
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

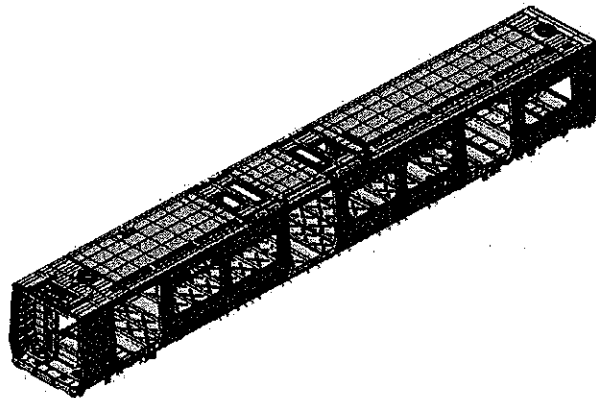
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 
				TC	MA	MS	M2	M3	TC2		
<input type="checkbox"/> DTR3000152645	AAD0001241033	Carshell Assembly TC	CB2210	X					(X)	PRA.CB2210.DTR3022331 9/3.V25	YES

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 Kelebone	
			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
225	TC2	LUNGA 671497	24/04/24	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		Signature/Date (Manufacturing)	Signature/Date (Quality)
	D	S	M	A	S	U					
DTR30223319/3						X			✓	N/A	29/04/2020

I.2 - Instruments Control

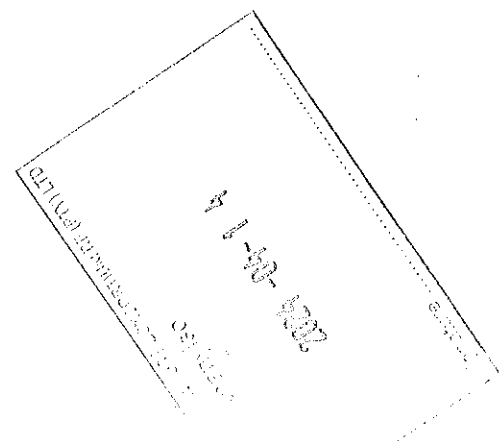
Monitoring and Measuring Instrument Control - Used for Special Process


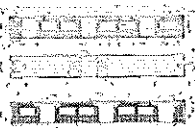

Instrument	Validation	Calibration or Verification Validation Date			Signature/Date (Manufacturing)	Signature/Date (Quality)
TUBULAR	328LS-2	15/03/20	✓		29/04/2020	29/04/2020
30 ML TAP	GIBIP0084	14/03/20	✓		29/04/2020	29/04/2020
LASER TAP	125425924	08/01/20	✓		29/04/2020	29/04/2020

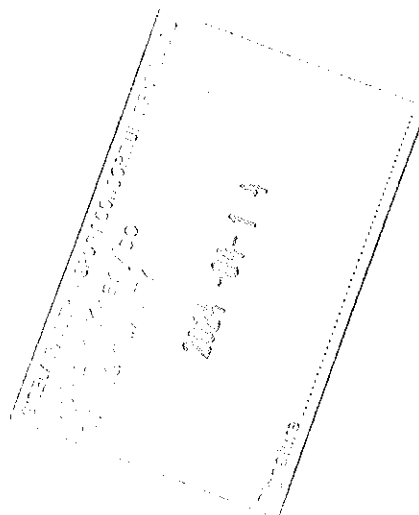
I.3 Consumables


Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process			Signature/Date (Manufacturing)	Signature/Date (Quality)
AUT ROD 308LSI	5221880	MIG	✓		29/04/2020	29/04/2020
ER 309 LSI	318594	MIG	✓		29/04/2020	29/04/2020

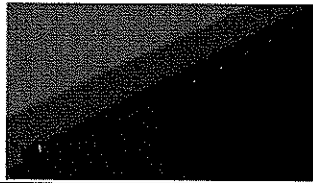


		DTR30223319/3 Carshell Assembly TC		Rev. V28 Date- 07/11/2023		Project: PRASA SI.CB2210.322.V28	
Item	Picture/Clipping	Description	Acceptance criteria / Record			Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls, Endframes, Roof and Underframe)	DT00000284980	✓		29/04/24	29/04/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		29/04/24	29/04/24
03		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		29/04/24	29/04/24
04	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 a DTD0000210675	✓		29/04/24	29/04/24
05	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		29/04/24	29/04/24
06		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		29/04/24	29/04/24
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	✓		29/04/24	29/04/24



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

Roof ring welds

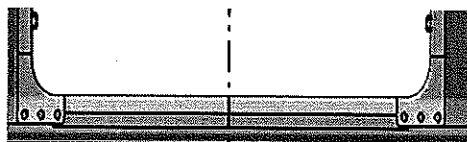


Boller maker (Name & Sign): <u>Tim Red</u> ^{LHS}	Welder (Name & Sign): <u>Thabang</u> ^{RHS}
Boller maker (Name & Sign): <u>Tim Red</u> ^{RHS}	Welder (Name & Sign): <u>Siphokazi</u> ^{RHS}

END 1

Boller maker (Name & Sign): <u>Tim Red</u> ^{LHS}	Welder (Name & Sign): <u>Thabang</u> ^{RHS}
Boller maker (Name & Sign): <u>Tim Red</u> ^{RHS}	Welder (Name & Sign): <u>Siphokazi</u> ^{RHS}

END 2



Boller maker (Name & Sign): <u>LUNGA</u> ^{LHS}
Welder (Name & Sign): <u>Mthokozisi</u> ^{RHS}

Boller maker (Name & Sign): <u>LUNGA</u> ^{RHS}
Welder (Name & Sign): <u>Mthokozisi</u> ^{RHS}


EUF Reinforcement Plates

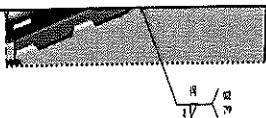
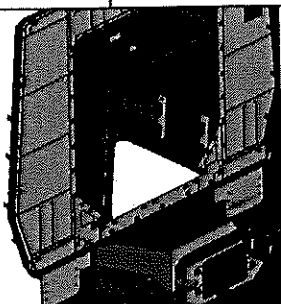


Boller maker (Name & Sign): <u>END 1</u>
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END 1

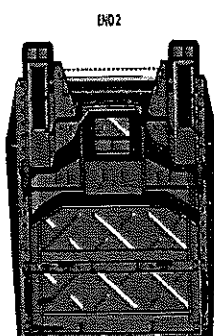
Boller maker (Name & Sign):

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

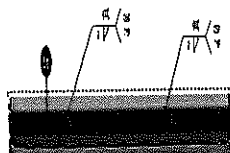


Welder (Name & Sign):

NIA



Underneath the CAR



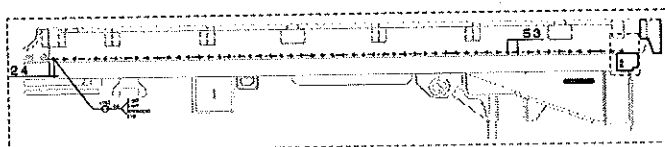
Boiler maker (Name & Sign):

Welder (Name & Sign):

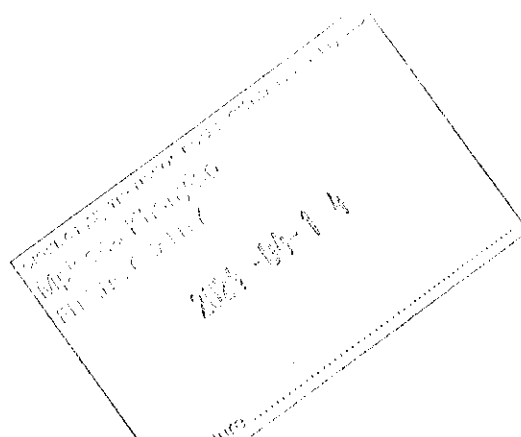
END 2

Telego

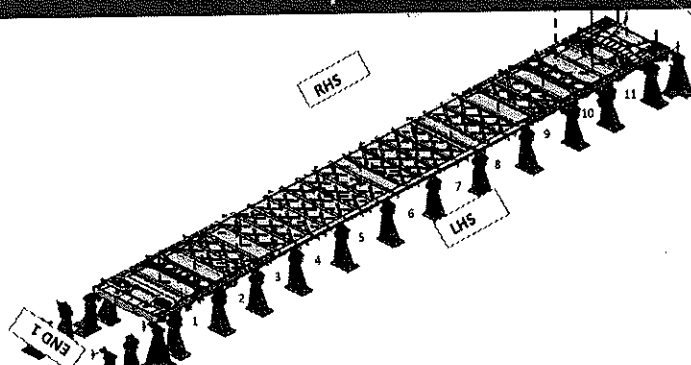
Thas ang totol




FEDOLI	
Operator:	Telego



Specifications of Details for CBS measurement



	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA 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: 29/04/24

After Welding.

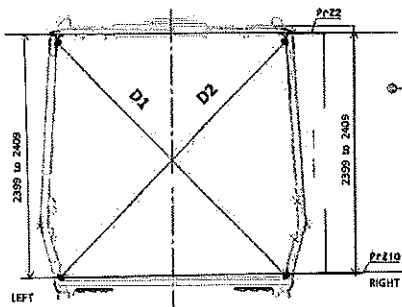
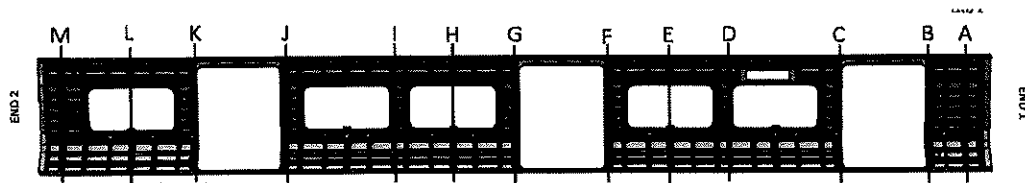
	1	2	3	4	5	6	7	8	9	10	11	12
Left Hand Side												
Right Hand Side												

Signature Industrial Quality:

Date:



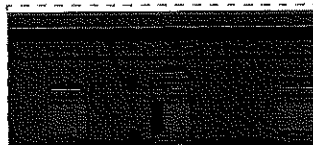
Specifications of Details for CBS measurement



Measurement positions on roof rail and side wall corner



Measurement positions on side wall and side sill

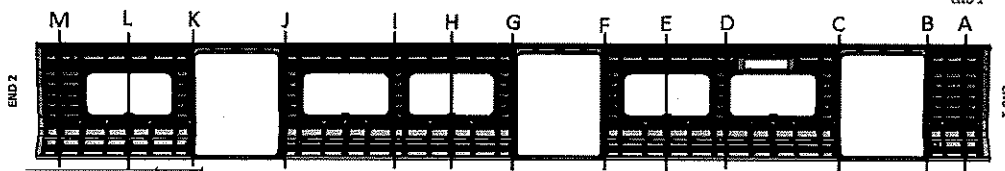


Reinforcement area measurement positions on roof reinforcement area

APPROVED FOR RELEASE
DATE: 07/11/2023
PROJECT: PRASA
SI.CB2210.322.V28
1003-100-1-4
Signature: _____

Specifications of Details for CBS measurement

BEFORE WELDING



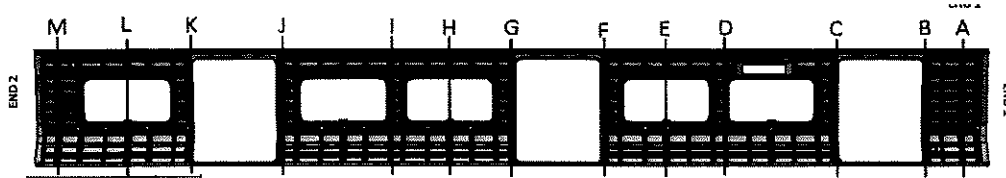
PME: The difference in Height values measured on the LHS and RHS should be $\leq 2\text{MM}$ on each point.

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3270	3268	2	2405	2405	0
B	3268	3269	1	2406	2405	1
C	3269	3268	1	2405	2406	1
D	3266	3264	2	2406	2407	1
E	3265	3264	1	2407	2405	2
F	3270	3269	1	2406	2406	0
G	3269	3267	2	2404	2406	2
H	3264	3266	2	2406	2405	1
I	3266	3266	0	2407	2408	2
J	3267	3269	2	2404	2404	0
K	3269	3269	0	2405	2406	1
L	3264	3268	4	2406	2406	0
M	3268	3269	1	2407	2408	1

29/04/24




AFTER WELDING




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

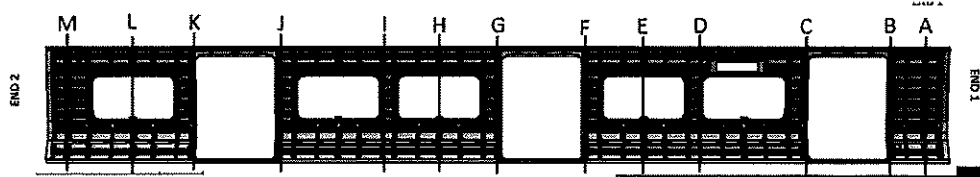
	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3270	3269	1	2405	2405	0
B	3295	3295	0	2406	2406	2
C	3296	3295	1	2405	2406	1
D	3266	3266	0	2404	2406	2
E	3264	3265	1	2405	2404	1
F	3295	3295	0	2405	2405	0
G	3295	3294	1	2406	2405	1
H	3264	3266	2	2405	2407	2
I	3265	3266	1	2406	2405	1
J	3294	3295	1	2406	2406	0
K	3293	3295	2	2407	2403	2
L	3269	3265	4	2406	2406	0
M	3294	3294	0	2408	2407	1


24/04/24


24/04/24

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

BEFORE WELDING



2270 to 2276

2268 to 2274

A 2274

B 2271

C 2272

D 2277

E 2275

F 2270

G 2273

H 2275

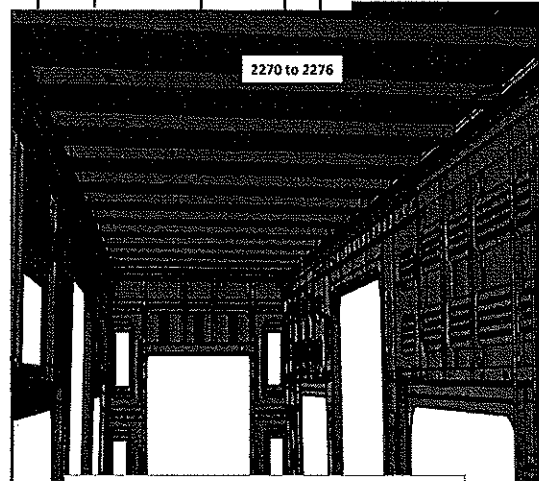
I 2277

J 2270

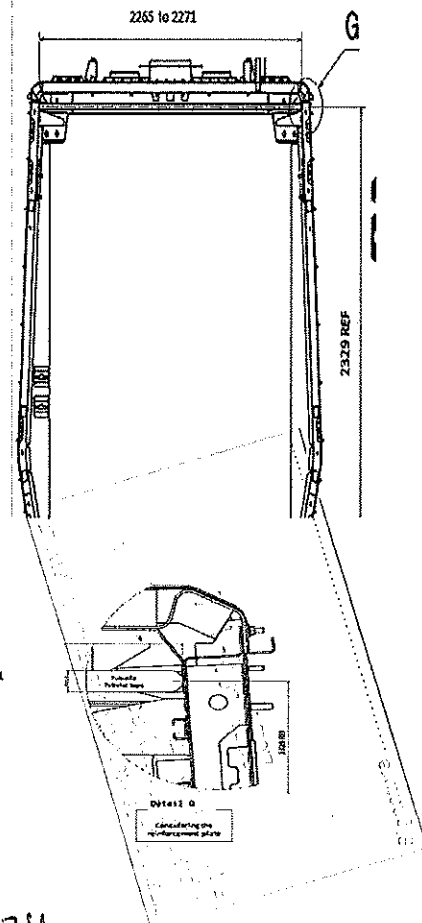
K 2272

L 2274

M 2271

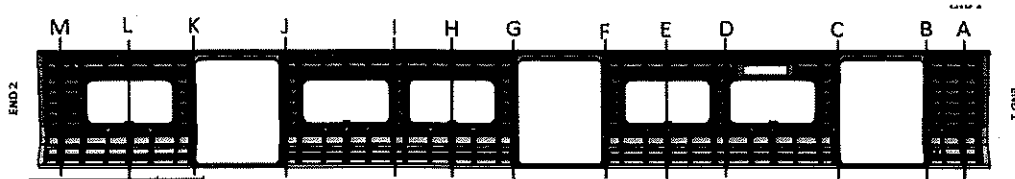


Do not consider reinforcement (Take measurements top area of zee profile)

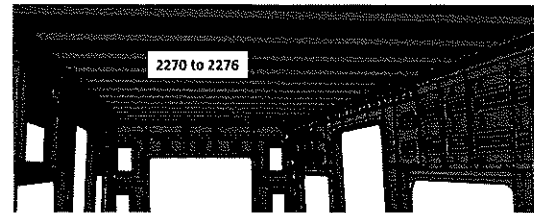


29/04/24

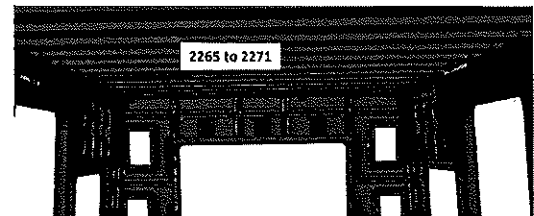
AFTER WELDING



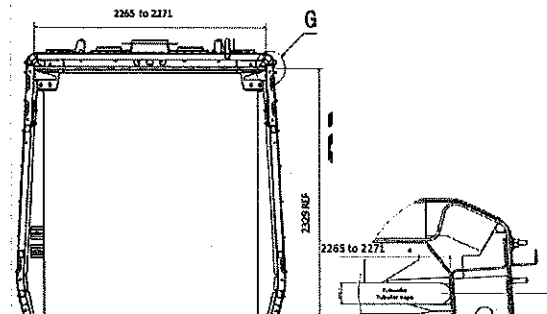
	2265 to 2271	2270 to 2276
A	NA	2274
B	2265	NA
C	2268	NA
D	NA	2276
E	NA	2275
F	2269	NA
G	2266	NA
H	NA	2276
I	NA	2276
J	2269	NA
K	2271	NA
L	NA	2273
M	2266	NA



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



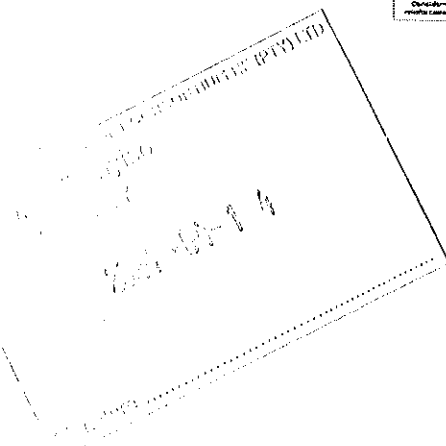
Take measurement close to radius (considering reinforcement)



Detail B
Considering the profile cannot state

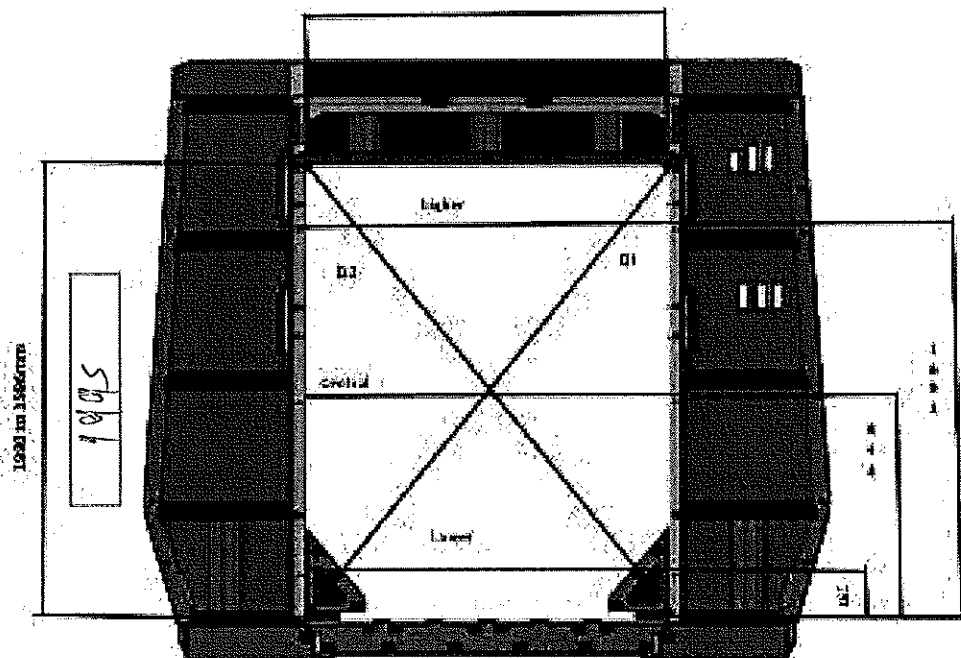
[Handwritten signature]

29/01/24



Specifications of Details for CBS measurement

Endframe 2



1180 to 1380 mm

DIAGONAL DIFFERENCE D1-D2 ≤ 3mm

Higher Dimension

1381

D1

2414

Central Dimension

1381

D2

2413

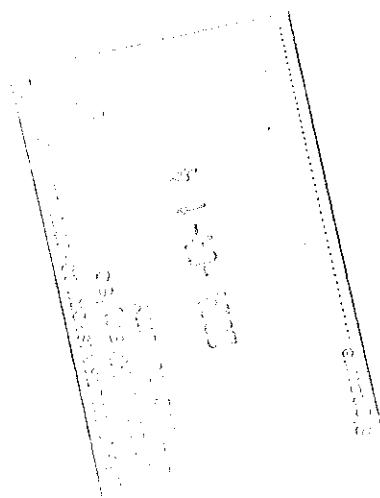
Lower Dimension

1380

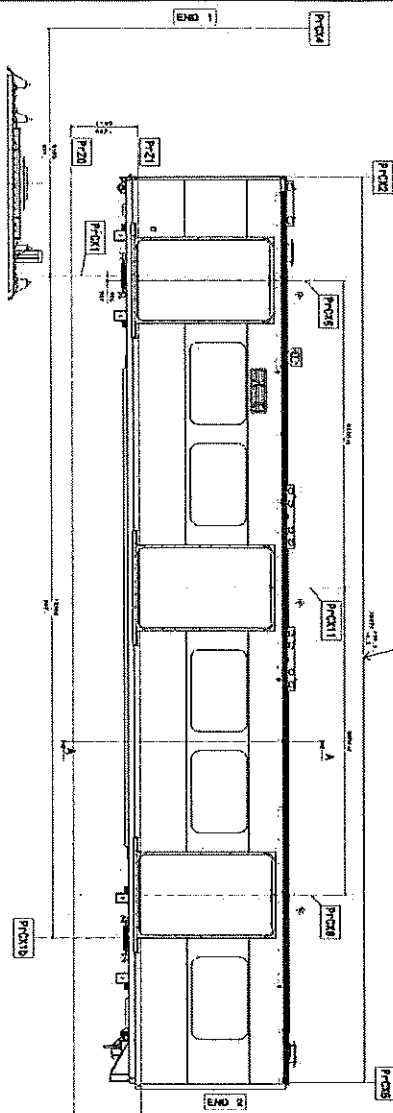
D1-D2

1

29/04/24



Specifications of Details for CBS measurement



1A

LEFT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	18870	<div> <div>+10.5</div> <div>4.5</div> </div> 18872

		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



GROUP 1
MPT 2000
FEBRUARY 2000

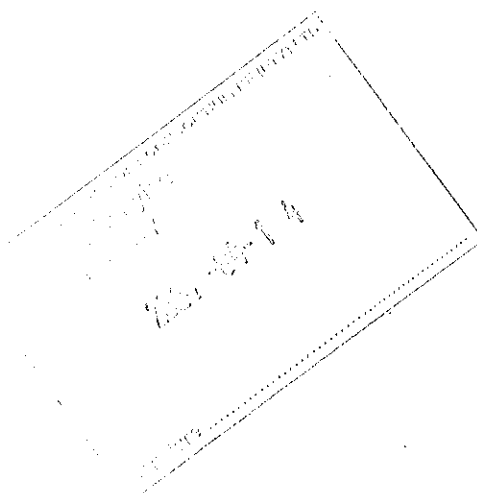
Signature _____


[illegible]

		DTR30223319/3 Carshell Assembly TC		Rev. V28	Project: PRASA	
				Date- 07/11/2023		
Self Inspection - Final Result						
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT			If activities are not complete, the missing activities must not impact the next stage!	29/04/24	Leva/24 Operations	10/10
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	29/04/24	Andoni Quality	
			There are activities pending that impact/stop the activities of the next process Obs: (To describe problems below)			
			There are non-conformities impact the quality of the product and there is no corrective action defined yet)			
In case of "NO GO", describe blocking problems						
In case of "NO GO", the operations manager must define below action plan to ensure "GO":						
Item	Description	Action	Responsible	Due date	Status	

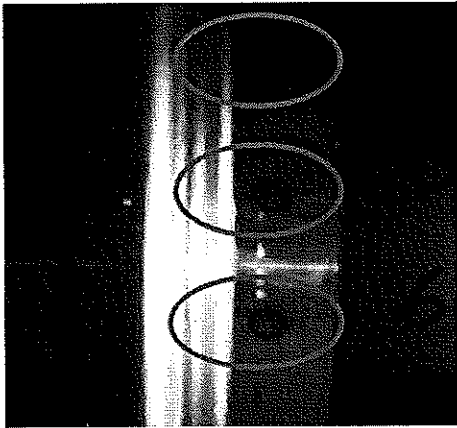
Operations

Quality



	DTR30223319/3 Carshell Assembly TC	Rev. V28 Date- 07/11/2023	Project: PRASA SI.CB2210.322.V28
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ANNEXURE A: Spot Welding Quality Acceptance Standard





APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

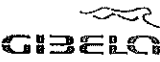
SELF INSPECTION SHEET

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APPLICATION REFERENCE

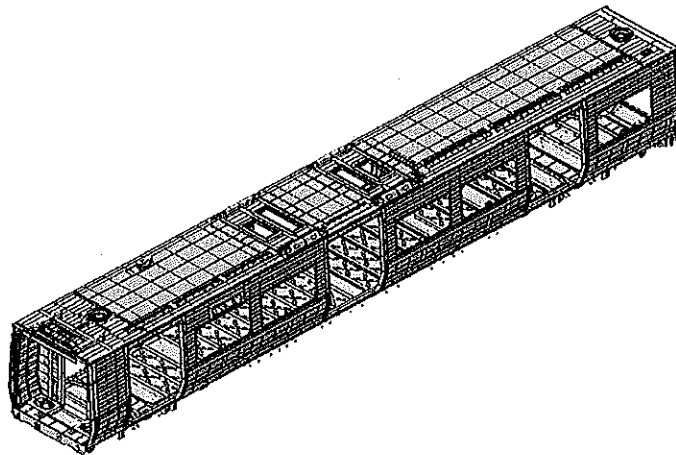
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	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

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



I - Documentation and Instruments

I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK	Not OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
	TC1	M1	M2	M3	M4	TC2						
DTR30223319/2						✓			✓		N/A	30/04/24

I.2 - Instruments Control

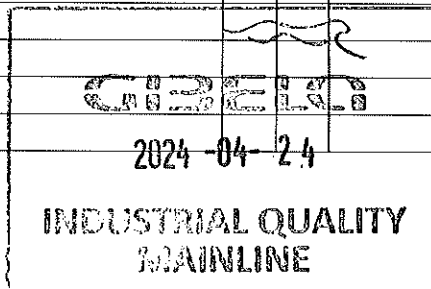
Monitoring and Measuring Instrument Control - Used for Special Process


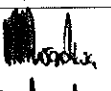
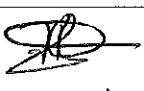

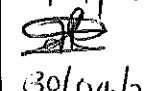
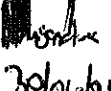



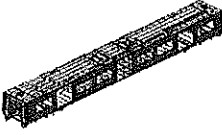

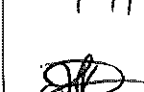
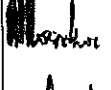







Instruments	Validation	Calibration or Verification Validation Date	OK	Not OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
Tubular Measuring tape	38823-3 GIBTA0399	15/03/2025 2025/04/16	✓		30/04/24	30/04/24


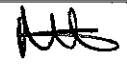

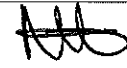

1.3 Consumables

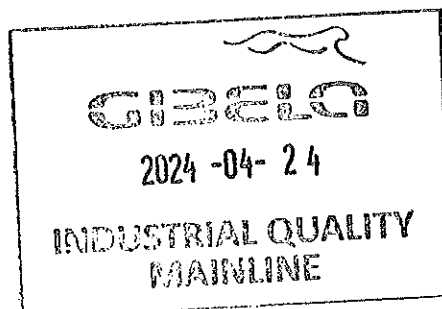
Welding Consumable Control - Used for Special Process


Filler Material	Heat Number	Welding Process	OK	Not OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
308 1.0mm	373777	MIG	✓		30/04/24	30/04/24

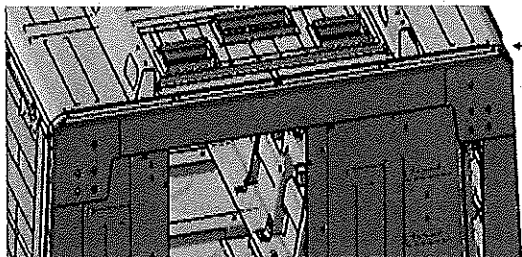


		DTR30223319/2 Carshell Assembly TC		Rev. 29 Date- 28/10/2023	Project: PRASA SI.CB2220.323.V29			
II - Control Activities of Production								
II.1 - Items to check								
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Not OK	Reason	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB2220.DTR30225487/2 Verification of fitment for all reinforcement brackets.	DTR30223319/2	✓			 30/04/24	 30/04/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓			 30/04/24	 30/04/24
03	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓			 30/04/24	 30/04/24
04	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓			 30/04/24	 30/04/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓			 30/04/24	 30/04/24
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.				 30/04/24	 30/04/24
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 INDUSTRIAL QUALITY MAINLINE				 30/04/24	 30/04/24
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 (°C) : Min Max Relative humidity Min - Max (%) : Min Max	Sealant Batch No <u>20019340</u> Exp Date: <u>05/25</u> Actuals Temperature: <u>23</u> Humidity: <u>43</u>	✓			 30/04/24	 30/04/24

		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	✓		 30/04/24	 30/04/24
10	NA	Verification of sealant application on the roof and sidewall finishers	Sealant must be: -Applied straight and even (1.5mm) -Free of gaps,cracks,damage and debris (flashes, dirt, dust) Refer to Annexure B	✓		 30/04/24	 30/04/24




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



END 1
SEALANT


OPERATOR
(Name & sign):

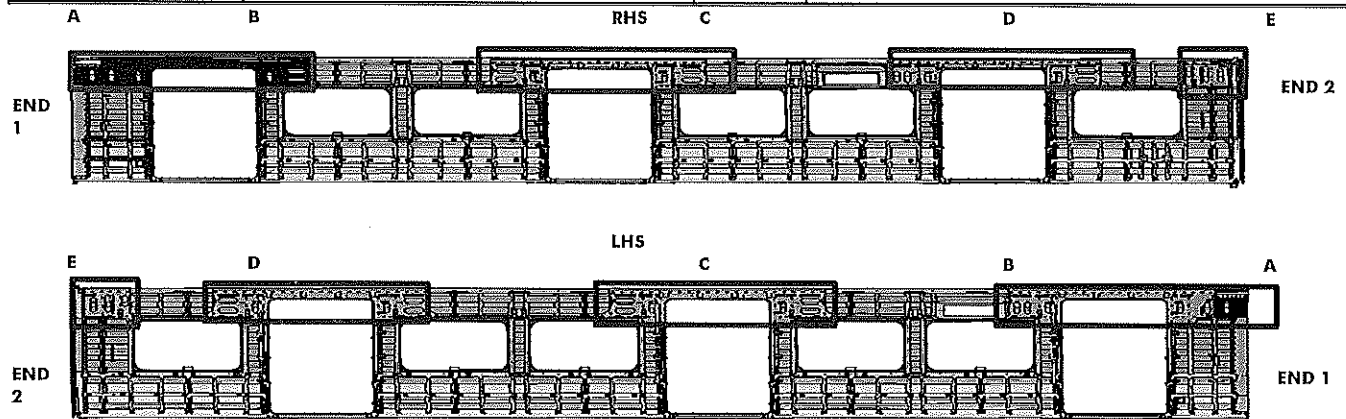
Mthkhozisi 

OPERATOR
(Name & sign):

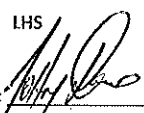
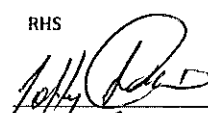


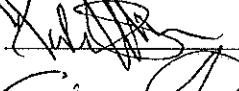

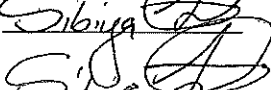

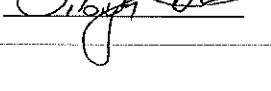

Mthkhozisi 

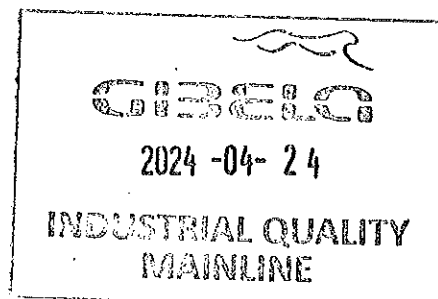



	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

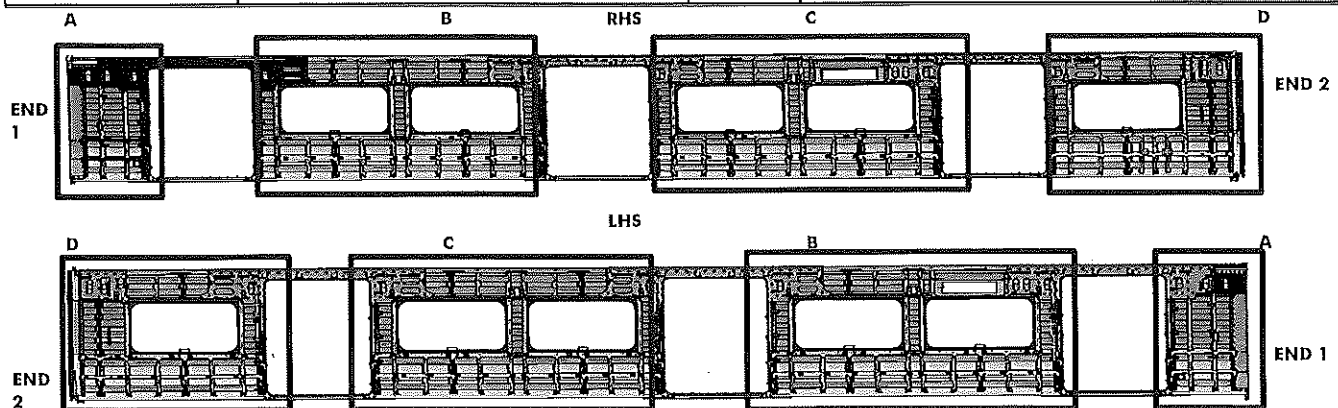


REINFORCEMENT WELDING

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

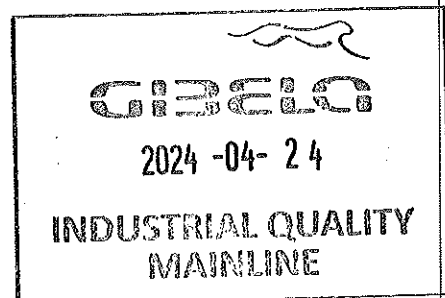


	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	




BRACKETING

C-RAILS:	Operator:	INSTALLATION <i>[Signature]</i>
	Operator:	
DOOR MECHANISMS:	Operator:	<i>Tebelo</i>
	Operator:	
TAPPING PADS	Operator:	<i>MATSHILO</i>
	Operator:	
		INSTALLATION & VERIFICATION
SEAT & LUGGAGE BRACKETS:	Operator:	<i>[Signature]</i>
	Operator:	
SEAT BRACKETS VERIFICATION:	Operator:	<i>[Signature]</i>
	Operator:	



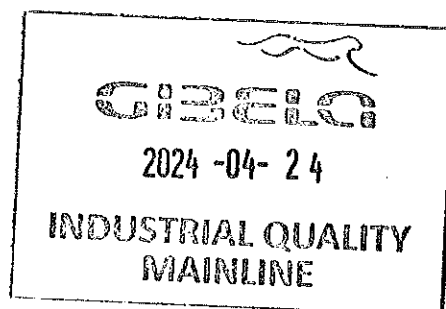
AREA	WELDING	
	LHS	RHS
A (Seat brackets)	: Operator (Name&sign): <i>N/A</i>	<i>N/A</i>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <i>N/A</i>	<i>N/A</i>
B (Seat brackets)	: Operator (Name&sign): <i>[Signature]</i>	<i>[Signature]</i>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <i>[Signature]</i>	<i>[Signature]</i>
C (Seat brackets)	: Operator (Name&sign): <i>[Signature]</i>	<i>MATSHILO</i>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <i>[Signature]</i>	<i>MATSHILO</i>
D (Seat brackets)	: Operator (Name&sign): <i>MATSHILO</i>	<i>MATSHILO</i>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <i>[Signature]</i>	<i>MATSHILO</i>

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

ENDS

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

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





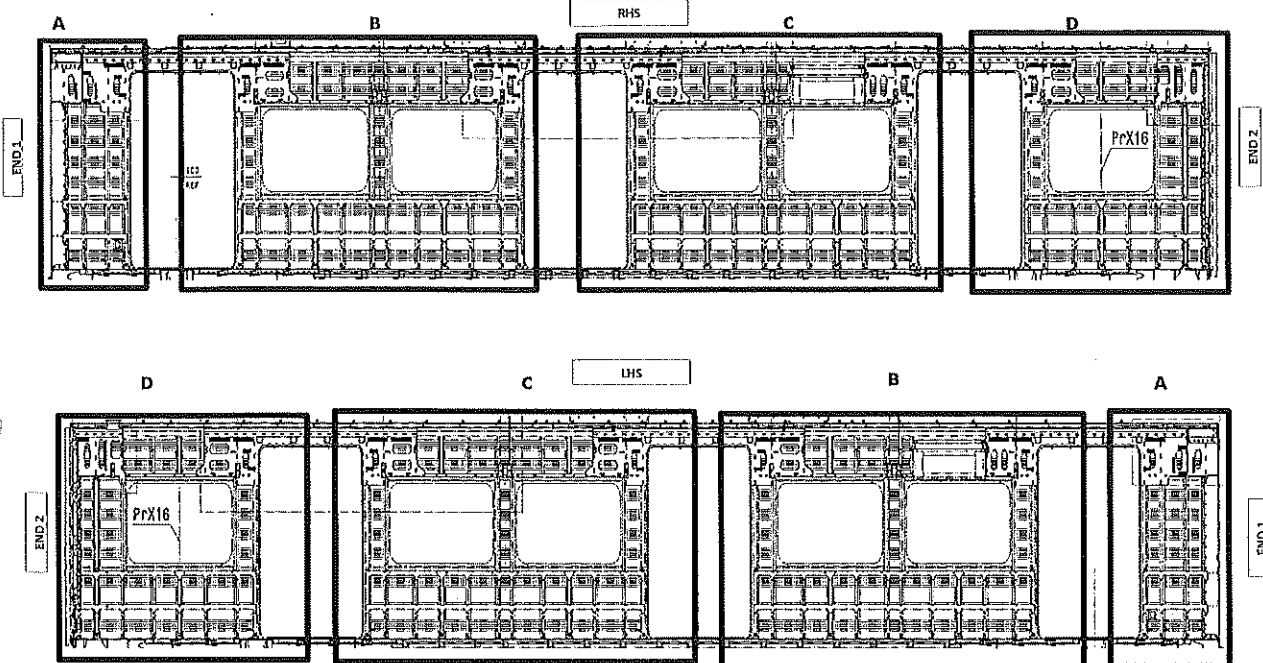
DTR30223319/2 Carshell Assembly TC

Rev.
29Date-
28/10/2023

Project: PRASA

SI.CB2220.323.V29

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 2VERIFICATION BY: Mashudu

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 2VERIFICATION BY: Mashudu

2024-04-24

INDUSTRIAL QUALITY
MAINLINE



DTR30223319/2 Carshell Assembly TC

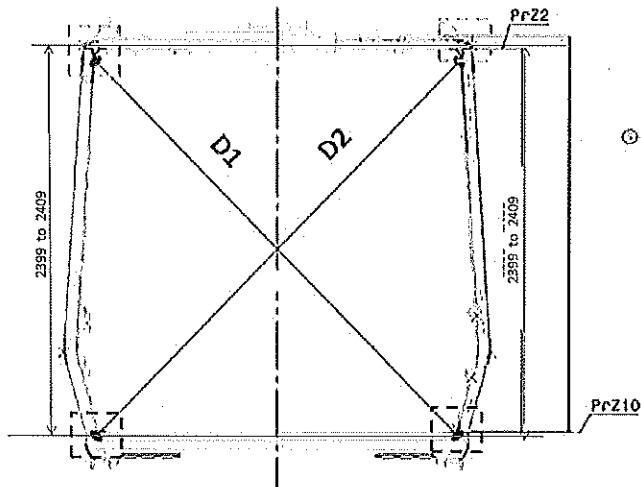
Rev.
29

Project: PRASA

Date-

28/10/2023

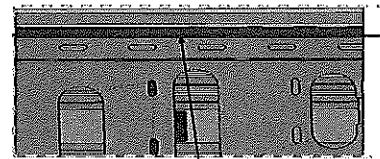
SI.CB2220.323.V29



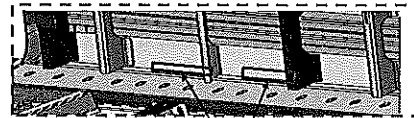
Take measurement close to radius



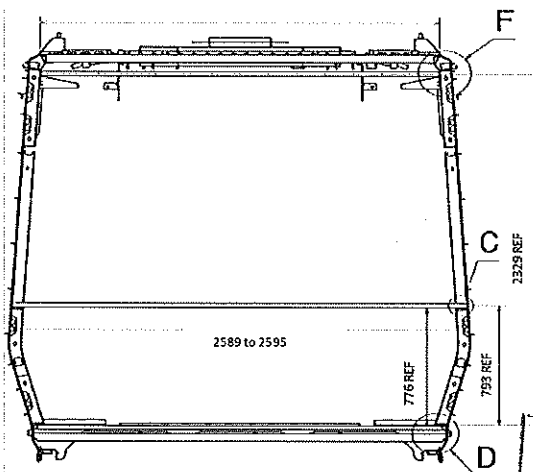
Measurement positions on roof rail and sidewall omega corner.



Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.



Take measurement close to radius

GIBELQ

2024-04-24

INDUSTRIAL QUALITY
MAINLINE



DTR30223319/2 Carshell Assembly TC

Rev.

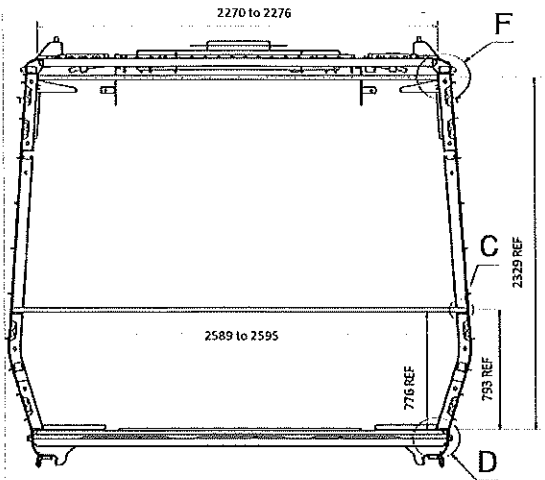
29

Date-

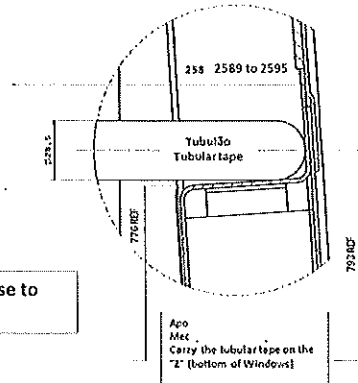
28/10/2023

Project: PRA5A

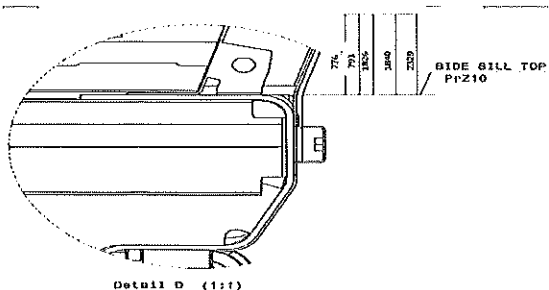
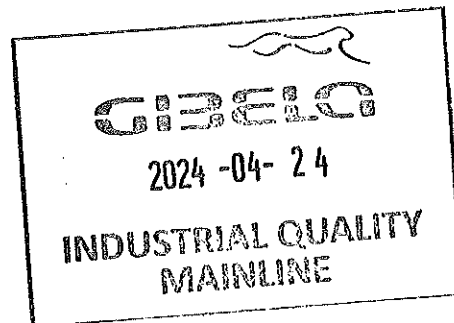
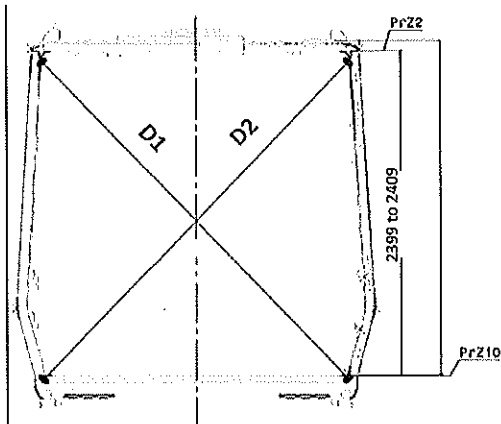
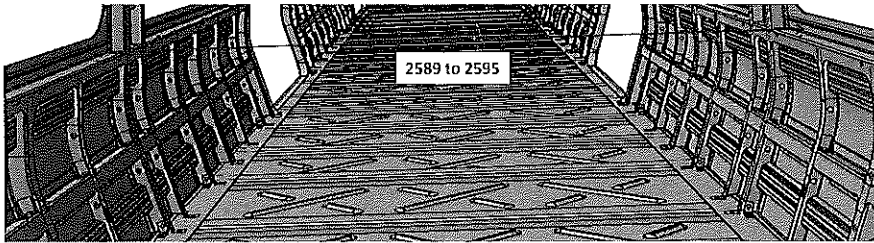
SI.CB2220.323.V29



Take measurement close to radius



Detail C





DTR30223319/2 Carshell Assembly TC

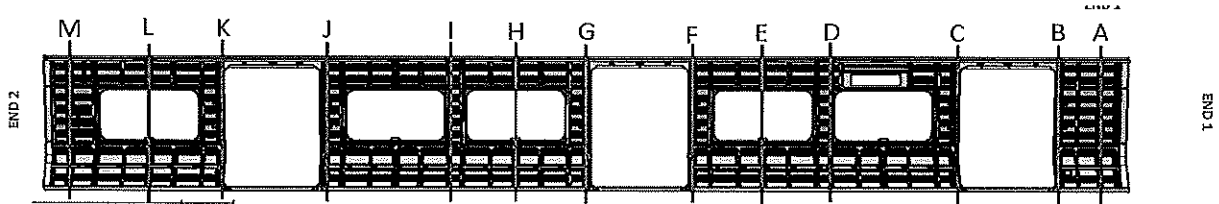
Rev.
29

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Date-

28/10/2023

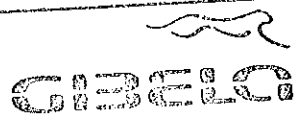
SI.CB2220.323.V29



BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3291	3295	4	
B	3289	3294	5	
C	3300	3292	8	
D	3267	3270	3	
E	3264	3266	2	
F	3293	3294	1	
G	3294	3295	1	
H	3265	3265	0	
I	3268	3270	2	
J	3300	3295	5	
K	3298	3295	3	
L	3269	3270	1	
M	3295	3301	6	

N/A



2024 -04- 24

INDUSTRIAL QUALITY
MAINLINE



DTR30223319/2 Carshell Assembly TC

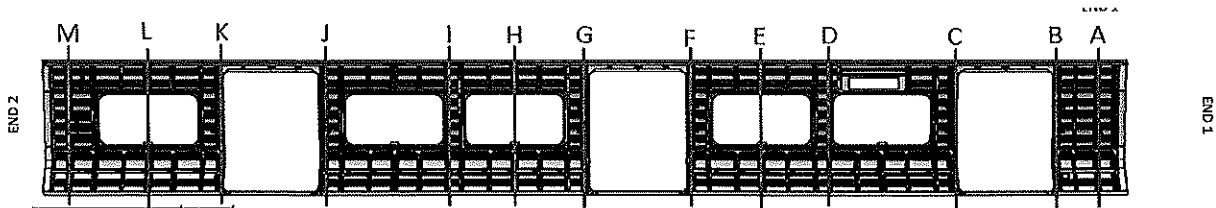
Rev.
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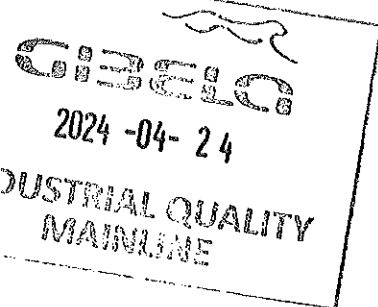
Date-


SI.CB2220.323.V29

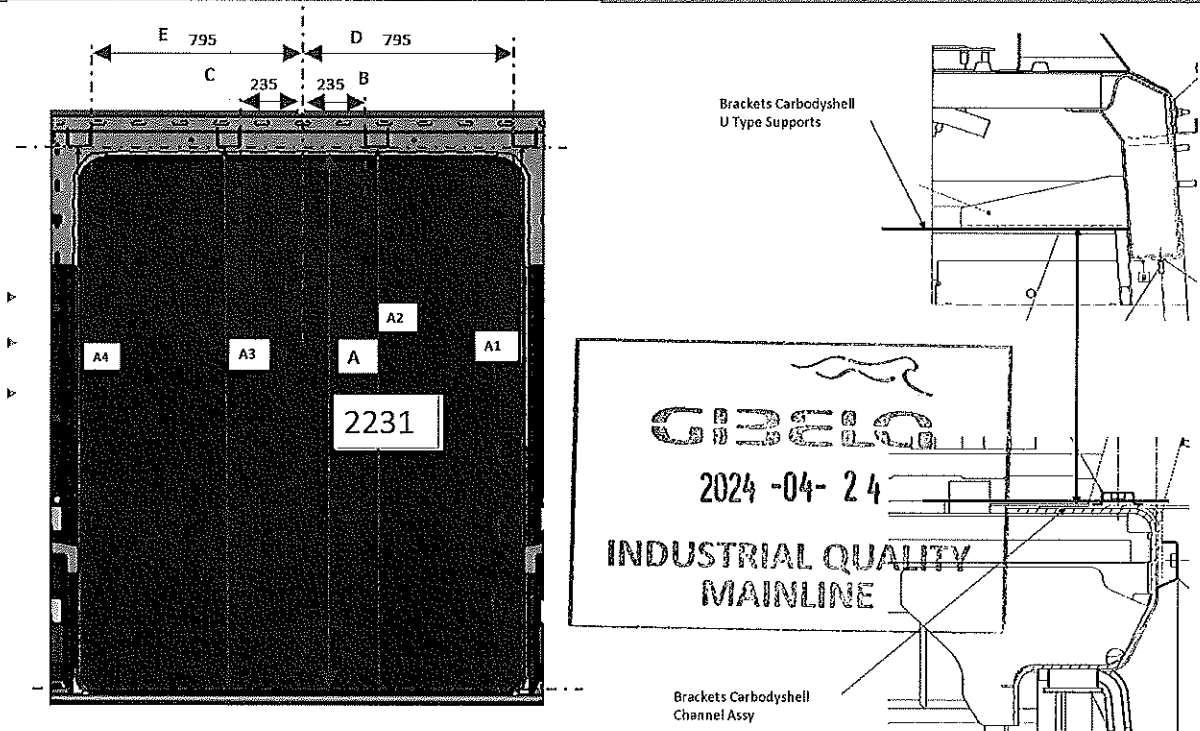
28/10/2023

AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3291	3294	3	2594
B	3291	3295	4	2593
C	3293	3299	6	2591
D	3270	3268	2	2590
E	3267	3265	2	2593
F	3292	3294	2	2594
G	3297	3294	3	2590
H	3265	3265	0	2593
I	3269	3267	2	2590
J	3297	3300	3	2592
K	3296	3298	2	2592
L	3270	3268	2	2593
M	3298	3295	3	2594



	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	
Specifications of Details for CBS measurement			



DOOR 1 - LHS			DOOR 2 - LHS			DOOR 3 - LHS		
	VALUE	ACTUAL		VALUE	ACTUAL		VALUE	ACTUAL
A1	2230 to 2232	2233	A1	2230 to 2232	2233	A1	2230 to 2232	2232
A2	2230 to 2232	2232	A2	2230 to 2232	2232	A2	2230 to 2232	2232
A3	2230 to 2232	2232	A3	2230 to 2232	2232	A3	2230 to 2232	2231
A4	2230 to 2232	2232	A4	2230 to 2232	2233	A4	2230 to 2232	2233
B	234 to 236	236	B	234 to 236	235	B	234 to 236	235
C	234 to 236	235	C	234 to 236	234	C	234 to 236	235
D	794 to 796	795	D	794 to 796	796	D	794 to 796	795
E	794 to 796	796	E	794 to 796	795	E	794 to 796	794

DOOR 1 - RHS			DOOR 2 - RHS			DOOR 3 - RHS		
	VALUE	ACTUAL		VALUE	ACTUAL		VALUE	ACTUAL
A1	2230 to 2232	2233	A1	2230 to 2232	2232	A1	2230 to 2232	2233
A2	2230 to 2232	2232	A2	2230 to 2232	2231	A2	2230 to 2232	2232
A3	2230 to 2232	2231	A3	2230 to 2232	2231	A3	2230 to 2232	2232
A4	2230 to 2232	2232	A4	2230 to 2232	2232	A4	2230 to 2232	2233
B	234 to 236	235	B	234 to 236	235	B	234 to 236	235
C	234 to 236	234	C	234 to 236	235	C	234 to 236	235
D	794 to 796	795	D	794 to 796	796	D	794 to 796	796
E	794 to 796	795	E	794 to 796	795	E	794 to 796	795



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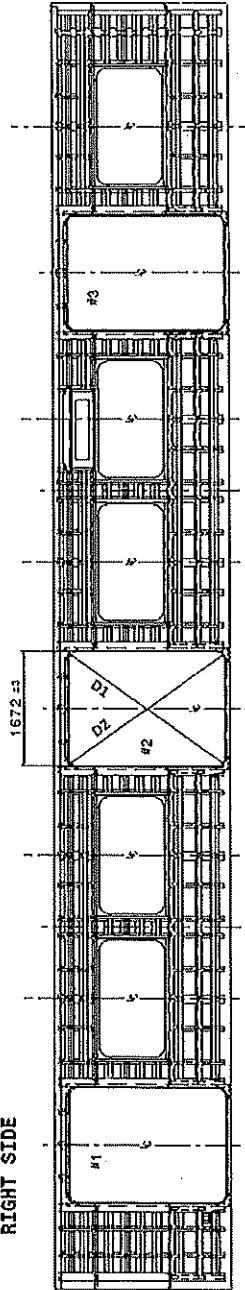
28/10/2023

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Specifications of Details for CBS measurement

End #2



End #1

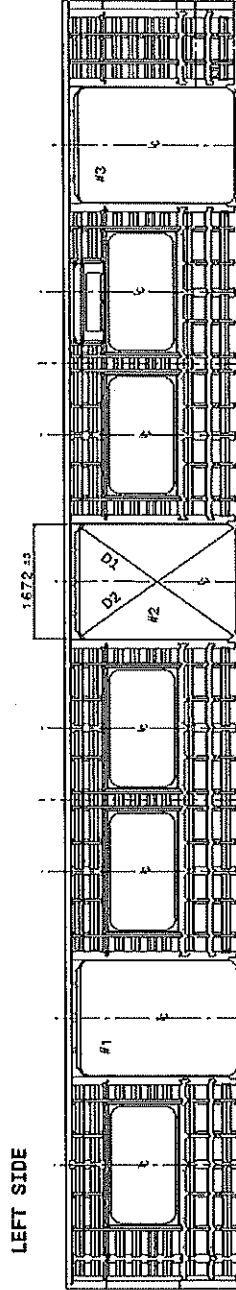
Doors diagonal D1-D2 maximum difference ≤ 4 mm

	#1	#2	#3
D1	2749	2748	2749
D2	2750	2749	2747
D1-D2	1	1	2

Doors Length - 1672 ±3mm

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

End #1



End #2

Diagonal de portas - diferença D1-D2 ≤ 4 mm

	#1	#2	#3
D1	2750	2749	2749
D2	2747	2747	2748
D1-D2	3	2	1

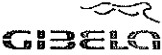
Vão de Portas - 1672 ±3mm

	#1	#2	#3
DIMENSÃO SUPERIOR HIGHER DIMENSION	1671	1672	1671
CENTRAL DIMENSION	1670	1672	1671
LOWER DIMENSION	1670	1671	1670



2024-04-24

INDUSTRIAL QUALITY
MAINLINE

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Specifications of Details for GBS measurement

Dye penetrant test

Dye-penetration test to be performed by quality personnel

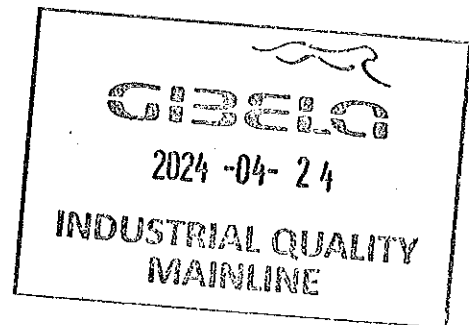



Item	Description of the issue	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)

II.2 - Check List REX



Check List Items

Item	Picture/Drawing	Description	Criteria /Record	OK	NOX	Remark	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-		SI.CB2220.323.V29
		28/10/2023		

Self Inspection - Final Result

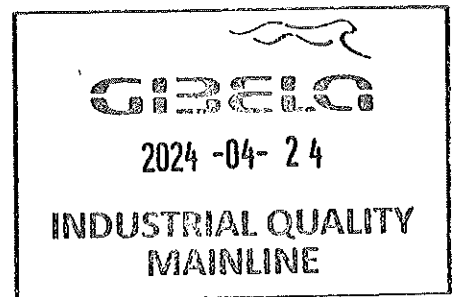
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)			DATE	NAME	SIGNATURE
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!	30/04/2024	Mashudh	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	30/04/2029	Amo	
		There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)			
		There are non-conformities impact the quality of the product and there is no corrective action defined yet)			


In case of "NO GO", describe blocking problems

In case of "NO GO", the operations manager must define below action plan to ensure "GO":					
Item	Description	Action	Responsible	Due date	Status

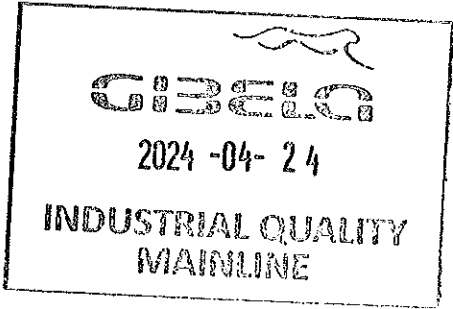
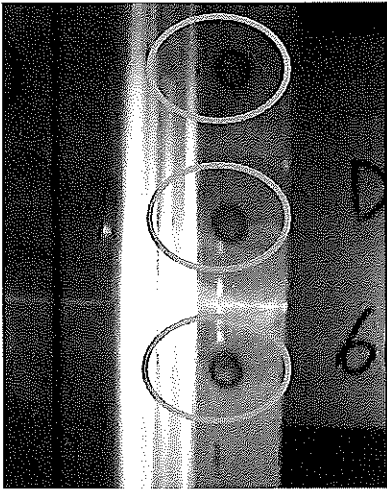
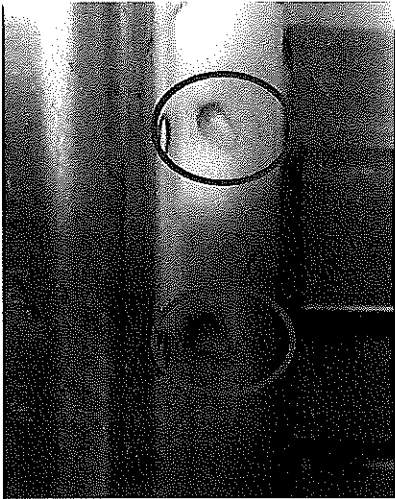
Operations


Quality



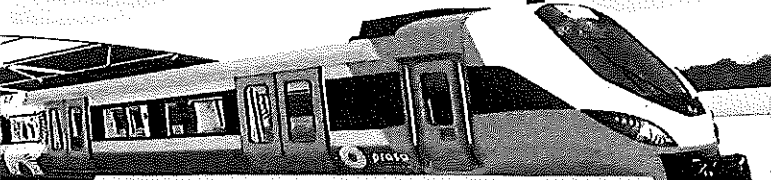
	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

ANNEXURE A: Spot Welding Quality Acceptance Standard





PRASA PROJECT



APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

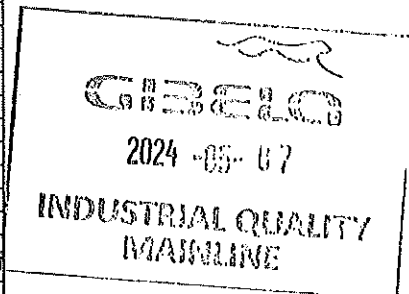
SELF INSPECTION SHEET


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												
WORKING	DRAWING	DESCRIPTION	STATION	CARTER						WORK INSTRUCTION	SAFETY	
				TC	HS	MT	PH	TH	TC			
<input checked="" type="checkbox"/>	DT00000111119	A/D00001111119	DT00000111119 Cup 23 Area-By TC	(01119)	X						PRA/CB1210.010000012 23119.V10	YES
<input type="checkbox"/>												

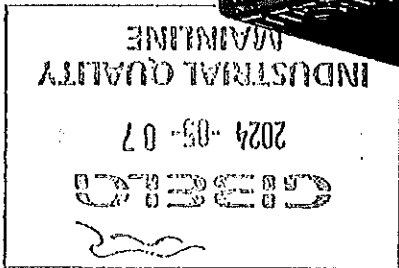
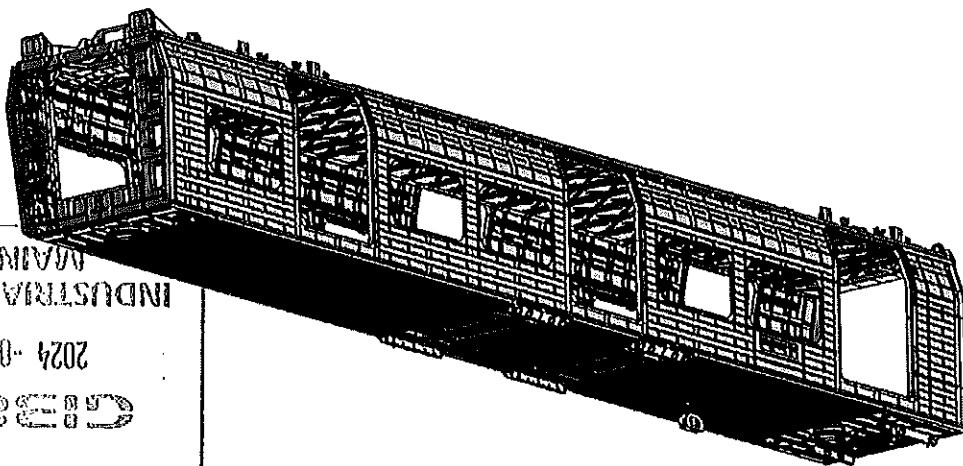
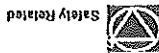
REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	06/04/2018	GIBELA NEW CREATION	APPROVER	Ismael Rodriguez	02/04/2018
			CHECKER	Ismael Rodriguez	02/04/2018
			COMPILED	Ismael Rodriguez	02/04/2018
1	30/5/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Ismael Rodriguez	30/5/2018
			CHECKER	Ismael Rodriguez	30/5/2018
			REVISOR BY	Ismael Rodriguez	30/5/2018
2	05/07/2018	Certain dimensional checks moved to CB1270	APPROVER	Ismael Rodriguez	05/07/2018
			CHECKER	Ismael Rodriguez	05/07/2018
			COMPILED	Ismael Rodriguez	05/07/2018
5	24/01/2019	As per Baseline 10.2	APPROVER	Ismael Rodriguez	24/01/2019
			CHECKER	Ismael Rodriguez	24/01/2019
			REVISOR BY	Ismael Rodriguez	24/01/2019
6	13/03/2019	Added Twist and Floor Bracket Measurements Remove Door Measurements	APPROVER	Ismael Rodriguez	13/03/2019
			CHECKER	Ismael Rodriguez	13/03/2019
			COMPILED	Ismael Rodriguez	13/03/2019
7	11/03/2019	Added Cab Fire Barrier Harness Measurements	APPROVER	Ismael Rodriguez	11/03/2019
			CHECKER	Ismael Rodriguez	11/03/2019
			COMPILED	Ismael Rodriguez	11/03/2019
10	20/03/2019	New Baseline 10.2.5	APPROVER	Ismael Rodriguez	20/03/2019
			CHECKER	Ismael Rodriguez	20/03/2019
			COMPILED	Ismael Rodriguez	20/03/2019
15	28/01/2021	New Baseline 10.2.6	APPROVER	Ismael Rodriguez	28/01/2021
			CHECKER	Ismael Rodriguez	28/01/2021
			COMPILED	Ismael Rodriguez	28/01/2021
20	19/03/2021	New Baseline change 10.3	APPROVER	Ismael Rodriguez	19/03/2021
			CHECKER	Ismael Rodriguez	19/03/2021
			COMPILED	Ismael Rodriguez	19/03/2021
25	20/04/2022	New Baseline change 10.3.1	APPROVER	Ismael Rodriguez	20/04/2022
			CHECKER	Ismael Rodriguez	20/04/2022
			COMPILED	Ismael Rodriguez	20/04/2022
26	14/05/2022	Update minimum temperature requirement for sealant application	APPROVER	Ismael Rodriguez	14/05/2022
			CHECKER	Ismael Rodriguez	14/05/2022
			COMPILED	Ismael Rodriguez	14/05/2022
27	26/01/2022	Threshold measurements addition	APPROVER	Ismael Rodriguez	26/01/2022
			CHECKER	Ismael Rodriguez	26/01/2022
			COMPILED	Ismael Rodriguez	26/01/2022
28	17/10/2022	Addition of traceability for sealant application	APPROVER	Ismael Rodriguez	17/10/2022
			CHECKER	Ismael Rodriguez	17/10/2022
			COMPILED	Ismael Rodriguez	17/10/2022
29	14/05/2023	Added sealant batch number & welding consumables traceability	APPROVER	Ismael Rodriguez	14/05/2023
			CHECKER	Ismael Rodriguez	14/05/2023
			COMPILED	Ismael Rodriguez	14/05/2023
30	06/11/2023	Added traceability for thresholds for body markers and welders	APPROVER	Ismael Rodriguez	06/11/2023
			CHECKER	Ismael Rodriguez	06/11/2023
			COMPILED	Ismael Rodriguez	06/11/2023

TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
325	TC 2	Ismael Rodriguez	10/05/24	SI.CB1230.324.V2B	14



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

Carro	NCR:	Work station: CB1230
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I - Documentation and Instruments


I.1 - Documentation Control		Type of car		Revision		Observation		OK	NCR	REWORK	N/A	Signature/Date (Operations)	Signature/Date (Quality)
Document		TC1										Signature/Date (Quality)	
DT00000223319		M1										Signature/Date (Quality)	
		M2										Signature/Date (Quality)	
		M3										Signature/Date (Quality)	
		M4										Signature/Date (Quality)	
		TC2										Signature/Date (Quality)	

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process		Calibration or Verification		Validation		Validation Date		OK	NCR	Signature/Date (Operations)	Signature/Date (Quality)
Instruments		277B		26/04/24		2024/04/05				Signature/Date (Quality)	
Tuberc		41579.0396		27/04/2024		27/04/2024				Signature/Date (Quality)	
Measuring tape		41539.0100								Signature/Date (Quality)	
Working square										Signature/Date (Quality)	

I.3 Consumables

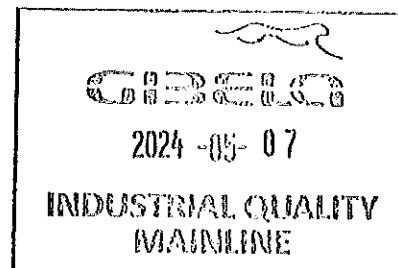
Welding Consumable Control - Used for Special Process		Heat Number		Welding Process		OK	NCR	Signature/Date (Manufacturing)	Signature/Date (Quality)
Filler Material		31379		M19				Signature/Date (Quality)	
808		4316		18				Signature/Date (Quality)	

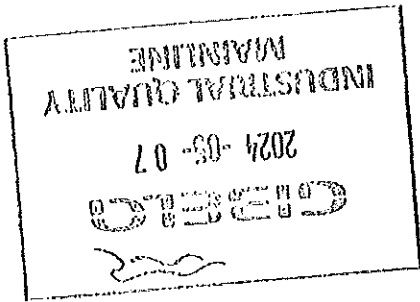
	DT00000223319 Carshell Assembly TC	Rev. 30	Project: PRASA
		Date-	
		06/11/2023	

II - Control Activities of Production

II.1 - Items to check

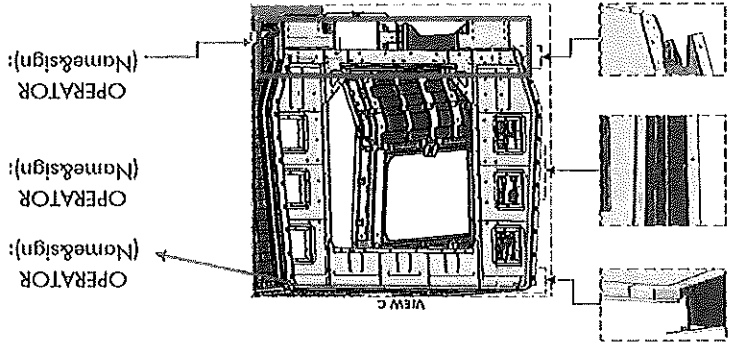
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	NOT	REWORK	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering nº DT00000223319	DT00000223319	✓			06/05/24	06/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓			06/05/24	06/05/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 DTD0000210675	✓			06/05/24	06/05/24
04	N/A	Functional dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓			06/05/24	06/05/24
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	✓			06/05/24	06/05/24
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 (°C) Min-Max 10°C - 35°C Relative humidity Min - Max (%) Min-Max 25% - 60%	Sealant Batch No: 200194367 Exp Date: 05/2025 Actuals Temperature: 16°C Humidity: 65%	✓			06/05/24	06/05/24
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	✓			06/05/24	06/05/24





Boitumelo Bbore

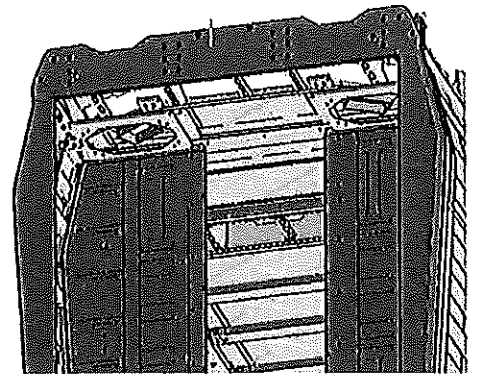
Boitumelo Bbore





Boitumelo Bbore

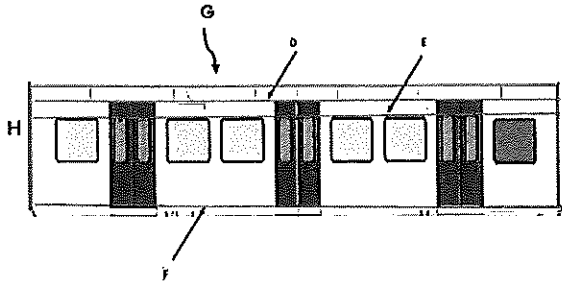
Boitumelo Bbore

END 1 SEALANT

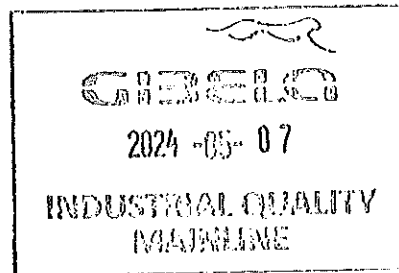


VIEW A				
 GIBELG	DT000002233319 Carshell Assembly TC	06/11/2023	SI,CB1230.324,V29	
		Date-		Project: PRASA
		Rev. 30		

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



Area D,E,F,G,H,I	LHS	RHS
Operator (Name & sign) :		
Operator (Name & sign) :	Buhle	Buhle
Operator (Name & sign) :		
Operator (Name & sign) :	Bo. Luoro	Bo. Luoro
Operator (Name & sign) :		
Operator (Name & sign) :		





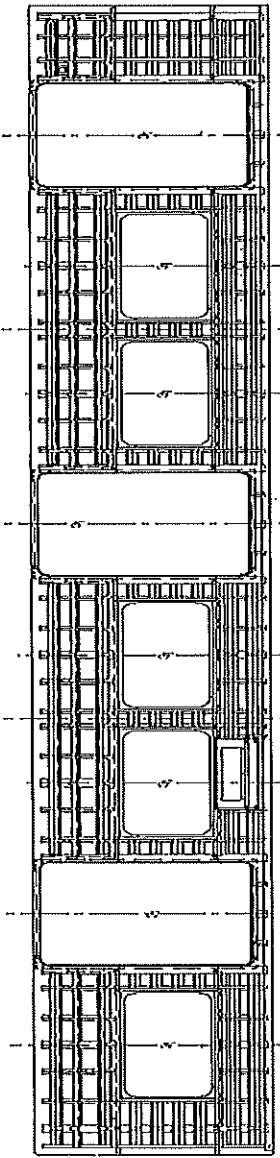
DT00000223319 Carshell Assembly TC

Rev.	30
Date-	06/11/2023

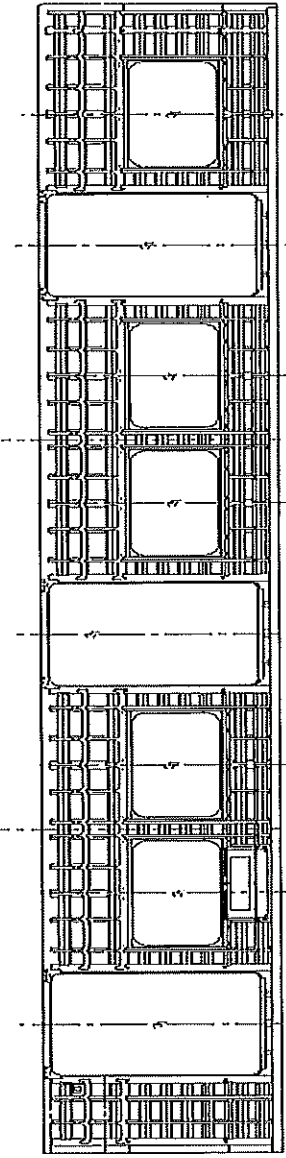
Project: PRASA
SI,CB1230.324,V29

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

RIGHT SIDE




LEFT SIDE

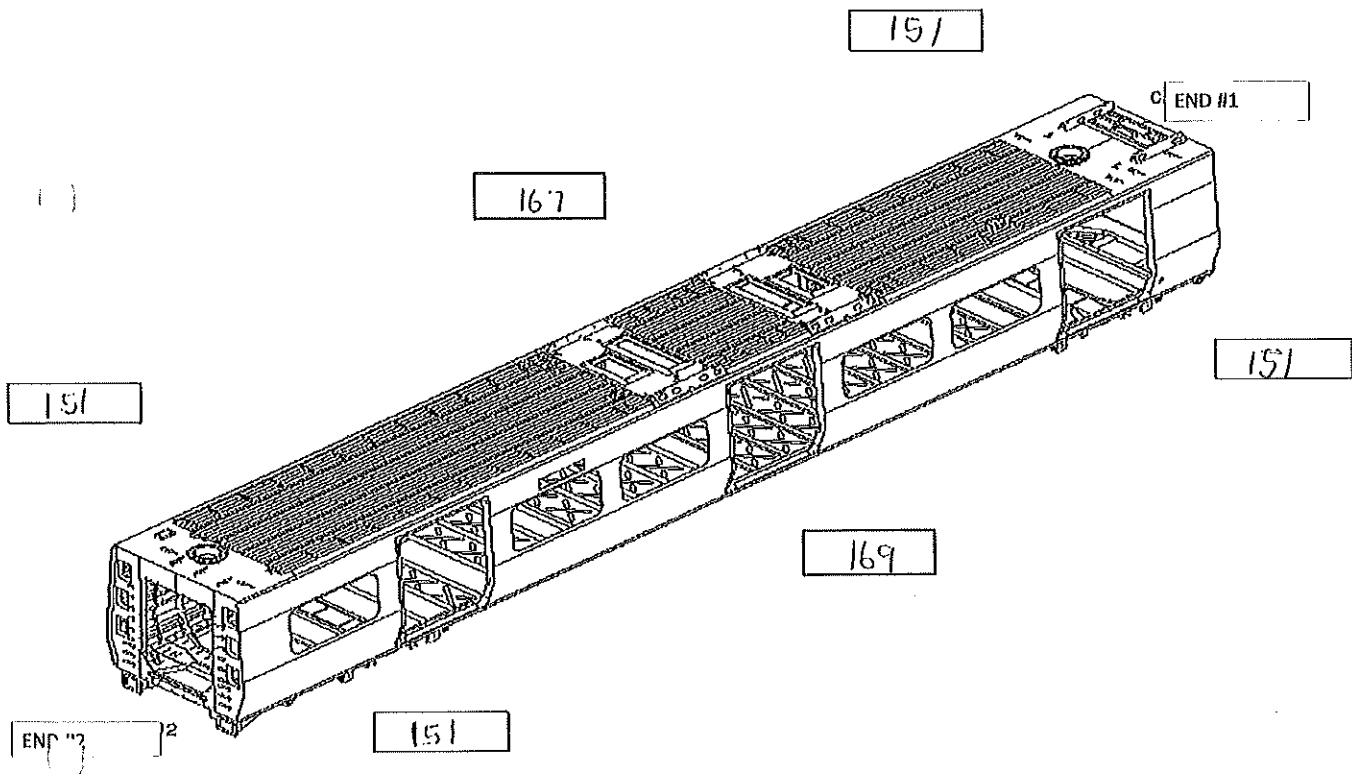


MAXIMUM 1.4
MINIMUM 1.1

MAXIMUM 1.8
MINIMUM 1.2

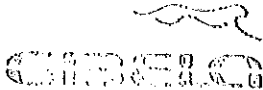
2024-05-07
INDUSTRIAL QUALITY
GIBBINS

	DT00000223319 Carshell Assembly TC	Rev. 30	Project: PRASA SI.CB1230.324.V29
		Date-	
		06/11/2023	
Specifications of Details for CBS measurement CB1230			
Specified Camber for car out of Jlg is 16mm (-0mm + 2mm)			



MEASURED CAMBER VALUES	
RIGHT	18
LEFT	16

D1



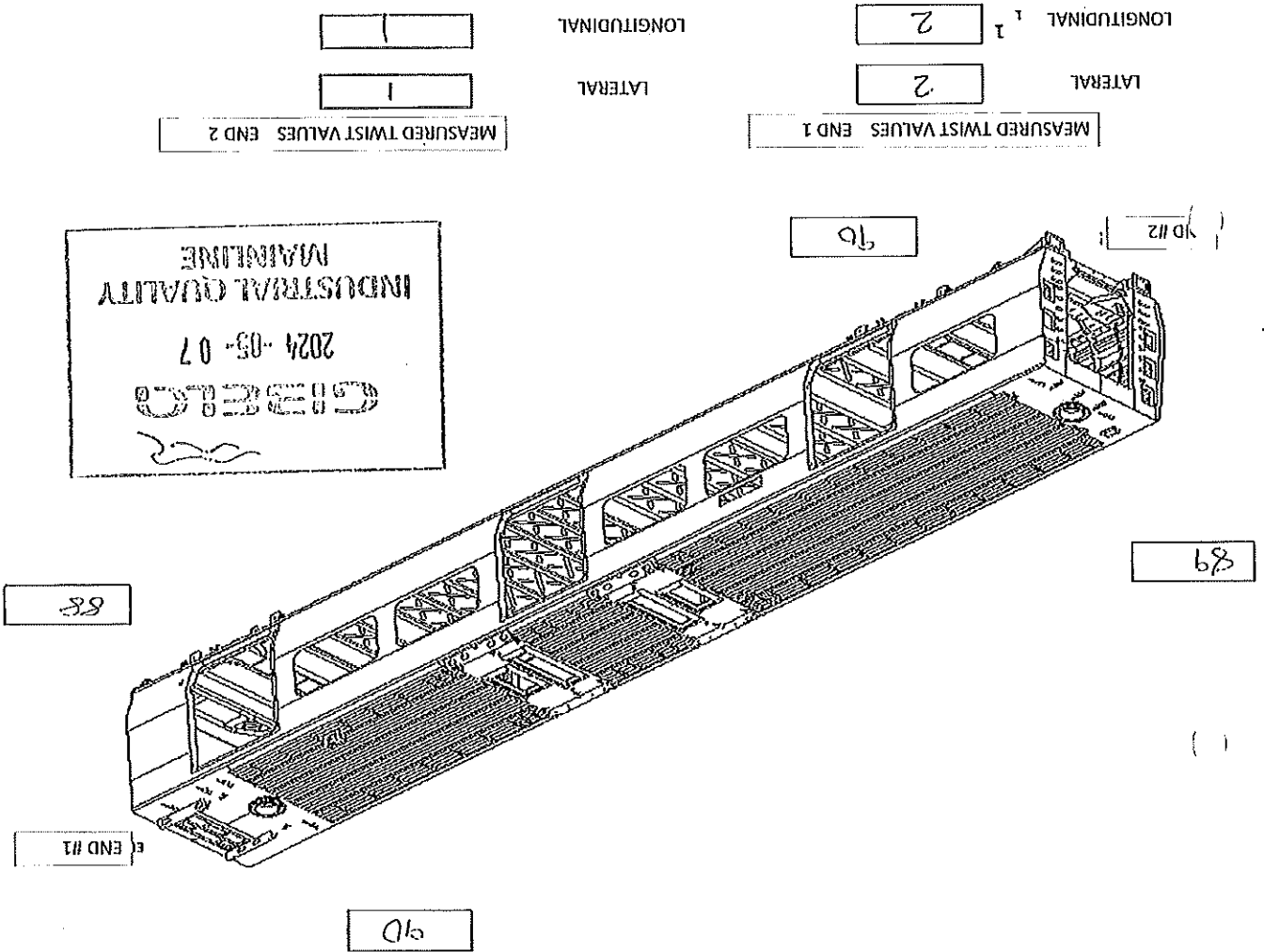
2024-05-07

INDUSTRIAL QUALITY

MAINLINE

GIBCO			DT00000223319 Carshell Assembly TC	Specifications of Details for CBS measurement CB1230	
Rev. 30	Project: PRASA	Date-		06/11/2023	SI.CB1230.324.V29

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.





DT00000223319 Carshell Assembly TC

Rev.
30

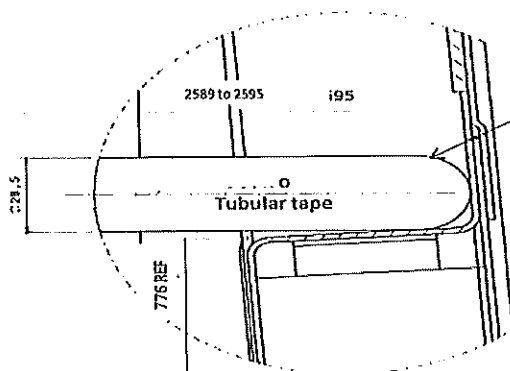
Date-

06/11/2023

Project PRASA

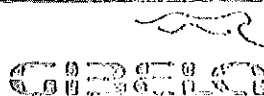
SI.CB1230.324.V29

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



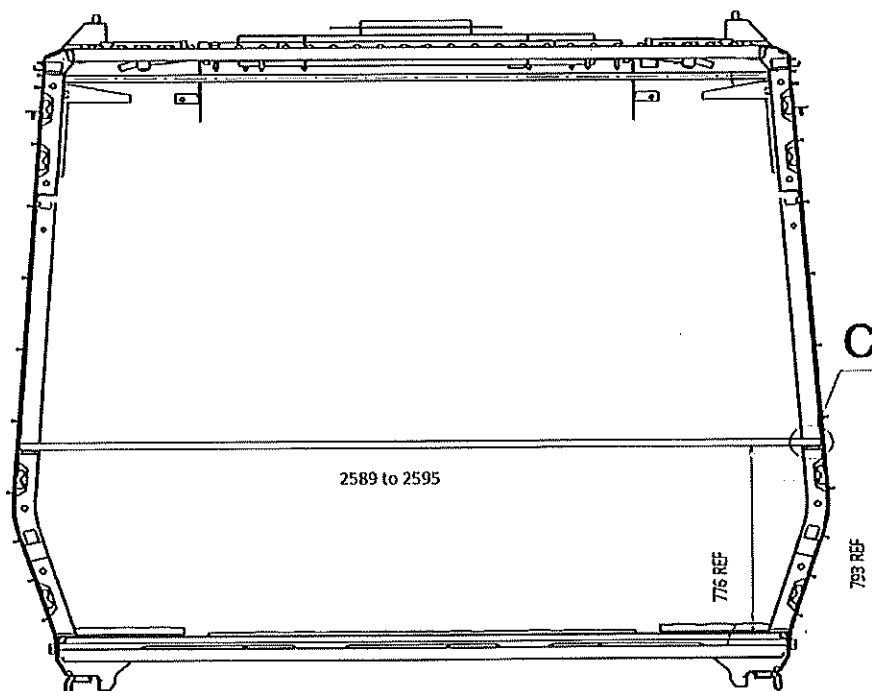
A
N
Carry the tubular tape on the
"2" bottom of Windows

Detail C



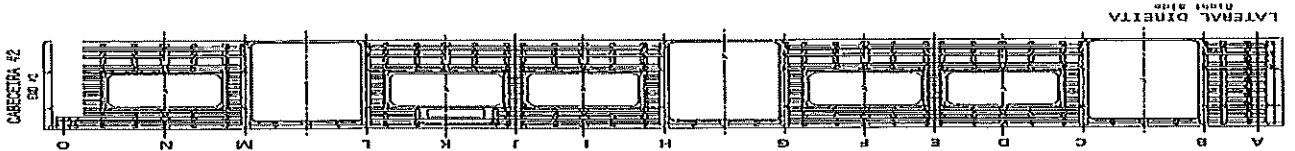
2024-05-07

INDUSTRIAL QUALITY
MAINLINE



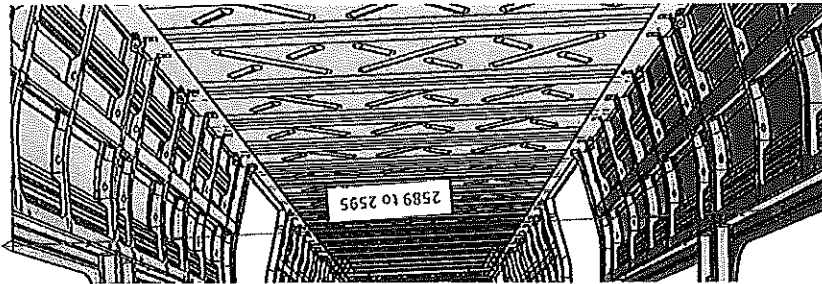
GIBELL		DT00000223319 Carshell Assembly TC		Rev. 30	Date- 06/11/2023	Project: PRASA	SI.CB1230.324.V29
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Specifications of Details for CBS measurement



2589 to 2595mm

A	2595
B	25 91
C	25 90
D	25 89
E	25 93
F	25 96
G	25 95
H	25 92
I	25 90
J	25 90
K	25 89
L	25 90
M	25 91
N	25 93
O	25 95




GIBELL
2024-05-07
INDUSTRIAL QUALITY
MAINLINE

Threshold Verification

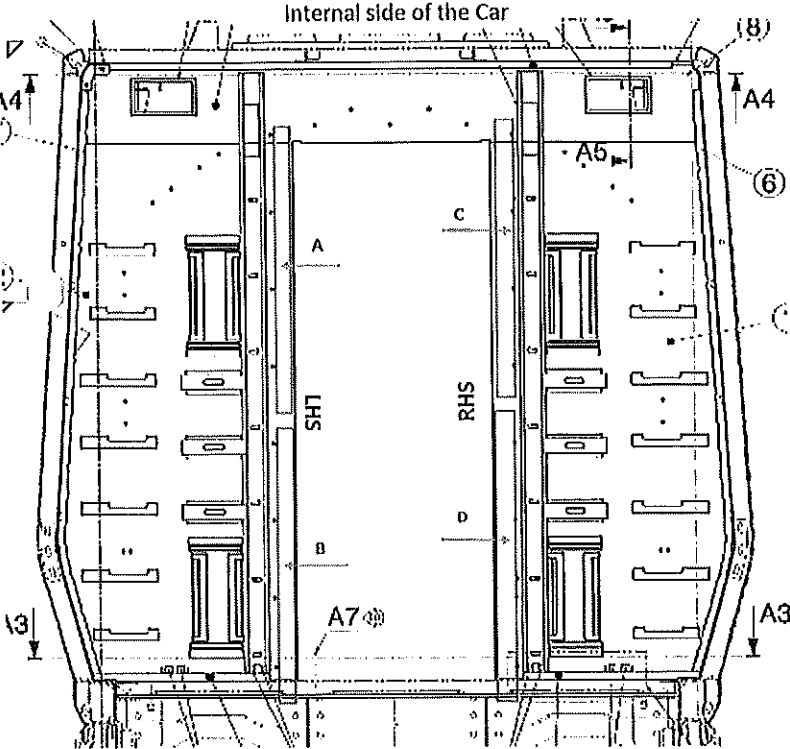
Door 1	L	38	Door 2	L	38	Door 3	L	38
Door 1	R	38	Door 2	R	38	Door 3	R	38
Door 4	L	38	Door 5	L	38	Door 6	L	38
Door 4	R	36	Door 5	R	38	Door 6	R	38

BOILER MAKER: Hoshizaki
WELDER: Hoshizaki

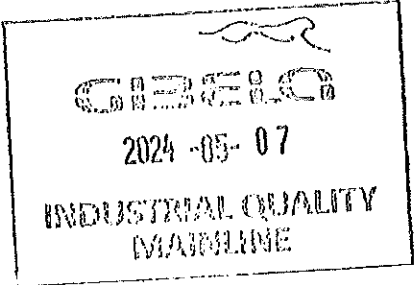
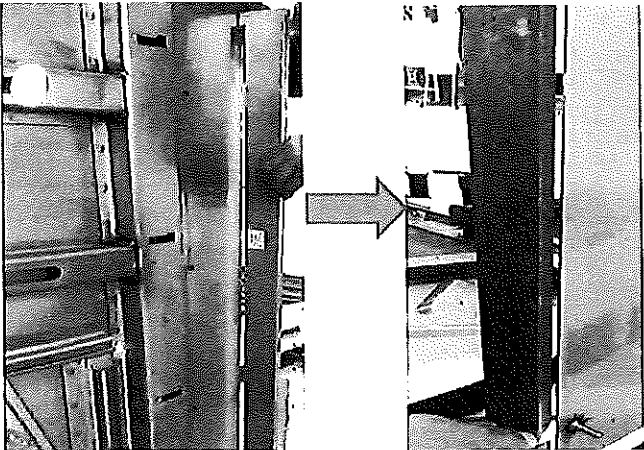
	DT00000223319 Carshell Assembly TC	Rev. 30	Project: PRASA SI.CB1230.324.V29
		Date-	
		06/11/2023	
Specifications of Details for CBS measurement			


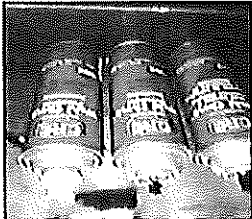
Measure the flatness on the Cab Fire Barrier after installation and welding. Measure positions A, B,C and D using 1000mm flatness ruler and taper gauge.

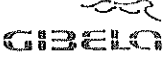
Specified Maximum Flatness deviation on Cab Fire Barrier = 2mm





	Measured Values		
	Minimum	Maximum	Deviation
A	10.4	11.4	1.0
B	10.1	11.0	0.9
C	10.5	11.4	0.9
D	11.0	11.5	0.5



	DT00000223319 Carshell Assembly TC	Project: PRASA SI:CB1230.324.V29	Dye penetrant test		<div style="text-align: center;">  <p>Dye penetration test to be performed by quality personnel</p> </div>
			Rev. 30 Date- 06/11/2023		

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

Self Inspection - Final Result

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)			DATE	NAME	SIGNATURE
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!	06/05/24	manthypeto 483009- Operations	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	06/05/2024	Amogelang Industrial Quality	
	NO GO	There are activities pending that impact/stop the activities of the next process Obs: (To describe problems below)		Operations	
		There are non-conformities impact the quality of the product and there is no corrective action defined yet)		Industrial Quality	

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

