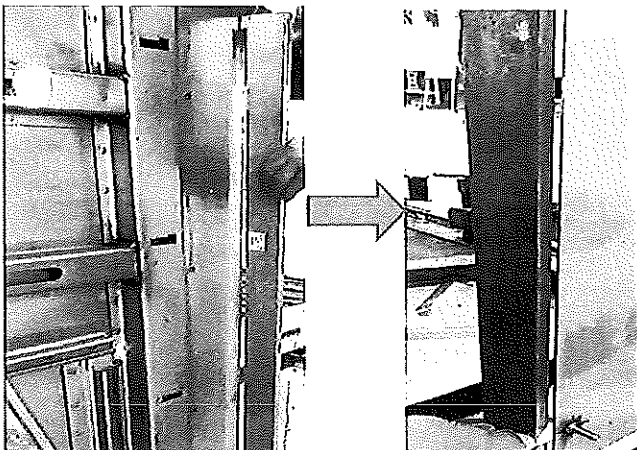
### Specifications of Details for CB8 measurement

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	10	1.7
B	9.1	10.0	0.4
C	9.6	10.6	1
D	9	10	2





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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)


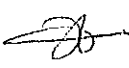
II.2 - Check List REX

Check List Items

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

	DT00000223319 Carshell Assembly TC	Rev. 30	Project: PRASA
		Date- 06/11/2023	

**Self Inspection - Final Result**

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)			DATE	NAME	SIGNATURE
<b>HOLD POINT</b>	<b>GO</b>	If activities are not complete, the missing activities must not impact the next stage!	09/07/2024	Hankankia	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	09/04/2024	Arbini	
	<b>NO GO</b>	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

