



**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			
<div><div></div><div></div></div>	DTR30223319/3	AAD0001241033	Corshell Assembly TC	CB2210	X					X	PRA.CB2210.DTR30223319/3.V25	YES

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	09/04/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	09/04/2018
			CHECKER	Nosizo Pindela	09/04/2018
			COMPILER	Thanyani Mathegu	06/04/2018
1	2018/05/18	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	2018/05/18
			CHECKER	Nosizo Pindela	2018/05/18
			REVISED BY	Ramokone Motama	2018/05/18
2	2018/06/18	MODIFICATION CONTENT	APPROVER	Itumeleng Modiba	2018/06/18
			CHECKER	Nosizo Pindela	2018/06/18
			REVISED BY	Ramokone Motama	2018/06/18
3	2018/12/12	Additional checkpoints	APPROVER	Itumeleng Modiba	2018/12/12
			CHECKER	Nosizo Pindela	2018/12/12
			REVISED BY	Ramokone Motama	2018/12/12
5	22/01/2019	As per Baseline 10.2	APPROVER	Itumeleng Modiba	22/01/2019
			CHECKER	Nosizo Pindela	22/01/2019
			REVISED BY	Vanessa Ntuli	22/01/2019
6	2019/11/03	Record D1 and D2 on Self - Inspection	APPROVER	Itumeleng Modiba	2019/11/03
			CHECKER	Nosizo Pindela	2019/11/03
			REVISED BY	Nosizo Pindela	2019/11/03
10	21/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	21/08/2019
			CHECKER	Nosizo Pindela	21/08/2019
			REVISED BY	Nosizo Pindela	21/08/2019
15	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela	06/08/2020
			CHECKER	Bongane Masina	06/08/2020
			REVISED BY	Bongane Masina	06/08/2020
20	19/04/2020	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2020
			CHECKER	Bongane Masina	19/04/2020
			REVISED BY	Bongane Masina	19/04/2020
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING	APPROVER	Mbhombi Collins	17/08/2021
			CHECKER	Mpho Mulaudzi	17/08/2021
			REVISED BY	Mpho Mulaudzi	17/08/2021
25	21/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombi Collins	21/02/2022
			CHECKER	Andani Muthelo	21/02/2022
			REVISED BY	Andani Muthelo	21/02/2022
26	14/04/2023	Addition of welding consumable traceability	APPROVER	Ntuli Vanessa	14/04/2023
			CHECKER	Mohlampe Amogelang	14/04/2023
			REVISED BY	Mohlampe Amogelang	14/04/2023
27	27/07/2023	Added verification of loaded parts	APPROVER	Ngobeni Tyson	27/07/2023
			CHECKER	Mathapo Kelebone	27/07/2023
			REVISED BY	Mohlampe Amogelang	27/07/2023
28	07/11/2023	Addition of welding traceability	APPROVER	Ngobeni Tyson	07/11/2023
			CHECKER	Andani Muthelo	07/11/2023
			REVISED BY	Ntokozo Zwane	07/11/2023

TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
234	TC2	GERALD / 426957	06/06/24	SI.CB2210.322.V28	16

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

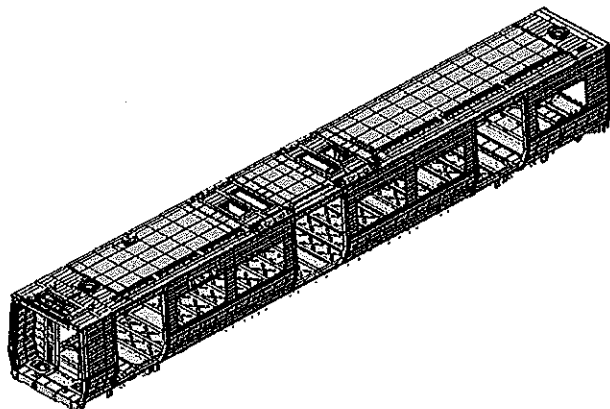
Car: TC1 &amp; TC2

NGR:

Work station: CB2210



Safety Related



### I - Documentation and Instruments

#### I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	P	F	M	M	M	M						
DTR30223319/3											N/A	06/06/24

#### I.2 - Instruments Control

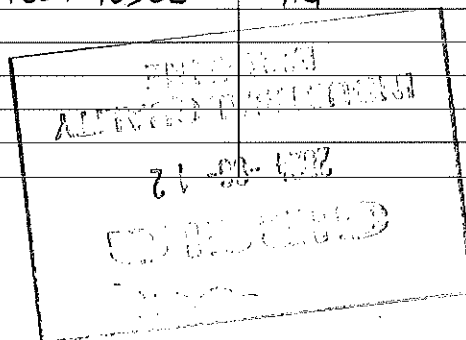
##### Monitoring and Measuring Instrument Control - Used for Special Process


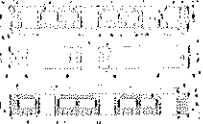
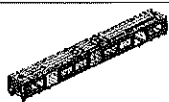
Instruments	Validation	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
tubular	32823-2	15/03/25	✓		06/06/24	
laser tape	125425924	08/01/25	✓		06/06/24	
30m tape	GIBTP0102	18/11/24	✓		06/06/24	

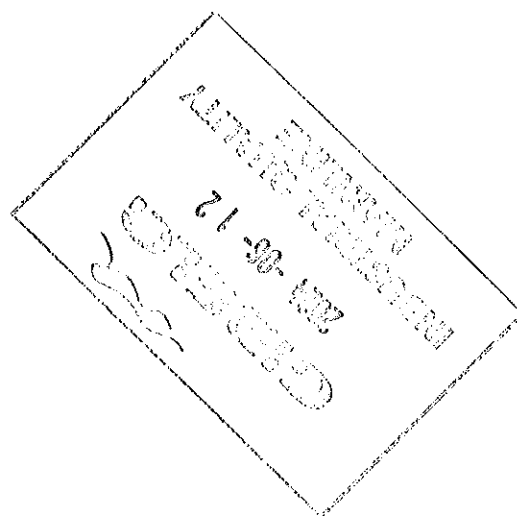
#### 1.3 Consumables


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

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
MIG ER308 LSi	314018-74097	MIG	✓		06/06/24	
TIG ER308 L	299687-70322	TIG	✓		06/06/24	
			✓		06/06/24	



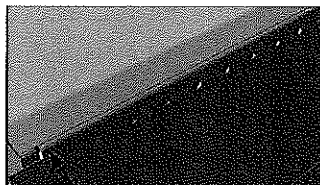
		DTR30223319/3 Carshell Assembly TC		Rev. V28 Date- 07/11/2023	Project: PRASA SI.CB2210.322.V28		
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls, Endframes, Roof and Underframe)	DT00000284980	✓		P. Maslo 6/6/24	P. Maslo 06/06/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD00000210675	✓		P. Maslo 6/6/24	P. Maslo 06/06/24
03		Functional dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		P. Maslo 6/6/24	P. Maslo 06/06/24
04	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD00000210675	✓		P. Maslo 6/6/24	P. Maslo 06/06/24
05	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		P. Maslo 6/6/24	P. Maslo 06/06/24
06		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		P. Maslo 6/6/24	P. Maslo 06/06/24
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 DTD00000210658	✓		P. Maslo 6/6/24	P. Maslo 06/06/24

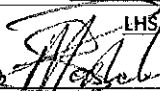





	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB2210.322.V28
		Date- 07/11/2023	

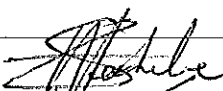
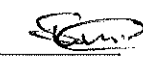

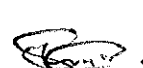
**Welder traceability**

Roof ring welds

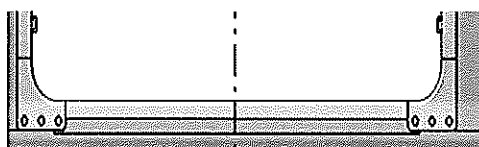



Boiler maker (Name & Sign): <u>IEBOGO</u>  <sup>LHS</sup>	Welder (Name & Sign): <u>Siphokazi</u> 
Boiler maker (Name & Sign): <u>LUNGA</u>  <sup>RHS</sup>	Welder (Name & Sign): <u>Siphokazi</u> 


END 1

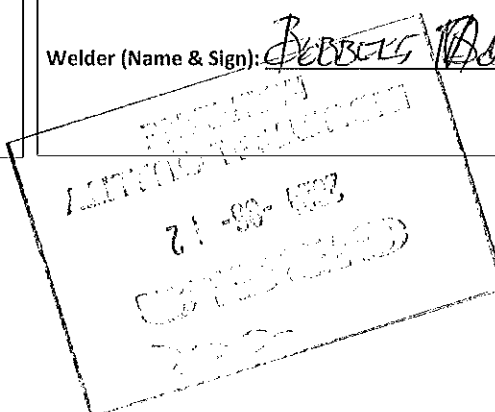
Boiler maker (Name & Sign): <u>LUNGA</u>  <sup>LHS</sup>	Welder (Name & Sign): <u>Siphokazi</u> 
Boiler maker (Name & Sign): <u>LUNGA</u>  <sup>RHS</sup>	Welder (Name & Sign): <u>Siphokazi</u> 

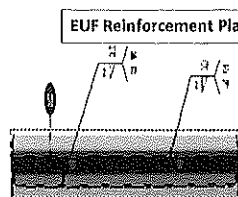
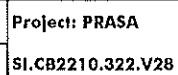
END 2



Boiler maker (Name & Sign): <u>Tim Radebe</u> <sup>LHS</sup>
Welder (Name & Sign): <u>BURBENS</u> 

Boiler maker (Name & Sign): <u>Tim Radebe</u> <sup>RHS</sup>
Welder (Name & Sign): <u>BURBENS</u> 

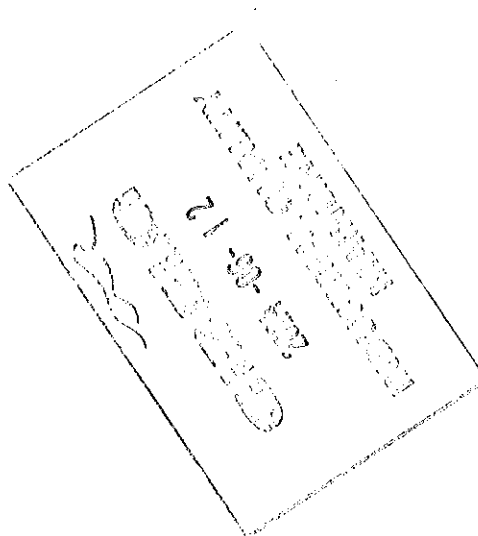





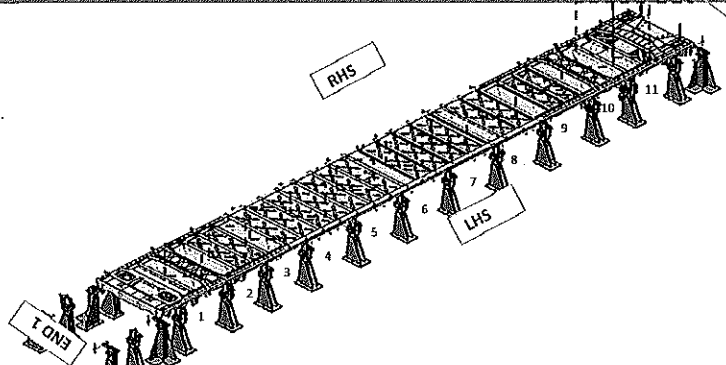
**Welder (Name & Sign):**



**Operator:**



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



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: *[Signature]*

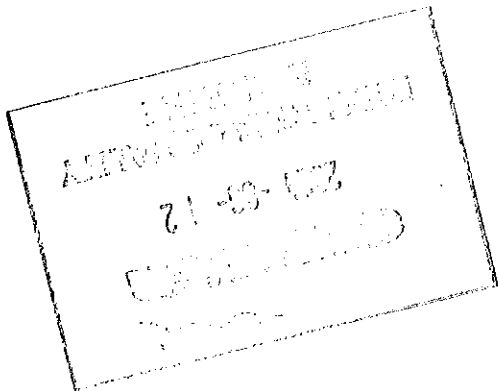
Date: 6/6/24

After Welding.

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

Signature Industrial Quality:

Date:





DTR30223319/3 Carshell Assembly TC

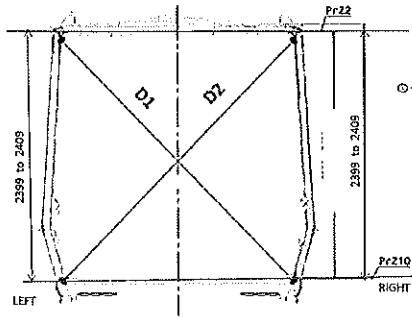
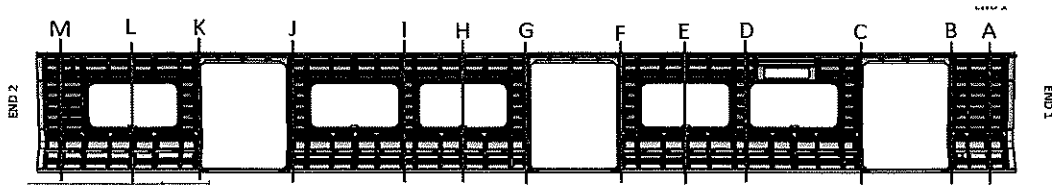
Rev.  
V28

Date-  
07/11/2023

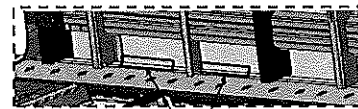
Project: PRASA

SI.CB2210.322.V28

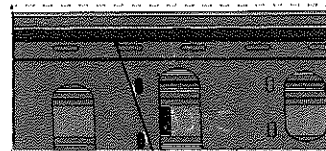
### Specifications of Details for CBS measurement



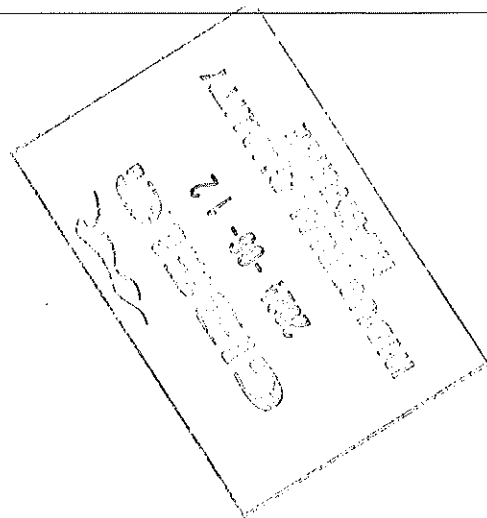
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.



Reinforcement area measurement positions on roof reinforcement area.





DTR30223319/3 Carshell Assembly TC

Rev.

V28

Project: PRA5A

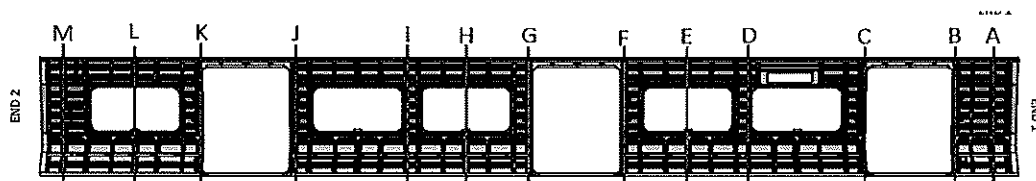
Date-

07/11/2023

SI.CB2210.322.V28

## Specifications of Details for CBS measurement

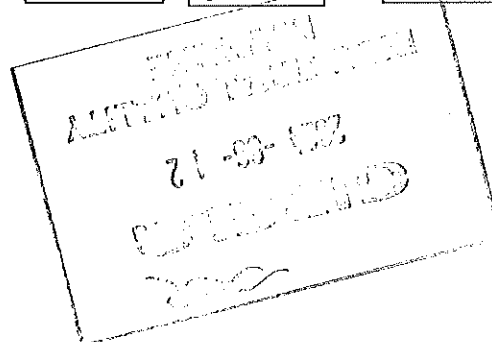
## BEFORE WELDING




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

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

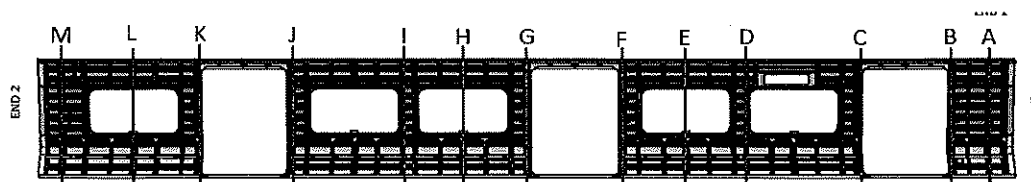
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07/06/24





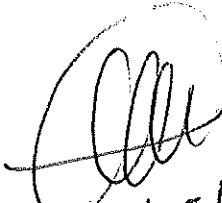
	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRA5A
		Date- 07/11/2023	
Specifications of Details for CBS measurement			

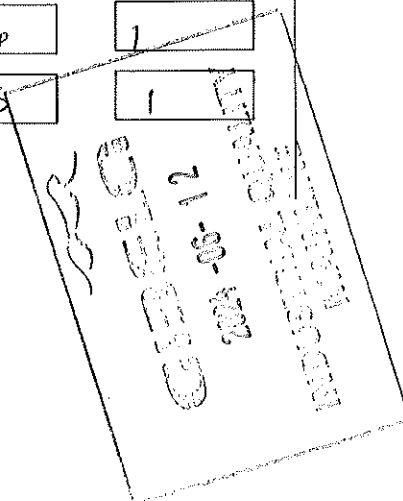
AFTER WELDING




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

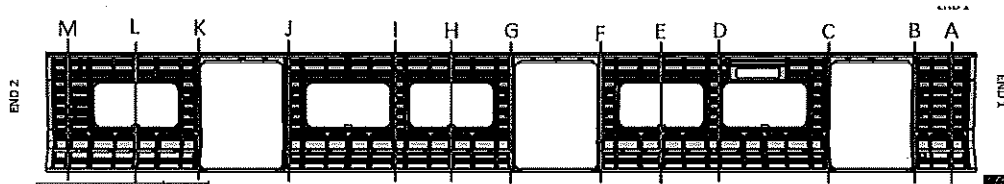
	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS $\leq 2$
A	3266	3266	0	2404	2404	0
B	3296	3296	0	2405	2404	1
C	3296	3295	1	2405	2405	0
D	3268	3267	1	2406	2405	1
E	3265	3265	0	2405	2405	0
F	3298	3298	0	2406	2405	1
G	3298	3296	2	2406	2405	0
H	3265	3265	0	2406	2406	0
I	3266	3265	1	2406	2405	1
J	3295	3295	0	2405	2405	0
K	3296	3295	1	2404	2404	0
L	3265	3265	0	2405	2404	1
M	3296	3296	0	2406	2405	1

  
07/06/24



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

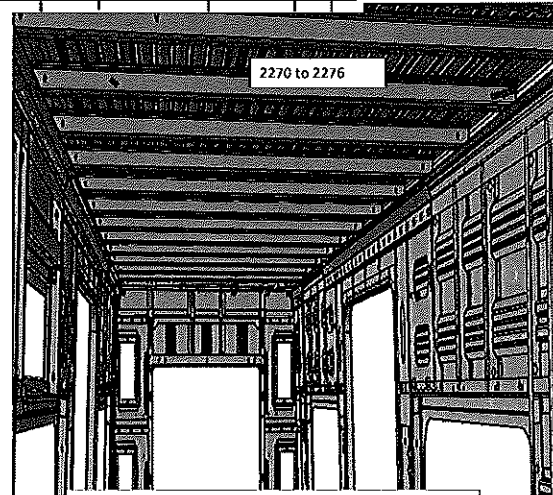
BEFORE WELDING



2270 to 2276

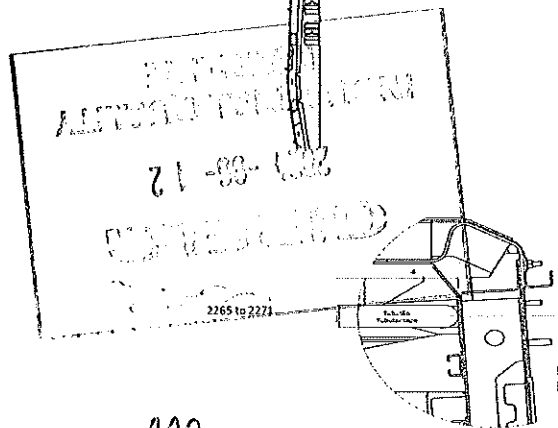
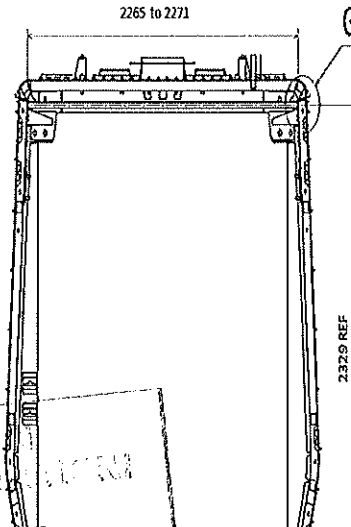
2268 a 2274

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




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

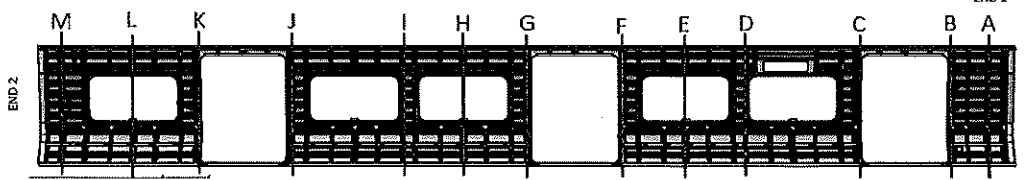
2265 to 2271



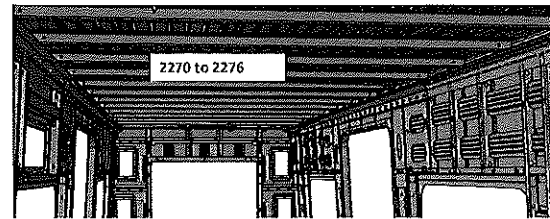
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07/06/24

	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB2210.322.V28
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Specifications of Details for CBS measurement			

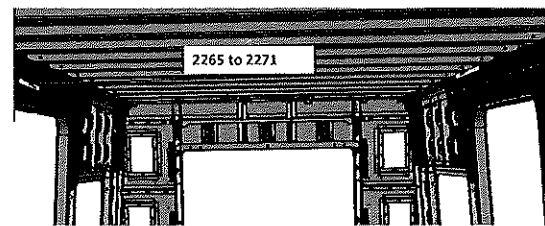
AFTER WELDING



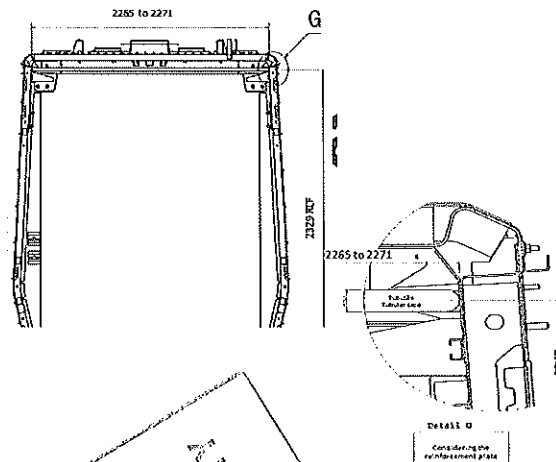
	2265 to 2271	2270 to 2276
A	N/A	2275
B	2270	N/A
C	2269	N/A
D	N/A	2274
E	N/A	2273
F	2271	N/A
G	2270	N/A
H	N/A	2274
I	N/A	2275
J	2271	N/A
K	2270	N/A
L	N/A	2274
M	2270	N/A



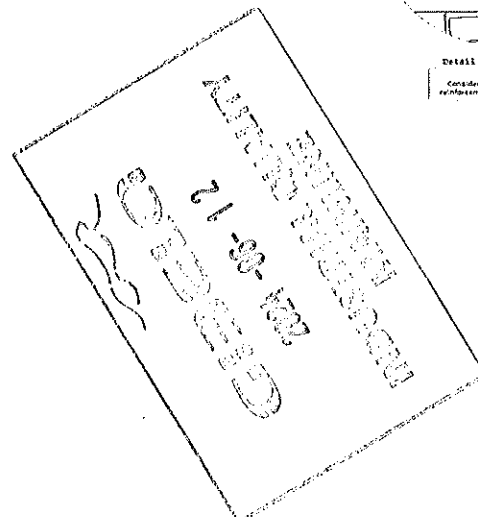
Do not consider reinforcement ( Take measurements top area of zee profile



Take measurement close to radius ( considering reinforcement)

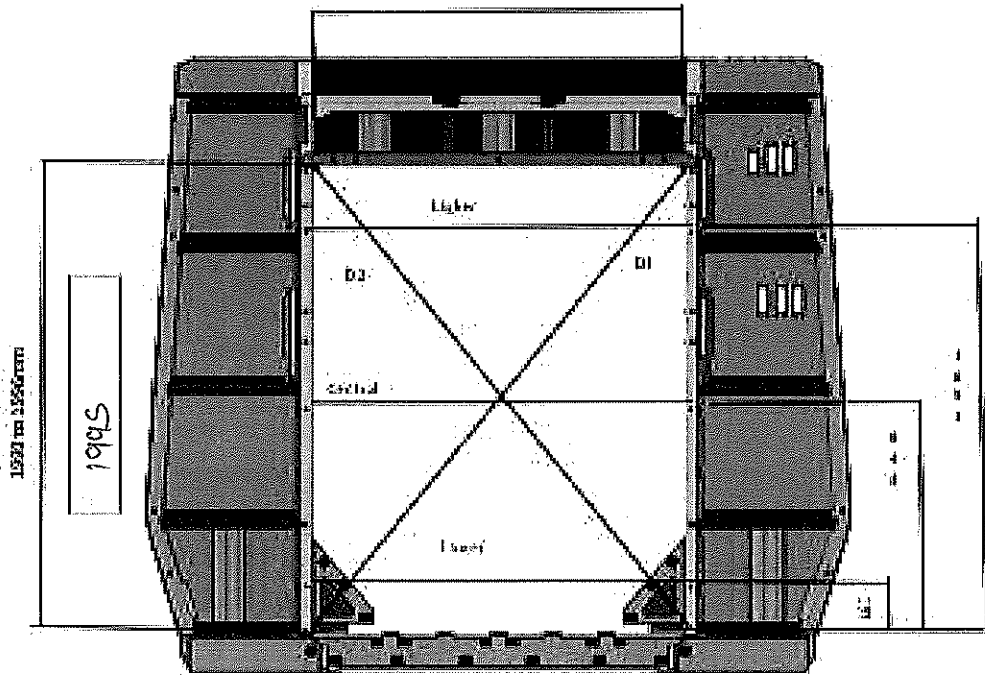


*[Signature]*  
07/06/24



Specifications of Details for CBS measurement

Endframe 2



1100x1380 mm

DIAGONAL DIFFERENCE D1-D2 ≤ 3mm

Upper dimension

1380

D1

2415

Central dimension

1361

D2

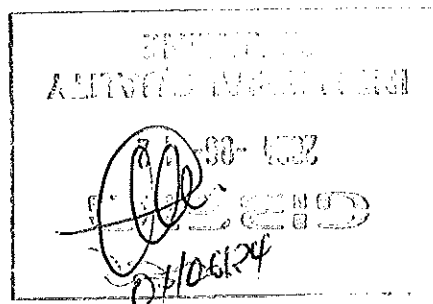
2414

Lower dimension

1380

D1-D2

1



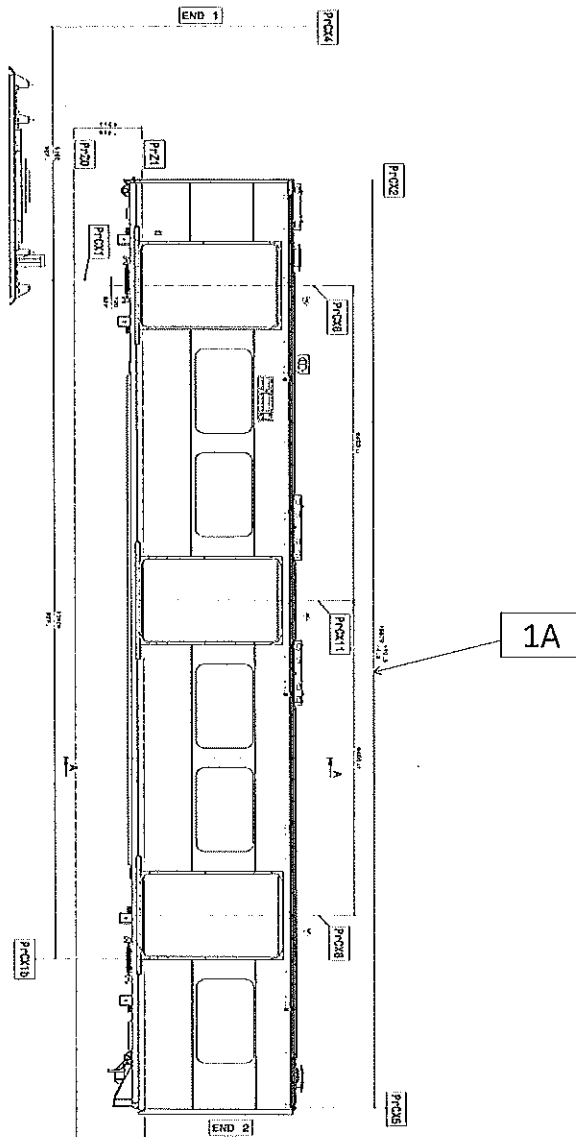


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### Specifications of Details for CBS measurement



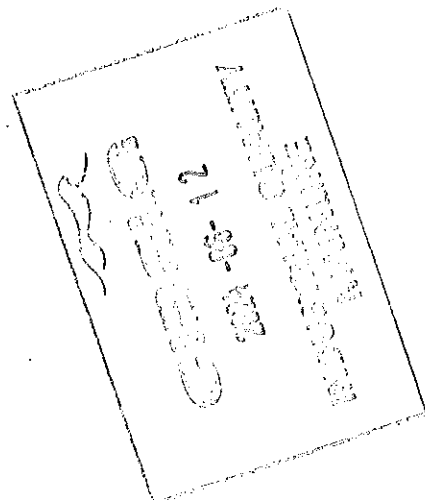
LEFT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	18870 $\begin{matrix} +10.5 \\ -4.5 \end{matrix}$	18871

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




*[Signature]*  
07/10/2024

### Dye penetrant test

Dye-penetration test to be performed by quality personnel

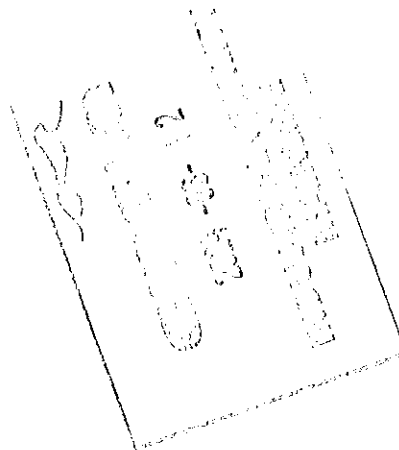





		DTR30223319/3 Carshell Assembly TC		Rev. V28	Project: PRASA SI.CB2210.322.V28	
				Date- 07/11/2023		
<b>Self Inspection - Final Result</b>						
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!	6/06/24	GERARD Operations		
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.	06/06/24	Richmond Quality		
		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	

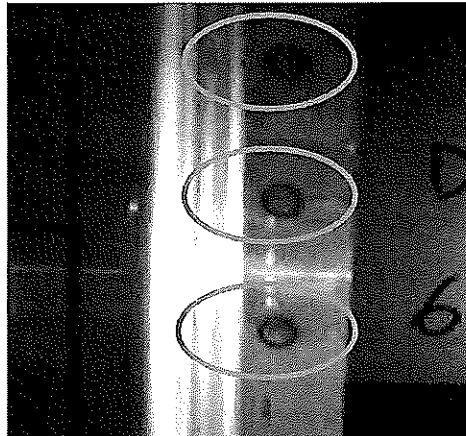
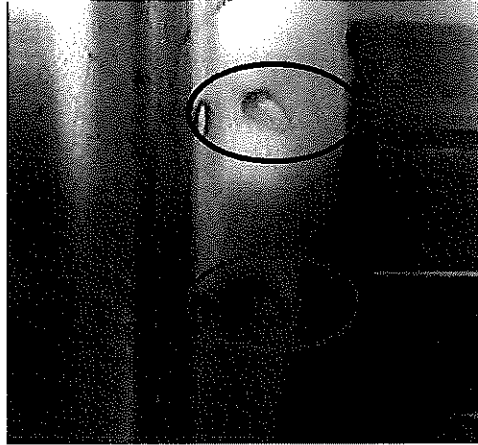
Operations

Quality




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

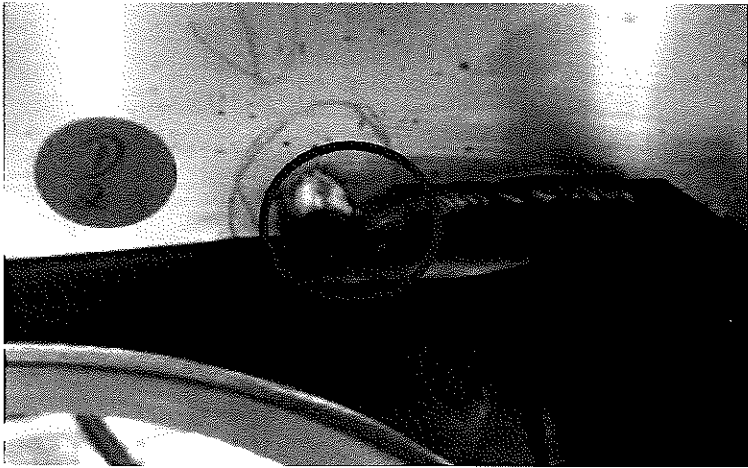
**ANNEXURE A: Spot Welding Quality Acceptance Standard**



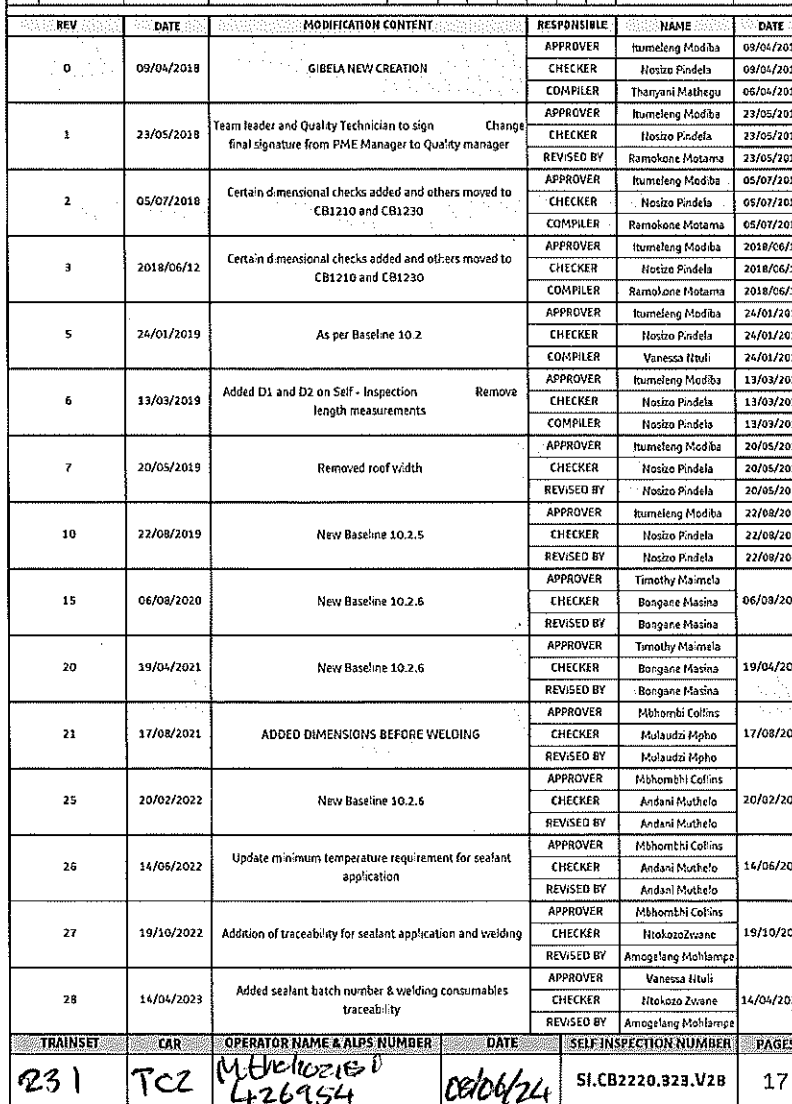



	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB2210.322.V28
		Date- 07/11/2023	

**ANNEXURE B: Arc Welding Quality Acceptance Standard**





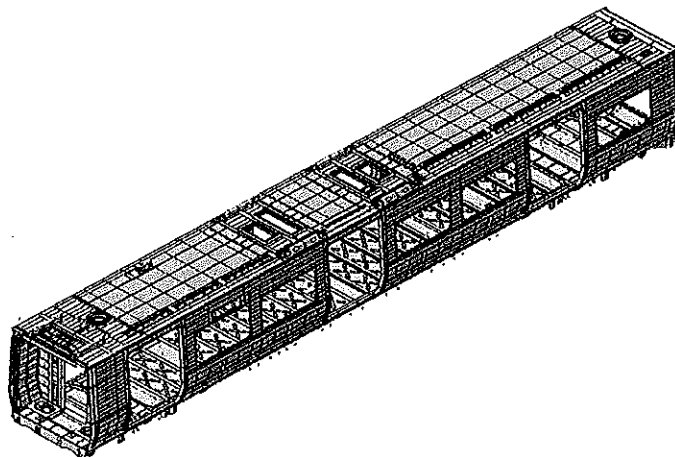


	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

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



Safety Related



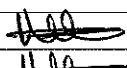
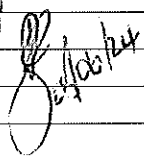
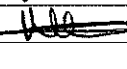
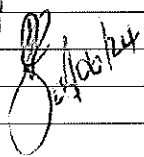
## I - Documentation and Instruments

### I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	TC1	M1	M2	M3	M4	TC2						
DTR30223319/2							29	06/06/24	✓	N/A	 25/10/24	 06/06/24

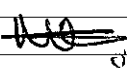
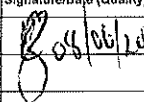
### I.2 - Instruments Control


#### 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	15/03/2025	✓		 06/06/24	 06/06/24
Tape measure	0-16TAD431	2025/04/17	✓		 06/06/24	 06/06/24

### 1.3 Consumables

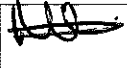

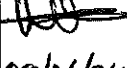

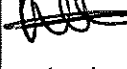

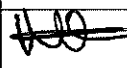

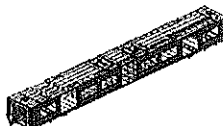
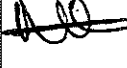

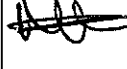


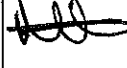

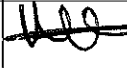

#### Welding Consumable Control - Used for Special Process


Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
308	313779	308 MIG	✓		 06/06/24	 06/06/24

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		Date-	
		28/10/2023	

## II - Control Activities of Production

### II.1 - Items to check

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	✓	 08/06/24	 08/06/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓	 08/06/24	 08/06/24
03	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓	 08/06/24	 08/06/24
04	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 08/06/24	 08/06/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 08/06/24	 08/06/24
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.	✓	 08/06/24	 08/06/24
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	✓	 08/06/24	 08/06/24
08	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified: Temperature Min - Max (I) Min-Max 30°C - 35°C Relative humidity Min - Max (I) 25% - 60%	Sealant Batch No: <u>B3440</u> Exp Date: <u>09/06/24</u>  Actuals Temperature: <u>10</u> Humidity: <u>56</u>	✓	 08/06/24	 08/06/24

		DTR30223319/2 Carshell Assembly TC		Rev. 29	Project: PRASA			
				Date-				
				28/10/2023	SI.CB2220.323.V29			
09	NA	Verification of sealant application in certain regions in the drawing.	AAD0001241033	✓			<del>Signature</del> 08/06/24	<del>Signature</del> 08/06/24
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)  Refer to Annexure B	✓			<del>Signature</del> 08/06/24	<del>Signature</del> 08/06/24



DTR30223319/2 Carshell Assembly TC

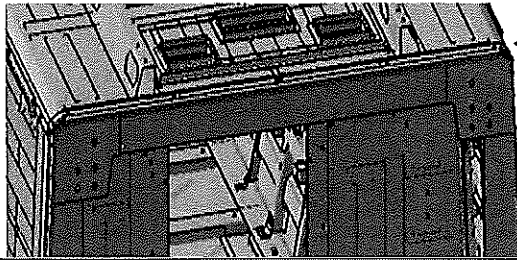
Rev.  
29

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SI.CB2220.323.V29

28/10/2023



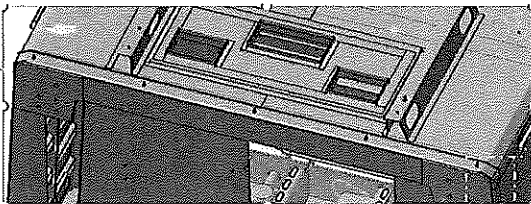
END 1  
SEALANT

OPERATOR  
(Name & sign):


Mthkhozisi

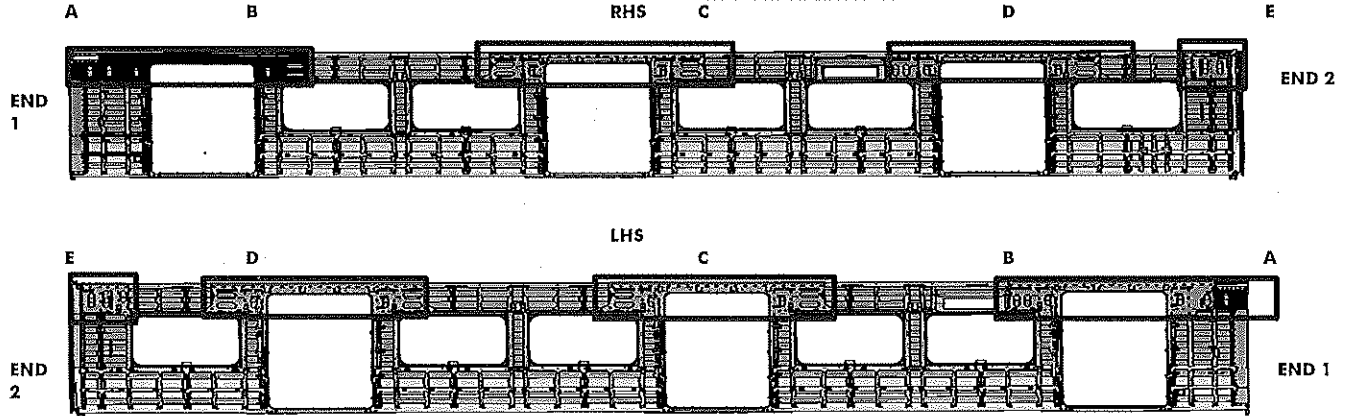
OPERATOR  
(Name & sign):

Mthkhozisi



TL2 231


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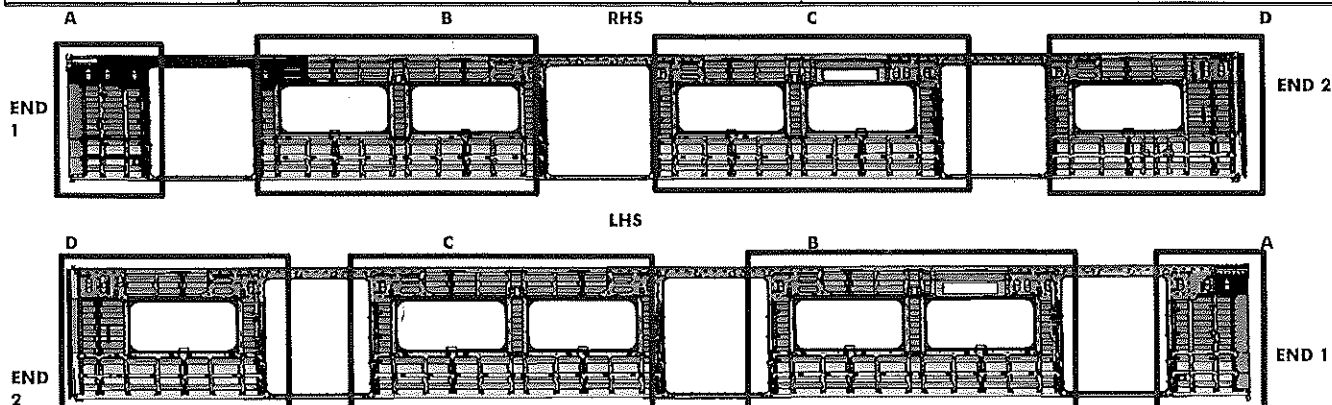


### REINFORCEMENT WELDING

AREA	LHS	RHS
A	Operator (Name&sign): <u><i>[Signature]</i></u> ?	<u><i>[Signature]</i></u> ?
B	Operator (Name&sign): <u><i>[Signature]</i></u>	<u><i>[Signature]</i></u>
C	Operator (Name&sign): <u><i>[Signature]</i></u>	<u><i>[Signature]</i></u>
D	Operator (Name&sign): <u><i>[Signature]</i></u>	<u><i>[Signature]</i></u>
E	Operator (Name&sign): <u><i>[Signature]</i></u>	<u><i>[Signature]</i></u>



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		28/10/2023	




### BRACKETING


C-RAILS:	Operator:	INSTALLATION <u>Leni</u>
	Operator:	
DOOR MECHANISMS:	Operator:	<u>LINDO</u> <u>med</u>
	Operator:	
TAPPING PADS	Operator:	<u>SHU</u>
	Operator:	
INSTALLATION & VERIFICATION		
SEAT & LUGGAGE BRACKETS:	Operator:	
	Operator:	
SEAT BRACKETS VERIFICATION:	Operator:	<u>Methekozi</u> <u>AD</u>
	Operator:	

AREA		LHS WELDING	
A	(Seat brackets)	: Operator (Name&sign):	<u>SHU</u>
	(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>SHU</u>
B	(Seat brackets)	: Operator (Name&sign):	<u>LINDO</u> <u>med</u>
	(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>SHU</u>
C	(Seat brackets)	: Operator (Name&sign):	<u>LINDO</u> <u>med</u>
	(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>SHU</u>
D	(Seat brackets)	: Operator (Name&sign):	<u>SHU</u>
	(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>SHU</u>

RHS	
	<u>SHU</u>
	<u>SHU</u>
	<u>LINDO</u> <u>med</u>
	<u>LINDO</u> <u>med</u>
	<u>LINDO</u> <u>med</u>
	<u>SHU</u>
	<u>LINDO</u> <u>med</u>

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		Date-	
		28/10/2023	

ENDS

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

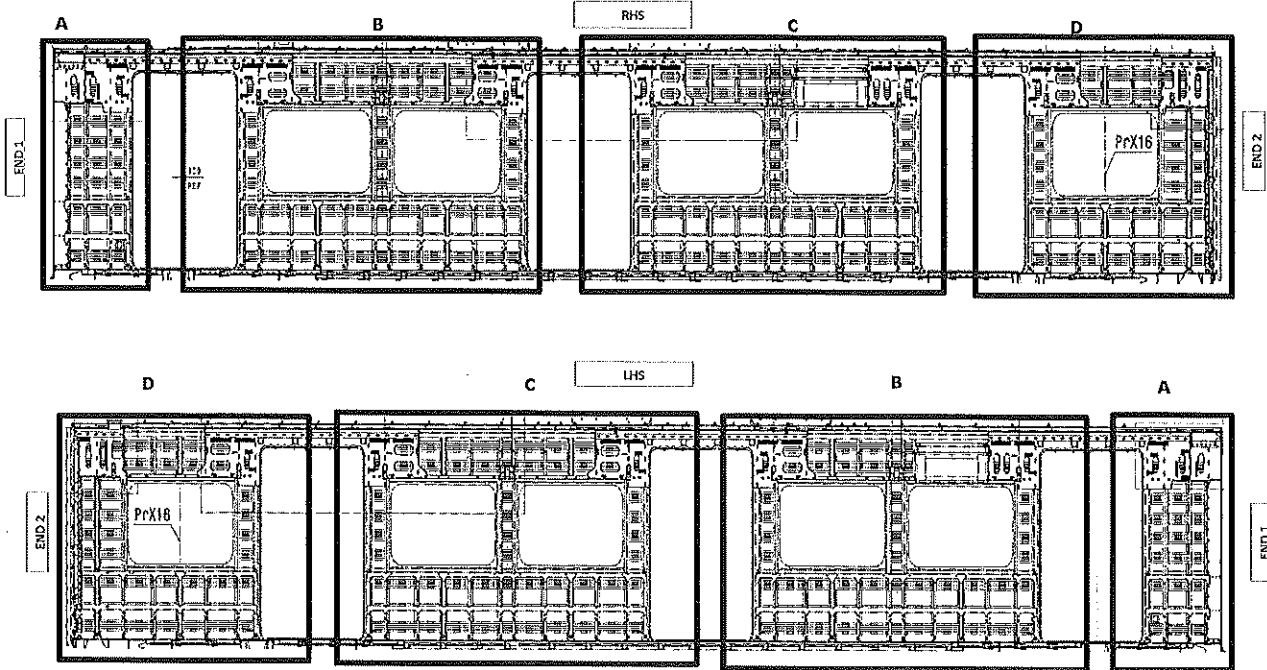
END 1 TAPPING PADS WELDING: Operator (Name&sign): \_\_\_\_\_



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SI.CB2220.323.V29

## TC BRACKET INSTALLATION



## QUANTITIES (TC)

## RHS

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

## ROOF ENDS:

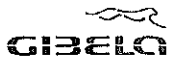
CRAILS 2 OFF END 2  
EARTH BUSH 4 OFF END 2VERIFICATION BY: Mthobozisi

## LHS

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

## ROOF ENDS:

CRAILS 2 OFF END 2  
EARTH BUSH 4 OFF END 2VERIFICATION BY: Mthobozisi



DTR30223319/2 Carshell Assembly TC

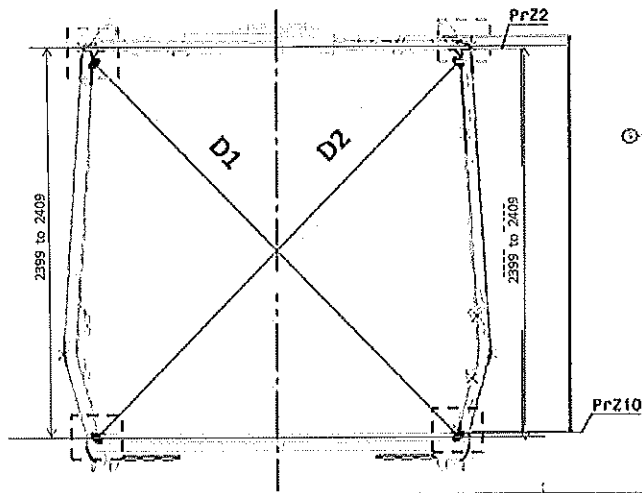
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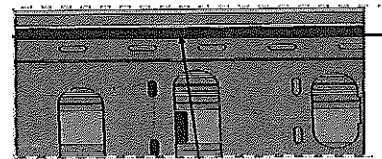


Take measurement close to radius

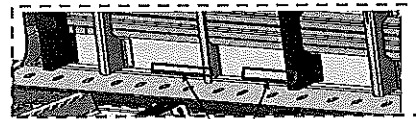
⊙



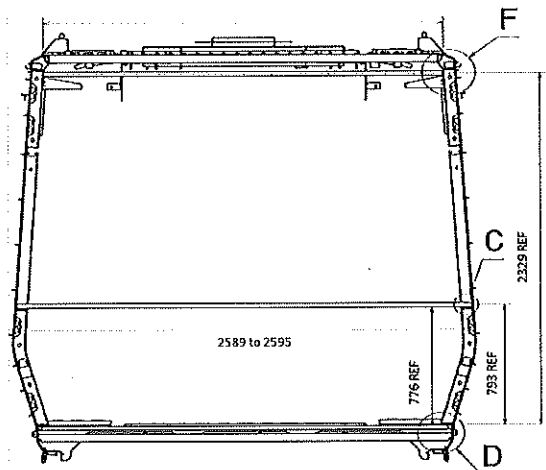
Measurement positions on roof rail and sidewall omega corner.



Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.



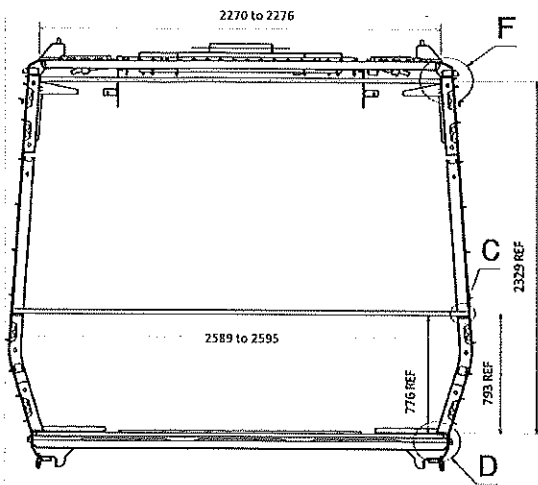
Take measurement close to radius



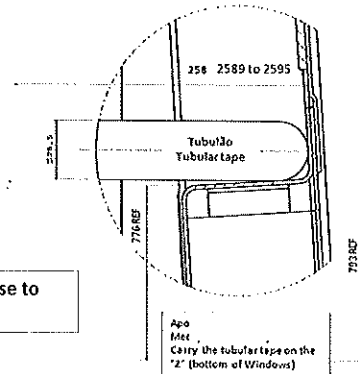
DTR30223319/2 Carshell Assembly TC

Rev.  
29  
Date-  
28/10/2023

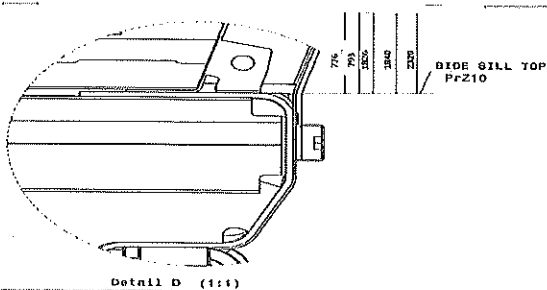
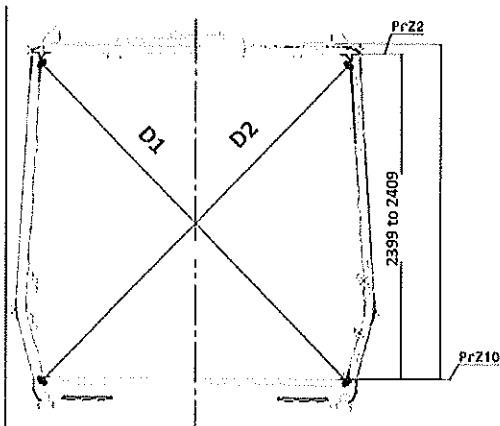
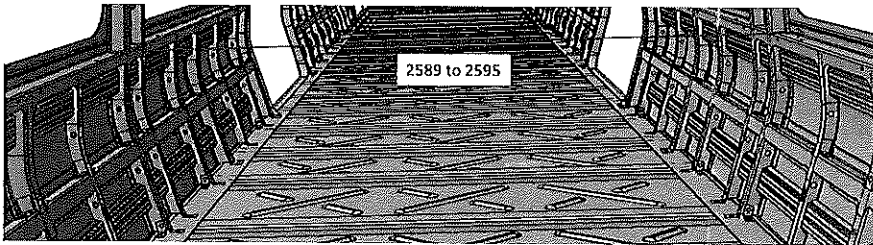
Project: PRASA  
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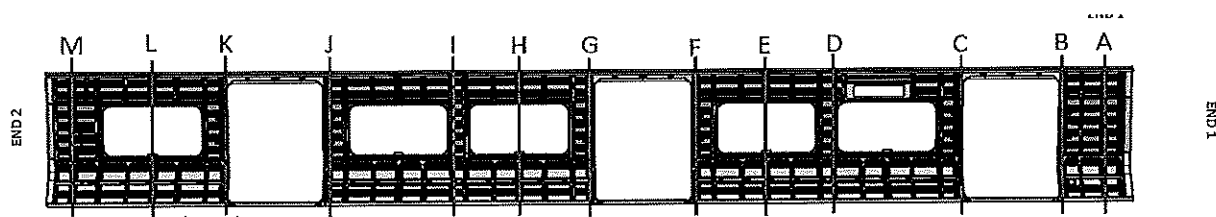


Take measurement close to radius



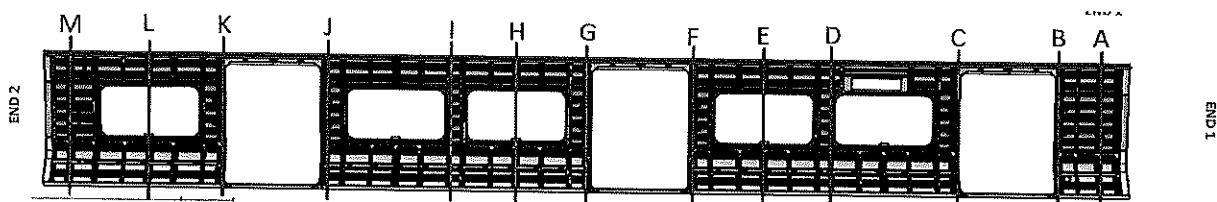
Detail C






### BEFORE WELDING

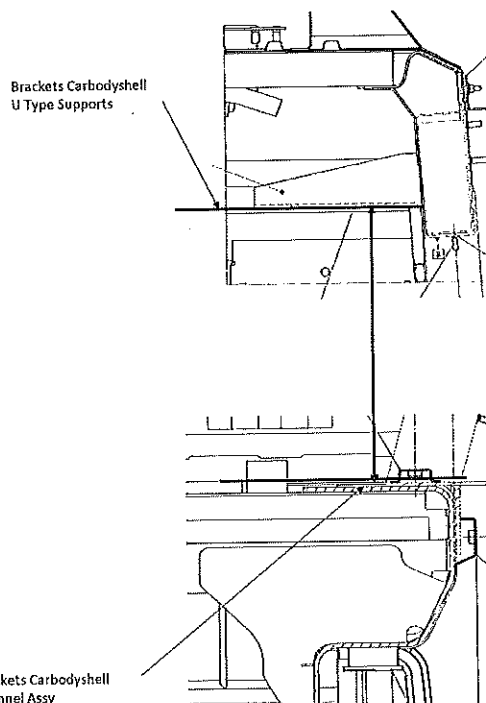
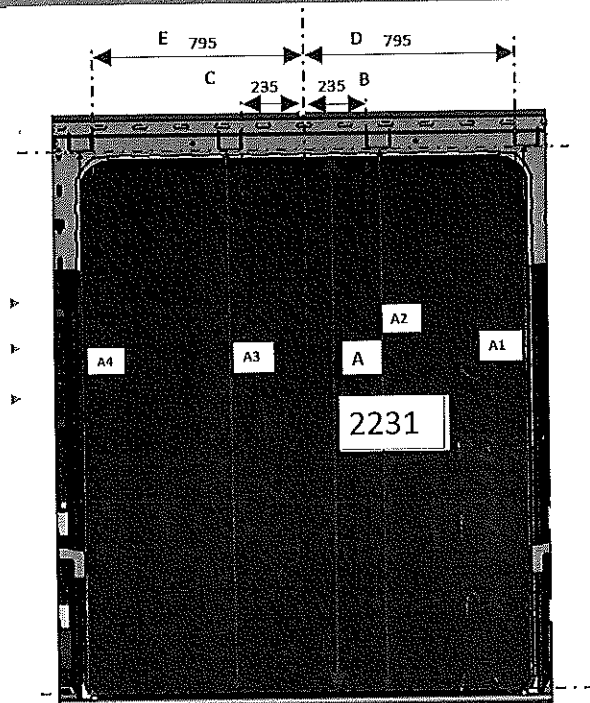
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3266	3265	1	-
B	3295	3296	1	-
C	3295	3296	1	-
D	3264	3268	2	-
E	3265	3264	1	-
F	3294	3295	1	-
G	3294	3298	4	-
H	3265	3265	0	-
I	3263	3265	2	-
J	3294	3293	1	-
K	3293	3296	3	-
L	3264	3264	0	-
M	3296	3296	0	-



### AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3250	3244	6	2595
B	3293	3291	2	2589
C	3295	3296	1	2589
D	3263	3263	0	2589
E	3262	3262	0	2589
F	3295	3291	4	2589
G	3290	3294	4	2593
H	3261	3264	3	2593
I	3261	3267	5	2591
J	3293	3295	2	2590
K	3291	3293	2	2589
L	3264	3263	1	2590
M	3295	3297	2	2595

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		Date-	
		28/10/2023	
Specifications of Details for CBS measurement			



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

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

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

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

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

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





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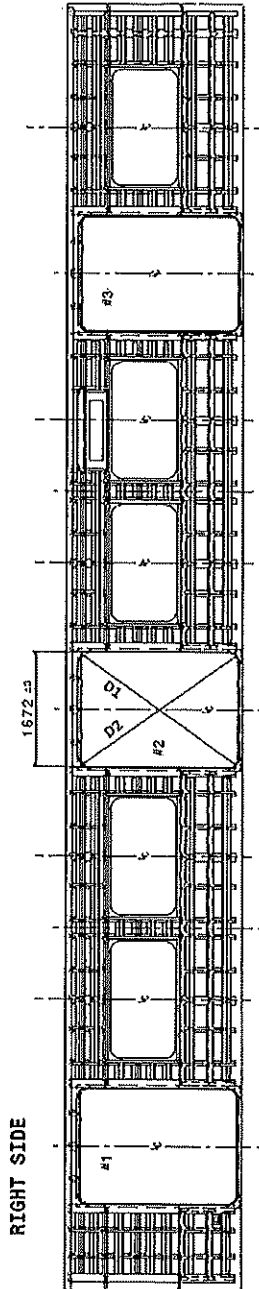
Date-

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28/10/2023

## Specifications of Details for CBS measurement

End #2



End #1

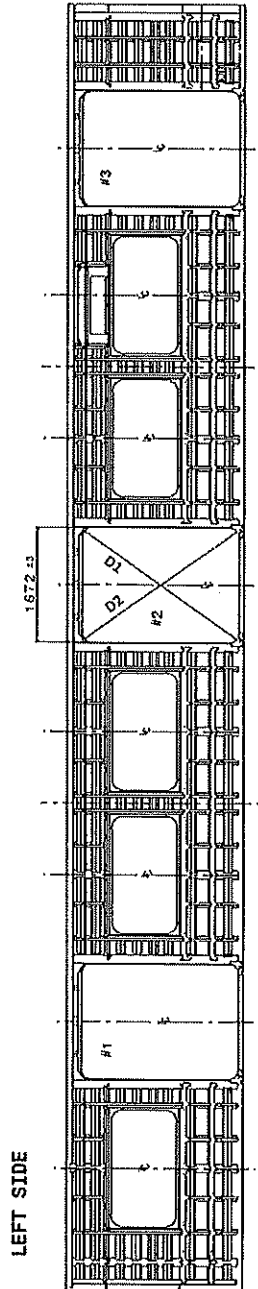
Doors diagonal D1-D2 maximum difference  $\leq 4$  mm

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

Doors length - 1672  $\pm 3$  mm

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

End #1




End #2

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

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

Vão de Portas - 1672  $\pm 3$  mm  
Doors length - 1672  $\pm 3$  mm


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

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		28/10/2023				

**Specifications of Details for CBS measurement**

**Dye penetrant test**


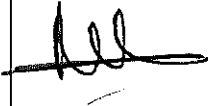

Dye-penetration test to be performed by quality personnel



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)
G1	N/A	To complete REX	Refer to REX. New defects must be added on the REX					

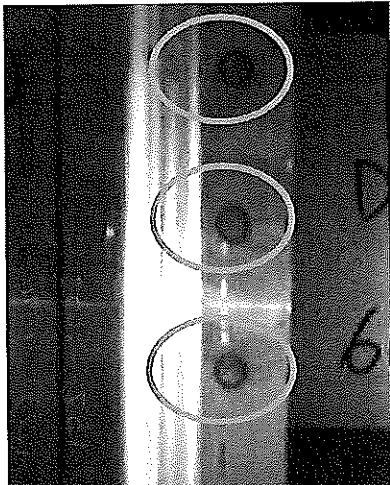
	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29			
		Date-				
		28/10/2023				
<b>Self Inspection - Final Result</b>						
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!	08/06/24	Mthokozisi		
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	08/06/24	Ntokozi		
	NO GO	There are activities pending that impact/stop the activities of the next process Obs: (To describe problems below)				
		There are non-conformities impact the quality of the product and there is no corrective action defined yet)				
In case of "NO GO", describe blocking problems						
In case of "NO GO", the operations manager must define below action plan to ensure "GO":						
Item	Description	Action	Responsible	Due date	Status	


Operations

Quality

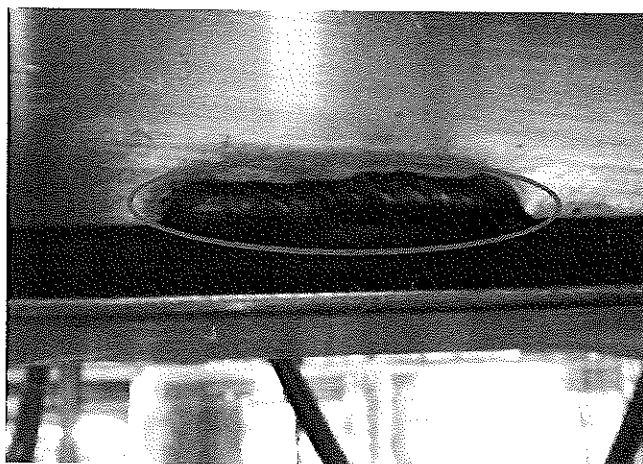
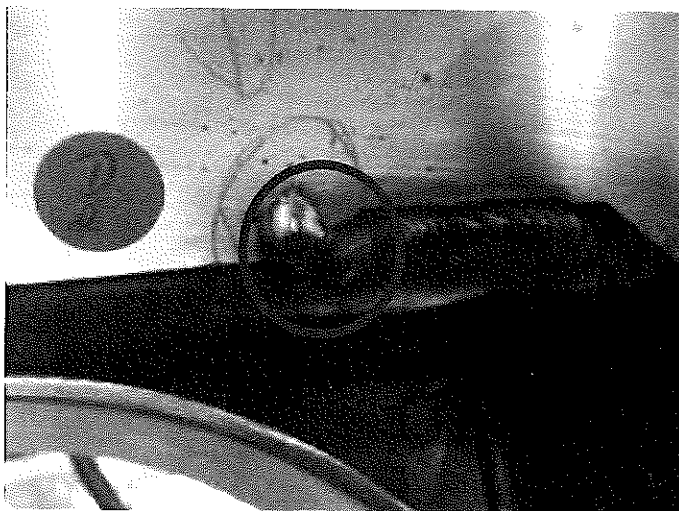
	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	


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



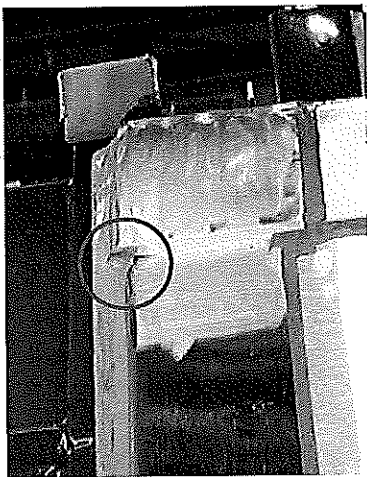
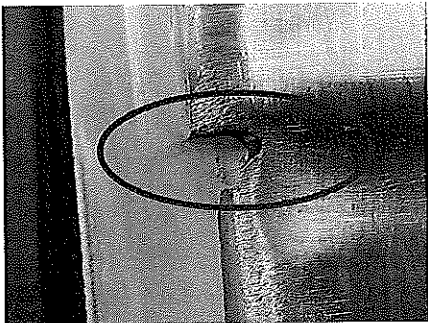
	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA  SI.CB2220.323.V29
		Date-	
		28/10/2023	

**ANNEXURE B: Arc Welding Quality Acceptance Standard**



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

ANNEXURE B: Sealant





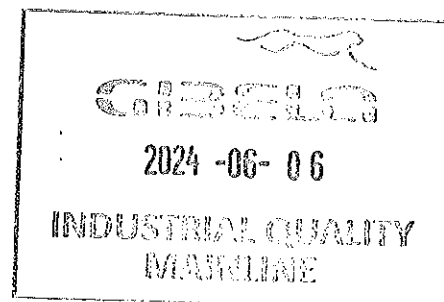
PRASA PROJECT



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 ?
				TCL	MA	ME	MY	TYR			
DT00000223319	AAD00002230963	DT00000223319 Carshell Assembly TC	CB1230	X					X	PRA.CB1230.DT00000223319.V20	YES
REV	DATE	MODIFICATION CONTENT			RESPONSIBLE		NAME		DATE		
0	06/04/2018	GIBELA NEW CREATION			APPROVER	Itumeleng Modiba		09/04/2018			
					CHECKER	Nosizo Pindela		09/04/2018			
					COMPILER	Thanyani 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 <del>Remove Door Measurements</del>			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 Mhombhi		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 Mhombhi		14/06/2022			
					CHECKER	Andani Muthelo		14/06/2022			
					COMPILER	Andani Muthelo		14/06/2022			
27	26/07/2022	Threshold measurements addition			APPROVER	Collins Mhombhi		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	Collins Mhombhi		17/10/2022			
					CHECKER	Ntokozo Zwane		17/10/2022			
					COMPILER	Amogelang Moflampe		17/10/2022			
29	14/04/2023	Added sealant batch number & welding consumables traceability			APPROVER	Vanessa Ntuli		14/04/2023			
					CHECKER	Ntokozo Zwane		14/04/2023			
					COMPILER	Amogelang Moflampe		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	Ntokozo Zwane		06/11/2023			
TRAINSET	CAR	OPERATOR NAME	CHALPS NUMBER	DATE	SELF INSPECTION NUMBER		PAGES				
261	TC2	19015	19015	10/06/2023	SI.CB1230.324.V28		14				





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Carro  
Car:

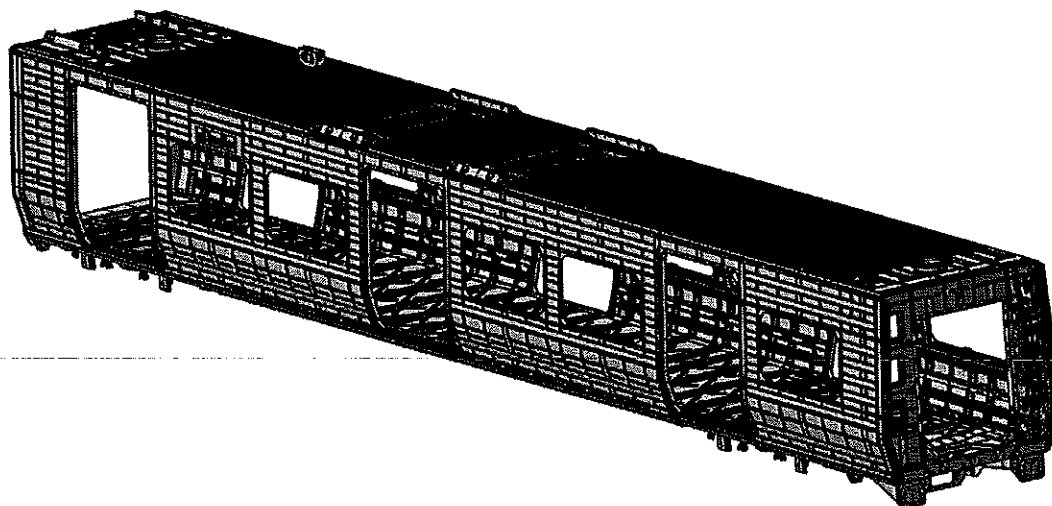
NCR:

Work station:

CB1230



Safety Related



## I - Documentation and Instruments

## I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK	Signature/Date (Operations)	Signature/Date (Quality)
	TC	M1	M2	M3	M4	TC2					
DT00000223319						T	30			N/A	

## I.2 - Instruments Control

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

Instruments	Validation	Calibration or Verification Validation Date	OK	Signature/Date (Operations)	Signature/Date (Quality)
Mensurador tipo GIB0794		20/25/04/25	X		
Combustion meter GIB0130012		27/07/24	X		
Intubador 22713		20/05/25	X		

## 1.3 Consumables

## Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
308 LSI	310180	MIG	X		
308 LSI	227042	MIG	X		

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MANLINE





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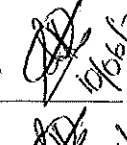
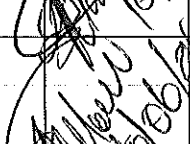
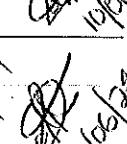
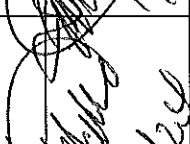
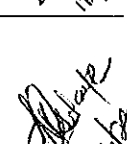
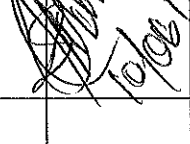
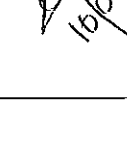
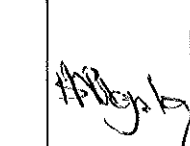

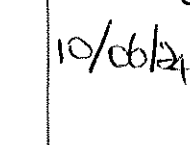
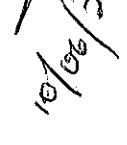
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## II - Control Activities of Production

## II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK			Signature/Date (Operations)	Signature/Date (Quality)						
01	N/A	Assembly according to Instruction Engineering n° DT00000223319	DT00000223319	T			 10/06/24	 10/06/24						
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	T			 10/06/24	 10/06/24						
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 DTD0000210675	T			 10/06/24	 10/06/24						
04	N/A	Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	T			 10/06/24	 10/06/24						
05	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658	X			 10/06/24	 10/06/24						
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: <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% - 60%</td></tr></table>	Temperature Min - Max (1)	Min-Max	10°C - 35°C	Relative humidity Min - Max (1)	Min-Max	25% - 60%	Sealant Batch No: <u>JSF 70-03</u> Exp Date: <u>10/09/24</u>  Actuals Temperature: <u>16°C</u> Humidity: <u>42%</u>	X			 10/06/24	 10/06/24
Temperature Min - Max (1)	Min-Max	10°C - 35°C												
Relative humidity Min - Max (1)	Min-Max	25% - 60%												
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	X			 10/06/24	 10/06/24						



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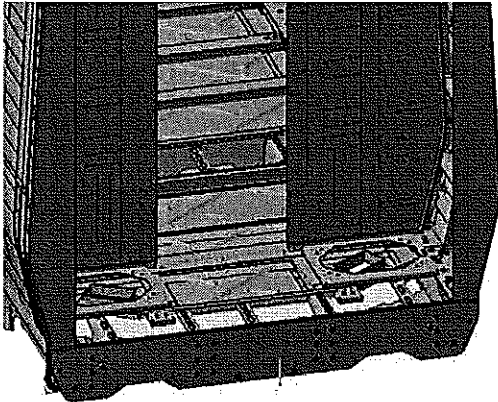
Date-

06/11/2023

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VIEW A



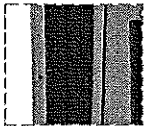
END 1  
SEALANT

OPERATOR  
(Name & sign):

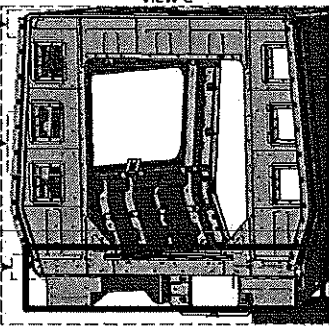
Buhle *[Signature]*

OPERATOR  
(Name & sign):

Buhle *[Signature]*



VIEW C

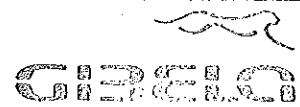


OPERATOR  
(Name&sign):

OPERATOR  
(Name&sign):

OPERATOR  
(Name&sign):

Buhle *[Signature]*



2024 -06- 06

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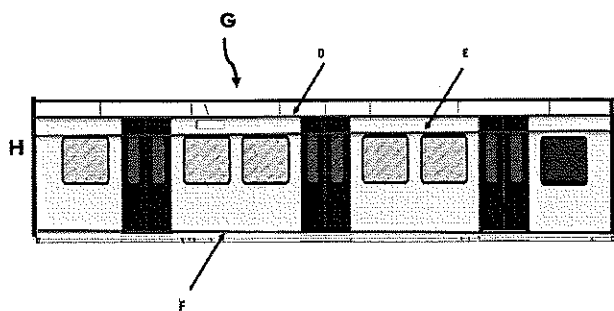
Date-

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

Operator (Name & sign): F (HI Bottom)Operator (Name & sign): F (HI Bottom)Operator (Name & sign): Buhle MphahleleOperator (Name & sign): Buhle MphahleleOperator (Name & sign): D,E,G,H,I TopOperator (Name & sign): D,E,G,H,I TopOperator (Name & sign): Ishenola INUTOperator (Name & sign): Ishenola INUTOperator (Name & sign): SihleOperator (Name & sign): SihleOperator (Name & sign): [Signature]Operator (Name & sign): [Signature]

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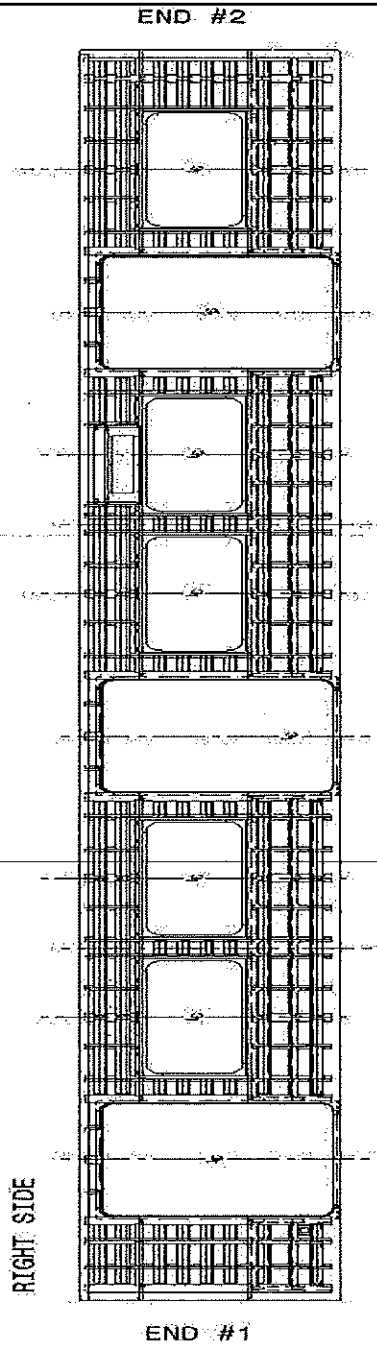


DT00000223319 Carshell Assembly TC

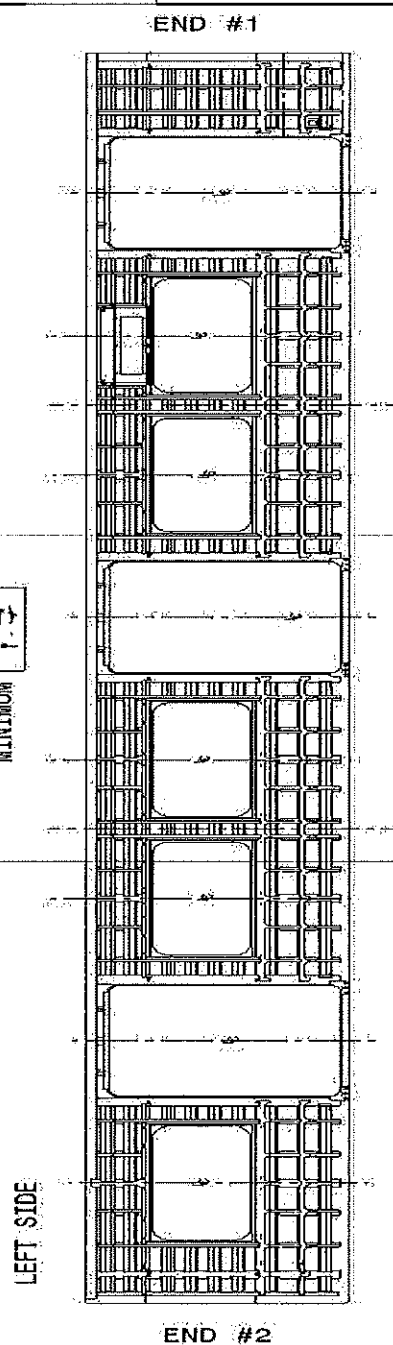
Rev.  
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Date-  
06/11/2023

Project: PRASA  
SI.CB1230.324.V29

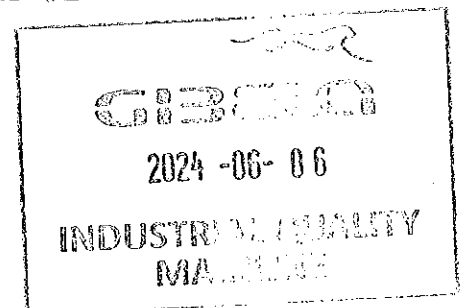
Flatness side left and right maximum of 2mm in the valley to peak measured in 900mm. Recod the maximum and minimum value found and indicate the corresponding region.



MAXIMUM  
2.0  
MINIMUM  
1.3



MAXIMUM  
1.5  
MINIMUM  
1.3





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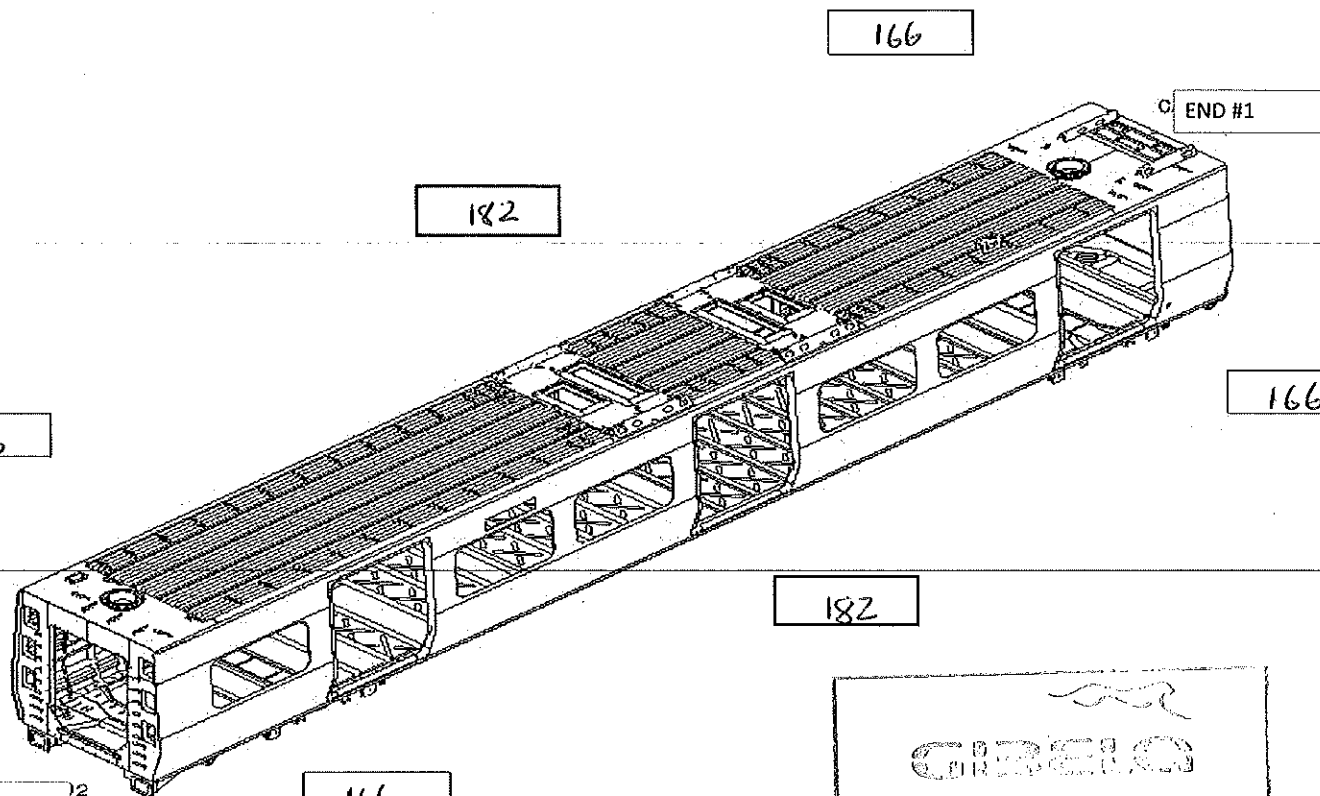
Date-

06/11/2023

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## Specifications of Details for CBS measurement CB1230

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



END #2

2

## MEASURED CAMBER VALUES

RIGHT

+

16

LEFT

1

16

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D1



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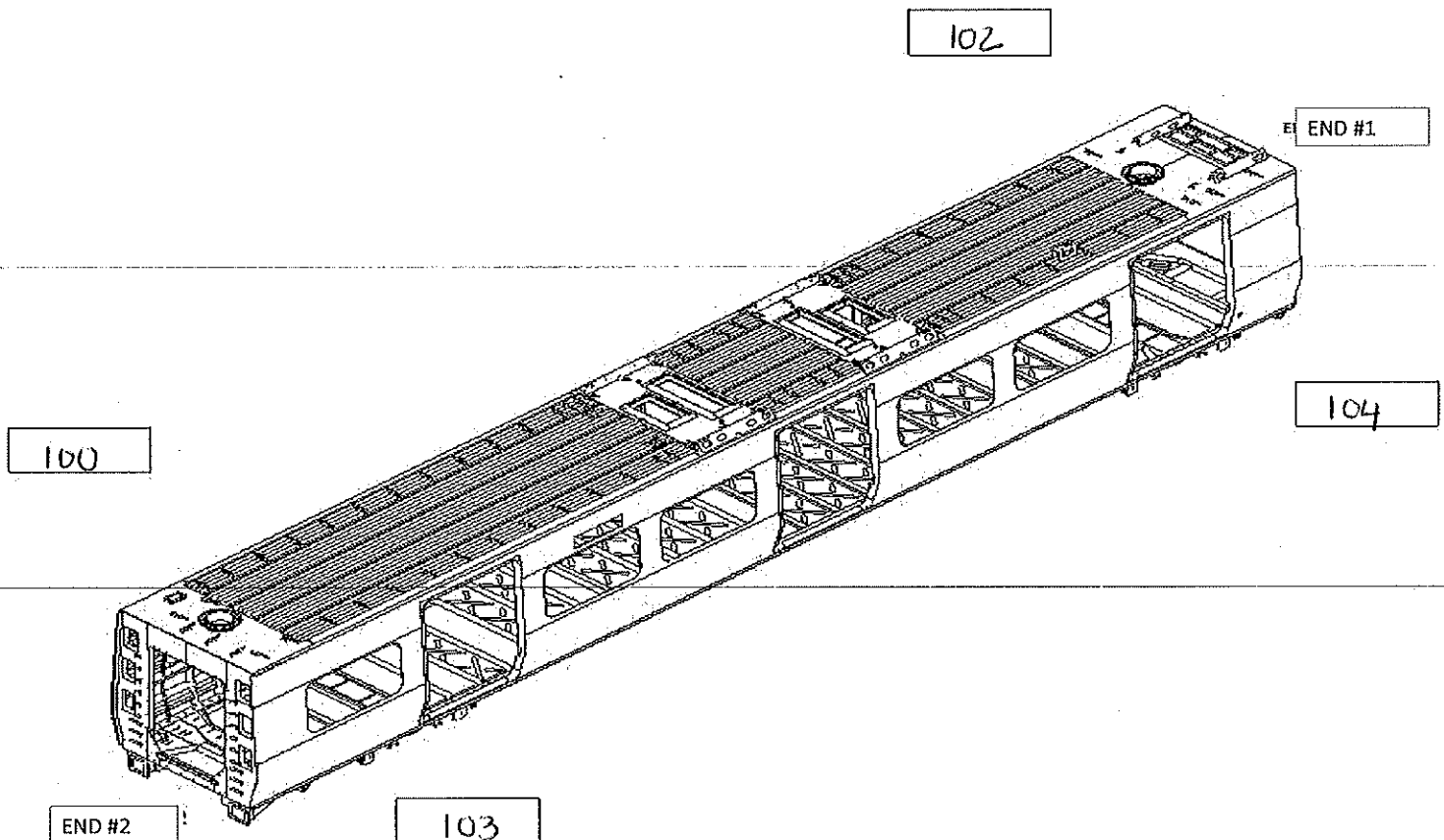
Project: PRASA

Date-  
06/11/2023

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## Specifications of Details for CBS measurement CB1230

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



MEASURED TWIST VALUES END 1

LATERAL

2

LONGITUDINAL

1

1

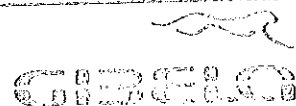
MEASURED TWIST VALUES END 2

LATERAL

3

LONGITUDINAL

2



2024-06-06

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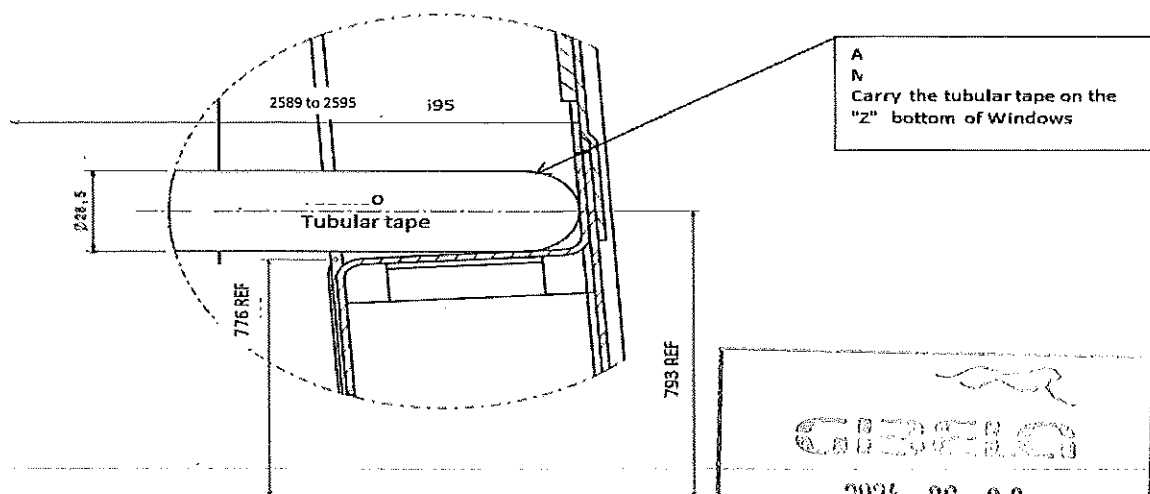
Date-

06/11/2023

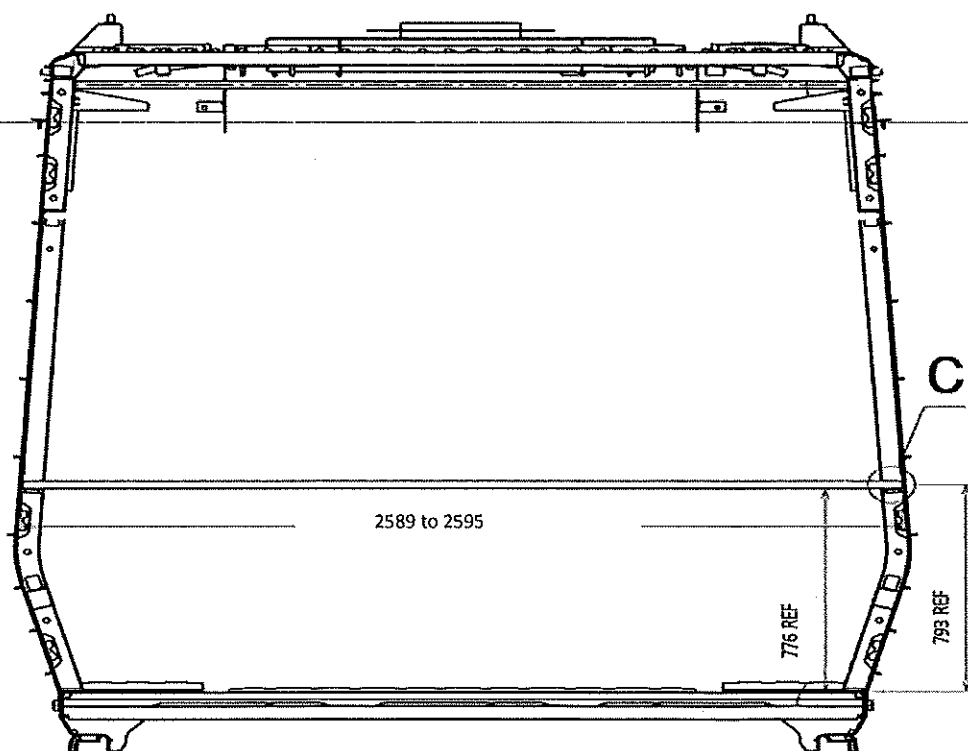
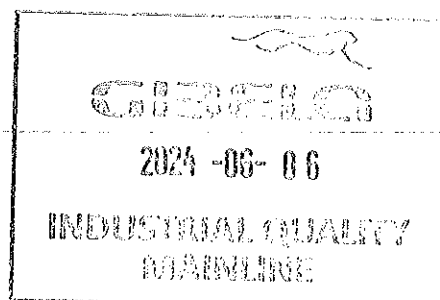
Project: PRASA

SI.CB1230.324.V29

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



Detail C





DT00000223319 Carshell Assembly TC

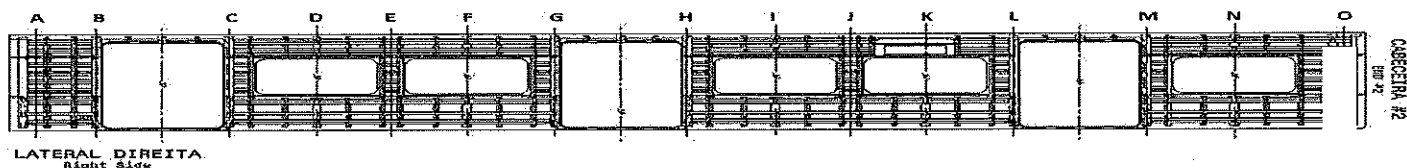
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Date-  
06/11/2023

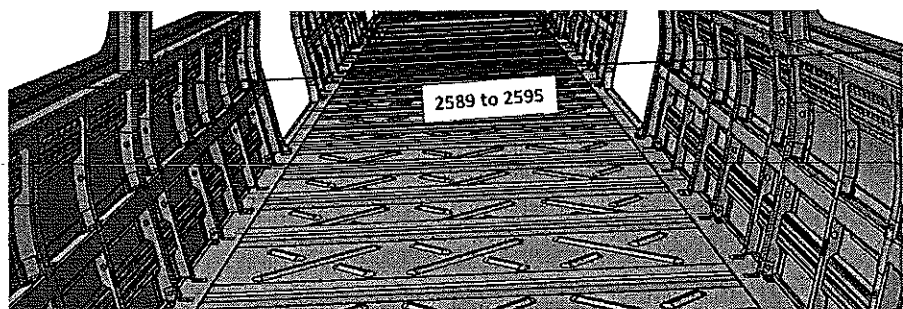
SI.CB1230.324.V29

## Specifications of Details for CBS measurement



2589 to 2595mm

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



GIBELO

2024-06-06

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MAINLINE

## Threshold verification

Nominal value :38

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

BOILER MAKER:

Lerato (signature)

WELDER:

Nonwambele (signature)





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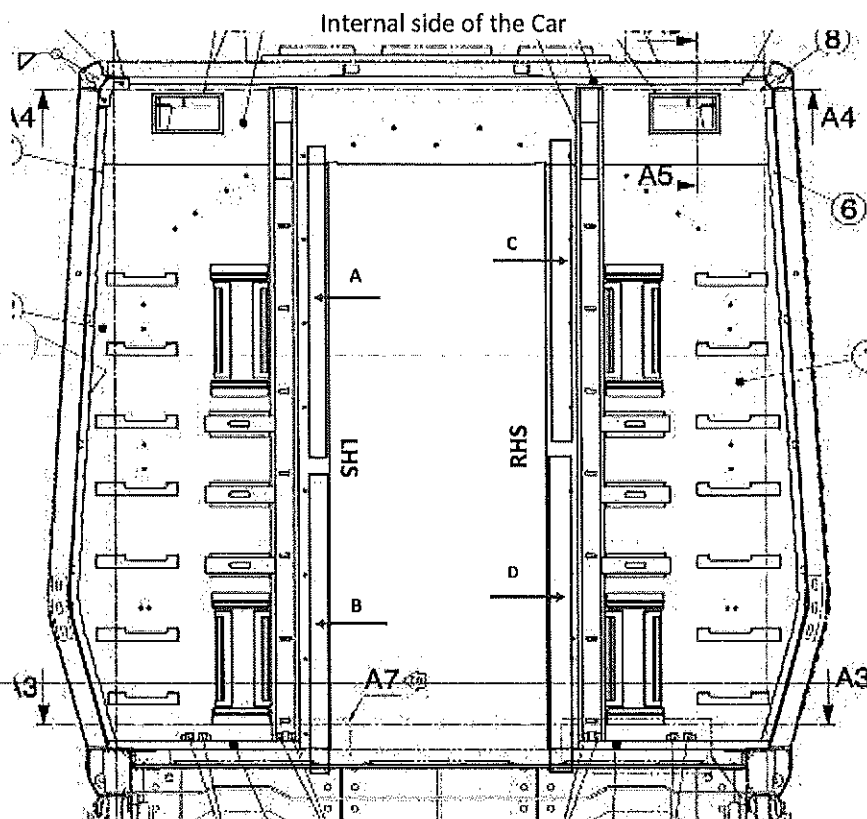
Project: PRASA

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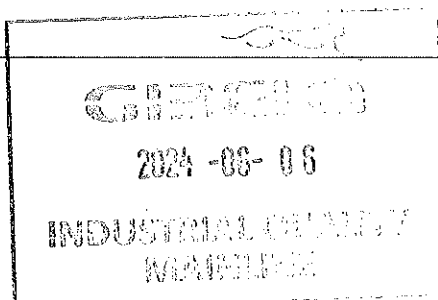
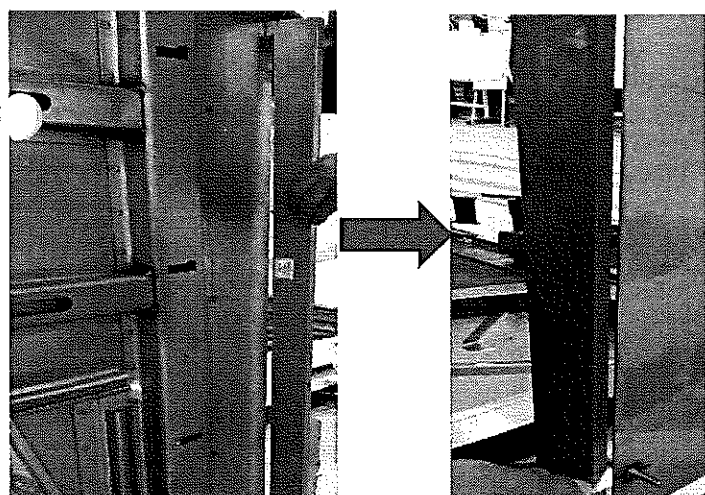
### Specifications of Details for CBS measurement

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	8.2	9.0	0.8
B	8.5	10.0	0.5
C	9.7	10.0	0.3
D	8.0	10.0	2





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**Dye penetrant test**

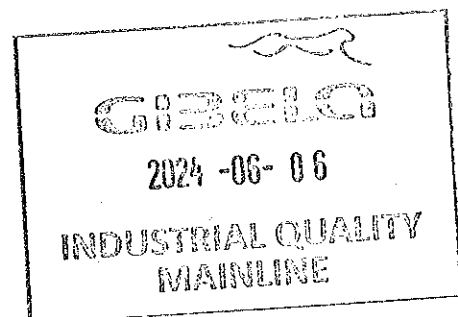
Dye-penetration test to be performed by quality personnel



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

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

Item	Picture/Drawing	Description	Criteria /Record	OK		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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## Self Inspection - Final Result

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
OLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!		10/06/24	Koyoto	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)		10/06/2024	Amogelony	
		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)				

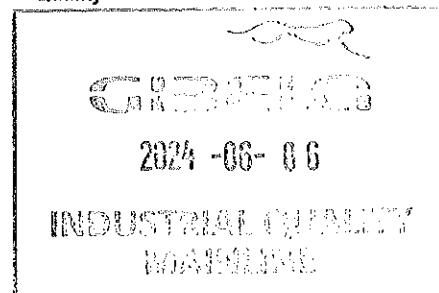
In case of "NO GO", describe blocking problems

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



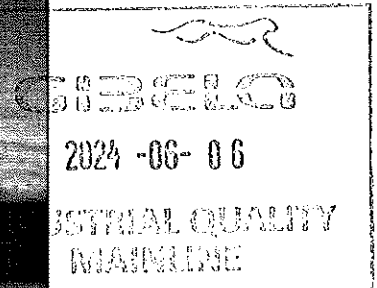
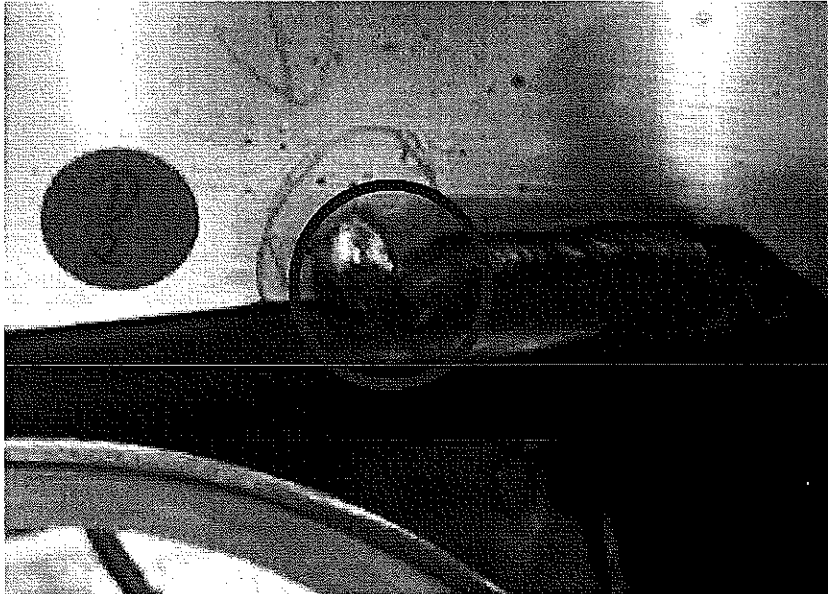


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SI.CB1230.324.V29

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





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ANNEXURE B: SEALANT

