

GIBELA

PRASA PROJECT


APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

# SELF INSPECTION SHEET

## CONFIDENTIAL INFORMATION

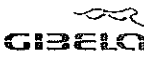
This document and the information contemplated therein have to be considered as Confidential Information pursuant to the provisions of Clause 25 of the MSA, and treated as such.

### APPLICATION REFERENCE

MOUNTING		DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 
					TC1	M4	M1	M2	M3	TC2		
<input type="checkbox"/>	DTR30223319/3	AAD0001241033	Carshell Assembly TC	CB1210	X					X	PRA.CB1210.DTR3022331 9/3.V25	YES
<input type="checkbox"/>												

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	Mohlame Amogelang	
			REVISED BY	Mohlame Amogelang	
27	27/07/2023	Added verification of loaded parts	APPROVER	Ngobeni Tyson	27/07/2023
			CHECKER	Mathapo Kelebone	
			REVISED BY	Mohlame Amogelang	
28	07/11/2023	Addition of welding traceability	APPROVER	Ngobeni Tyson	07/11/2023
			CHECKER	Andani Muthelo	
			REVISED BY	Ntokozo Zwane	

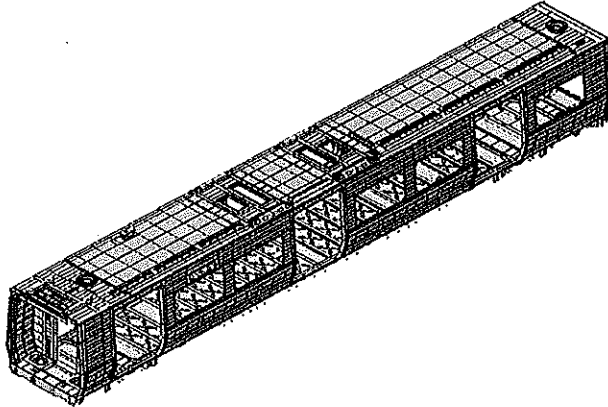
TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
231	TC1	16490 492833	04/06/24	SI.CB1210.322.V28	16

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

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



### I - Documentation and Instruments

#### I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	P	E	M	R	S	D						
DTR30223319/3						X			✓		N/A	04/06/24

#### I.2 - Instruments Control

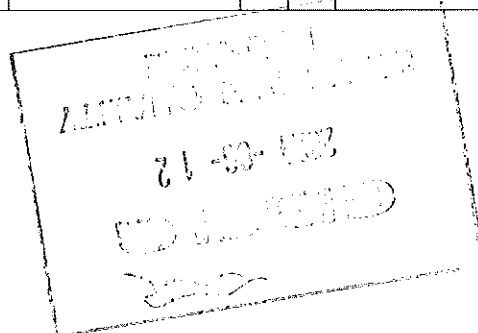
##### Monitoring and Measuring Instrument Control - Used for Special Process


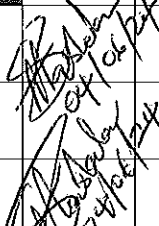
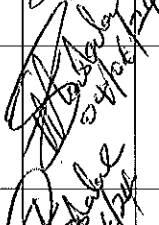
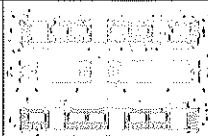
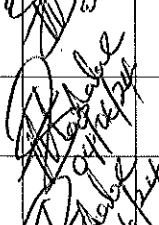
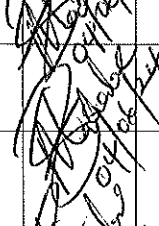
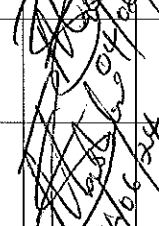

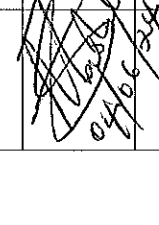
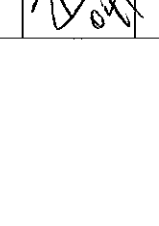
Instruments	Validation	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Tubular	32823-2	15/03/25	✓		04/06/24	
Laser tape	125425924	08/01/25	✓		04/06/24	
30m tape	GIBTP0102	18/11/24	✓		04/06/24	

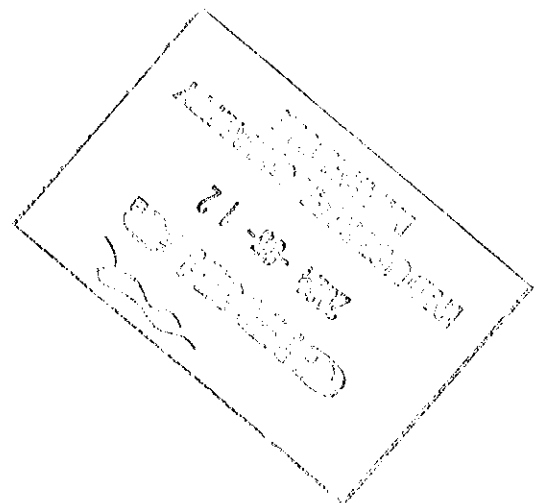
#### I.3 Consumables


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

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308LSI	314018-74097	MIG	✓		04/06/24	
ER 308L	299687-70322	TIG	✓		04/06/24	



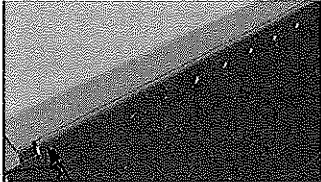
		DTR30223319/3 Carshell Assembly TC		Rev. V28	Project: PRA5A	
				Date: 07/11/2023	SI.CB1210.322.V28	
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK		Signature/Date (Manufacturing)
01	N/A	Verification of correct parts loaded (Sidewalls, Endframes, Roof and Underframe)	DT00000284980	✓		 04/06/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		 04/06/24
03		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		 04/06/24
04	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 04/06/24
05	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 04/06/24
06		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 04/06/24
07	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018.	As the welding procedure (IND-SAL-WMS-018 and DTD0000210658	✓		 04/06/24



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		Date- 07/11/2023	

**Welder traceability**

Roof ring welds

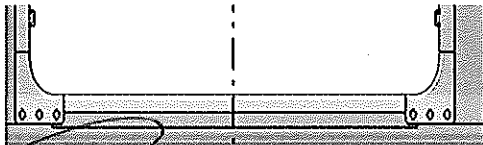


<p>Boiler maker (Name &amp; Sign): <u><i>Tebogo M. K. M. M.</i></u> <sup>LHS</sup></p>	<p>Welder (Name &amp; Sign): <u><i>Giphel</i></u></p>
<p>Boiler maker (Name &amp; Sign): <u><i>Giphel</i></u> <sup>RHS</sup></p>	<p>Welder (Name &amp; Sign): <u><i>Keiru K. M. M.</i></u></p>

END 1

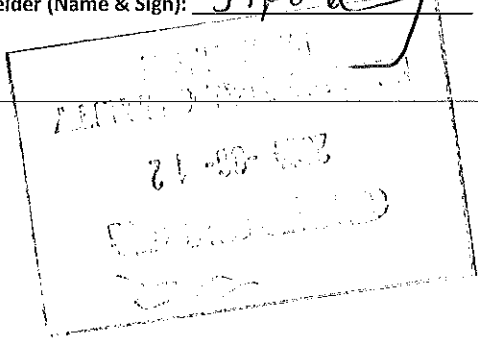
<p>Boiler maker (Name &amp; Sign): <u><i>Tebogo M. K. M. M.</i></u> <sup>LHS</sup></p>	<p>Welder (Name &amp; Sign): <u><i>Giphel</i></u></p>
<p>Boiler maker (Name &amp; Sign): <u><i>Giphel</i></u> <sup>RHS</sup></p>	<p>Welder (Name &amp; Sign): <u><i>Keiru K. M. M.</i></u></p>


END 2



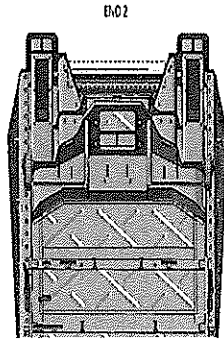
<p>Boiler maker (Name &amp; Sign): <u><i>Tebogo M. K. M. M.</i></u> <sup>LHS</sup></p>	<p>Welder (Name &amp; Sign): <u><i>Giphel</i></u></p>
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<p>Boiler maker (Name &amp; Sign): <u><i>Giphel</i></u> <sup>RHS</sup></p>	<p>Welder (Name &amp; Sign): <u><i>Giphel</i></u></p>
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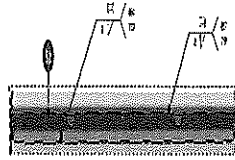


	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB1210.322.V28
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EUF Reinforcement Plates




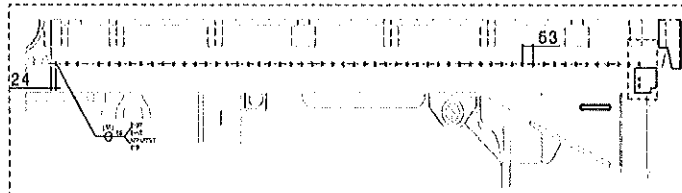
Underneath the CAR




END 2

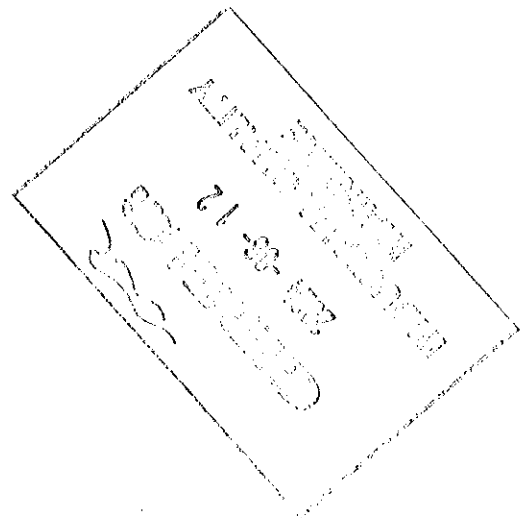
Boiler maker (Name & Sign): GERARD 


Welder (Name & Sign): MITROCOZIS 

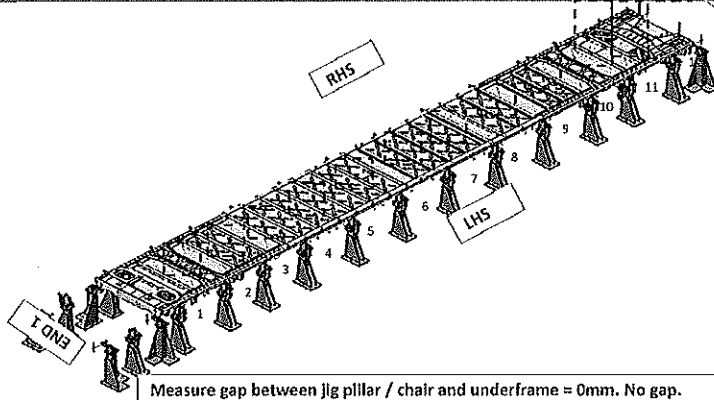


FEDOLI

Operator: LUNGA 

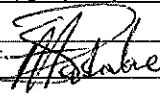


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		Date- 07/11/2023	
Specifications of Details for CBS measurement			




Fill in the gap found on each jig pillars / chair and underframe should be 0mm.  
After Loading Underframe and Clamping.

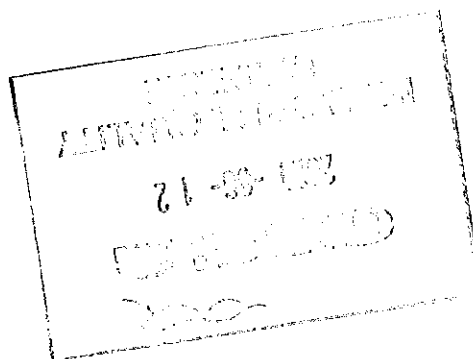
	1	2	3	4	5	6	7	8	9	10	11	12
Left Hand Side	0	0	0	0	0	0	0	0	1	0	0	0
Right Hand Side	0	0	0	0	0	0	0	0	0	0	0	0

Signature Operations:  Date: 04/06/24

After Welding.

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

Signature Industrial Quality:  Date: 04/06/24



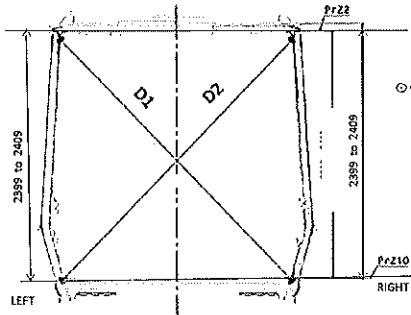
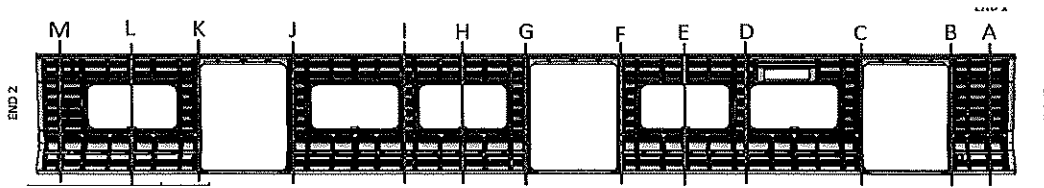


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07/11/2023

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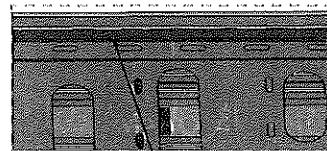
### Specifications of Details for CBS measurement



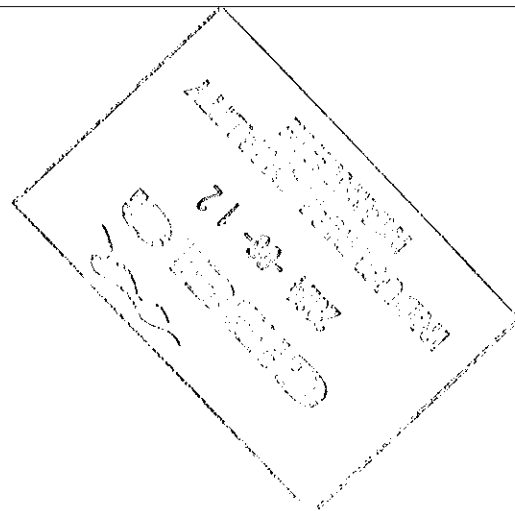
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.



Reinforcement area measurement positions on roof reinforcement area.





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Rev.

V28

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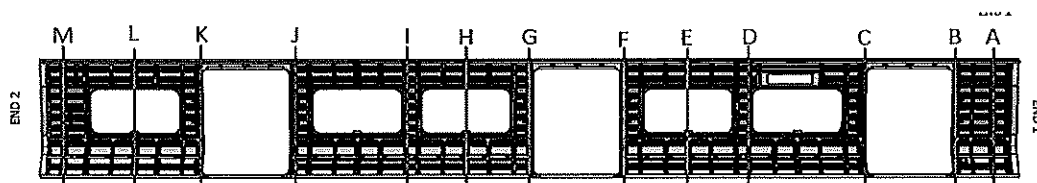
Date-

07/11/2023

SI.CB1210.322.V28

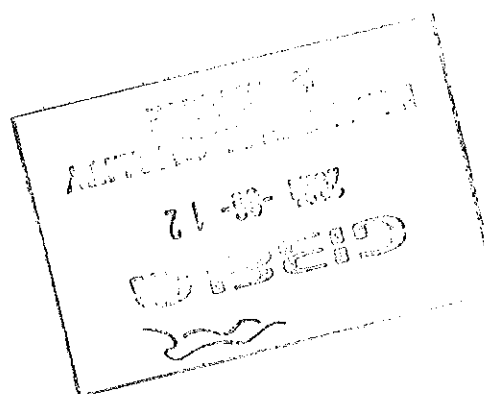
## Specifications of Details for CBS measurement

## BEFORE WELDING




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

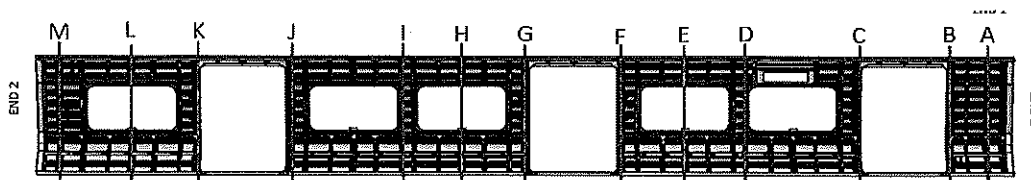
	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS $\leq 2$
A	3265	3266	1	2404	2405	1
B	3266	3264	2	2406	2404	2
C	3266	3266	0	2406	2406	0
D	3264	3265	1	2405	2406	1
E	3267	3266	1	2405	2405	0
F	3265	3266	1	2408	2405	2
G	3267	3265	2	2406	2407	1
H	3265	3264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





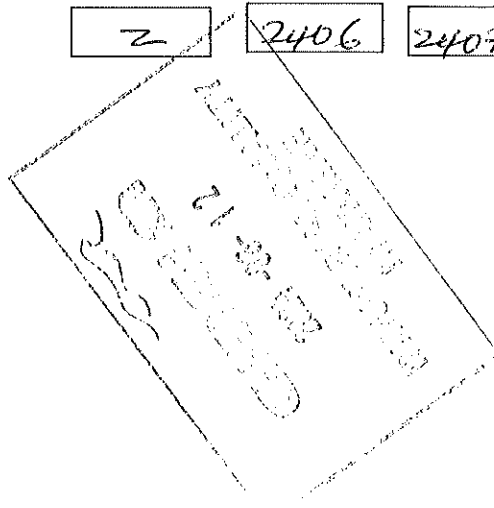
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		Date: 07/11/2023	
Specifications of Details for CBS measurement			

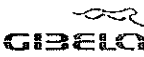
AFTER WELDING



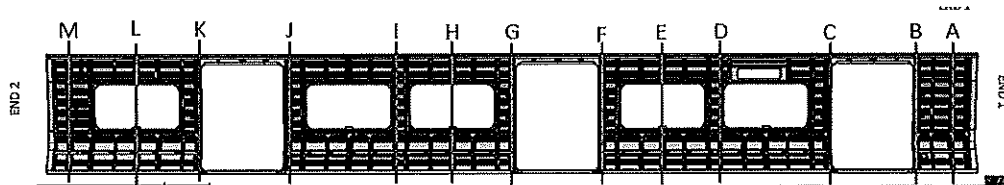
PME: The difference in Height values measured on the LHS and RHS should be  $\leq 2\text{MM}$  on each point.

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS $\leq 2$
A	3266	3267	1	2404	2403	1
B	3293	3295	2	2405	2406	1
C	3294	3295	1	2405	2405	0
D	3266	3266	0	2406	2405	1
E	3266	3265	1	2404	2403	1
F	3296	3297	1	2406	2405	1
G	3294	3296	2	2404	2404	0
H	3264	3265	1	2405	2404	1
I	3265	3265	0	2406	2405	1
J	3295	3296	1	2405	2403	2
K	3294	3296	2	2405	2404	1
L	3265	3266	1	2406	2405	1
M	3297	3299	2	2406	2407	1



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

BEFORE WELDING



2270 to 2276

2268 a 2274

A 2271

B 2273

C 2275

D 2270

E 2276

F 2271

G 2269

H 2274

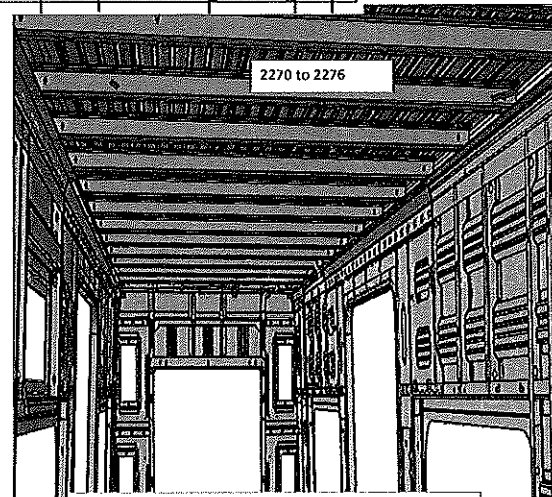
I 2273

J 2272

K 2270

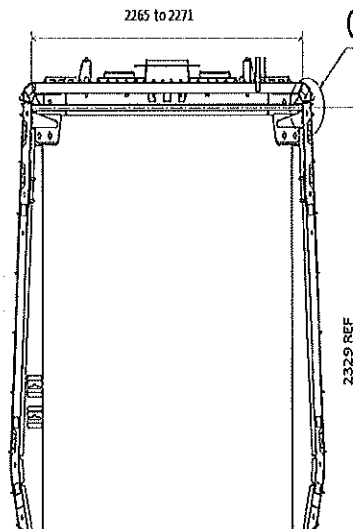
L 2276

M 2271

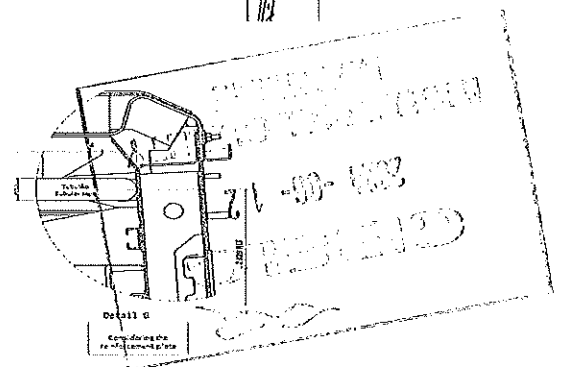


Do not consider reinforcement ( Take measurements top area of zee profile

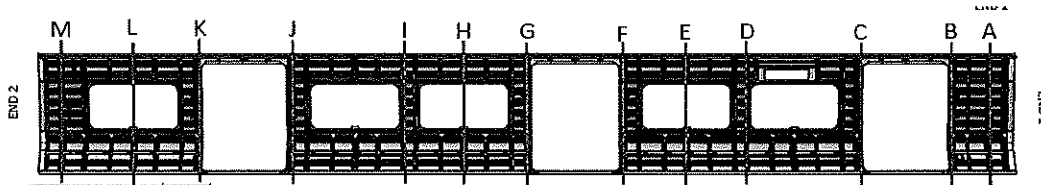
2265 to 2271



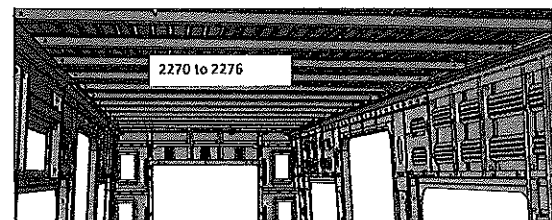
2265 to 2271



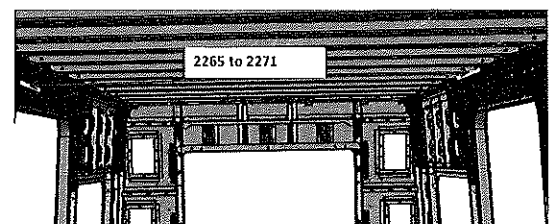
### AFTER WELDING



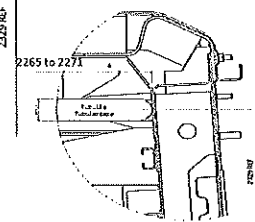
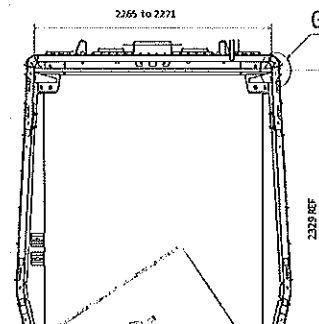
	2265 to 2271	2270 to 2276
A	N/A	2275
B	2270	N/A
C	2267	N/A
D	N/A	2274
E	N/A	2275
F	2269	N/A
G	2271	N/A
H	N/A	2276
I	N/A	2274
J	2270	N/A
K	2269	N/A
L	N/A	2273
M	2268	N/A



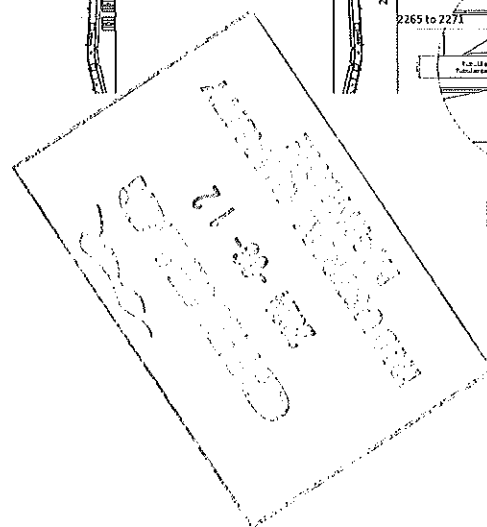
Do not consider reinforcement ( Take measurements top area of zee profile

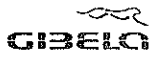


Take measurement close to radius ( considering reinforcement)



Detail Q  
Considering the reinforcement plate





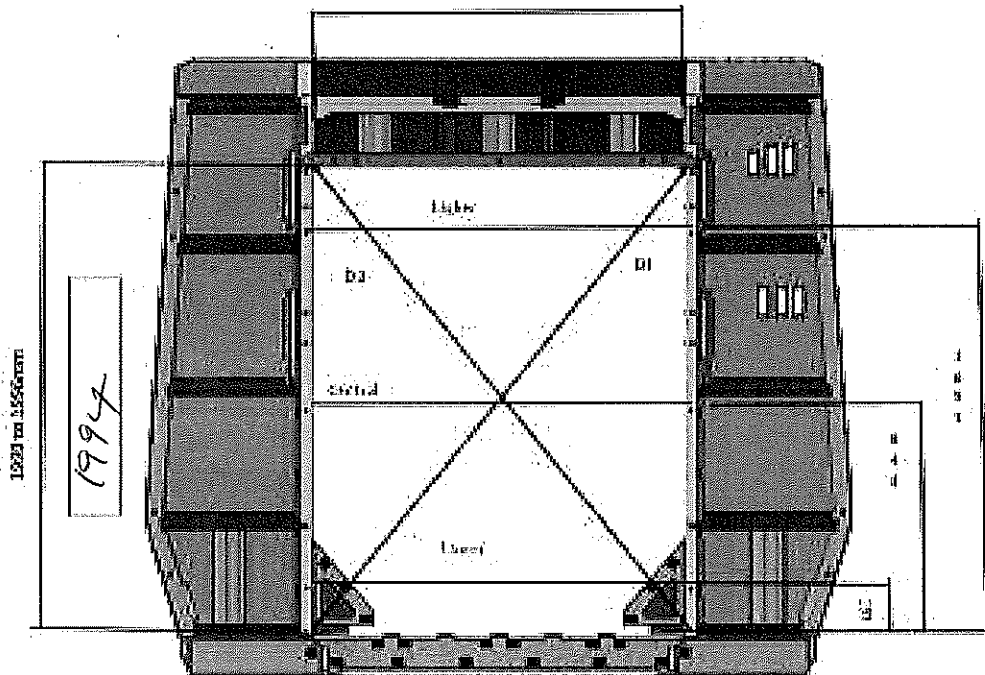
DTR30223319/3 Garshell Assembly TC

Rev.  
V28  
Date-  
07/11/2023

Project: PRASA  
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Specifications of Details for CBS measurement

Endframe 2



1100±1mm

DIAGONAL DIFFERENCE  $D1-D2 \leq 3mm$

Upper Dimension

1381

D1

2415

Central Dimension

1381

D2

2414

Lower Dimension

1380

D1-D2

1

21-08-2023  
21-08-2023  
21-08-2023



DTR30223319/3 Carshell Assembly TC

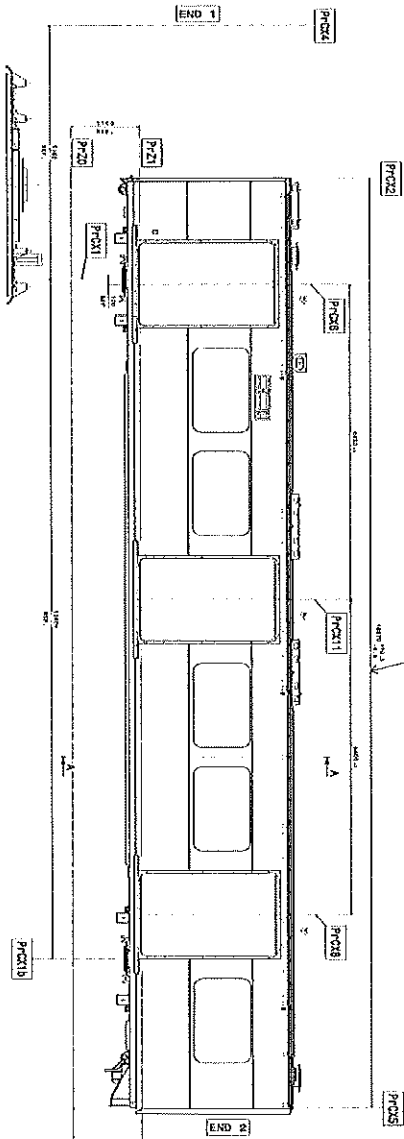
Rev.  
V28

Date-  
07/11/2023

Project: PRA5A

SI.CB1210.322.V28

### Specifications of Details for CBS measurement



#### LEFT SIDE

	SPECIFICATION SIZE	ACTUAL SIZE
1A	18870 $\begin{matrix} +10.5 \\ -4.5 \end{matrix}$	18868

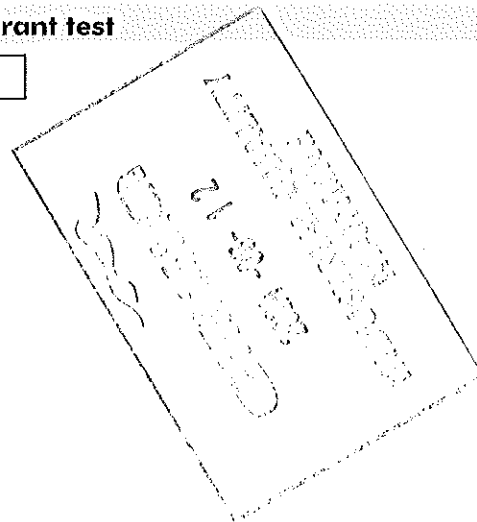
#### RIGHT SIDE

	SPECIFICATION SIZE	ACTUAL SIZE
1A	18870 $\begin{matrix} +10.5 \\ -4.5 \end{matrix}$	18869


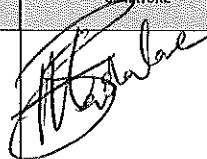

1A

### Dye penetrant test

Dye-penetration test to be performed by quality personnel

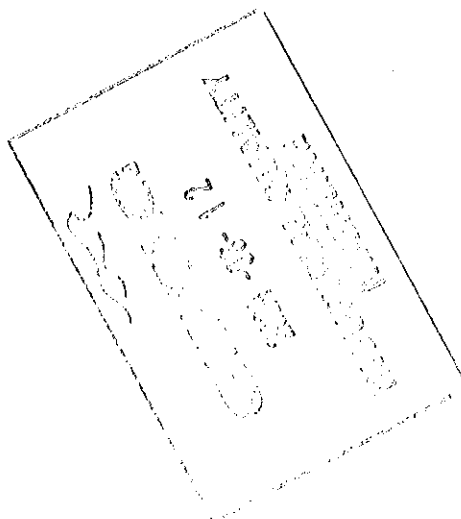





		DTR30223319/3 Carshell Assembly TC		Rev. V28 Date- 07/11/2023	Project: PRASA SI.CB1210.322.V28	
Self Inspection - Final Result						
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!	04/06/24	Telego		
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.	04/06/24	Nto koro		
	NO GO	There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)				
		There are non-conformities impact the quality of the product and there is no corrective action defined yet!				
In case of "NO GO", describe blocking problems						
In case of "NO GO", the operations manager must define below action plan to ensure "GO":						
Item	Description	Action	Responsible	Due date	Status	

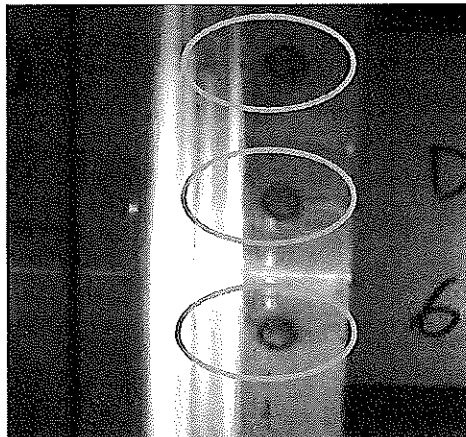
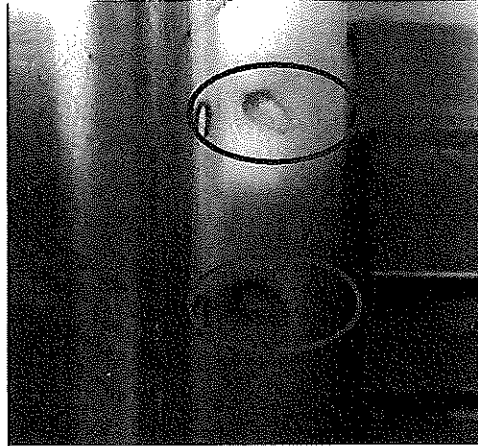
Operations

Quality




	DTR30223319/3 Carshell Assembly TC	Rev. V28 Date- 07/11/2023	Project: PRASA SI.CB1210.322.V28
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**ANNEXURE A: Spot Welding Quality Acceptance Standard**





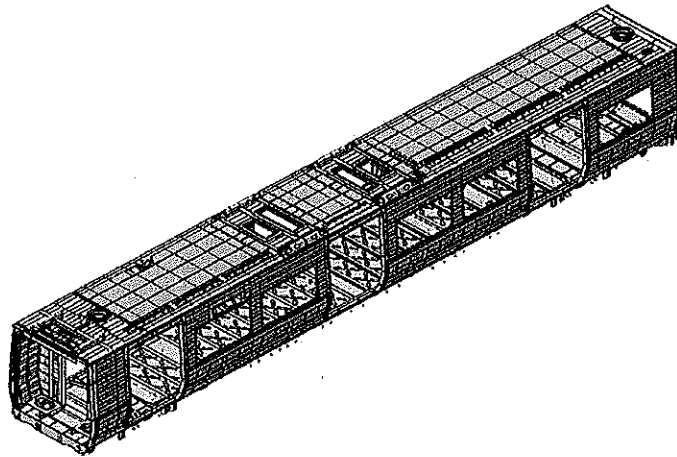


	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date- 28/10/2023	

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




Safety Related





## I - Documentation and Instruments

### I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	TC1	TC2	TC3	TC4	TC5	TC6						
DTR30223319/2	✓						29	05/06/24	✓	N/A		05/06/24


### I.2 - Instruments Control


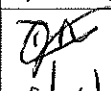



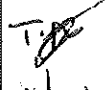

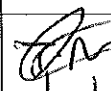

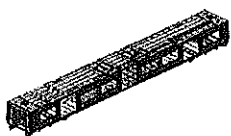
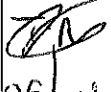








#### Monitoring and Measuring Instrument Control - Used for Special Process


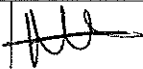

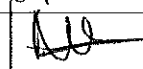

Instruments	Validation	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Turbular	3-31015	15/04/25	✓			
Measuring tape	GIBITA063	17/04/25	✓		05/06/2024	05/06/24

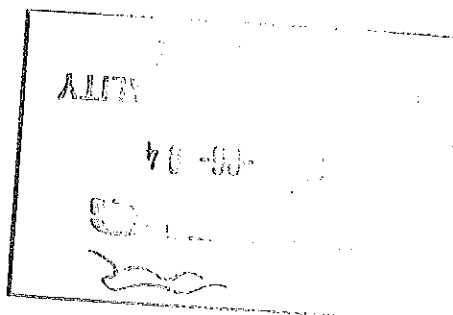
### 1.3 Consumables

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

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Welding wire	37377	MIG welding	✓			05/06/24

		DTR30223319/2 Carshell Assembly TC		Rev. 29 Date- 28/10/2023	Project: PRASA SI.CB2220.323.V29										
<b>II - Control Activities of Production</b>															
<b>II.1 - Items to check</b>															
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)								
01	N/A	Assembly according to Instruction Engineering n° PRA.CB2220.DTR30225487/2 Verification of fitment for all reinforcement brackets.	DTR30223319/2	✓		 05/06/24	 05/06/24								
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		 05/06/24	 05/06/24								
03	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 05/06/24	 05/06/24								
04	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 05/06/24	 05/06/24								
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 05/06/24	 05/06/24								
06	N/A	Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		 05/06/24	 05/06/24								
07		Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658	✓		 05/06/24	 05/06/24								
08	N/A	<p>Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified:</p> <table border="1"> <tr> <td>Temperature Min - Max (t)</td> <td>Min-Max</td> </tr> <tr> <td>...</td> <td>35°C</td> </tr> <tr> <td>Relative humidity Min - Max (h)</td> <td>Min-Max</td> </tr> <tr> <td>...</td> <td>60%</td> </tr> </table>	Temperature Min - Max (t)	Min-Max	...	35°C	Relative humidity Min - Max (h)	Min-Max	...	60%	<p>Sealant Batch No: 1024-9 Exp Date: 01/06/24</p> <p>Actuals Temperature: 13 Humidity: 30</p>	✓		 05/06/24	 05/06/24
Temperature Min - Max (t)	Min-Max														
...	35°C														
Relative humidity Min - Max (h)	Min-Max														
...	60%														

		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	✓			 05/06/24	 05/06/24
10	NA	Verification of sealant application on the roof and sidewall finishers	Sealant must be: -Applied straight and even (1.5mm) -Free of gaps,cracks,damage and debris (flashes, dirt, dust)  <b>Refer to Annexure B</b>	✓			 05/06/24	 05/06/24





DTR30223319/2 Carshell Assembly TC

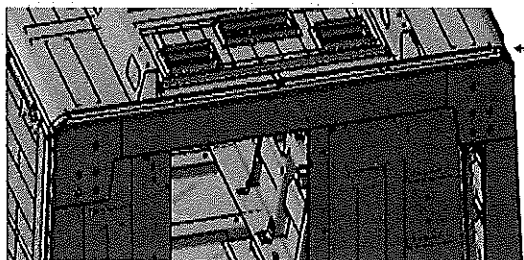
Rev.  
29

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Date-

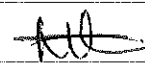
SI.CB2220.323.V29

28/10/2023

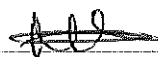


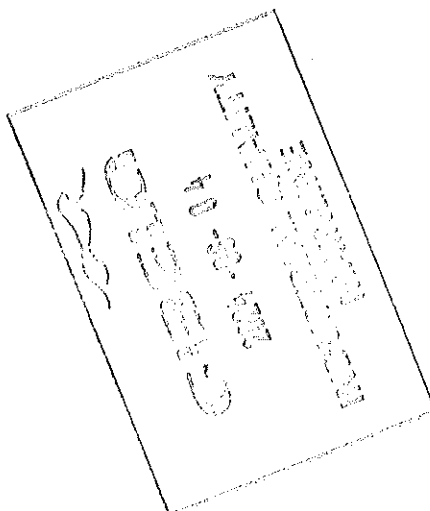
END 1  
SEALANT


OPERATOR  
(Name & sign):

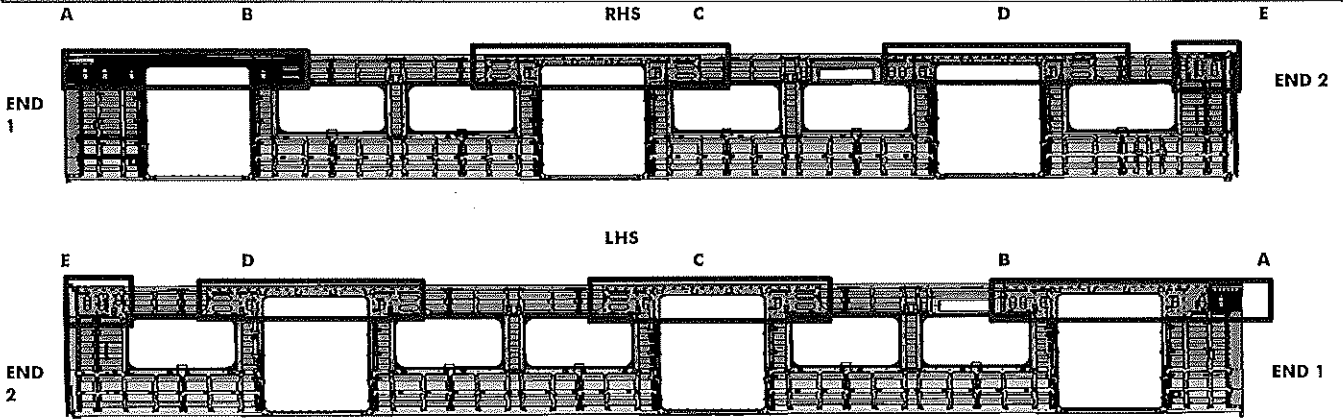
Mthekozisi: 

OPERATOR  
(Name & sign):

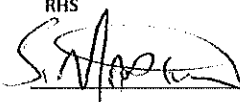
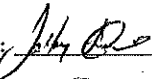

Mthekozisi: 

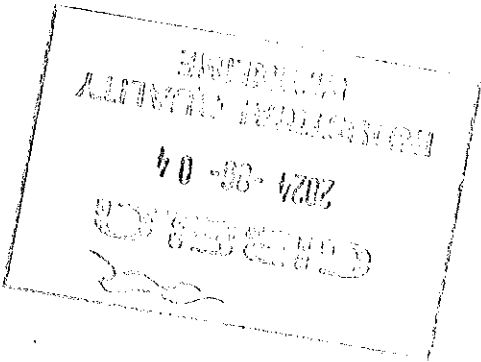



	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

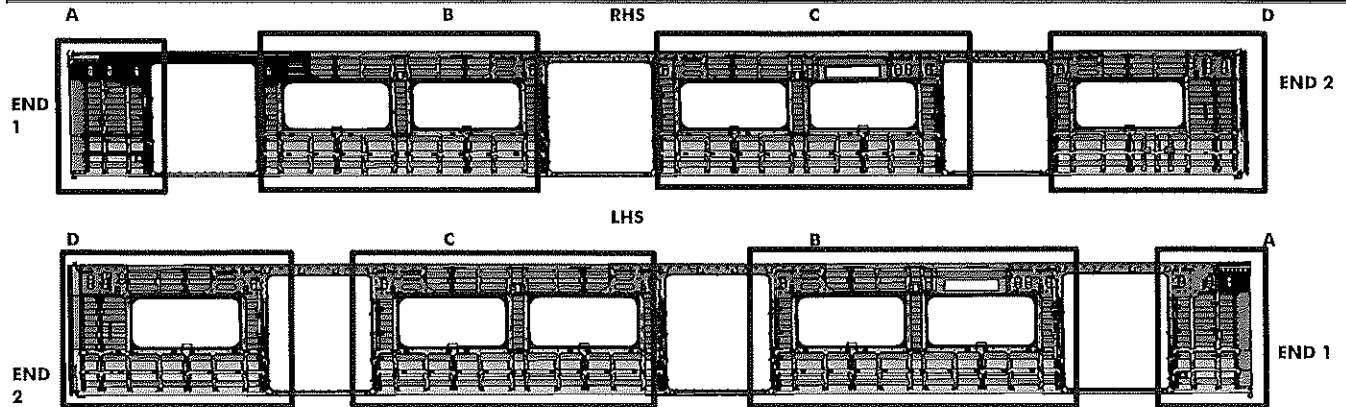


REINFORCEMENT WELDING

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

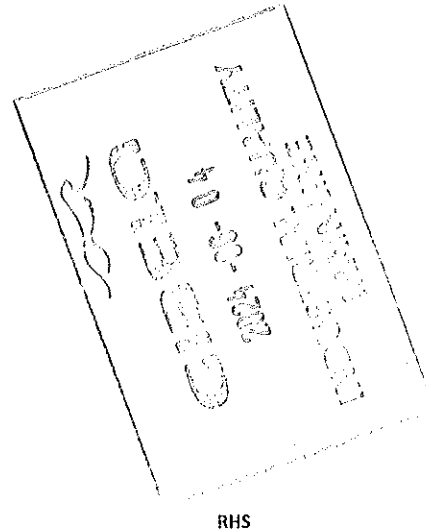


	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	




### BRACKETING

C-RAILS:	Operator:	INSTALLATION <u>Tefelo</u>
	Operator:	
DOOR MECHANISMS:	Operator:	<u>Mashudu</u>
	Operator:	
TAPPING PADS	Operator:	<u>Sibiga</u>
	Operator:	
		INSTALLATION & VERIFICATION
SEAT & LUGGAGE BRACKETS:	Operator:	<u>Thulani</u>
	Operator:	
SEAT BRACKETS VERIFICATION:	Operator:	<u>Thulani</u>
	Operator:	



AREA		WELDING
		LHS
A (Seat brackets)	: Operator (Name&sign):	
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>Nkulungu Dora</u>
B (Seat brackets)	: Operator (Name&sign):	<u>Nkulungu Dora</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>Nkulungu Dora</u>
C (Seat brackets)	: Operator (Name&sign):	<u>Yulu</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>Mashudu</u>
D (Seat brackets)	: Operator (Name&sign):	<u>Sibiga</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>Sibiga</u>

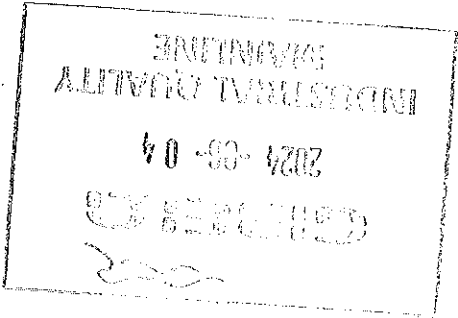
<u>Nkulungu Dora</u>
<u>Nkulungu Dora</u>
<u>Yulu</u>
<u>THULANI</u>
<u>Yulu</u>
<u>Sibiga</u>
<u>THULANI</u>

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

ENDS

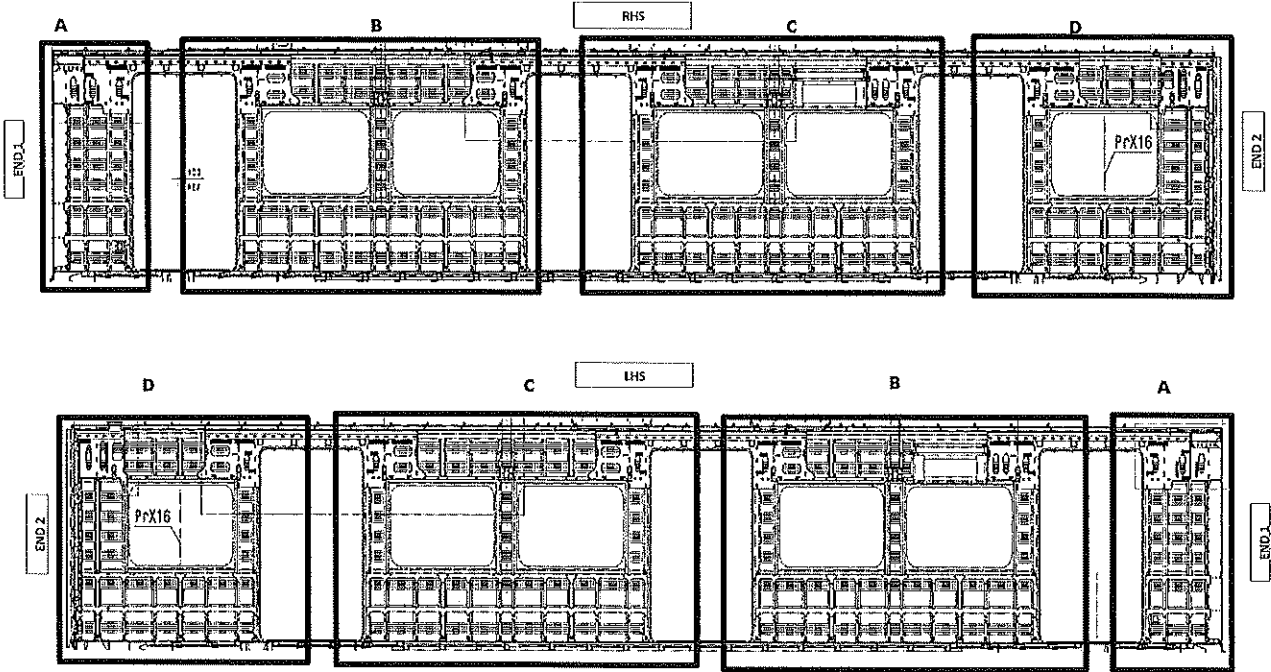
END 1 TAPPING PADS WELDING: Operator (Name&sign): N/A

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





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

RECEIVED  
 28-10-2023  
 10:30 AM



DTR30223319/2 Carshell Assembly TC

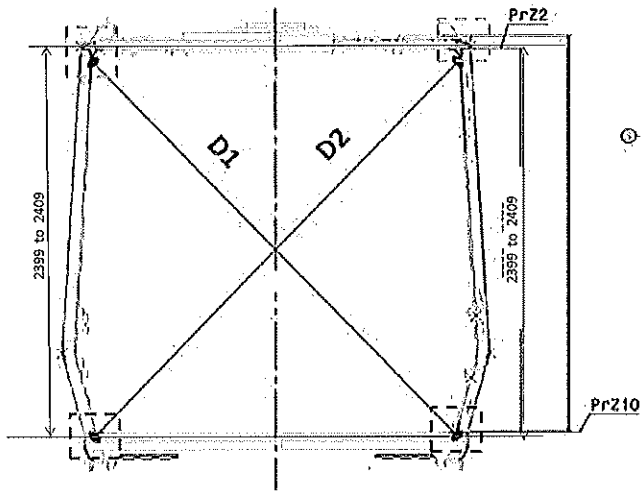
Rev.  
29

Project: PRASA

Date-

SI.CB2220.323.V29

28/10/2023

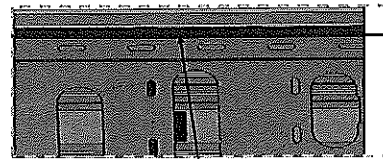


Take measurement close to radius

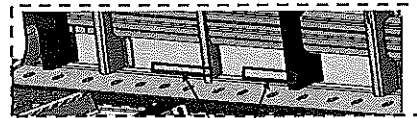
③



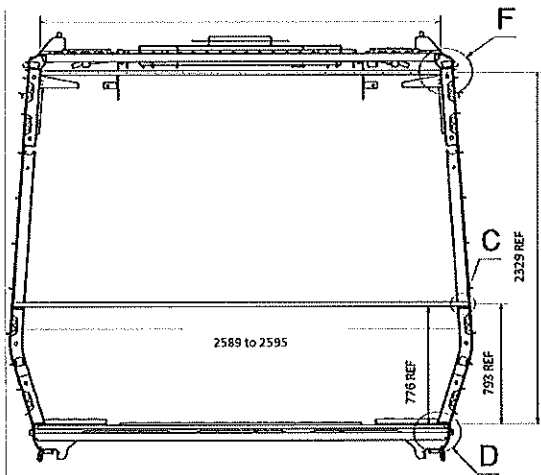
Measurement positions on roof rail and sidewall omega corner.



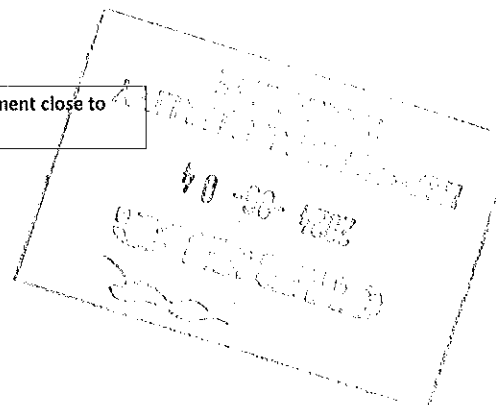
Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.



Take measurement close to radius

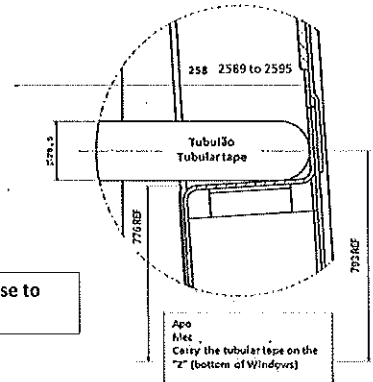
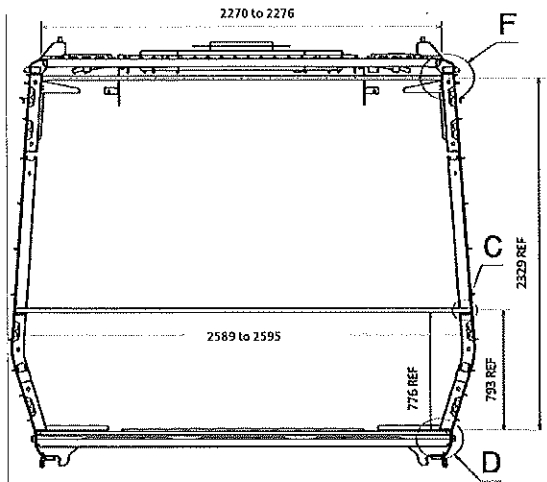




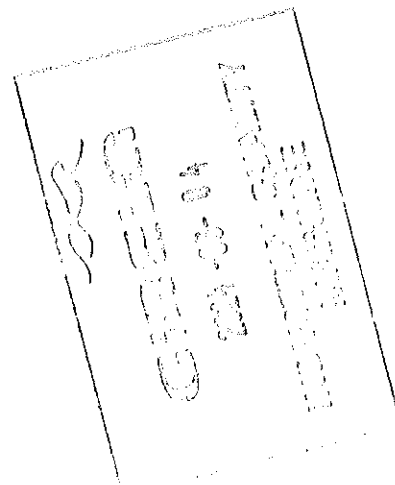
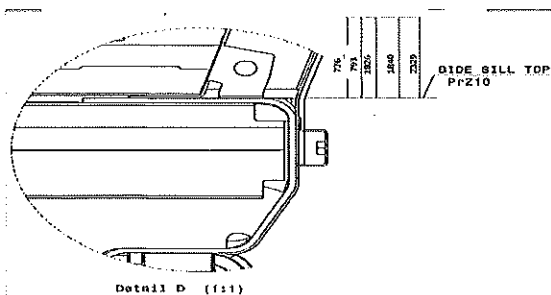
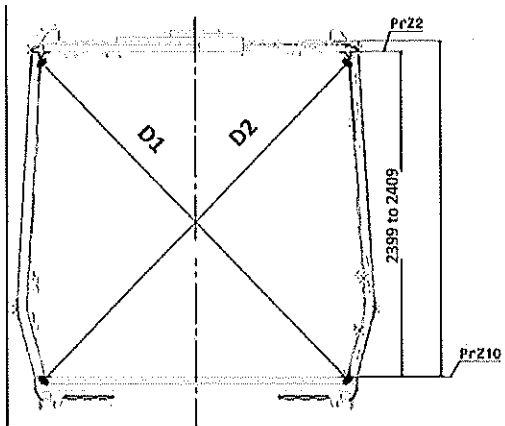
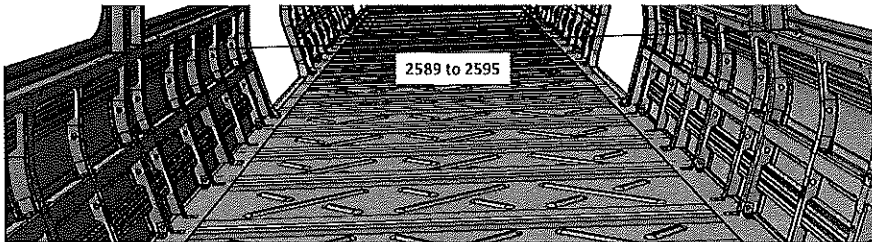
DTR30223319/2 Carshell Assembly TC


Rev.  
29  
Date-  
28/10/2023

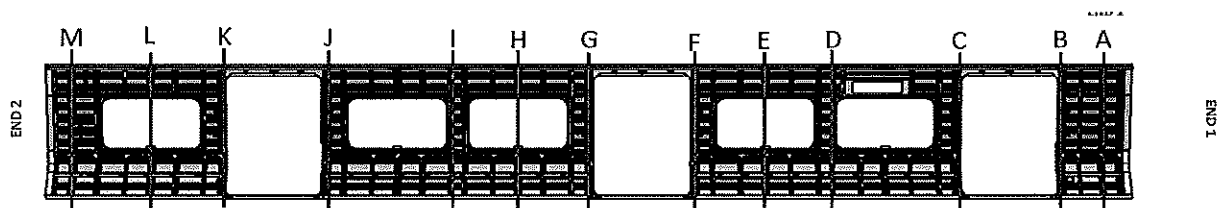
Project: PRASA  
SI.CB2220.323.V29



Detail C

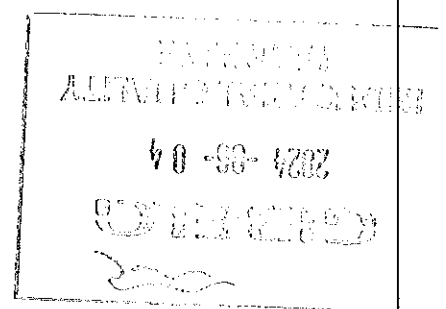


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		Date-	
		28/10/2023	



**BEFORE WELDING**

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3269	3266	3	—
B	3300	3247	3	—
C	3300	3299	1	—
D	3261	3261	0	—
E	3268	3266	2	—
F	3298	3296	2	—
G	3299	3297	2	—
H	3265	3267	2	—
I	3268	3266	2	—
J	3295	3297	2	—
K	3297	3298	1	—
L	3267	3268	0	—
M	3300	3298	2	—





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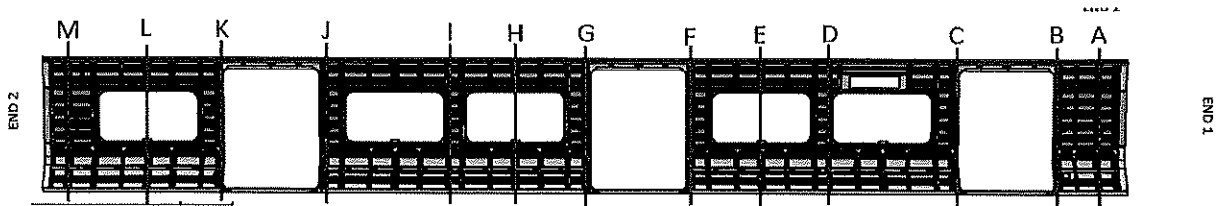
Rev.  
29

Project: PRASA

Date-

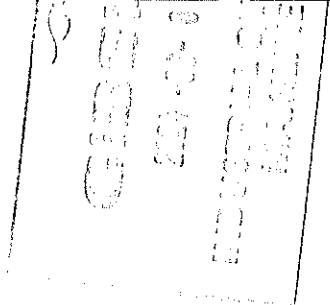
SI.CB2220.323.V29

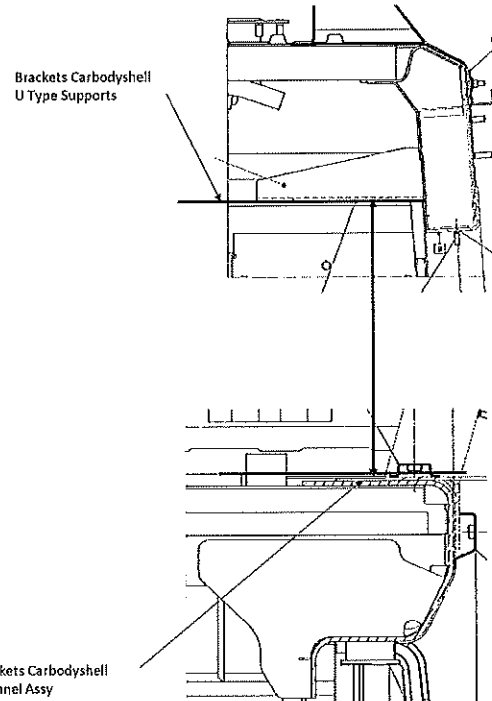
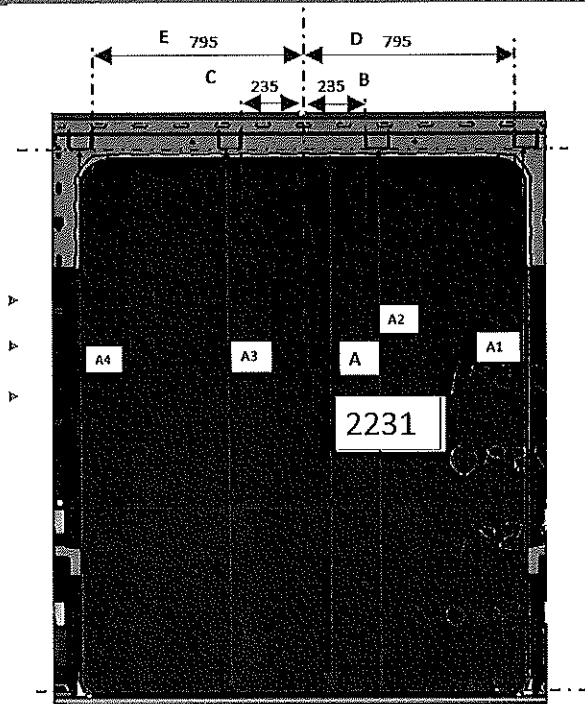
28/10/2023



**AFTER WELDING**

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3268	3266	2	2591
B	3300	3298	2	2590
C	3298	3296	2	2591
D	3268	3266	2	2590
E	3267	3268	1	2589
F	3297	3298	1	2592
G	3299	3300	1	2591
H	3268	3268	0	2590
I	3265	3267	2	2590
J	3300	3298	2	2593
K	3300	3298	2	2591
L	3268	3267	1	2591
M	3299	3297	2	2590





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

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

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

DOOR 1 - RHS		
	VALUE	ACTUAL
A1	2230 to 2232	2230
A2	2230 to 2232	2232
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	795

DOOR 2 - RHS		
	VALUE	ACTUAL
A1	2230 to 2232	2230
A2	2230 to 2232	2231
A3	2230 to 2232	2230
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

DOOR 3 - RHS		
	VALUE	ACTUAL
A1	2230 to 2232	2230
A2	2230 to 2232	2231
A3	2230 to 2232	2230
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



DTR30223319/2 Carshell Assembly TC

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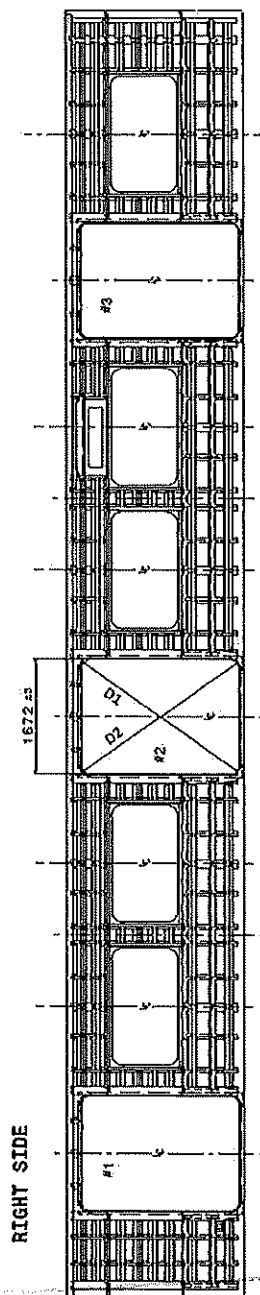
Date-

28/10/2023

SI.CB2220.323.V29

## Specifications of Details for CBS measurement

End #2



1672 ±3

RIGHT SIDE

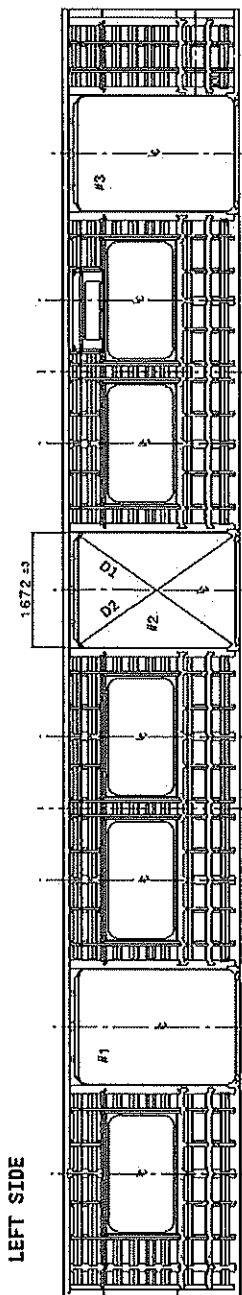
Doors diagonal D1-D2 maximum difference ≤ 4mm

	#1	#2	#3
D1	2751	2750	2751
D2	2749	2749	2749
D1-D2	2	1	3

Doors length - 1672 ±3mm

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

End #1



1672 ±3

LEFT SIDE

Diagonal de portas - diferença D1-D2 &lt; 4mm


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

Vão de Portas - 1672 ±3mm

Doors length - 1672 ±3mm

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

End #1

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

Specifications of Details for CBS measurement

Dye penetrant test

Dye-penetration test to be performed by quality personnel






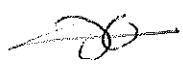
Item	Description of the Issue	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)

II.2 - Check List REX

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

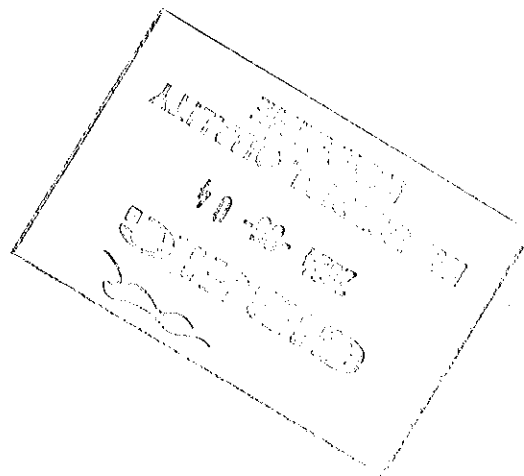
MFL  
 DTV  
 30-1  
 36




	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA		
		Date-	SI.CB2220.323.V29		
		28/10/2023			
<b>Self Inspection - Final Result</b>					
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)		DATE	NAME	SIGNATURE	
HOLD POINT	 <b>GO</b>	If activities are not complete, the missing activities must not impact the next stage!	05/06/24	Teledo <small>Operations</small>	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	05/06/24	Andani <small>Industrial Quality</small>	
		There are activities pending that impact/stop the activities of the next process Obs: (To describe problems below)		<small>Operations</small>	
		There are non-conformities impact the quality of the product and there is no corrective action defined yet)		<small>Industrial Quality</small>	
In case of "NO GO", describe blocking problems					
In case of "NO GO", the operations manager must define below action plan to ensure "GO":					
Item	Description	Action	Responsible	Due date	Status

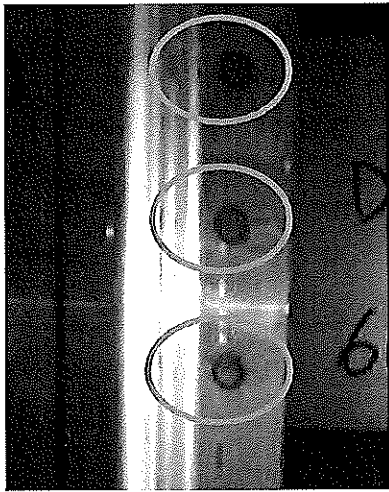
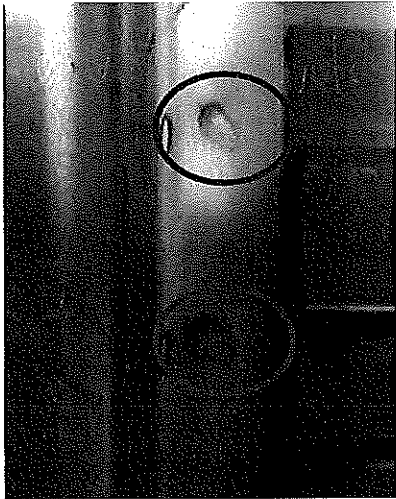
Operations

Quality



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

ANNEXURE A: Spot Welding Quality Acceptance Standard



GIBELA		PRASA PROJECT									
APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1											
SELF INSPECTION SHEET											
CONFIDENTIAL INFORMATION											
This document and the information contemplated therein have to be considered as Confidential Information pursuant to the provisions of Clause 25 of the MSA, and treated as such.											
APPLICATION REFERENCE											
NUMBER	DRAWING	DESCRIPTION	STATION	TYPE	DATE	WORK INSTRUCTION	SAFETY				
1	DI0000021318	AI0000113463	010000113119 Control Assembly TC	CR13M	X		PRACB1230.010000012 2318.V20	YES			
REV	DATE	MODIFICATION/CONTENT	RESPONSIBLE	NAME	DATE						
0	06/04/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	09/04/2018						
			CHECKER	Nosiso Pindela	09/04/2018						
			COMPILER	Thanyani Mavhega	06/04/2018						
1	30/5/2018	Team leader and Quality Technician to sign Change final signature from PMA Manager to Quality manager	APPROVER	Itumeleng Modiba	30/5/2018						
			CHECKER	Nosiso Pindela	30/5/2018						
			REVISED BY	Nosiso Pindela	30/5/2018						
2	05/07/2018	Certain dimensional checks moved to CB1220	APPROVER	Itumeleng Modiba	05/07/2018						
			CHECKER	Nosiso Pindela	05/07/2018						
			COMPILER	Ranshane Motama	05/07/2018						
5	24/01/2019	As per Baseline 10.2	APPROVER	Itumeleng Modiba	24/01/2019						
			CHECKER	Nosiso 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	Nosiso Pindela	13/03/2019						
			COMPILER	Nosiso Pindela	13/03/2019						
7	17/09/2019	Added Cab Fire Barrier Flatness Measurements	APPROVER	Itumeleng Modiba	17/09/2019						
			CHECKER	Nosiso Pindela	17/09/2019						
			COMPILER	Nosiso Pindela	17/09/2019						
10	20/09/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	20/09/2019						
			CHECKER	Nosiso Pindela	20/09/2019						
			COMPILER	Nosiso Pindela	20/09/2019						
15	20/01/2021	New Baseline 10.2.6	APPROVER	Timothy Maimela	20/01/2021						
			CHECKER	Bongane Masina	20/01/2021						
			COMPILER	Bongane Masina	20/01/2021						
20	19/04/2021	New Baseline change 10.2	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	Celene Mkhombi	20/04/2022						
			CHECKER	Andani Muthelo	20/04/2022						
			COMPILER	Andani Muthelo	20/04/2022						
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Celene Mkhombi	14/06/2022						
			CHECKER	Andani Muthelo	14/06/2022						
			COMPILER	Andani Muthelo	14/06/2022						
27	26/07/2022	Threshold measurements addition	APPROVER	Celene Mkhombi	26/07/2022						
			CHECKER	Andani Muthelo	26/07/2022						
			COMPILER	Andani Muthelo	26/07/2022						
28	17/10/2022	Addition of traceability for sealant application	APPROVER	Celene Mkhombi	17/10/2022						
			CHECKER	Ntshozo Zwane	17/10/2022						
			COMPILER	Amogelang Mkhlanga	17/10/2022						
29	14/04/2023	Added sealant batch number & yielding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023						
			CHECKER	Ntshozo Zwane	14/04/2023						
			COMPILER	Amogelang Mkhlanga	14/04/2023						
30	06/11/2023	Added traceability for thresholds for boiler makers and welders	APPROVER	Tyson Ngobeni	06/11/2023						
			CHECKER	Andani Muthelo	06/11/2023						
			COMPILER	Ntshozo Zwane	06/11/2023						
TRAINING	CIN	OPERATOR NAME & ID NUMBER	DATE	SELF INSPECTION NUMBER	PAGE						
231	TC1	Nontshiniq 407423	07/06/24	SI.CB1230.324.V28	14						

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MANAGEMENT



DT00000223319 Carshell Assembly TC

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Project: PRASA

Date-

08/11/2023

SI.CB1230.324.V29

Carro  
CM:

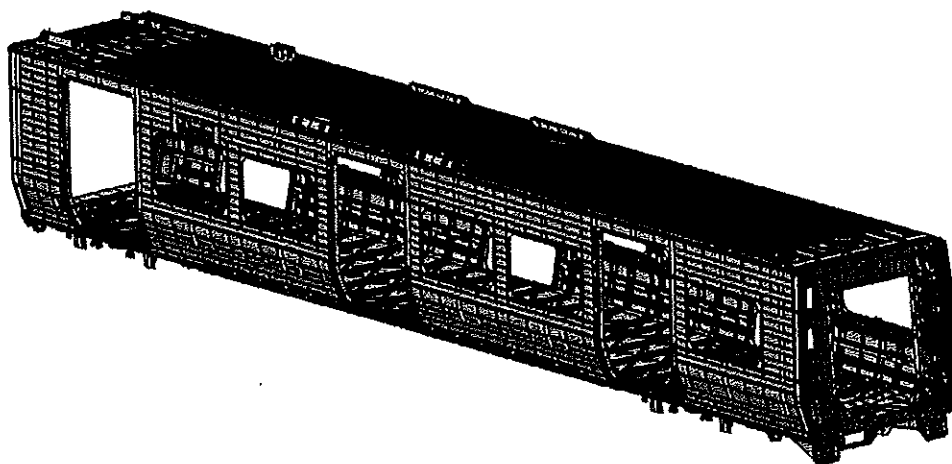
NCR:

Work station:

CB1230



Safety Related



## I - Documentation and Instruments

## I.1 - Documentation Control

Document	Type of Doc					Revision	Observation		Signature/Date (Operations)	Signature/Date (Quality)
	G	M	N	S	OT					
DT00000223319						30		✓	N/A	07/06/24

## I.2 - Instruments Control


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

Instrument	Validation	Calibration or Verification Validation Date		Signature/Date (Operations)	Signature/Date (Quality)
Tubular	30823	15/06/24	✓	07/06/24	07/06/24
Certification Square	GIRES 0012	27/07/24	✓		
Measuring tape	GIPTPC397	22/06/24	✓		

## I.3 Consumables















## Welding Consumable Control - Used for Special Process

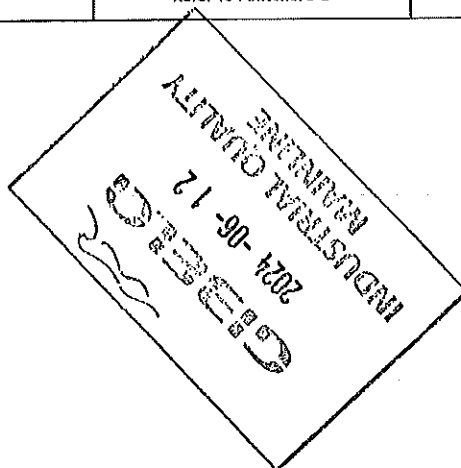
Filler Material	Heat Number	Welding Photo		Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 LS1	21043-711077		✓	07/06/24	07/06/24
ER 308L	2196571-7032		✓		

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		Date-	
		06/11/2023	

## II - Control Activities of Production

### II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	1	2A	3 (or 4)	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering nº DT00000223319	DT00000223319	✓			 07/06/24	 07/06/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD00000210675	✓			 07/06/24	 07/06/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 DTD00000210675	✓			 07/06/24	 07/06/24
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.	✓			 07/06/24	 07/06/24
05	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD00000210658.	As the welding procedure IND-SAL-WMS-018 and DTD00000210658	✓			 07/06/24	 07/06/24
06	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified:  Temperature Min - Max (1) Min-Max 10°C - 35°C Relative humidity Min - Max (1) Min-Max 25% - 80%	Sealant Batch No: <u>105831</u> Exp Date: <u>15/06/24</u>  Actuals Temperature: <u>16°C</u> Humidity: <u>62%</u>	✓			 07/06/24	 07/06/24
07	N/A	Verification of sealant application in regions of roof and sideframe finishers.	Sealant must be: -Applied straight and even (1.5mm) -Free of gaps, cracks, damage and debris (flashes, dirt, dust)  Refer to Annexure B	✓			 07/06/24	 07/06/24








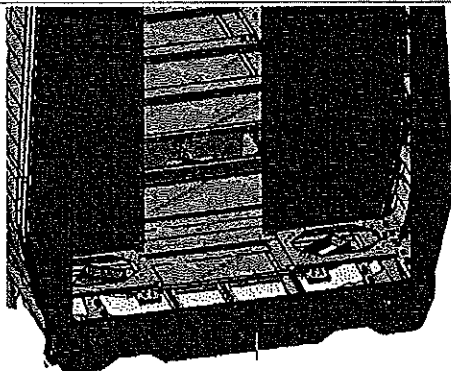






	DT00000223319 Carshell Assembly TC	Rev. 30 Date- 06/11/2023	Project PRASA SI.CB1230.324.V29
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VIEW A



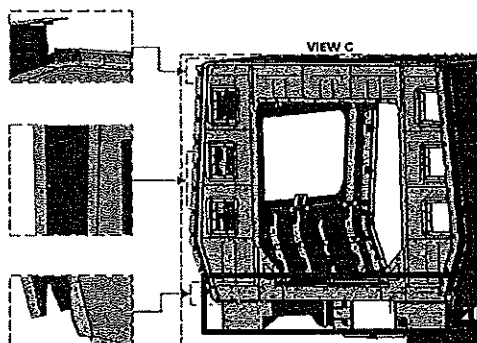
**END 1  
SEALANT**

OPERATOR  
(Name & sign):

*Eurle #10pla*

OPERATOR  
(Name & sign):

*Boitumelo [Signature]*



OPERATOR  
(Name&sign):

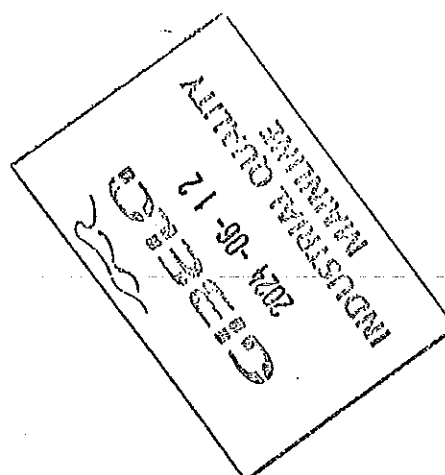
*Phele [Signature]*


OPERATOR  
(Name&sign):

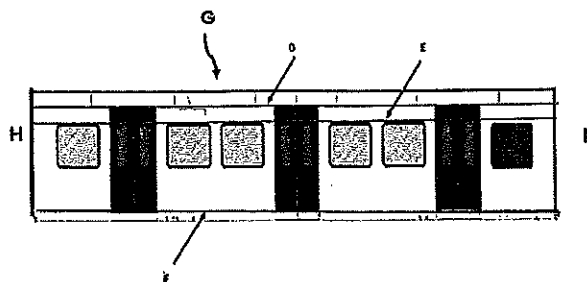
*Boitumelo [Signature]*

OPERATOR  
(Name & sign):

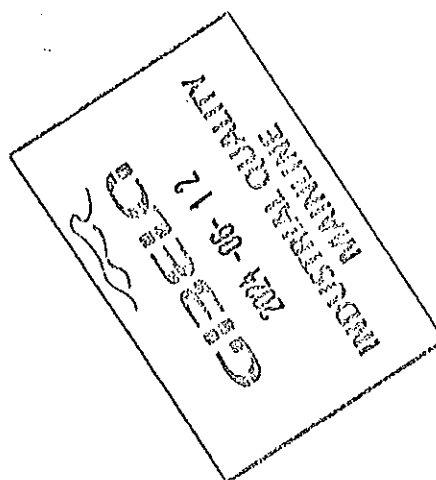
*Lerato [Signature]*



	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 bottom
Operator (Name & sign):	<u>D,E,F,G,H,I</u>	<u>F,H,I</u>
Operator (Name & sign):	<u>Buhle</u>	<u>Buhle</u>
Operator (Name & sign):	<u>Buhle</u>	<u>Buhle</u>
Operator (Name & sign):		<u>D,E,G</u>
Operator (Name & sign):		<u>Teherno lo</u>
Operator (Name & sign):		



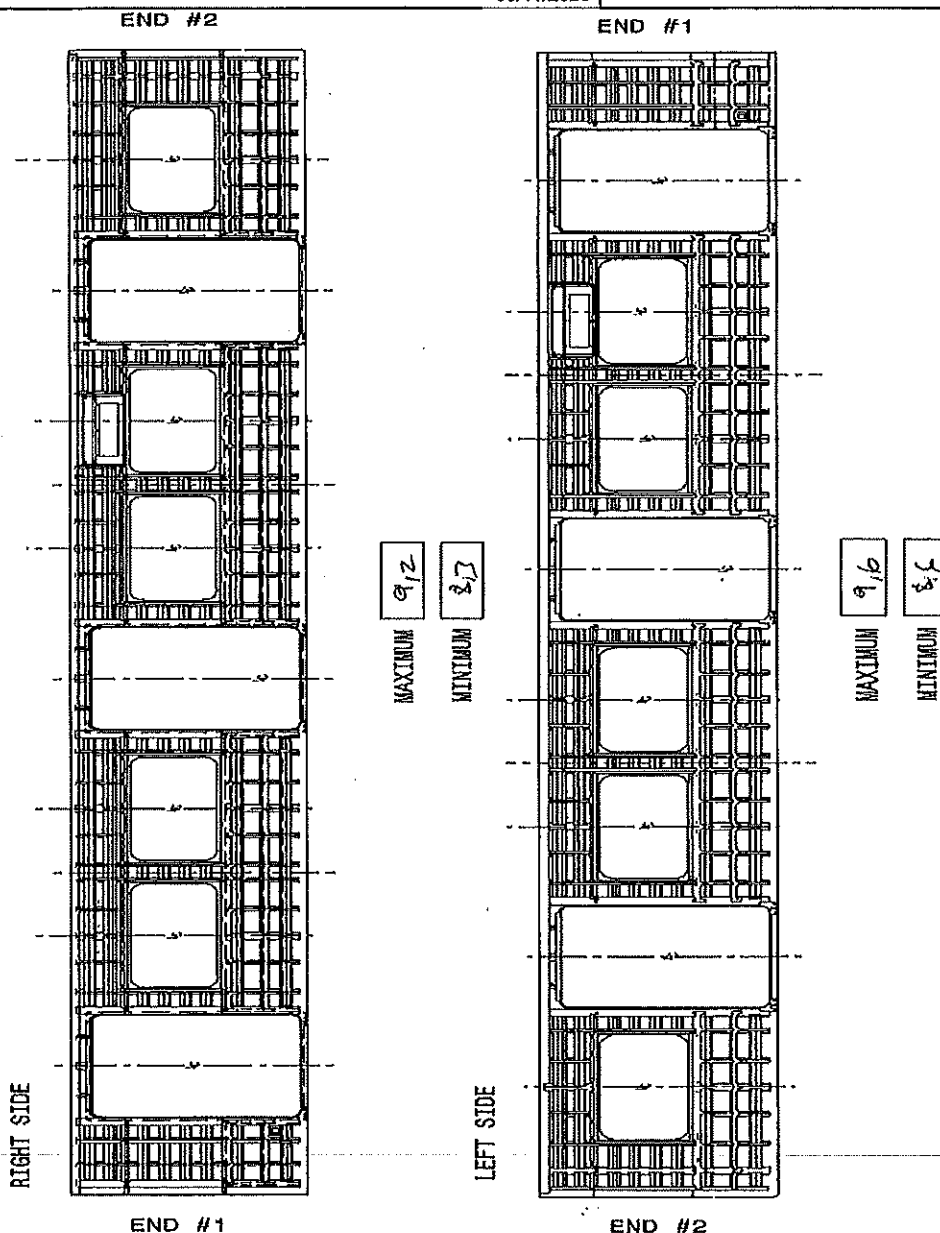


DT00000223319 Garshell Assembly TC

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



GARSELL  
 2024-06-12  
 PROJECT QUALITY  
 MANAGER



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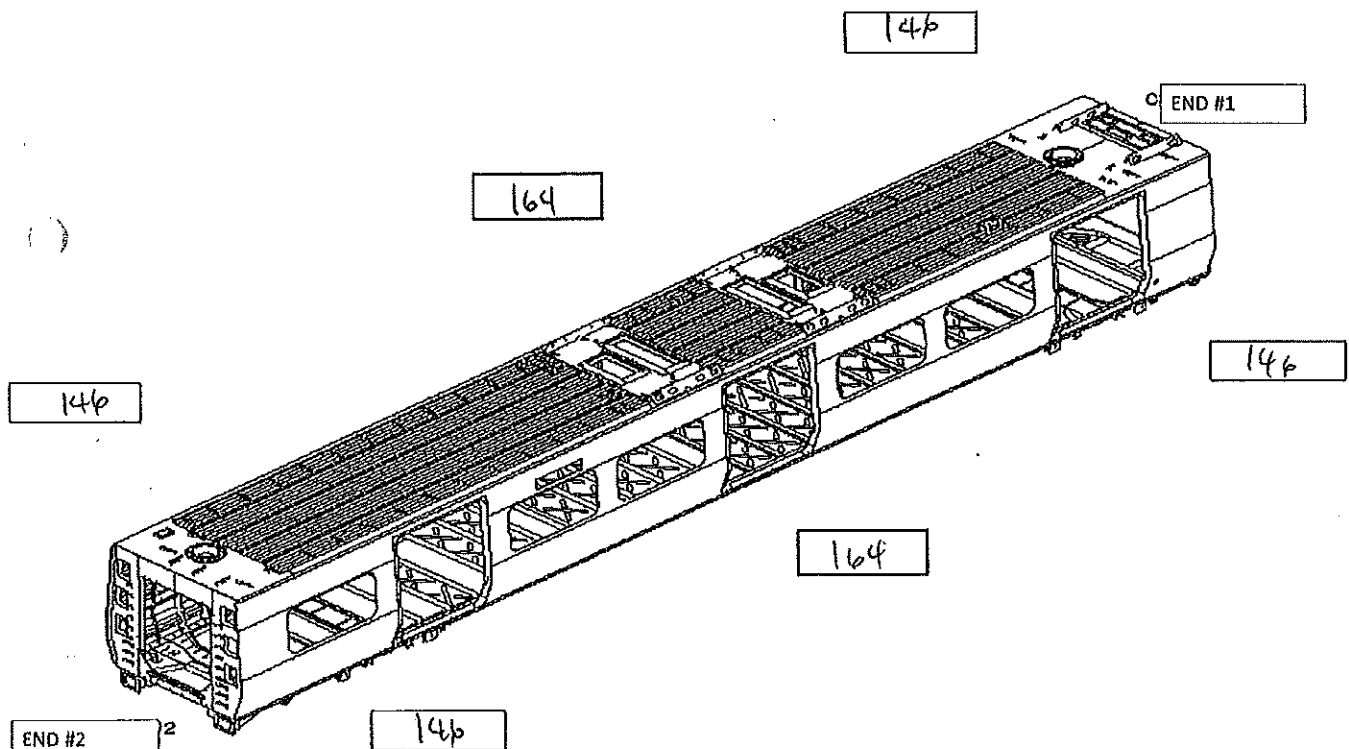
Project PRASA

Date-  
06/11/2023

SI.CB1230.324.V29

## Specifications of Details for CBS measurement CB1230

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



## MEASURED CAMBER VALUES

RIGHT

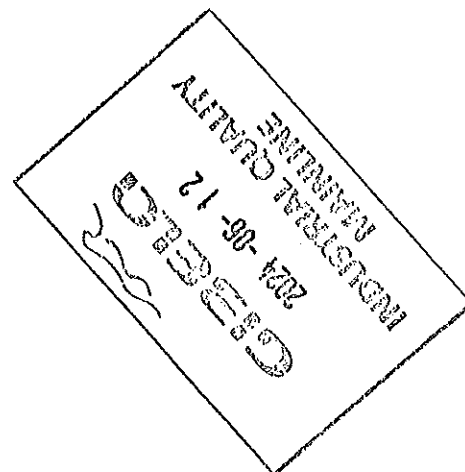
18

D1

LEFT

1

18





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Rev.

30

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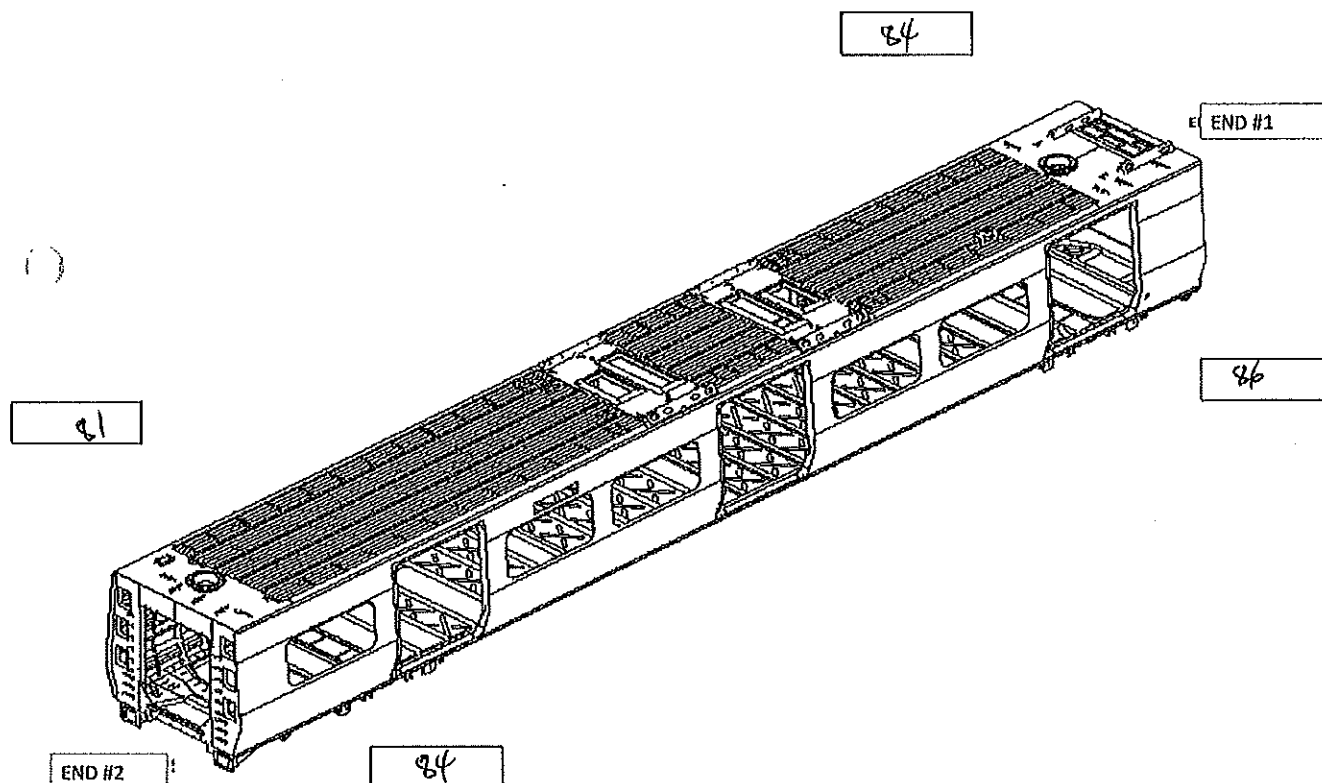
Date:

06/11/2023

SI.CB1230.324.V29

## Specifications of Details for CBS measurement CB1230

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



## MEASURED TWIST VALUES END 1

LATERAL

2

LONGITUDINAL

2

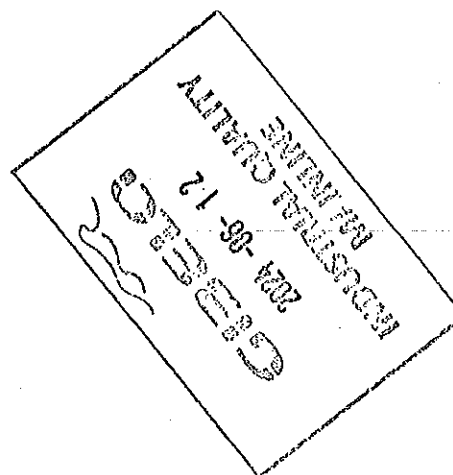
## MEASURED TWIST VALUES END 2

LATERAL

3

LONGITUDINAL

3





DT00000223319 Carshell Assembly TC

Rev.  
30

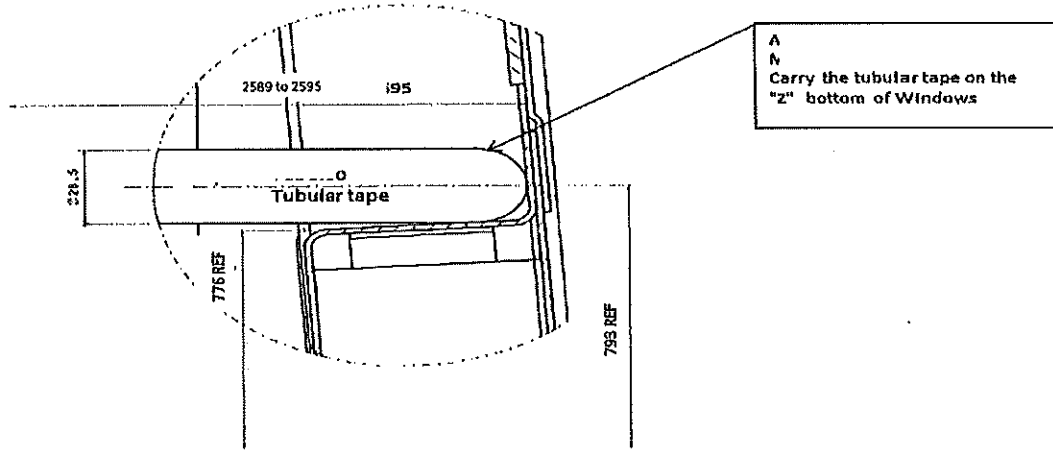
Project PRASA

Date-

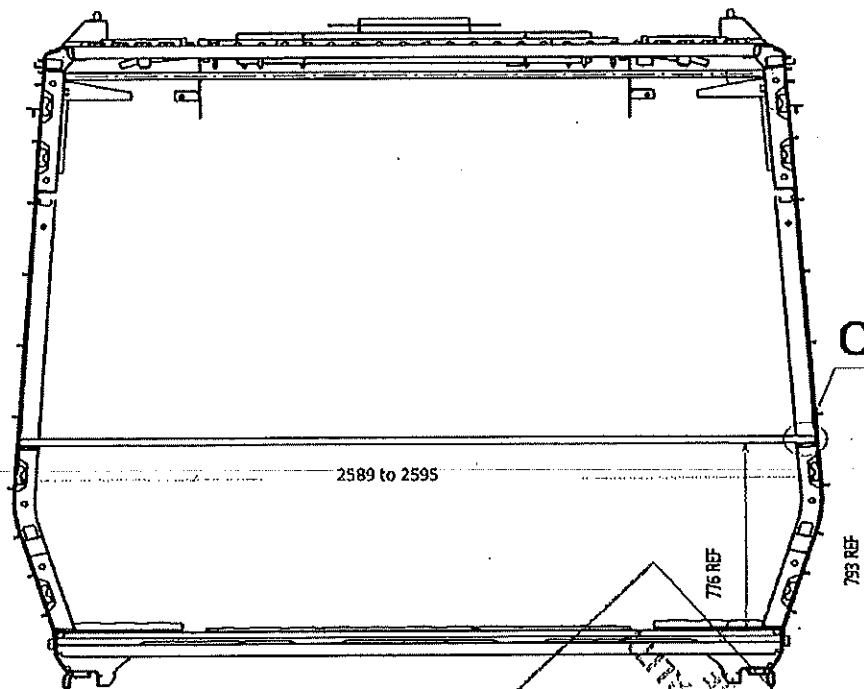
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06/11/2023

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



Detail C



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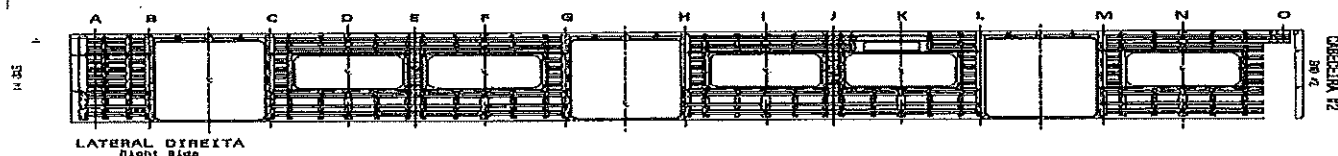
Project: PRASA

Date-

06/11/2023

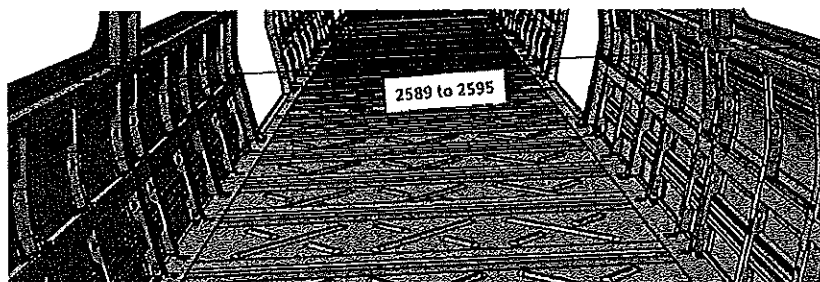
Sl.CB1230.324.V29

## Specifications of Details for CBS measurement



2589 to 2595mm

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



## Threshold verification

Nominal value 38

Door 1		Door 2		Door 3	
L	R	L	R	L	R
38	38	38	39	38	38
Door 4		Door 5		Door 6	
L	R	L	R	L	R
38	37	38	39	39	38

BOILER MAKER: mmathapelo Hubda.

WELDER: mmathapelo Hubda.

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MATERIALS  
DEPARTMENT





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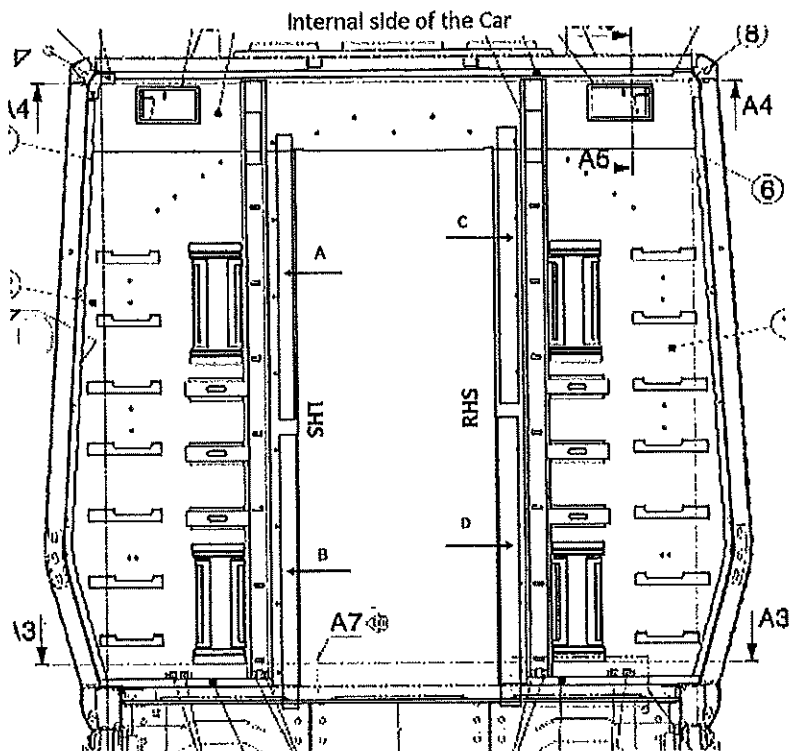
Date-  
06/11/2023

SI.CB1230.324.V29

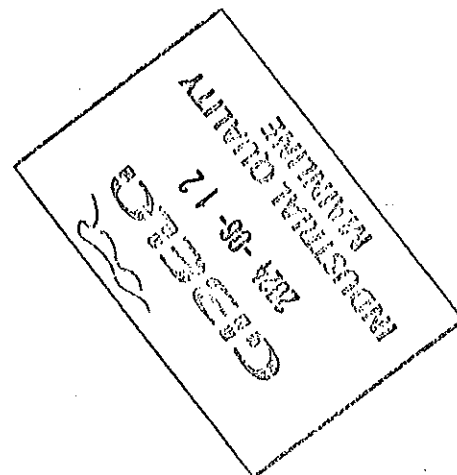
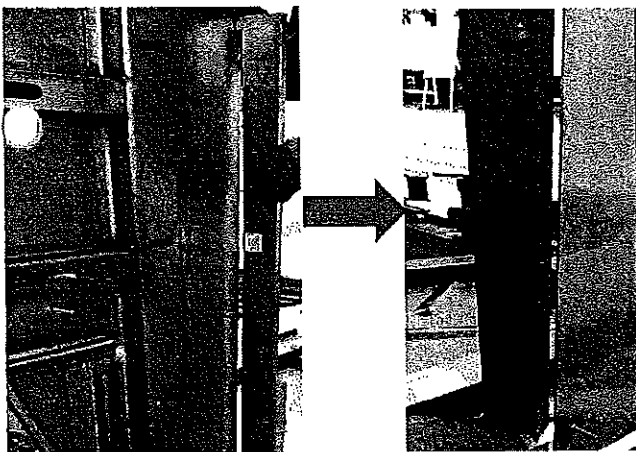
### Specifications of Details for CBS measurement

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	81	112	0.19
B	10	9	1
C	91.6	10	0.14
D	10	12	2













DT00000223319 Carshell Assembly TC

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**Dye penetrant test**

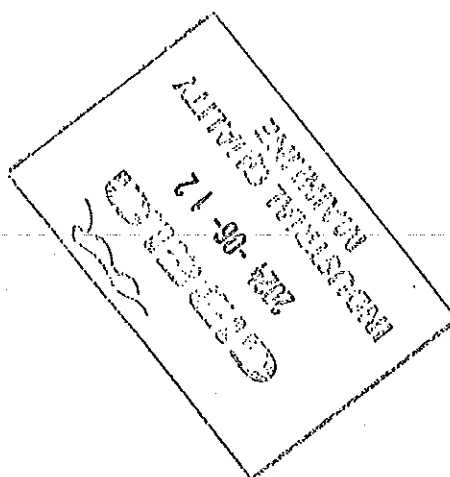
Dye-penetration test to be performed by quality personnel




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



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

Item	Picture/Drawing	Description	Criteria/Record				Signature/Date (Operations)	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- 08/11/2023	

## Self Inspection - Final Result

Is the car good to advance to the next workstation/propos?		DATE	NAME	SIGNATURE
HOLD POINT	If activities are not complete, the missing activities must not impact the next stage!	07/06/24	Honhlerh19	
	Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.	07/06/24	Kelo bowe	
	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

