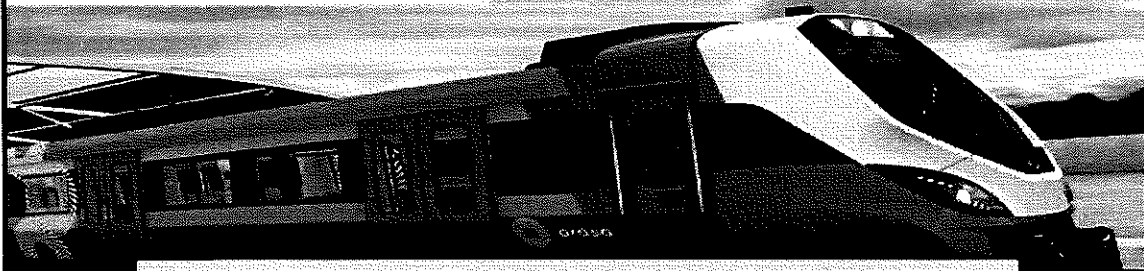



PRASA PROJECT




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	M1	M2	M3	M4	TC2		
<input type="checkbox"/> DTR3000152645	AAD0001741033	Carshell Assembly TC	CB1210							X PRA.CB1210.DTR3022391 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 Mathagu	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	06/08/2020
			REVISED BY	Bongane Masina	06/08/2020
20	19/04/2020	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	19/04/2021
			REVISED BY	Bongane Masina	19/04/2021
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING	APPROVER	Mbhombi Collins	17/08/2021
			CHECKER	Mpho Mulaudzi	17/08/2021
			REVISED BY	Mpho Mulaudzi	17/08/2021
25	21/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombi Collins	21/02/2022
			CHECKER	Andani Muthelo	21/02/2022
			REVISED BY	Andani Muthelo	21/02/2022
26	14/04/2023	Addition of welding consumable traceability	APPROVER	Ntuli Vanessa	14/04/2023
			CHECKER	Mohlame Amogelang	14/04/2023
			REVISED BY	Mohlame Amogelang	14/04/2023
27	27/07/2023	Added verification of loaded parts	APPROVER	Ngobeni Tyson	27/07/2023
			CHECKER	Mathapo Kelebone	27/07/2023
			REVISED BY	Mohlame Amogelang	27/07/2023
28	07/11/2023	Addition of welding traceability	APPROVER	Ngobeni Tyson	07/11/2023
			CHECKER	Andani Muthelo	07/11/2023
			REVISED BY	Ntokozo Zwane	07/11/2023

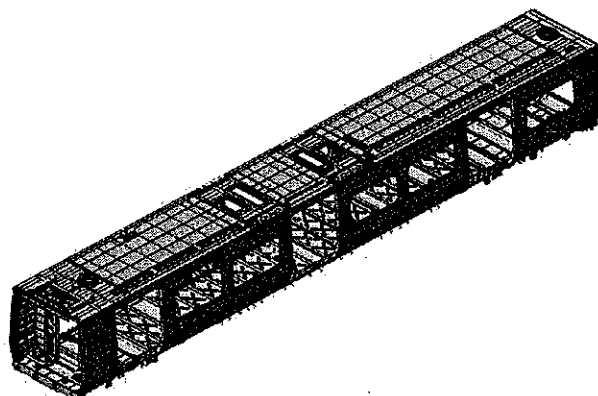
TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGE5
227	901	GERALD / 426951	09/05/24	SI.CB1210.322.V28	16

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

Car: TC1 & TC2

NCR:

Work station: CB1210



I - Documentation and Instruments

1.1 - Documentation Control

Document	Type of car						Revision	Observation	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
	1	2	3	4	5	6					
DTR30223319/3	X						28		✓	N/A	9/15/24

1.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process


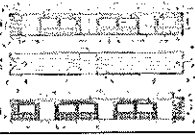

Instruments	Validation	Calibration or Verification Validation Date	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
Tubular	32823-2	15/03/25	✓	9/15/24	
laser tape	125425924	08/01/25	✓	9/15/24	
3Dn tape	GIBTP0102	18/11/24	✓	9/15/24	

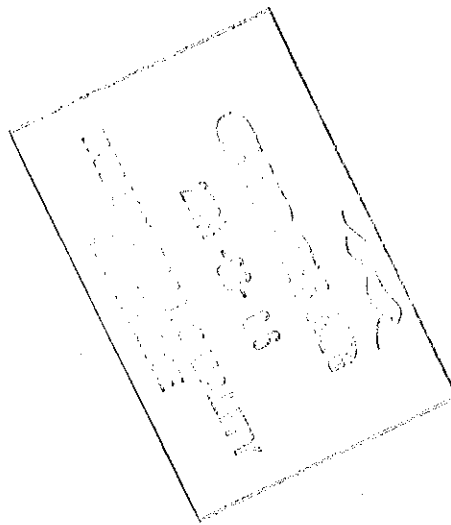
1.3 Consumables


Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 LSi	314018-74097	MIG	✓	9/15/24	
ER 308 LSi	314018-74097	MIG	✓	9/15/24	
ER 308 L	299687-70322	TIG	✓	9/15/24	

2024-05-11
 2024-05-11
 2024-05-11

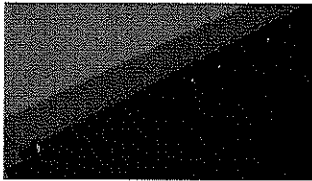
		DTR30223319/3 Carshell Assembly TC		Rev. V28 Date- 07/11/2023		Project: PRASA SI.CB1210.322.V28	
Item	Picture/Drawing	Description	Acceptance Criteria / Record	✓		Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls, Endframes, Roof and Underframe)	DT00000284980	✓		<i>R. Hash</i> 9/5/24	<i>[Signature]</i> 29/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		<i>R. Hash</i> 9/5/24	<i>[Signature]</i> 29/05/24
03		Functional dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		<i>R. Hash</i> 9/5/24	<i>[Signature]</i> 29/05/24
04	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 • DTD0000210675	✓		<i>R. Hash</i> 9/5/24	<i>[Signature]</i> 29/05/24
05	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		<i>R. Hash</i> 9/5/24	<i>[Signature]</i> 29/05/24
06		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		<i>R. Hash</i> 9/5/24	<i>[Signature]</i> 29/05/24
07	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658	✓		<i>R. Hash</i> 9/5/24	<i>[Signature]</i> 29/05/24



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

Welder traceability

Roof ring welds

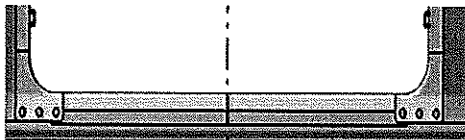


LHS	
Boiler maker (Name & Sign): <u>GERALD / hush</u>	Welder (Name & Sign): <u>Thabang</u>
RHS	
Boiler maker (Name & Sign): <u>Timothy</u>	Welder (Name & Sign): <u>Robert</u>

END 1

LHS	
Boiler maker (Name & Sign): <u>GERALD / hush</u>	Welder (Name & Sign): <u>Thabang</u>
RHS	
Boiler maker (Name & Sign): <u>Timothy</u>	Welder (Name & Sign): <u>ROBERT</u>

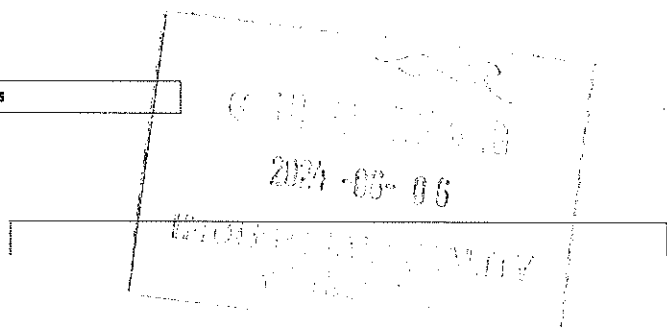
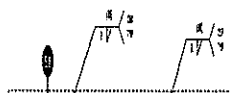
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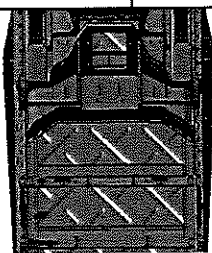
LHS	
Boiler maker (Name & Sign): <u>GERALD / hush</u>	
Welder (Name & Sign): <u>KEITH K. Moko</u>	

RHS	
Boiler maker (Name & Sign): <u>Timothy</u>	
Welder (Name & Sign): <u>KEITH K. Moko</u>	

EUR Reinforcement Plates



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



Underneath the CAR



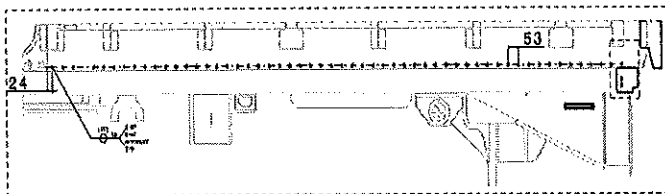
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Boiler maker (Name & Sign):

Terico Mestabe

Welder (Name & Sign):

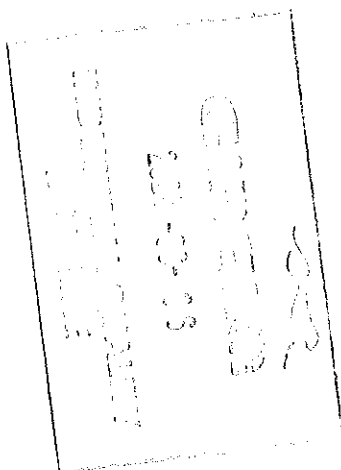
Mitkozi Chua



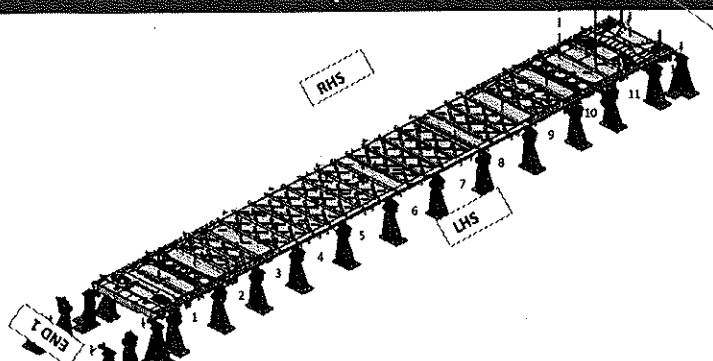
FEDOLI


Operator:

Lawrence Mestabe



Specifications of Details for CBS measurement



























	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB1210.322.V28
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Measure gap between jig pillar / chair and underframe = 0mm. No gap.








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


After Loading Underframe and Clamping.

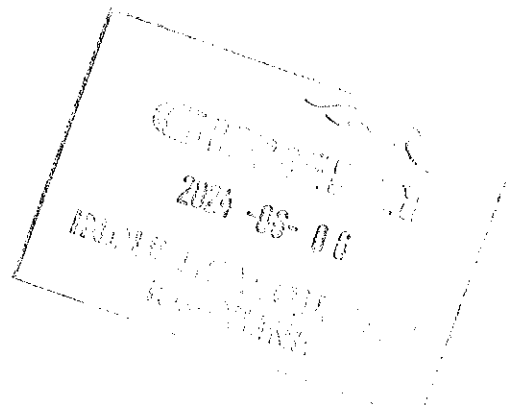
	1	2	3	4	5	6	7	8	9	10	11	12
Left Hand Side												
Right Hand Side												

Signature Operations:  Date: 9 / 9 / 24

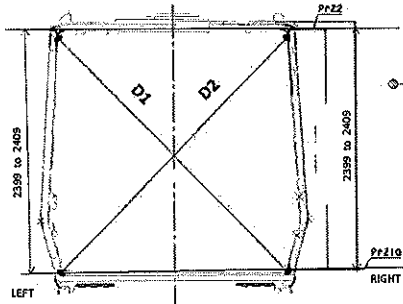
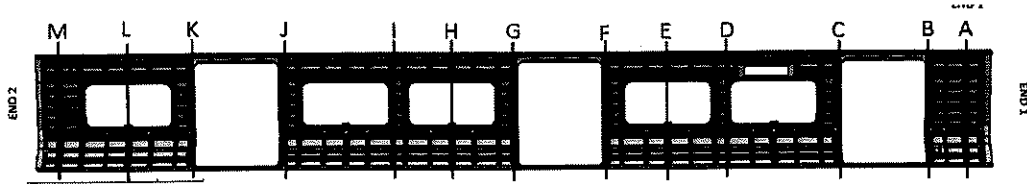
After Welding.

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

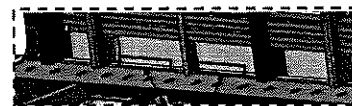
Signature Industrial Quality:  Date: 9 / 9 / 24



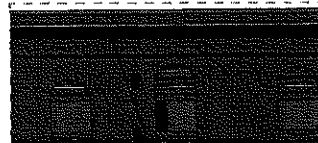
Specifications of Details for CBS measurement



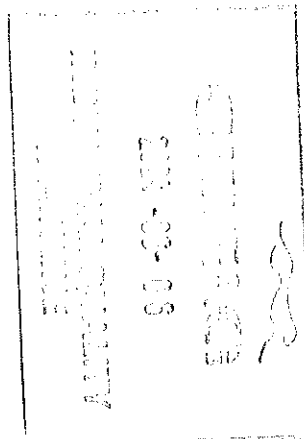
Measurement positions on roof rail and side wall omega corner



Measurement positions on side wall and side wall corner

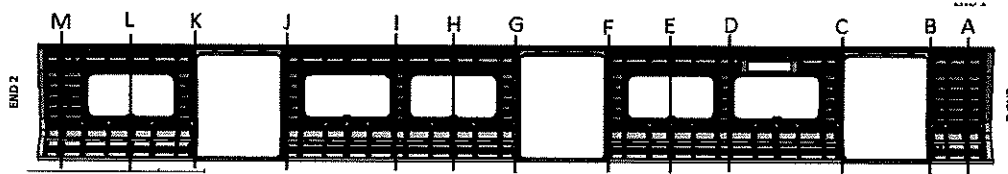


Reinforcement area measurement positions on roof reinforcement area



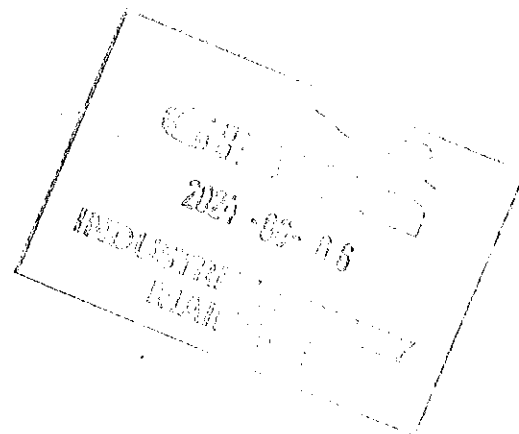
Specifications of Details for CBS measurement


BEFORE WELDING



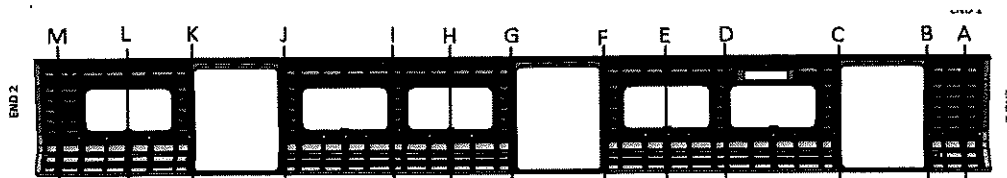
PME: The difference in Height values measured on the LHS and RHS should be $\leq 2\text{MM}$ on each point.

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



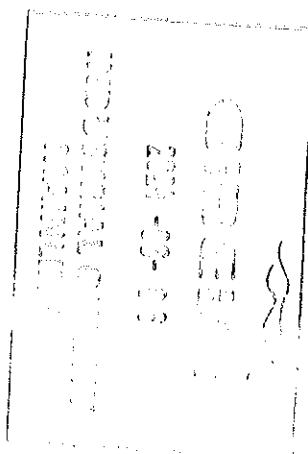
	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB1210.322.V28
		Date- 07/11/2023	
Specifications of Details for CBS measurement			


AFTER WELDING



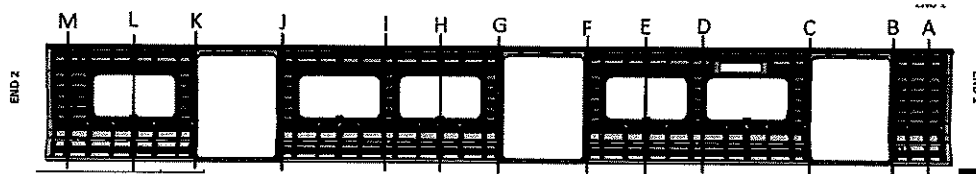
PME: The difference in Height values measured on the LHS and RHS should be $\leq 2\text{MM}$ on each point.

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



	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRA5A SI.CB1210.322.V28
		Date- 07/11/2023	
CBS measurement			

BEFORE WELDING



2270 to 2276

2268 to 2274

A 2274

B 2276

C 2275

D 2271

E 2273

F 2275

G 2274

H 2276

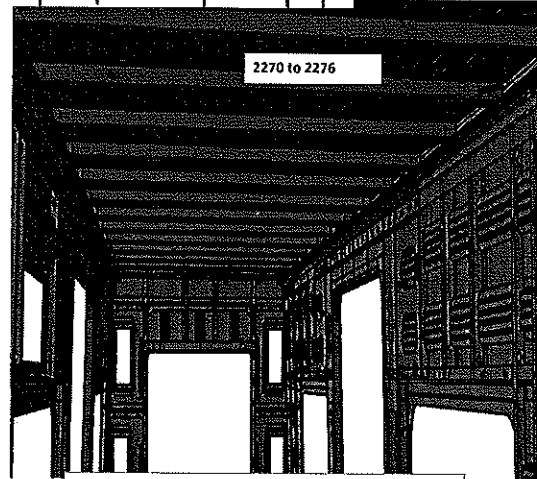
I 2275

J 2273

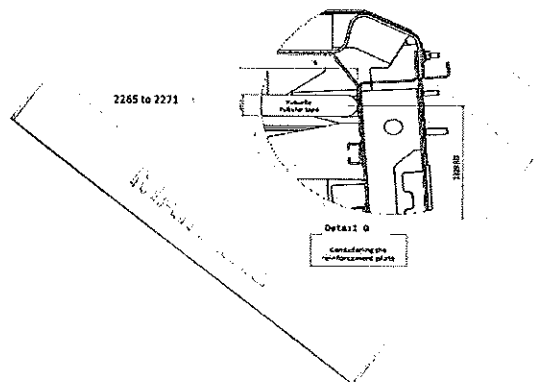
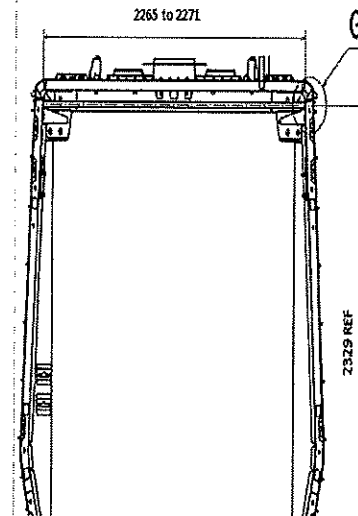
K 2274

L 2275

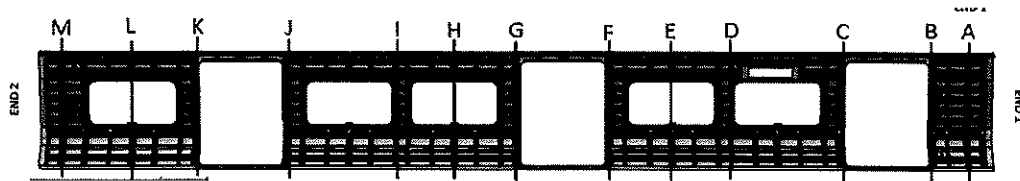
M 2276



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



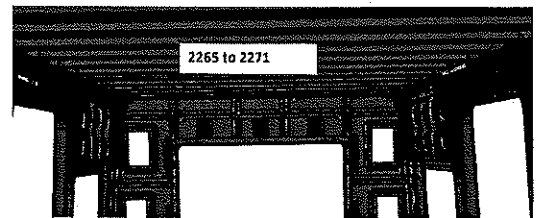
AFTER WELDING



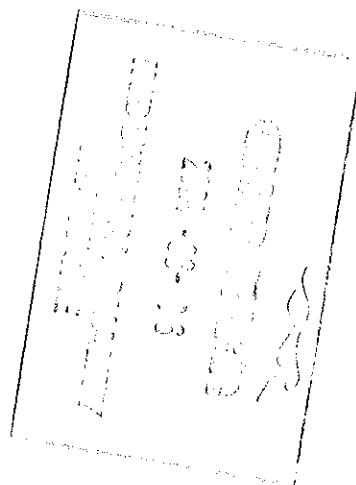
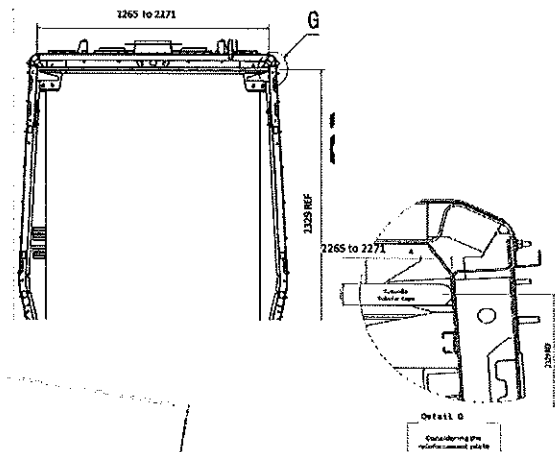
	2265 to 2271	2270 to 2276
A	N/A	2275
B	2270	N/A
C	2269	N/A
D	N/A	2276
E	N/A	2274
F	2271	N/A
G	2270	N/A
H	N/A	2273
I	N/A	2274
J	2270	N/A
K	2269	N/A
L	N/A	2275
M	2270	N/A



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

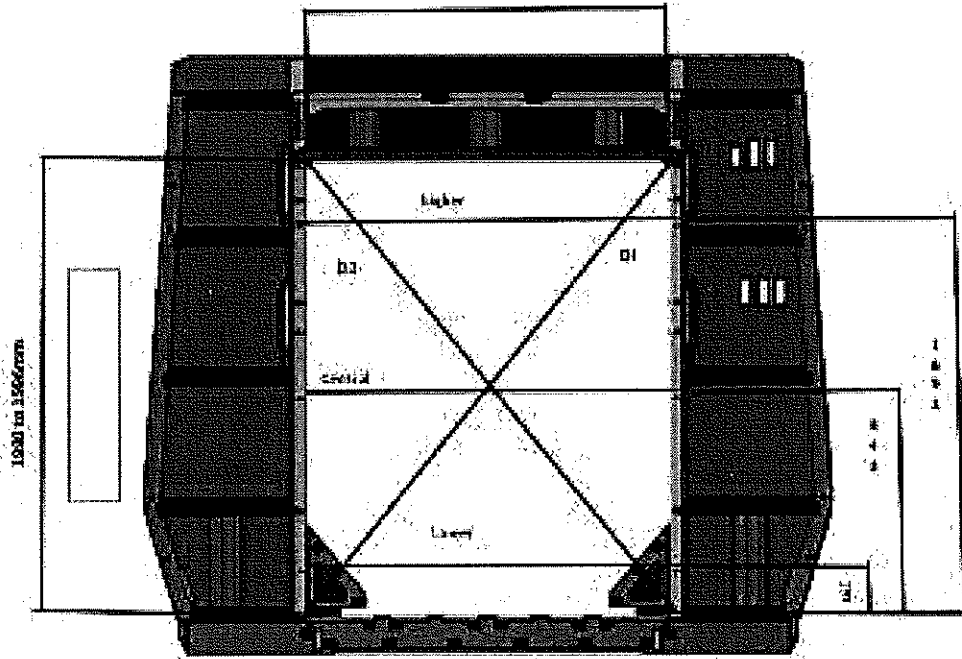


Take measurement close to radius (considering reinforcement)



Specifications of Details for CBS measurement

Endframe 2



11月20日 1982 年 11月

DIAGONAL DIFFERENCE D1-D2 = 3mm

SECRET

1380

01

2414

Central Directorate

1381

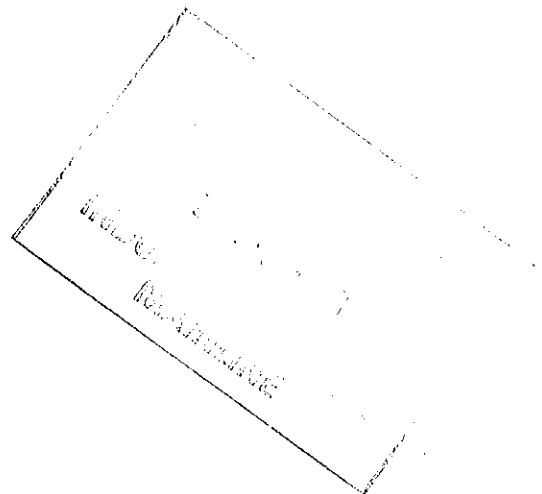
2414

~~CONFIDENTIAL~~

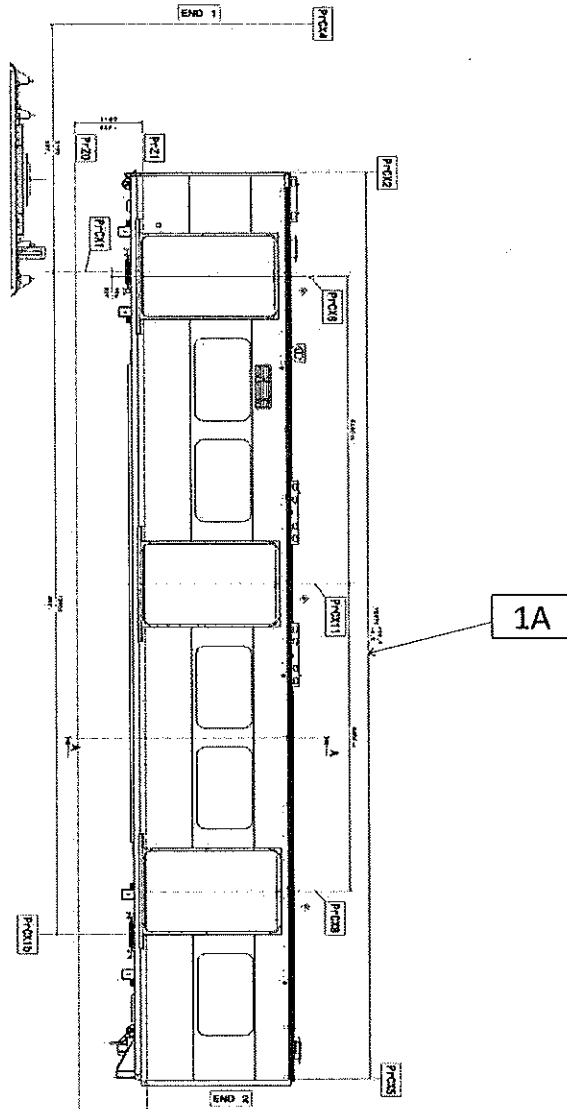
1380

01-02

6



Specifications of Details for CBS measurement



LEFT SIDE

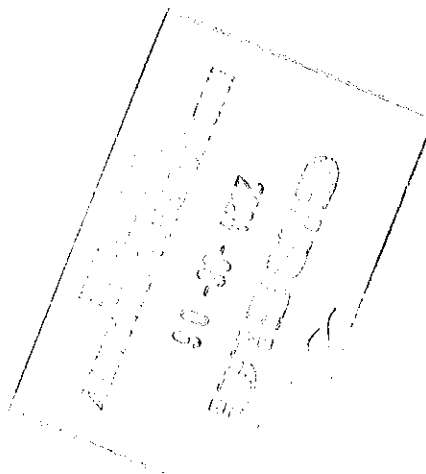
	SPECIFICATION SIZE	ACTUAL SIZE
1A	18870 $\begin{matrix} +10.5 \\ -4.5 \end{matrix}$	18871

RIGHT SIDE


	SPECIFICATION SIZE	ACTUAL SIZE
1A	18870 $\begin{matrix} +10.5 \\ -4.5 \end{matrix}$	18872

Dye penetrant test

Dye-penetration test to be performed by quality personnel

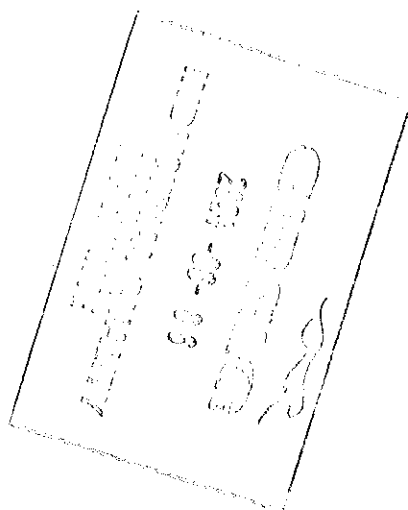



[illegible]

		DTR30223319/3 Carshell Assembly TC		Rev. V28	Project: PRASA SI.CB1210.322.V28	
				Date- 07/11/2023		
Self Inspection - Final Result						
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT	NO GO	If activities are not complete, the missing activities must not impact the next stage!	9/6/24	GERALD	h. N. S.	Operations
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.	24/05/24	MOLERO	[Signature]	Quality
	YES	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!				Quality
In case of "NO GO", describe blocking problems						
In case of "NO GO", the operations manager must define below action plan to ensure "GO":						
Item	Description	Action	Responsible	Due date	Status	

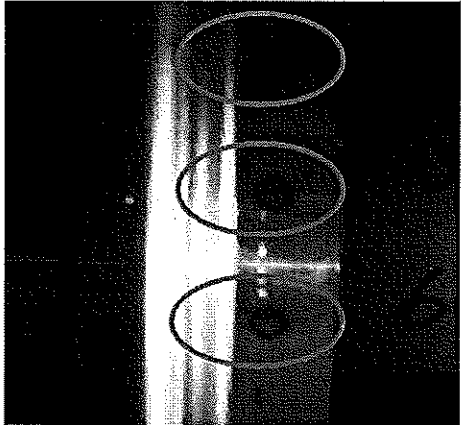
Operations


Quality



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

ANNEXURE A: Spot Welding Quality Acceptance Standard

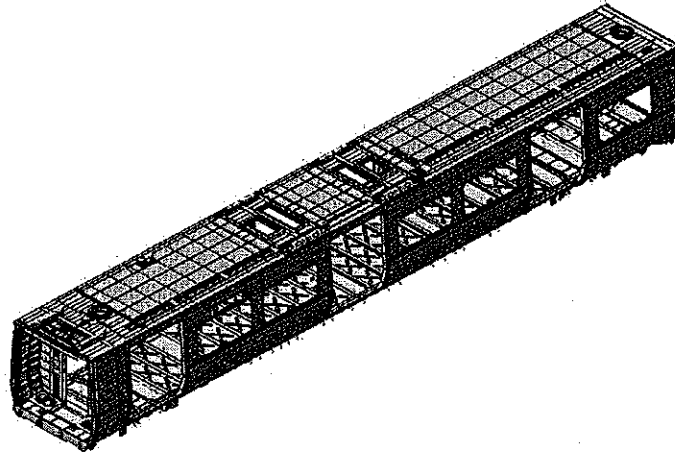


	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB1220.323.V29
		Date- 28/10/2023	

Carro Car: TC1, TC2	NCR:	Work station: CB1220
------------------------	------	----------------------



Safety Related



I - Documentation and Instruments

I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
	TC1	M1	M2	M3	M4	TC2					
DTR30223319/2	✓						29	13/05/24	✓	N/A	13/05/24

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)
Turbular	15/03/25	32823-2	✓	13/05/24	13/05/24
Measuring Tape	12/04/25	GIBTA0001	✓	13/05/24	13/05/24


1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
Welding wire	E231067	MIG welding	✓	13/05/24	13/05/24

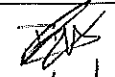







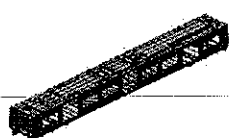


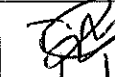






20/4-06-06




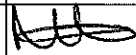

QUALITY
ENGINE

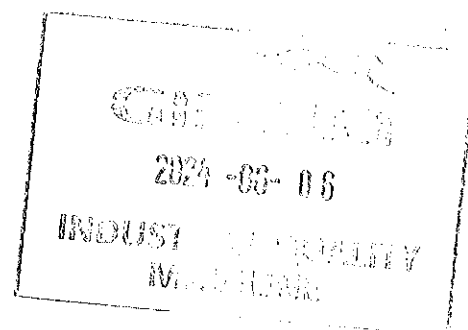
	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRA5A SI.CB1220.323.V29
		Date-	
		28/10/2023	

II - Control Activities of Production

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Signature/Data (Manufacturing)	Signature/Data (Quality)						
01	N/A	Assembly according to Instruction Engineering n° PRA.CB1220.DTR30225487/2 Verification of fitment for all reinforcement brackets.	DTR30223319/2	✓	 13/05/24	 13/05/24						
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓	 13/05/24	 13/05/24						
03	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓	 13/05/24	 13/05/24						
04	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 13/05/24	 13/05/24						
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 13/05/24	 13/05/24						
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.	✓	 13/05/24	 13/05/24						
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	✓	 13/05/24	 13/05/24						
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: <table><tr><td>Temperature Min - Max (1)</td><td>Min-Max</td><td>10°C - 35°C</td></tr><tr><td>Relative humidity Min - Max (1)</td><td>Min-Max</td><td>25% - 80%</td></tr></table>	Temperature Min - Max (1)	Min-Max	10°C - 35°C	Relative humidity Min - Max (1)	Min-Max	25% - 80%	Sealant Batch No: Exp Date: <u>06/24</u> Actuals Temperature: <u>11</u> Humidity: <u>75</u>	✓	 13/05/24	 13/05/24
Temperature Min - Max (1)	Min-Max	10°C - 35°C										
Relative humidity Min - Max (1)	Min-Max	25% - 80%										

		DTR30223319/2 Carshell Assembly TC		Rev. 29	Project: PRASA			
				Date-				
				28/10/2023	SI.CB1220.323.V29			
09	NA	Verification of sealant application in certain regions in the drawing.	AAD0001241033	✓			 14/05/24	 14/05/24
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	✓			 14/05/24	 14/05/24





DTR30223319/2 Carshell Assembly TC

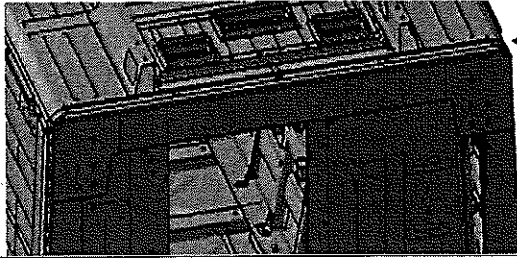
Rev.
29

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28/10/2023



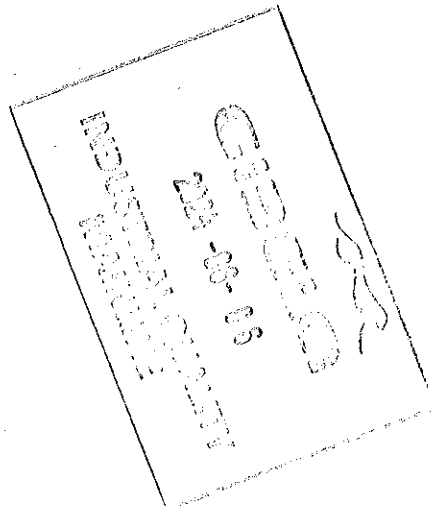
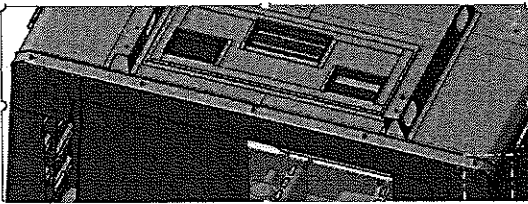
END 1
SEALANT


OPERATOR
(Name & sign):

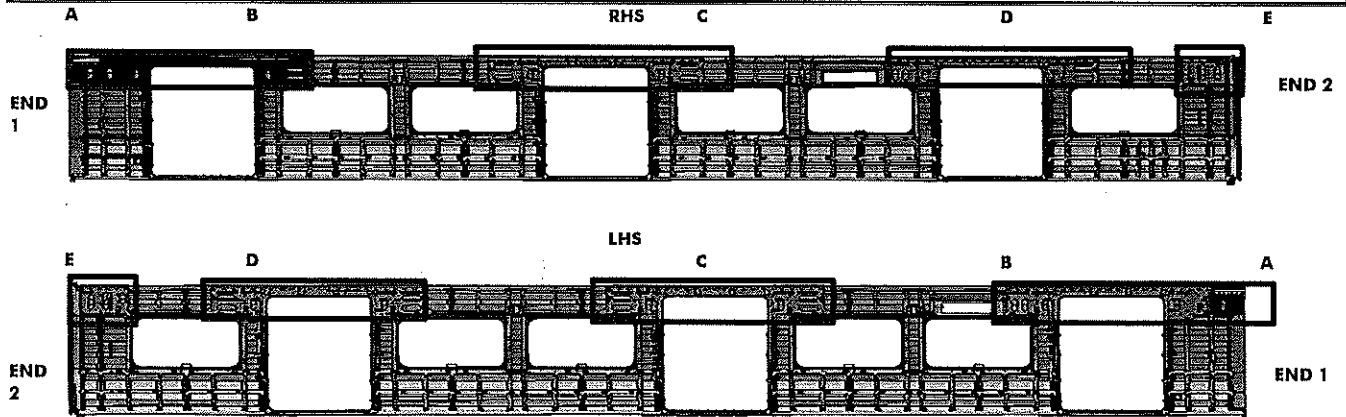
Mthp/lozisi:

OPERATOR
(Name & sign):

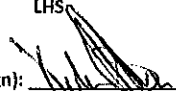

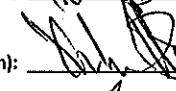

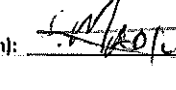
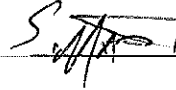
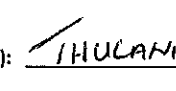
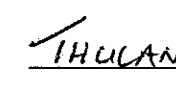
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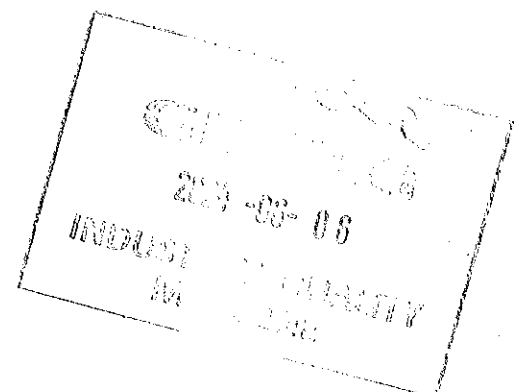



	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB1220.323.V29
		Date- 28/10/2023	

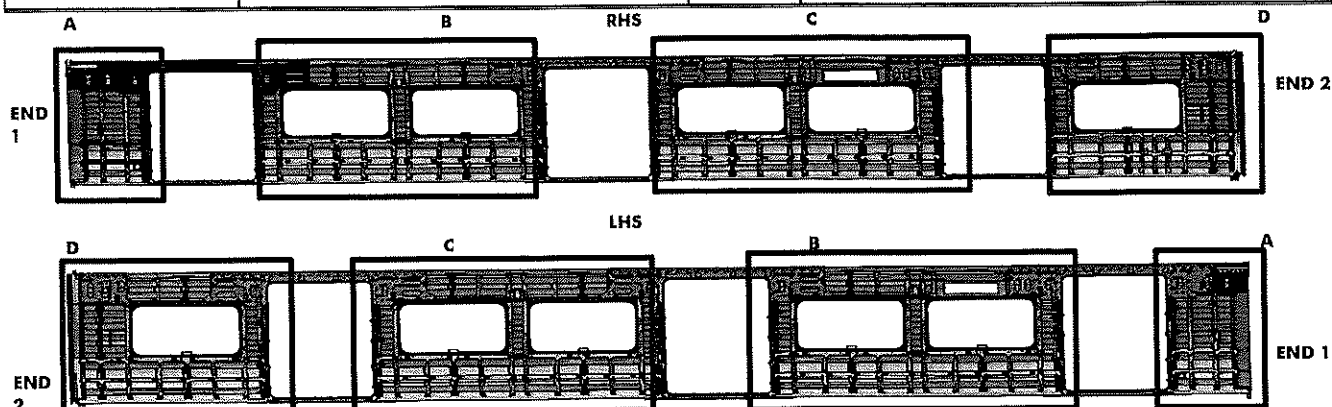


REINFORCEMENT WELDING

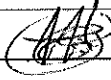


AREA	LHS	RHS
A	Operator (Name&sign): 	
B	Operator (Name&sign): 	
C	Operator (Name&sign): 	
D	Operator (Name&sign): _____	_____
E	Operator (Name&sign): 	



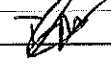
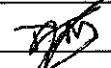
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		Date-	
		28/10/2023	



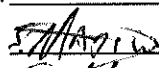
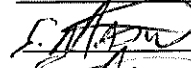
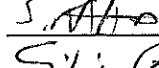
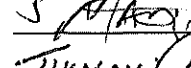
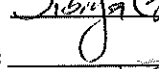
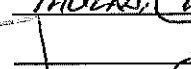
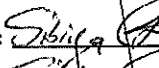
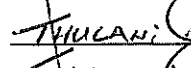




BRACKETING


C-RAILS:	Operator:	INSTALLATION Asanda 
	Operator:	
DOOR MECHANISMS:	Operator:	Leni 
	Operator:	
TAPPING PADS	Operator:	Leni 
	Operator:	

INSTALLATION & VERIFICATION

SEAT & LUGGAGE BRACKETS:	Operator:	Tebele 
	Operator:	
SEAT BRACKETS VERIFICATION:	Operator:	Tebele 
	Operator:	

WELDING

AREA	LHS	RHS
A (Seat brackets)	Operator (Name&sign): N/A	Operator (Name&sign): N/A
(C-rails, Luggage and earth bushes)	Operator (Name&sign):	Operator (Name&sign):
B (Seat brackets)	Operator (Name&sign): S. MARIU 	Operator (Name&sign): S. MARIU 
(C-rails, Luggage and earth bushes)	Operator (Name&sign): S. MARIU 	Operator (Name&sign): S. MARIU 
C (Seat brackets)	Operator (Name&sign): Sibiga 	Operator (Name&sign): THULANI 
(C-rails, Luggage and earth bushes)	Operator (Name&sign): S. MARIU 	Operator (Name&sign): S. MARIU 
D (Seat brackets)	Operator (Name&sign): Sibiga 	Operator (Name&sign): THULANI 
(C-rails, Luggage and earth bushes)	Operator (Name&sign): Sibiga 	Operator (Name&sign): THULANI 


	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB1220.323.V29
		Date-	
		28/10/2023	

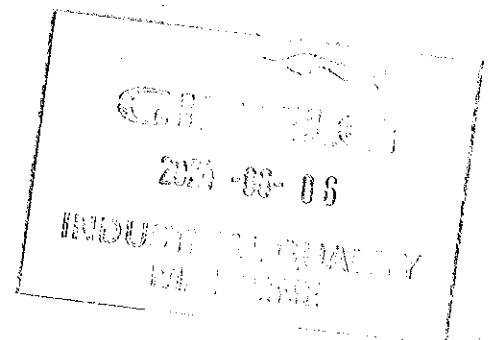
ENDS


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

N/A

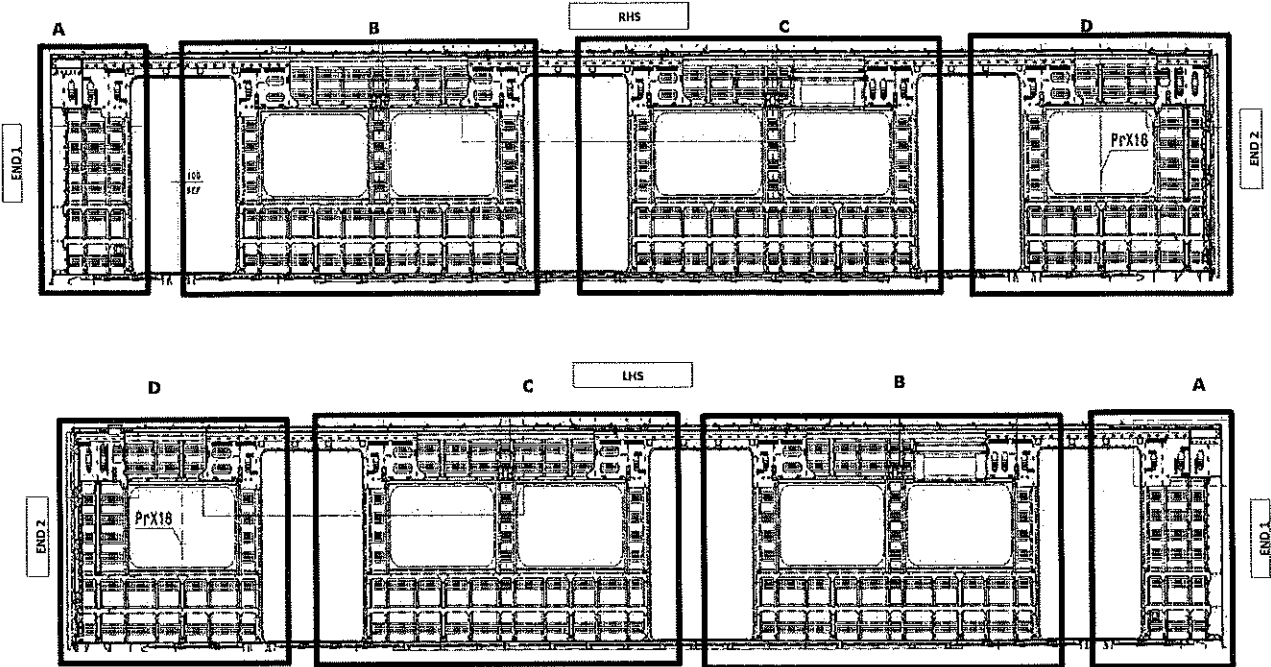
END 1 TAPPING PADS WELDING: Operator (Name&sign):

Silva 



	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB1220.323.V29
		Date-	
		28/10/2023	

TC BRACKET INSTALLATION



QUANTITIES (TC)

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

ROOF ENDS:
 C-RAILS 2 OFF END 2
 EARTH BUSH 4 OFF END 2

VERIFICATION BY: Tetelo

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:
 C-RAILS 2 OFF END 2
 EARTH BUSH 4 OFF END 2

VERIFICATION BY: Tetelo



DTR30223319/2 Carshell Assembly TC

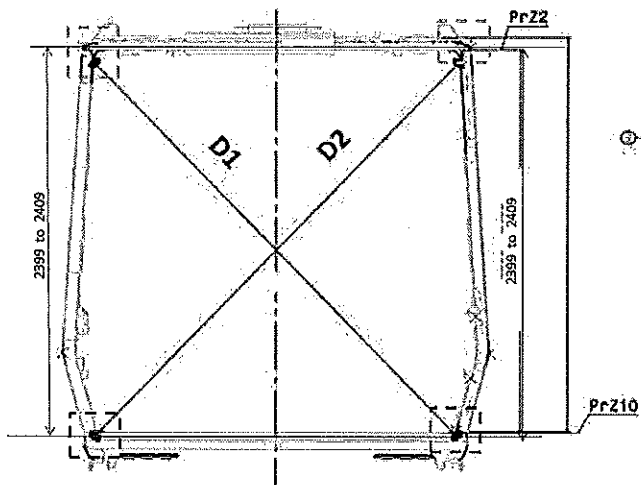
Rev.
29

Project: PRASA

Date-

28/10/2023

SI.CB1220.323.V29



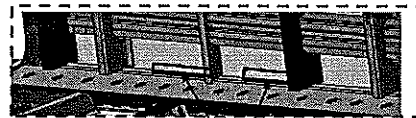
Take measurement close to radius



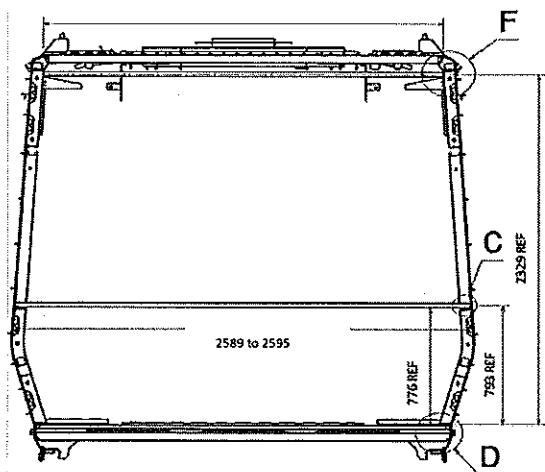
Measurement positions on roof rail and sidewall omega corner.



Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.



Take measurement close to radius





DTR30223319/2 Carshell Assembly TC

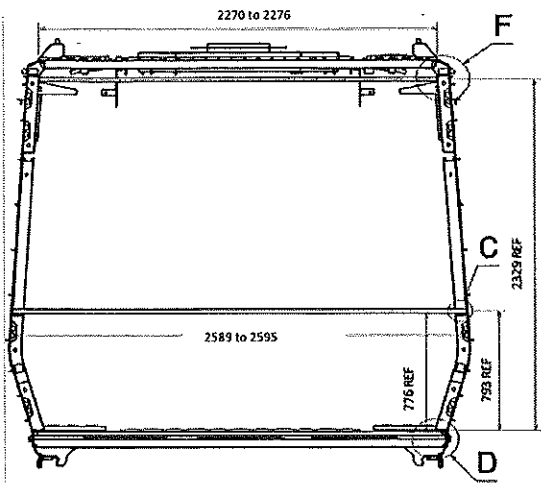
Rev.
29

Date-

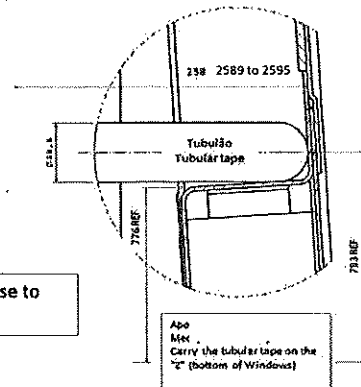
28/10/2023

Project: PRASA

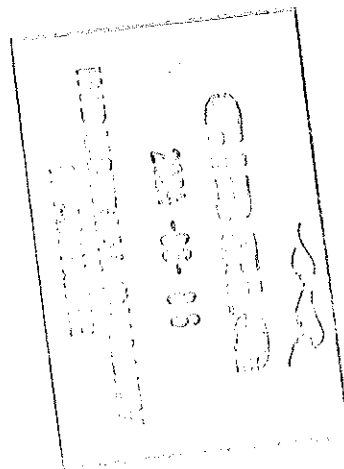
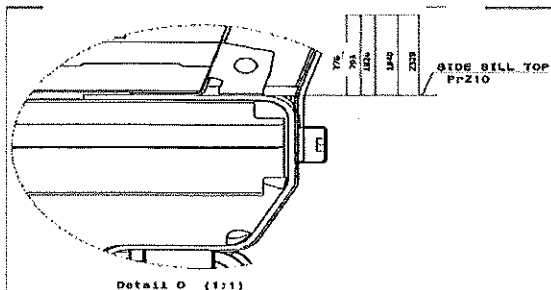
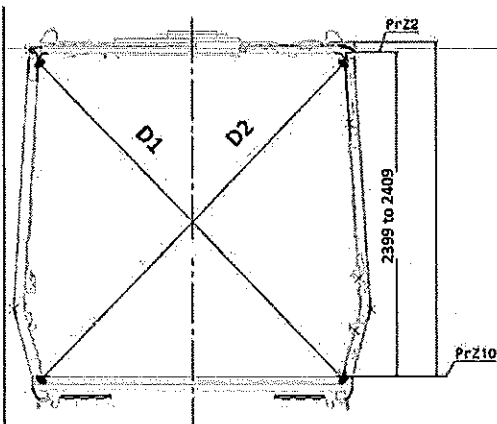
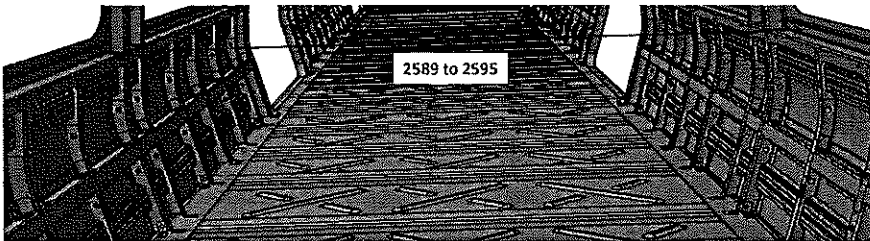
SI.CB1220.323.V29



Take measurement close to radius



Detail C

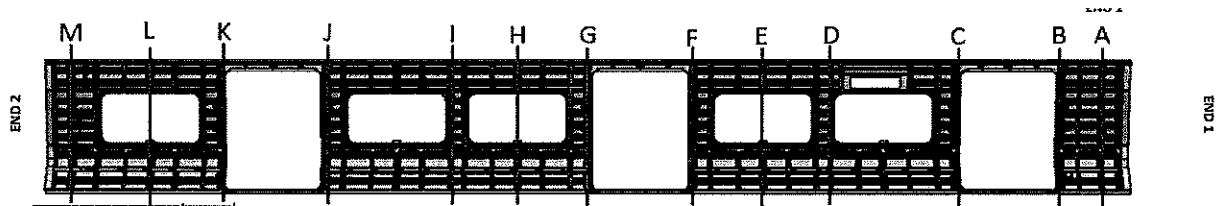




DTR30223319/2 Carshell Assembly TC

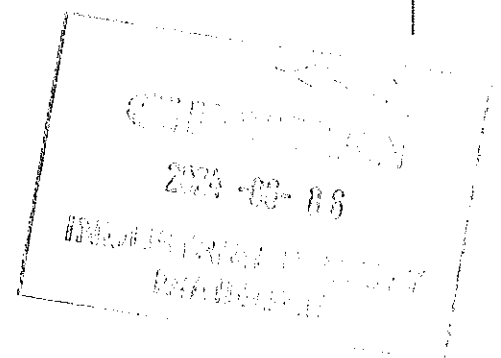
Rev.
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Date-
28/10/2023

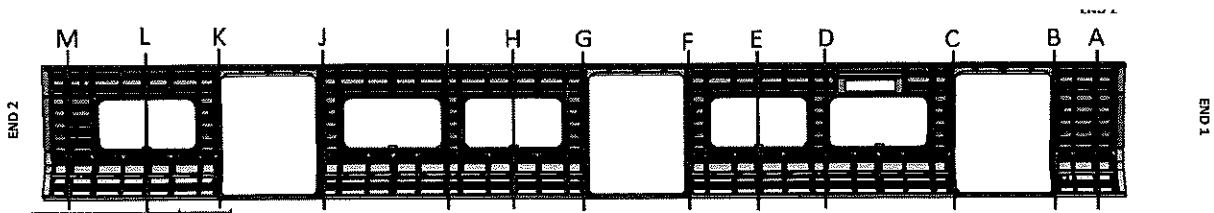
Project: PRASA
SI.CB1220.323.V29



BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3268	3265	3	—
B	3295	3297	2	—
C	3295	3296	1	—
D	3265	3266	1	—
E	3266	3268	2	—
F	3299	3297	2	—
G	3300	3299	1	—
H	3266	3267	1	—
I	3267	3266	1	—
J	3297	3296	1	—
K	3296	3295	1	—
L	3268	3269	1	—
M	3299	3300	1	—

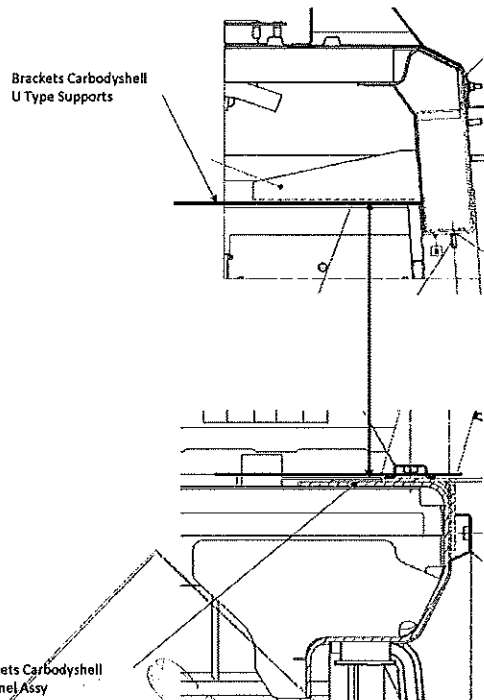
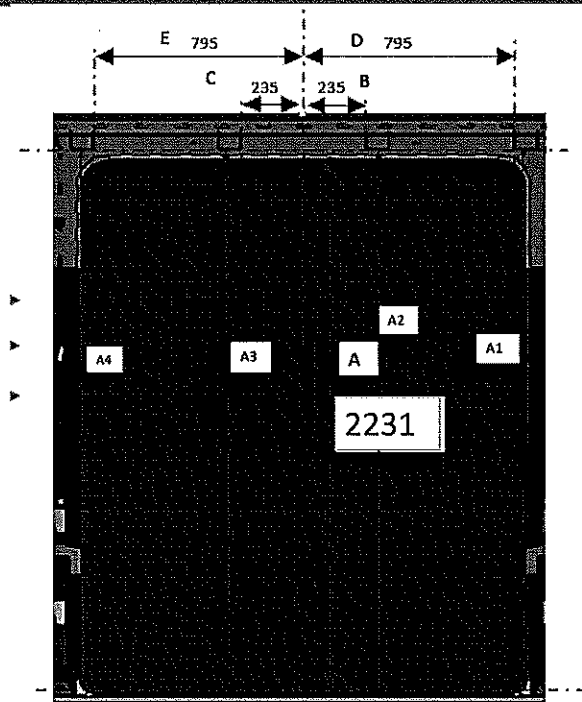




AFTER WELDING

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

[Faint, illegible markings]



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

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

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

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

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



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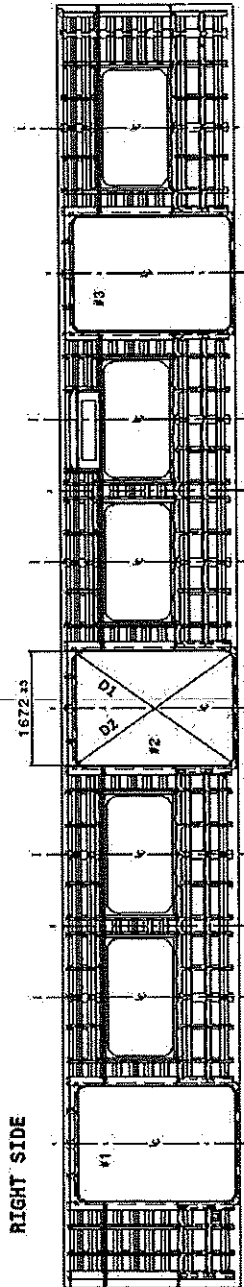
Date:

SI.CB1220.323.V29

28/10/2023

Specifications of Details for CBS measurement

End #2



End #1

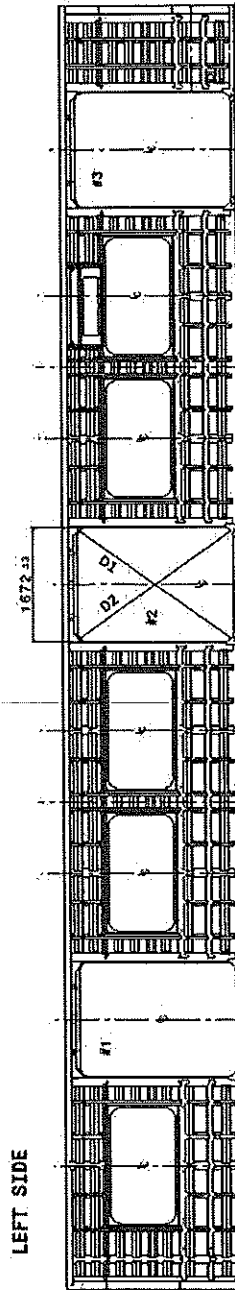
Doors diagonal D1-D2 maximum difference ≤ 4 mm

	#1	#2	#3
D1	2750	2748	275
D2	275	2749	2750
D1-D2		2	7

Doors length - 1672.33mm

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

End #1



End #2



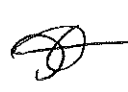
Diagonal de portas - diferença D1-D2 ≤ 4 mm

	#1	#2	#3
D1	2751	2752	2751
D2	2752	2754	2750
D1-D2	1	2	1

Vão de Portas - 1672.33mm

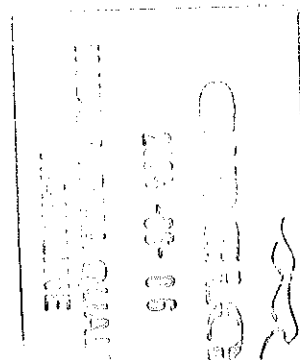
	#1	#2	#3
DIENSÃO SUPERIOR	1673	1671	1672
HIGHER DIMENSION	1673	1672	1672
CENTRAL DIMENSION	1673	1671	1672
LOWER DIMENSION	1673	1671	1672


30-08-2023

	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRA5A SI.CB1220.323.V29			
		Date-				
		28/10/2023				
Self Inspection - Final Result						
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)		DATE	NAME	SIGNATURE		
HOLD POINT	✓	GO	If activities are not complete, the missing activities must not impact the next stage!	13/05/24	Tetebo	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	13/05/24	Andoni	
			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	

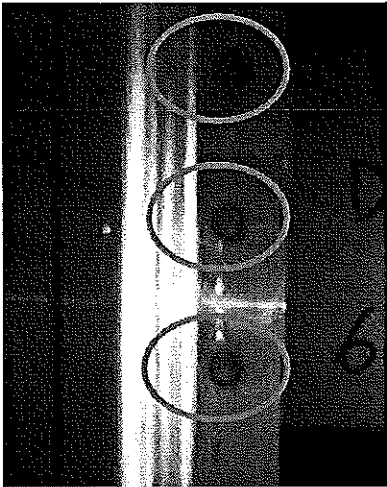
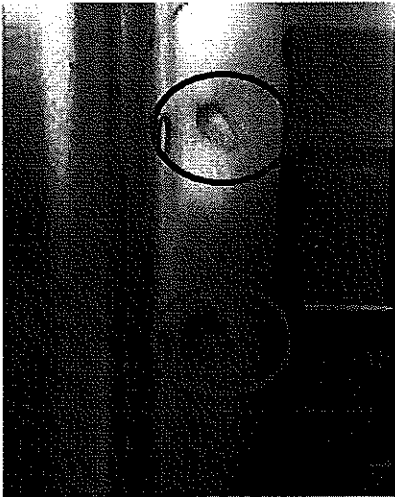
Operations


Quality




	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB1220.323.V29
		Date-	
		28/10/2023	

ANNEXURE A: Spot Welding Quality Acceptance Standard





PRASA PROJECT

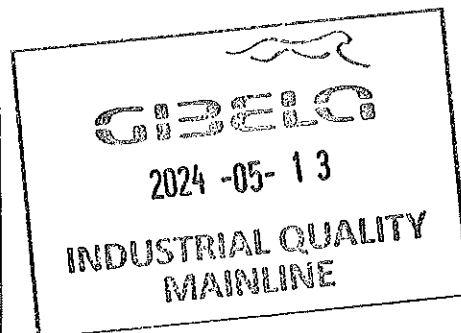


APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

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												
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ?	
				TC3	M4	M1	M1	M1	TC3			
DTR300012655	AAD0001235953	DT00000223319 Carshell Assembly TC	CB1230	X						X	PRA.CB1230.DT0000012 23319.V20	YES
REV	DATE	MODIFICATION CONTENT			RESPONSIBLE			NAME		DATE		
0	06/04/2018	GIBELA NEW CREATION			APPROVER			Itumeleng Modiba		05/04/2018		
					CHECKER			Nosizo Pindela		09/04/2018		
					COMPILER			Thanyani Mathegu		06/04/2018		
1	30/5/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager			APPROVER			Itumeleng Modiba		30/5/2018		
					CHECKER			Nosizo Pindela		30/5/2018		
					REVISED BY			Nosizo Pindela		30/5/2018		
2	05/07/2018	Certain dimensional checks moved to CB1220			APPROVER			Itumeleng Modiba		05/07/2018		
					CHECKER			Nosizo Pindela		05/07/2018		
					COMPILER			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 Mbombhni		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 Mbombhni		14/05/2022		
					CHECKER			Andani Muthelo				
					COMPILER			Andani Muthelo				
27	26/07/2022	Threshold measurements addition			APPROVER			Collins Mbombhni		26/07/2022		
					CHECKER			Andani Muthelo				
					COMPILER			Andani Muthelo				
28	17/10/2022	Addition of traceability for sealant application			APPROVER			Collins Mbombhni		17/10/2022		
					CHECKER			Ntokozo Zwane				
					COMPILER			Amogelang Mohlampe				
29	14/04/2023	Added sealant batch number & welding consumables traceability			APPROVER			Vanessa Ntuli		14/04/2023		
					CHECKER			Ntokozo Zwane				
					COMPILER			Amogelang Mohlampe				
30	06/11/2023	Added traceability for thresholds for boiler makers and welders			APPROVER			Tyson Ngobeni		06/11/2023		
					CHECKER			Andani Muthelo				
					COMPILER			Ntokozo Zwane				
TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER		DATE	SELF INSPECTION NUMBER		PAGES					
277	TC1	Norriemhlet 427423		14/05/24	SI.CB1230.324.V28		14					





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Date-

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Project: PRASA

SI.CB1230.324.V29

Carro
Car:

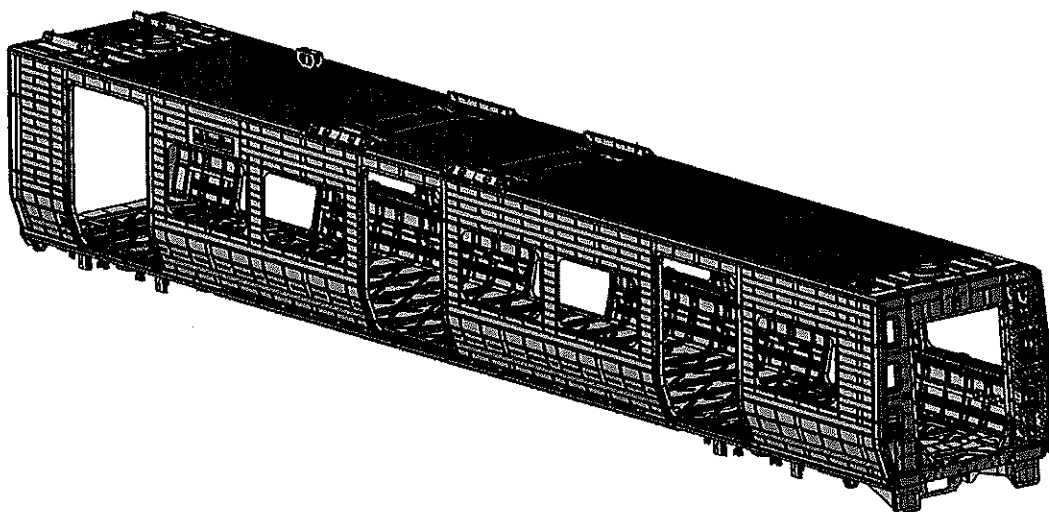
NCR:

Work station:

CB1230



Safety Related



I - Documentation and Instruments

I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK	NOK	Signature/Date (Operations)	Signature/Date (Quality)
	TC1	M1	M2	M3	M4	TC2						
DT00000223319	X						30		✓		N/A	14/05/24

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	12062-2	2025/02/19	✓		14/05/24	14/05/24
Measuring Tape	GIBIPOS06	2024/06/20	✓		14/05/24	14/05/24
Combination Square	GIBCS0082	2025/02/20	✓		14/05/24	14/05/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
308 LIS	E231067	MG	✓		14/05/24	14/05/24
<div> 2024-05-13 INDUSTRIAL QUALITY MAINLINE</div>						



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Date-

06/11/2023

Project: PRASA

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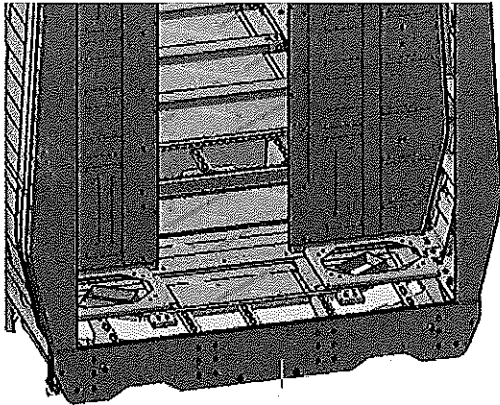
II - Control Activities of Production

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	NO	Reason	Signature/Date (Operations)	Signature/Date (Quality)						
01	N/A	Assembly according to Instruction Engineering n° DT00000223319	DT00000223319	✓			Kgotso 14/05/24	 14/05/24						
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓			Khosi 14/05/24	 14/05/24						
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 DTD0000210675	✓			Zarele 14/05/24	 14/05/24						
04	N/A	Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓			Thami 14/05/24	 14/05/24						
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	✓			Thami 14/05/24	 14/05/24						
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: <table><tr><td>Temperature Min - Max (1)</td><td>Min-Max</td><td>10°C - 35°C</td></tr><tr><td>Relative humidity Min - Max (1)</td><td>Min-Max</td><td>25% - 80%</td></tr></table>	Temperature Min - Max (1)	Min-Max	10°C - 35°C	Relative humidity Min - Max (1)	Min-Max	25% - 80%	Sealant Batch No: 105388 Exp Date: APRIL 24 Actuals Temperature: 20°C Humidity: 50%	✓			Buntle 14/05/24	 14/05/24
Temperature Min - Max (1)	Min-Max	10°C - 35°C												
Relative humidity Min - Max (1)	Min-Max	25% - 80%												
07	N/A	Verification of sealant application in regions of roof and sideframe finishers.	Sealant must be: Applied straight and even (1.5mm) Free of gaps, cracks, damage and debris (flashes, dirt, dust) Refer to Annexure B	✓			Bonty 14/05/24	 14/05/24						

GIBELA
2024-05-13
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MAINLINE

VIEW A




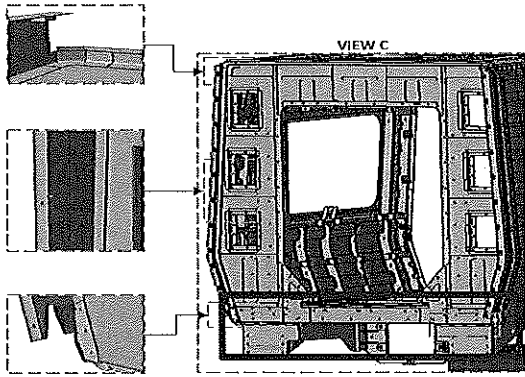
**END 1
SEALANT**

OPERATOR
(Name & sign):


Boitunebo 

OPERATOR
(Name & sign):

Buhle 




OPERATOR
(Name&sign):

Leroy 

OPERATOR
(Name&sign):

OPERATOR
(Name&sign):

Leroy 





DT00000223319 Carshell Assembly TC

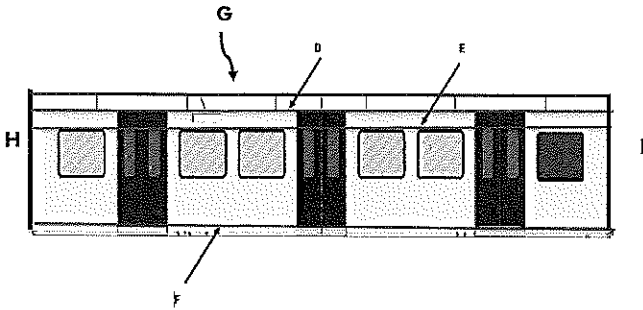
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Area D,E,F,G,H,I

LHS

RHS

Operator (Name & sign) : DEFGHI

[Signature]

Operator (Name & sign) : Bunle [Signature]

Bunle [Signature]

Operator (Name & sign) : DEFGHI

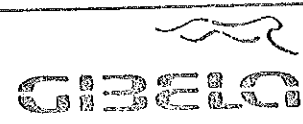
DEFGHI

Operator (Name & sign) : Bunle [Signature]

Bunle [Signature]

Operator (Name & sign) : _____

Operator (Name & sign) : _____



2024 -05- 13

INDUSTRIAL QUALITY
MAINLINE



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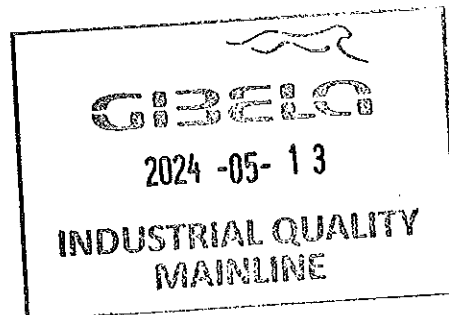
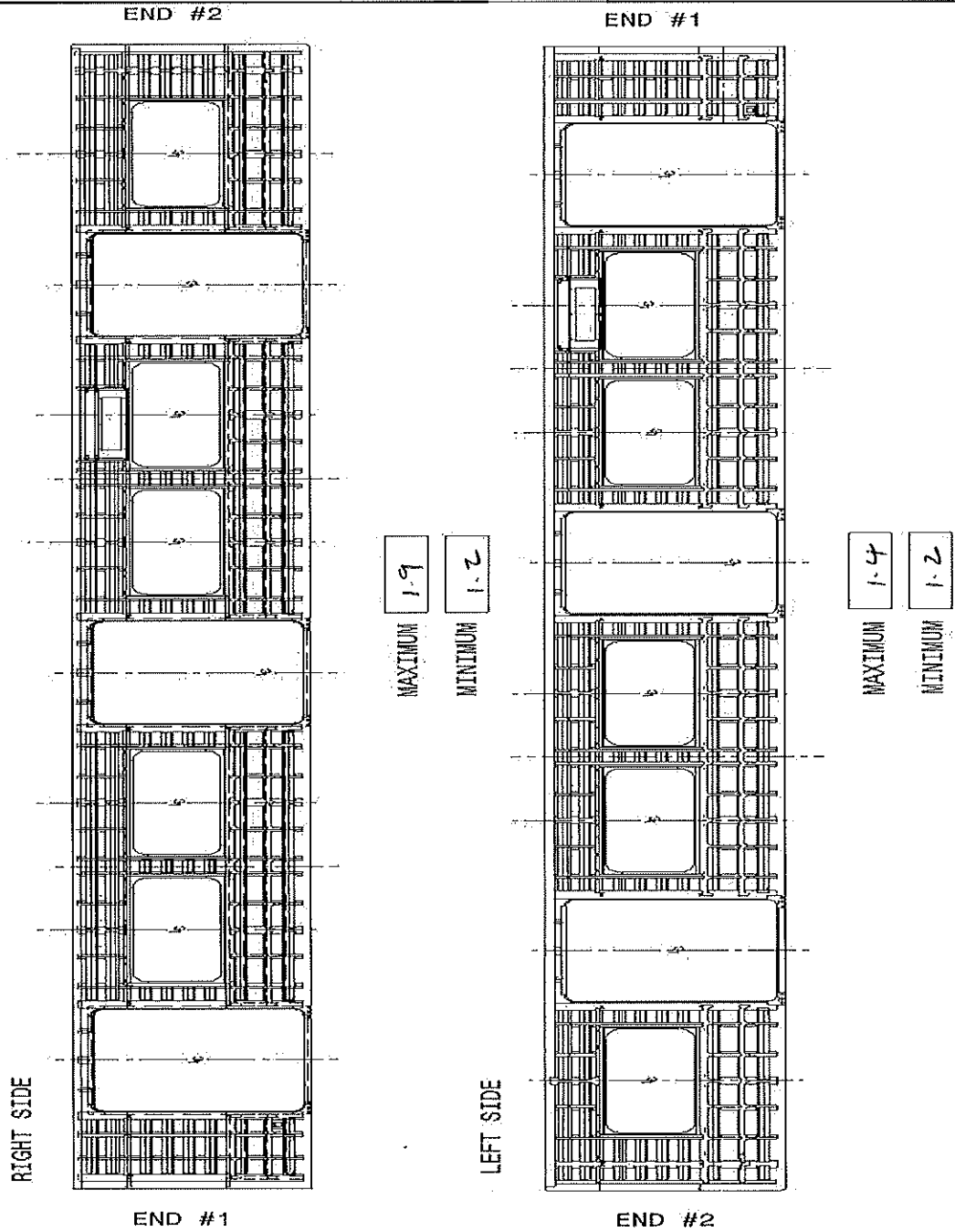
Date-

06/11/2023

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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 foundand indicate the corresponding region.





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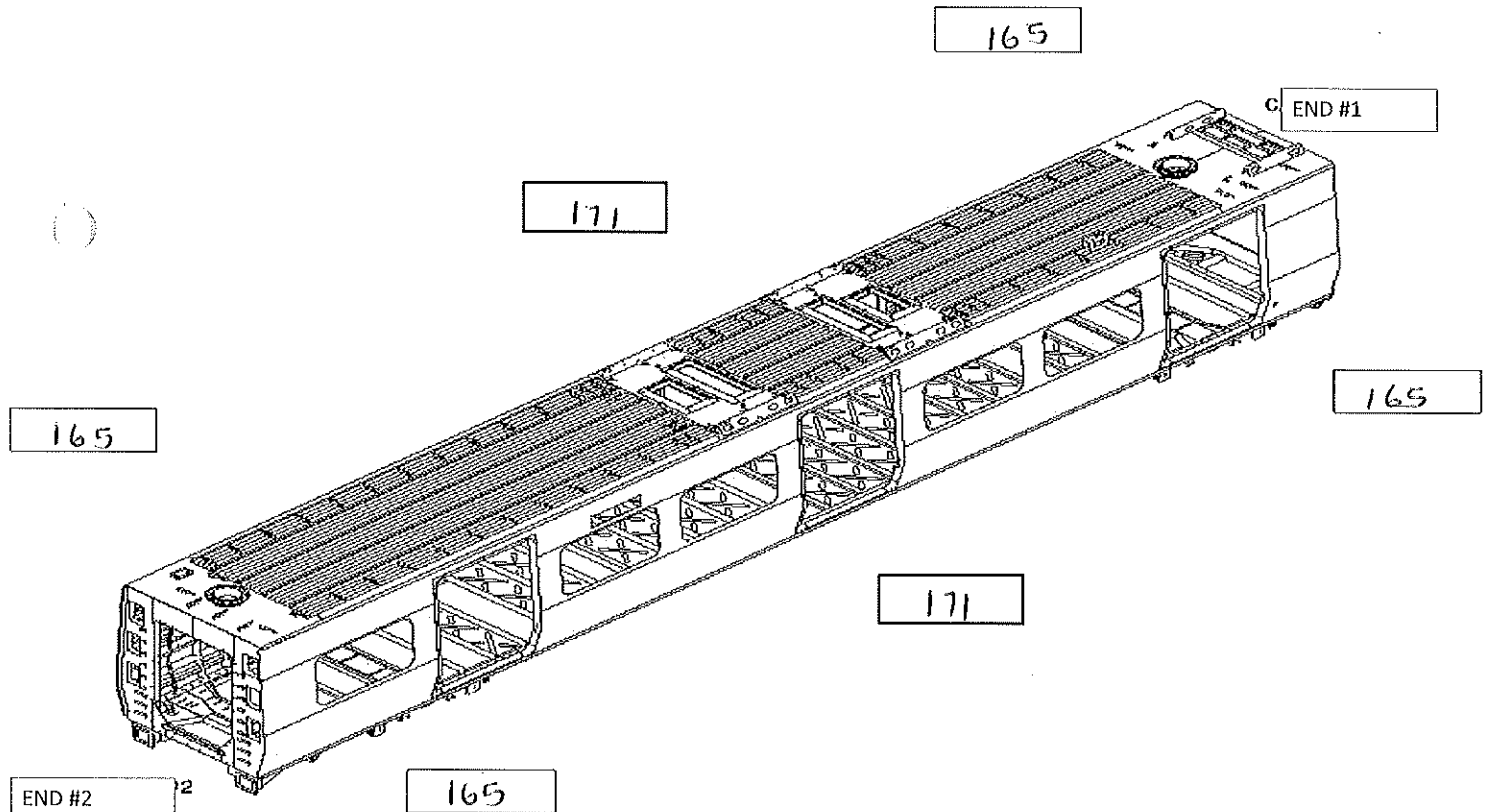
Date-
06/11/2023

Project: PRASA

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

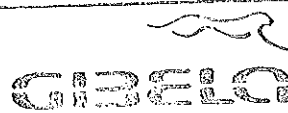
RIGHT

16

Di

LEFT

16

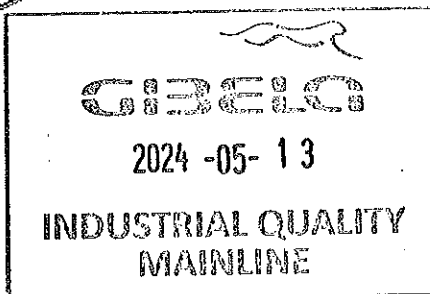
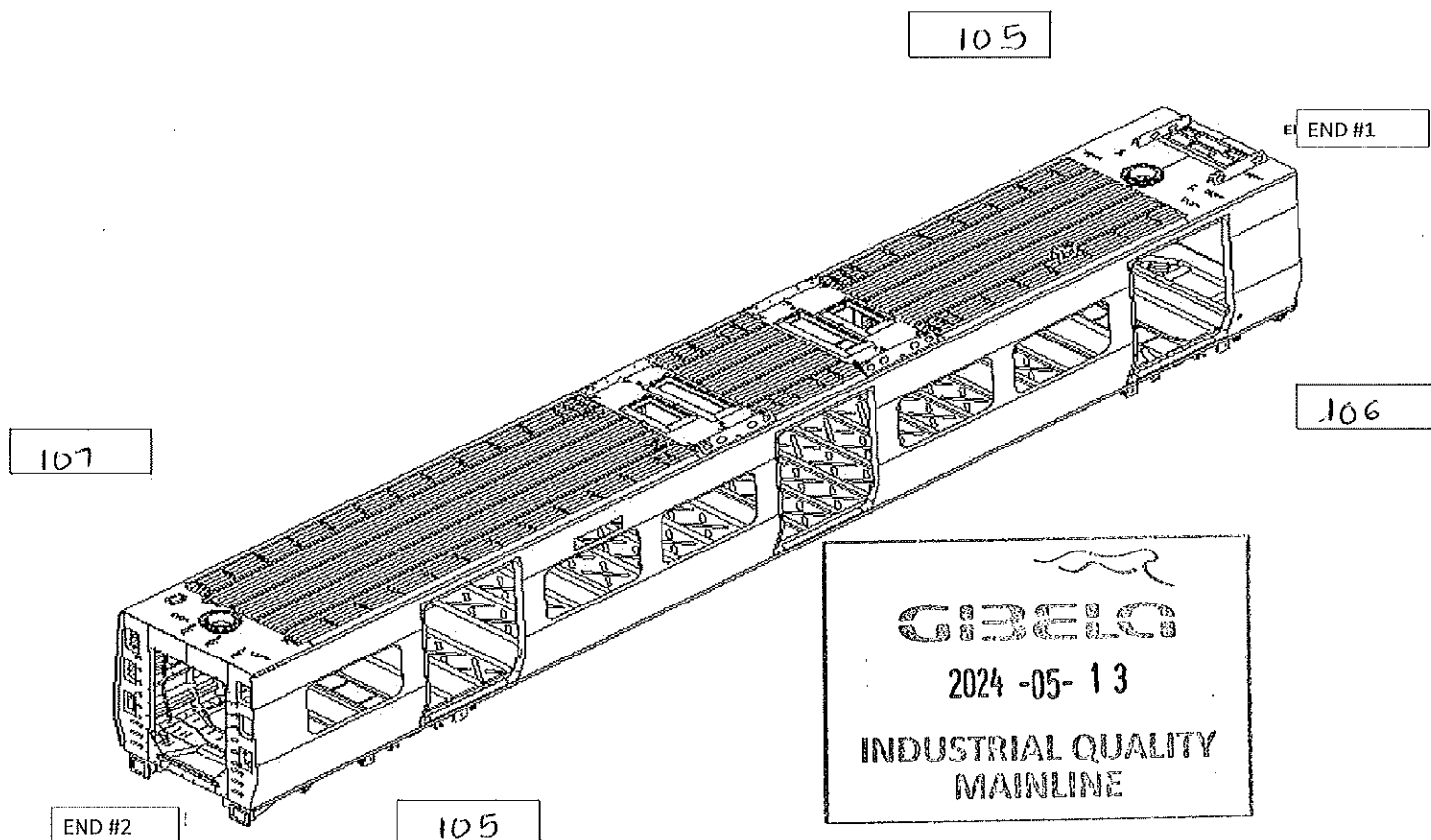


2024 -05- 13

INDUSTRIAL QUALITY
MAINLINE

Specifications of Details for CBS measurement CB1230

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



MEASURED TWIST VALUES END 1

LATERAL

1

LONGITUDINAL

1

1

MEASURED TWIST VALUES END 2

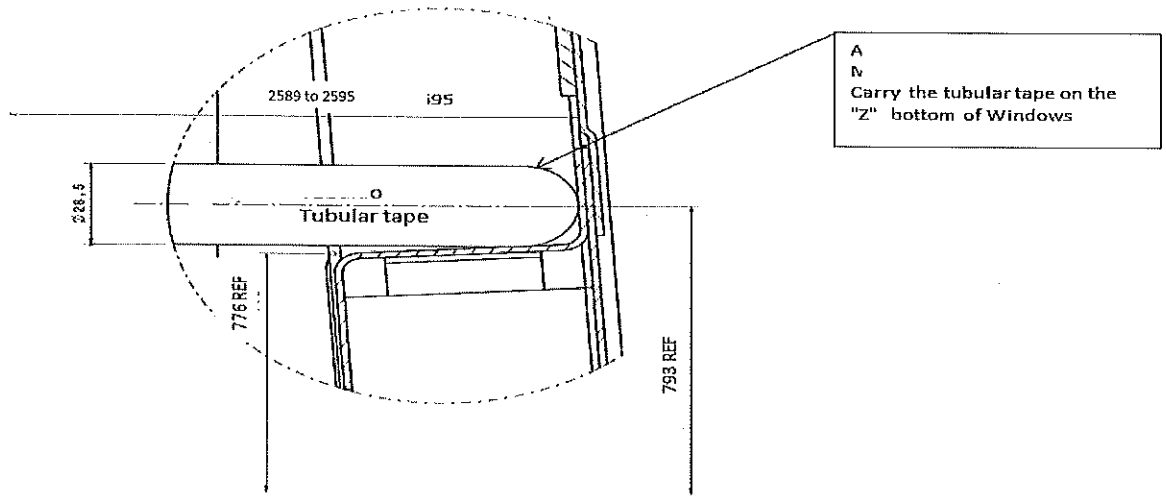
LATERAL

2

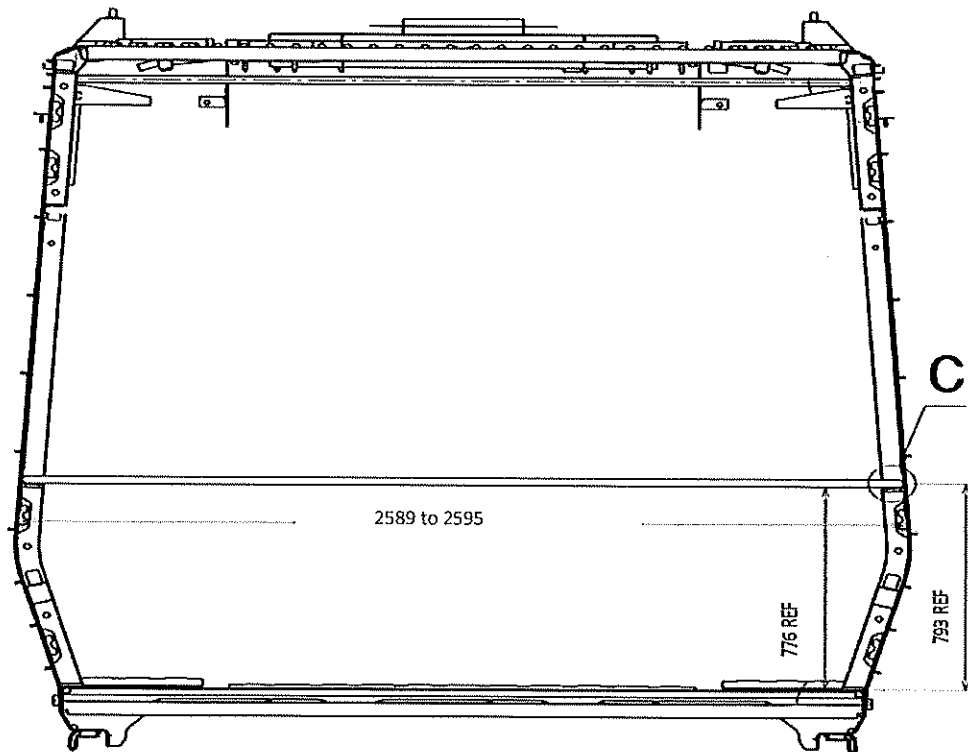
LONGITUDINAL

2

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

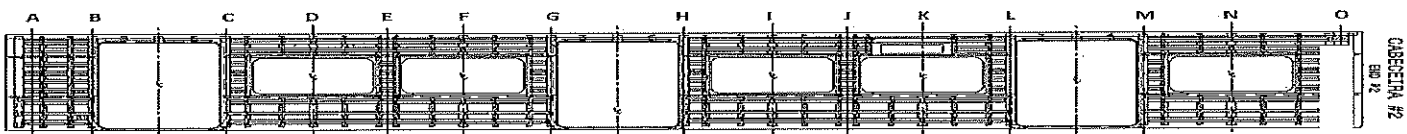


Detail C



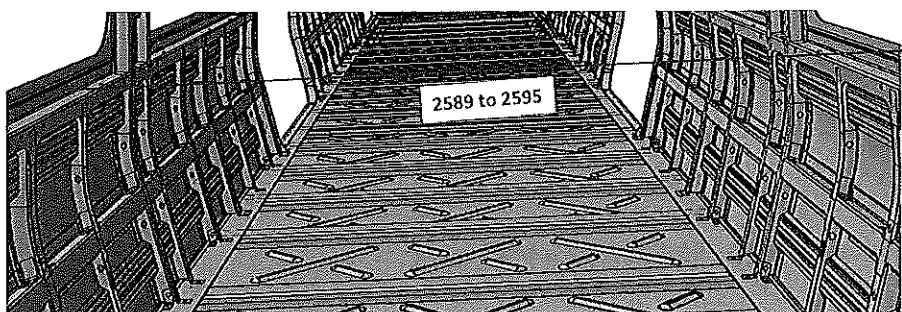
GIBELQ
2024 -05- 13
INDUSTRIAL QUALITY
MAINLINE

Specifications of Details for CBS measurement


LATERAL DIREITA
Right Side

2589 to 2595mm

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



2589 to 2595

Threshold verification

Nominal value :38

Door 1		Door 2		Door 3	
L	R	L	R	L	R
36	38	37	38	38	37
Door 4		Door 5		Door 6	
L	R	L	R	L	R
37	38	38	37	38	37

BOILER MAKER:

Lerato

WELDER:

Zanele



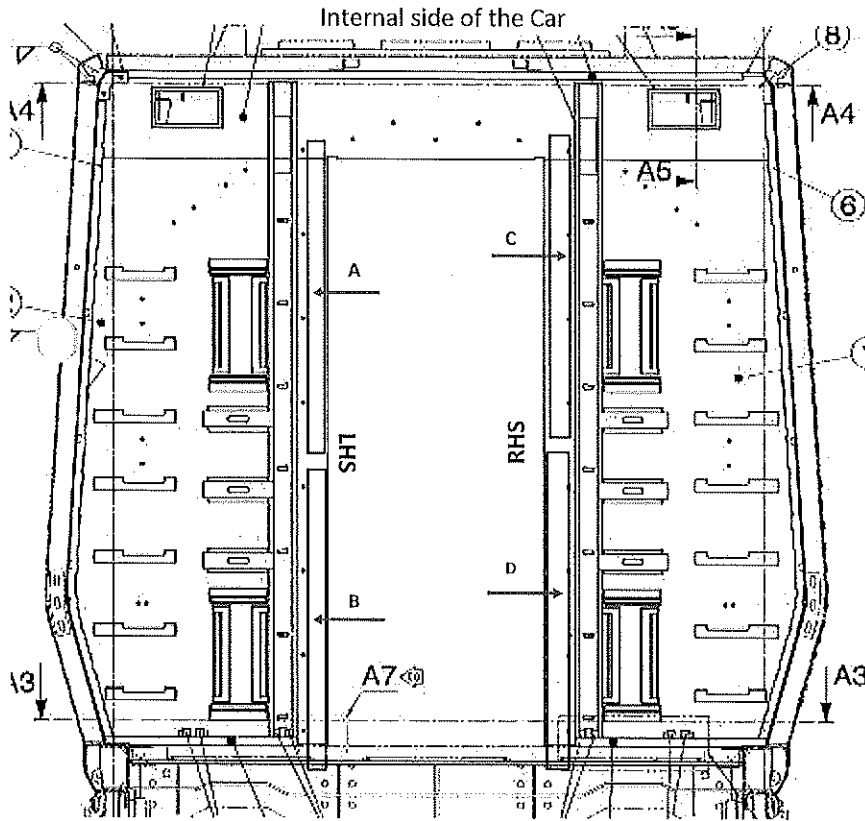
2024 -05- 13

INDUSTRIAL QUALITY
MAINLINE

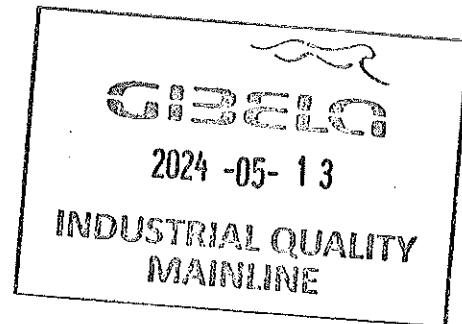
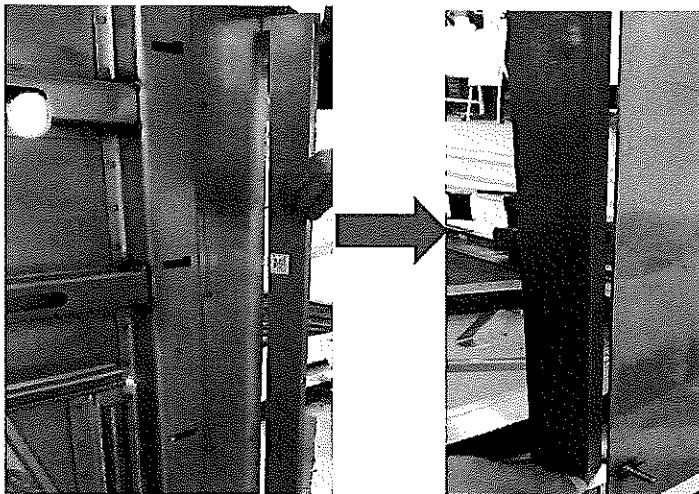
Specifications of Details for CBS measurement

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	8.5	9.5	1.0
B	10.1	11.0	0.9
C	10.5	11.5	1.0
D	9.5	10.5	1.0





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08/11/2023

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SI.CB1230.324.V29

Dye penetrant test

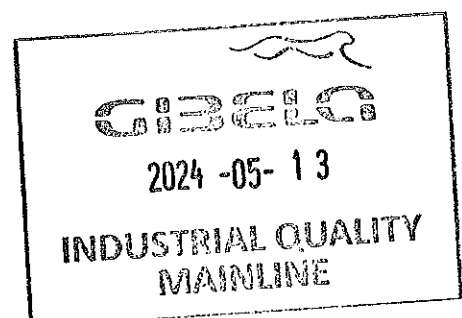
Dye-penetration test to be performed by quality personnel



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

II.2 - Check List REX**Check List Items**

Item	Picture/Drawing	Description	Criteria /Record	OK	Not OK	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

Date-

06/11/2023

Project: PRASA

SI.CB1230.324.V29

Self Inspection - Final Result

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

DATE

NAME

SIGNATURE

HOLD POINT

GO

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

14/05/2024

Danhlanh19
Sepeng
Operations

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

14/05/2024

Amo
Industrial 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)

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

GIBELQ

2024 -05- 13

INDUSTRIAL QUALITY
MAINLINE

ANNEXURE A: Arc Welding Quality Acceptance Standard

