

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.

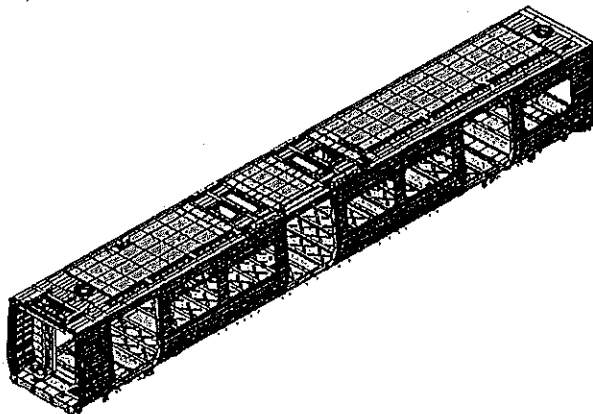
APPLICATION REFERENCE

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

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	09/04/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	09/04/2018
			CHECKER	Nosizo Pindela	09/04/2018
			COMPILER	Thanyani Mathegu	06/04/2018
1	2018/05/18	Team leader and Quality Technician to sign 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	
			REVISED BY	Bongane Masina	
20	19/04/2020	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	
			REVISED BY	Bongane Masina	
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING	APPROVER	Mbhombi Collins	17/08/2021
			CHECKER	Mpho Mulaudzi	
			REVISED BY	Mpho Mulaudzi	
25	21/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombi Collins	21/02/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
26	14/04/2023	Addition of welding consumable traceability	APPROVER	Ntuli Vanessa	14/04/2023
			CHECKER	Mohlampe Amogelang	
			REVISED BY	Mohlampe Amogelang	
27	27/07/2023	Added verification of loaded parts	APPROVER	Ngobeni Tyson	27/07/2023
			CHECKER	Mathapo Kelebone	
			REVISED BY	Mohlampe Amogelang	
28	07/11/2023	Addition of welding traceability	APPROVER	Ngobeni Tyson	07/11/2023
			CHECKER	Andani Muthelo	
			REVISED BY	Ntokozi Zwane	
TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
210	TC1	Lebogo 482833	06/02/24	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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I - Documentation and Instruments

I.1 - Documentation Control

Document	Type of car						Revision	Observation		Signature/Date (Manufacturing)	Signature/Date (Quality)
	TC	LC	LC	LC	LC	LC					
DTR30223319/3	X								✓	N/A	<i>[Signature]</i> 06/12/24

I.2 - Instruments Control

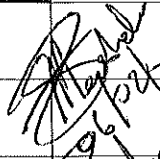
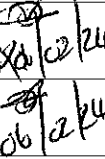
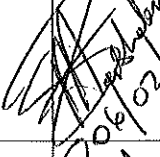
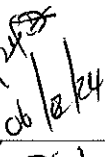
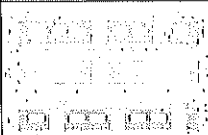
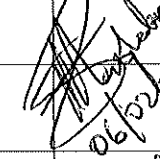
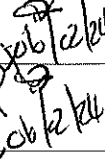
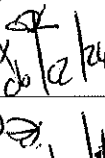
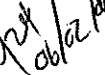
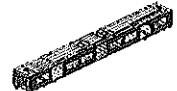
Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Validation	Calibration or Verification Validation Date			Signature/Date (Manufacturing)	Signature/Date (Quality)
Tubular	22713	04/10/2023	✓		<i>[Signature]</i>	<i>[Signature]</i> 06/12/24
30m Tape	CIRIP0084	23/03/31	✓		<i>[Signature]</i>	<i>[Signature]</i> 06/12/24
Laser Tape	125426924	08/01/24	✓		<i>[Signature]</i>	<i>[Signature]</i> 06/12/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

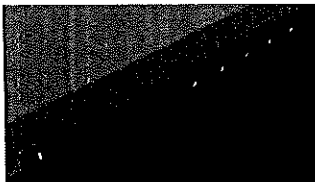
Filler Material	Heat Number	Welding Process			Signature/Date (Manufacturing)	Signature/Date (Quality)
Hamisq 308LSI	327230-74791	MIG	✓		<i>[Signature]</i>	<i>[Signature]</i> 06/12/24
Hamisq 308L	299687-72322	MIG	✓		<i>[Signature]</i>	<i>[Signature]</i> 06/12/24
Hamisq 309	318394-747	MIG	✓		<i>[Signature]</i>	<i>[Signature]</i> 06/12/24

		DTR30223319/3 Carshell Assembly TC		Rev. V28	Project: PRASA		
				Date: 07/11/2023	SI.CB1210.322.V28		
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Not OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls,Endframes,Roof and Underframe)	DT00000284980	✓		 06/02/24	 06/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		 06/02/24	 06/02/24
03		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		 06/02/24	 06/02/24
04	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 06/02/24	 06/02/24
05	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 06/02/24	 06/02/24
06		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 06/02/24	 06/02/24
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	✓		 06/02/24	 06/02/24

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

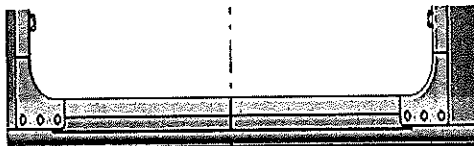
Welder traceability

Roof ring welds



<u>LHS</u>		
Boiler maker (Name & Sign):	<u>LUNGA M/1</u>	Welder (Name & Sign): <u>MTHOKOZISI M/1</u>
END 1		
<u>RHS</u>		
Boiler maker (Name & Sign):	<u>LAWRENCE M/1</u>	Welder (Name & Sign): <u>MTHOKOZISI M/1</u>

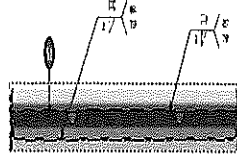
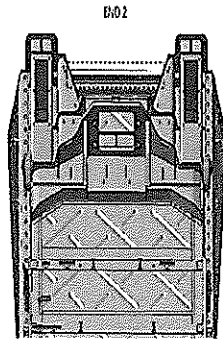
<u>LHS</u>		
Boiler maker (Name & Sign):	<u>LUNGA M/1</u>	Welder (Name & Sign): <u>MTHOKOZISI M/1</u>
END 2		
<u>RHS</u>		
Boiler maker (Name & Sign):	<u>LAWRENCE M/1</u>	Welder (Name & Sign): <u>MTHOKOZISI M/1</u>



<u>LHS</u>	<u>RHS</u>
Boiler maker (Name & Sign): <u>Gerald</u>	Boiler maker (Name & Sign): <u>LUNGA M/1</u>
Welder (Name & Sign): <u>Letumeliso</u>	Welder (Name & Sign): <u>Letumeliso</u>

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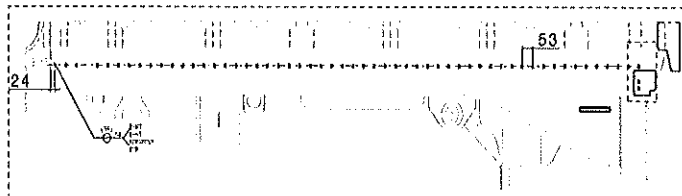
EUF Reinforcement Plates



END 2

Boller maker (Name & Sign): Sean

Welder (Name & Sign): Perthumease

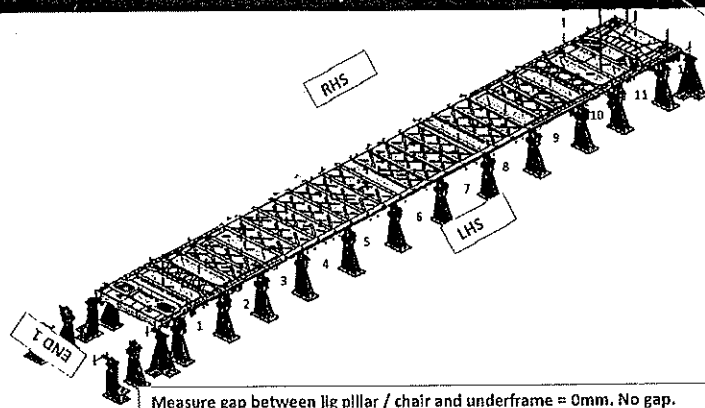


FEDOLI

Operator: LAWRENCE Jolly

	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB1210.322.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 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	0	0	0	0
Right Hand Side	0	0	0	0	0	0	0	0	0	0	0	0

Signature Operations:

Date:

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:



DTR30223319/3 Carshell Assembly TC

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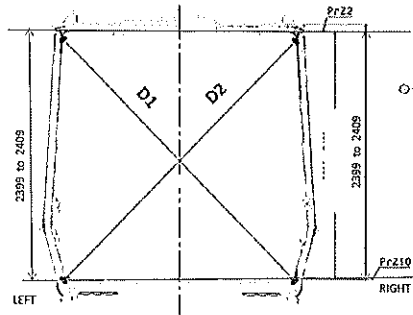
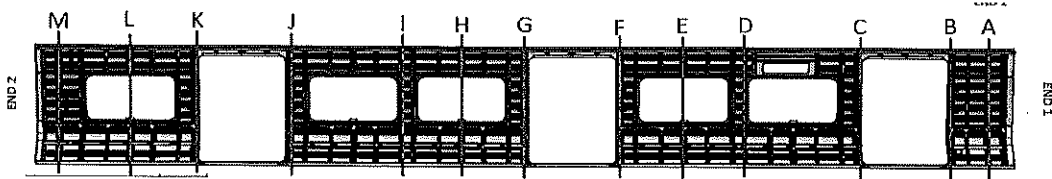
Project: PRASA

Date-

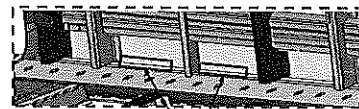
07/11/2023

SI.CB1210.322.V28

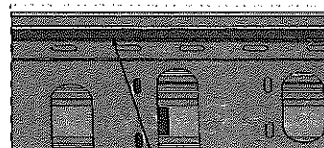
Specifications of Details for CBS measurement



Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.

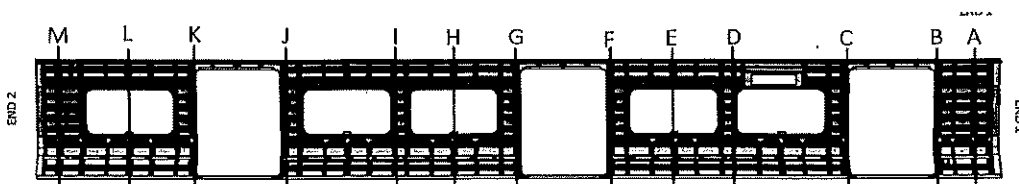


Reinforcement area measurement positions on roof reinforcement area.

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

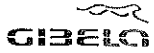
Specifications of Details for CBS measurement

BEFORE WELDING



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

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3265	3266	1	2405	2404	1
B	3268	3270	2	2406	2405	1
C	3267	3269	2	2405	2405	0
D	3266	3266	0	2403	2405	2
E	3264	3266	2	2404	2403	1
F	3267	3268	1	2406	2405	1
G	3265	3266	1	2404	2406	2
H	3267	3268	1	2405	2404	1
I	3267	3269	2	2406	2404	2
J	3264	3266	2	2404	2405	1
K	3266	3267	1	2404	2404	0
L	3268	3269	1	2405	2407	2
M	3265	3267	2	2406	2407	1



DTR30223319/3 Carshell Assembly TC

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V28

Project: PRASA

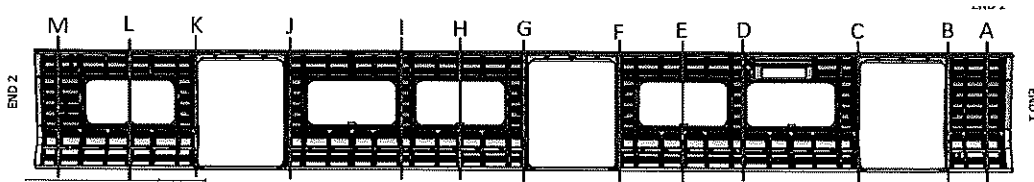
Date-

07/11/2023

SI.CB1210.322.V28

Specifications of Details for CBS measurement

AFTER WELDING



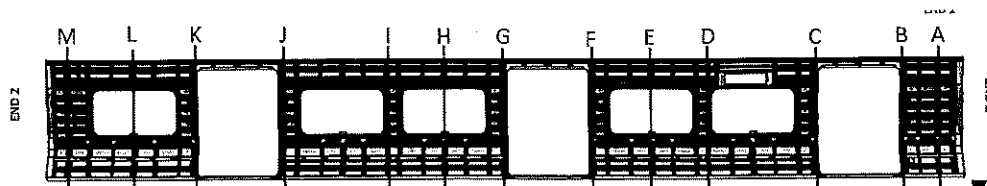
PME: The difference in Height values measured on the LHS and RHS should be $\leq 2\text{MM}$ on each point.

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3267	3268	1	2404	2403	1
B	3295	3297	2	2404	2405	1
C	3297	3296	1	2404	2404	0
D	3267	3268	1	2405	2406	1
E	3265	3267	2	2403	2404	1
F	3297	3299	2	2402	2404	2
G	3296	3298	2	2401	2403	2
H	3266	3267	1	2405	2403	2
I	3268	3269	1	2404	2403	1
J	3297	3296	1	2405	2405	0
K	3296	3295	0	2404	2404	0
L	3265	3267	2	2404	2406	2
M	3295	3297	2	2405	2406	1

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

CBS measurement

BEFORE WELDING



2270 to 2276

2268 & 2274

A 2271

B 2273

C 2269

D 2276

E 2274

F 2272

G 2270

H 2273

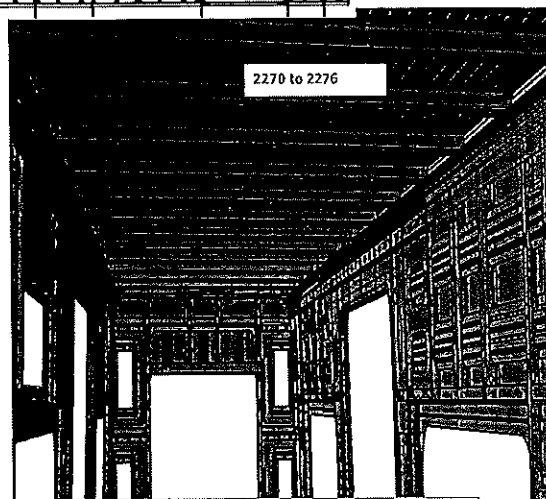
I 2275

J 2274

K 2271

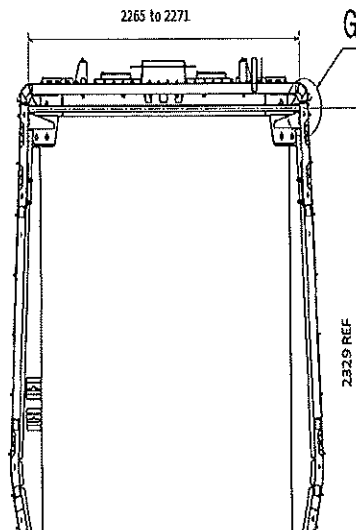
L 2268

M 2270

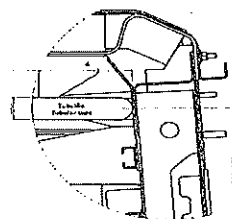


Do not consider reinforcement (Take measurements top area of zee profile

2265 to 2271



2265 to 2271



Detail G
Consider for the reinforcement profile



DTR30223319/3 Carshell Assembly TC

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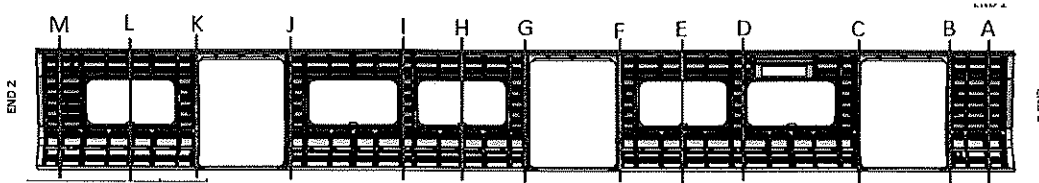
Date-
07/11/2023

Project: PRASA

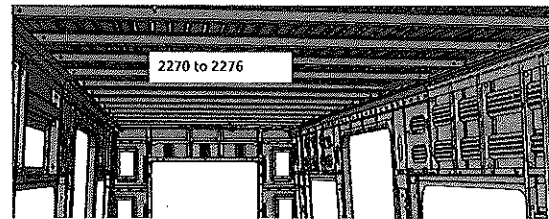
SI.CB1210.322.V28

Specifications of Details for CBS measurement

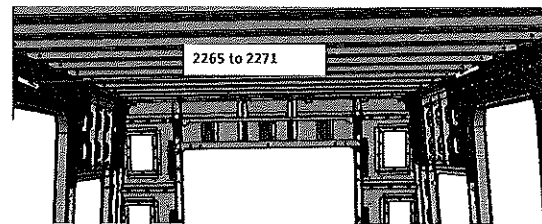
AFTER WELDING



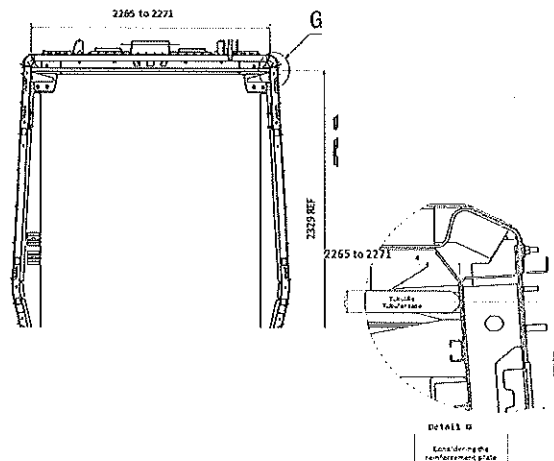
	2265 to 2271	2270 to 2276
A	N/A	2274
B	2271	N/A
C	2270	N/A
D	N/A	2275
E	N/A	2276
F	2268	N/A
G	2270	N/A
H	N/A	2276
I	N/A	2274
J	2271	N/A
K	2269	N/A
L	N/A	2273
M	2270	N/A



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



Take measurement close to radius (considering reinforcement)





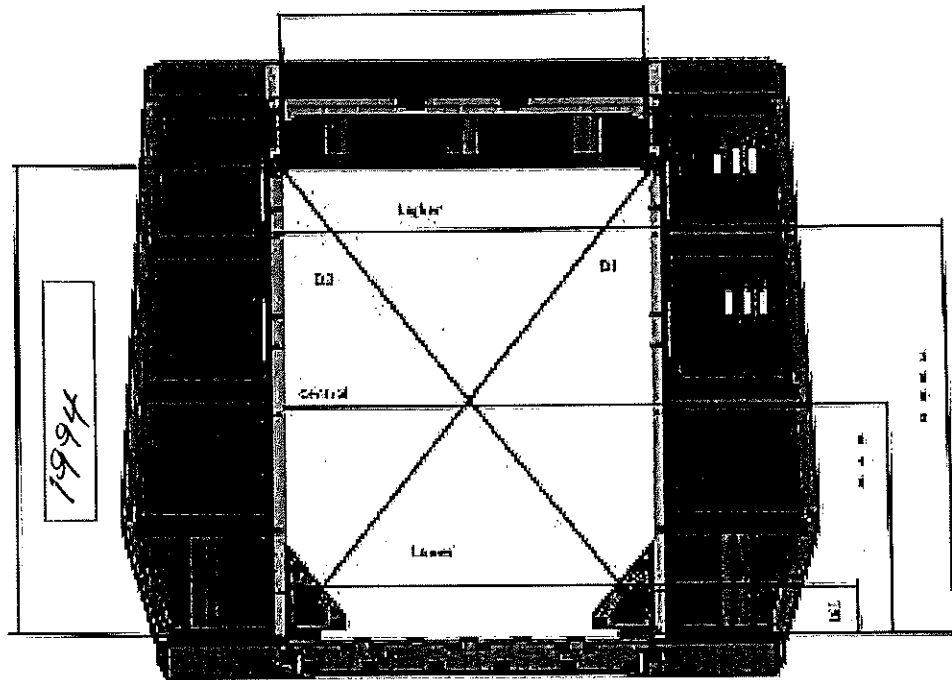
DTR30223319/3 Carshell Assembly TC

Rev.
V28
Date:
07/11/2023

Project: PRASA
SI.CB1210.322.V28

Specifications of Details for CBS measurement

Endframe 2



1180 to 1282 mm

DIAGONAL DIFFERENCE D1-D2 ± 3 mm

Higher Dimension

1381

D1

2415

Central Dimension

1380

D2

2414

Lower Dimension

1380

D1-D2

1

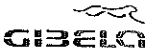
1A

Dye penetrant test

Dye-penetration test to be performed by quality personnel



[illegible]

		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!	06/02/24	Lebo	[Signature]	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	06/02/24	Andani	[Signature]	
	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

GIBELA

PRASA PROJECT

APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

SELF INSPECTION SHEET

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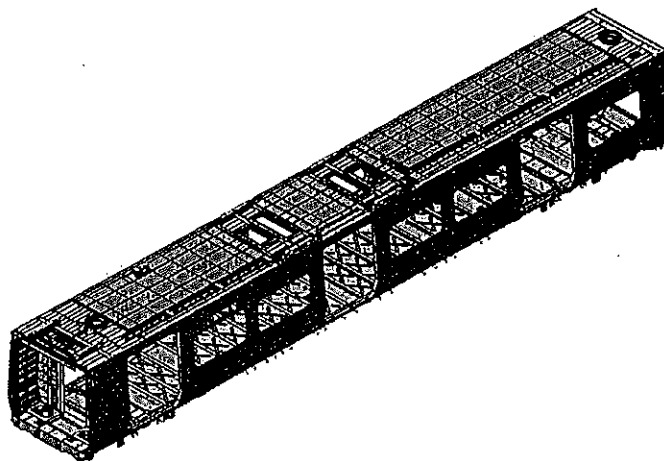
APPLICATION REFERENCE

PROJECT	DRAWING	DESCRIPTION	STATION	TYPE	DATE	WORK INSTRUCTIONS	SAFETY
ETR30233197	A4000124033	Carroll Assembly TC	CB1110	X		PRA.CB1220.DTR3023319/2.V20	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
			COMPILED	Thanyani Mtheggu	06/04/2018
1	23/05/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	23/05/2018
			CHECKER	Nosizo Pindela	23/05/2018
			REVISOR	Ramokane Motama	23/05/2018
2	05/07/2018	Certain dimensional checks added and others moved to CB1210 and CB1230	APPROVER	Itumeleng Modiba	05/07/2018
			CHECKER	Nosizo Pindela	05/07/2018
			COMPILED	Ramokane Motama	05/07/2018
3	2018/06/12	Certain dimensional checks added and others moved to CB1210 and CB1230	APPROVER	Itumeleng Modiba	2018/06/12
			CHECKER	Nosizo Pindela	2018/06/12
			COMPILED	Ramokane Motama	2018/06/12
5	24/01/2019	As per Baseline 10.2	APPROVER	Itumeleng Modiba	24/01/2019
			CHECKER	Nosizo Pindela	24/01/2019
			COMPILED	Vanessa Ntuli	24/01/2019
6	13/03/2019	Added D1 and D2 on Self - Inspection length measurements	APPROVER	Itumeleng Modiba	13/03/2019
			CHECKER	Nosizo Pindela	13/03/2019
			COMPILED	Nosizo Pindela	13/03/2019
7	20/05/2019	Removed roof width	APPROVER	Itumeleng Modiba	20/05/2019
			CHECKER	Nosizo Pindela	20/05/2019
			REVISOR	Nosizo Pindela	20/05/2019
10	22/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	22/08/2019
			CHECKER	Nosizo Pindela	22/08/2019
			REVISOR	Nosizo Pindela	22/08/2019
15	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela	06/08/2020
			CHECKER	Bongane Masina	06/08/2020
			REVISOR	Bongane Masina	06/08/2020
20	19/04/2021	New Baseline 10.2.6	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	19/04/2021
			REVISOR	Bongane Masina	19/04/2021
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING	APPROVER	Mkhombi Collins	17/08/2021
			CHECKER	Mulaudzi Mpho	17/08/2021
			REVISOR	Mulaudzi Mpho	17/08/2021
25	20/02/2022	New Baseline 10.2.6	APPROVER	Mkhombi Collins	20/02/2022
			CHECKER	Andani Muthelo	20/02/2022
			REVISOR	Andani Muthelo	20/02/2022
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Mkhombi Collins	14/06/2022
			CHECKER	Andani Muthelo	14/06/2022
			REVISOR	Andani Muthelo	14/06/2022
27	17/10/2022	Addition of traceability for sealant application and welding	APPROVER	Mkhombi Collins	17/10/2022
			CHECKER	Ntseze Zwane	17/10/2022
			REVISOR	Amogelang Mphahlepe	17/10/2022
28	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntseze Zwane	14/04/2023
			REVISOR	Amogelang Mphahlepe	14/04/2023
29	28/10/2023	Addition of bracket quantity	APPROVER	Ngoeni Tyson	28/10/2023
			CHECKER	Mapho Khebone	28/10/2023
			REVISOR	Amogelang Mphahlepe	28/10/2023
TRAINSET	CAH	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
210	TC1	Moshale 410041	07/09/2024	SI.CB1220.323.V29	17

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		Date-	
		28/10/2023	

Carro Car:	TC1, TC2	NCR:	Work station:	CB1220
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I - Documentation and Instruments

1.1 - Documentation Control

Document	Type of car					Revision	Observation	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
	21	22	23	24	25					
DTR30223319/2	✓					29		✓	N/A	01/12/24

1.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Validation	Calibration or Verification Validation Date	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
Tubular	227B	2024/08/03	✓	01/12/24	
Measuring tape	GIBELA0231	2024/03/30	✓	01/12/24	

1.3 Consumables

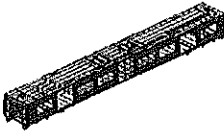
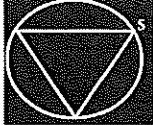
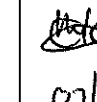
Welding Consumable Control - Used for Special Process

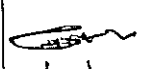
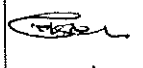
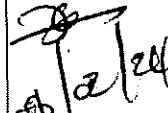
Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
308 1.0mm	0331366	MIG	✓	01/12/24	07/12/24

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

II - Control Activities of Production

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Not OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB1220.0TR30225487/2 Verification of fitment for all reinforcement brackets.	DTR30223319/2	✓		 07/02/2024	 07/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		 07/02/2024	 07/02/24
03	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 07/02/2024	 07/02/24
04	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 07/02/2024	 07/02/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 07/02/2024	 07/02/24
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.	✓		 07/02/2024	 07/02/24
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	✓		 07/02/2024	 07/02/24
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 Relative humidity Min - Max (I) 10°C - 35°C 25% - 80%	Sealant Batch No: <u>ISL 1003</u> Exp Date: <u>1/02/24</u> Actuals Temperature: <u>20°C</u> Humidity: <u>40%</u>	✓		 08/02/24	 07/02/24

		DTR30223319/2 Carshell Assembly TC		Rev. 29	Project: PRASA			
				Date- 28/10/2023	SI.CB1220.323.V29			
09	NA	Verification of sealant application in certain regions in the drawing.	AAD0001241033	✓			 08/02/24	 08/02/24
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	✓			 08/02/24	 08/02/24



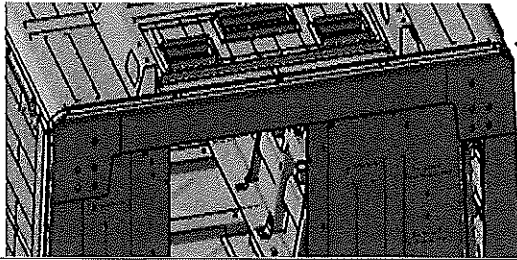
DTR30223319/2 Carshell Assembly TC

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28/10/2023

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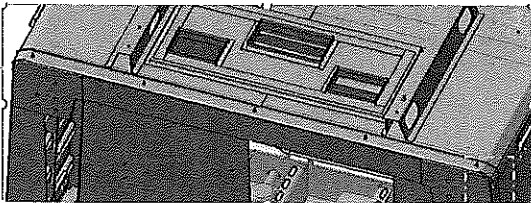
END 1
SEALANT

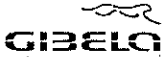
OPERATOR
(Name & sign):

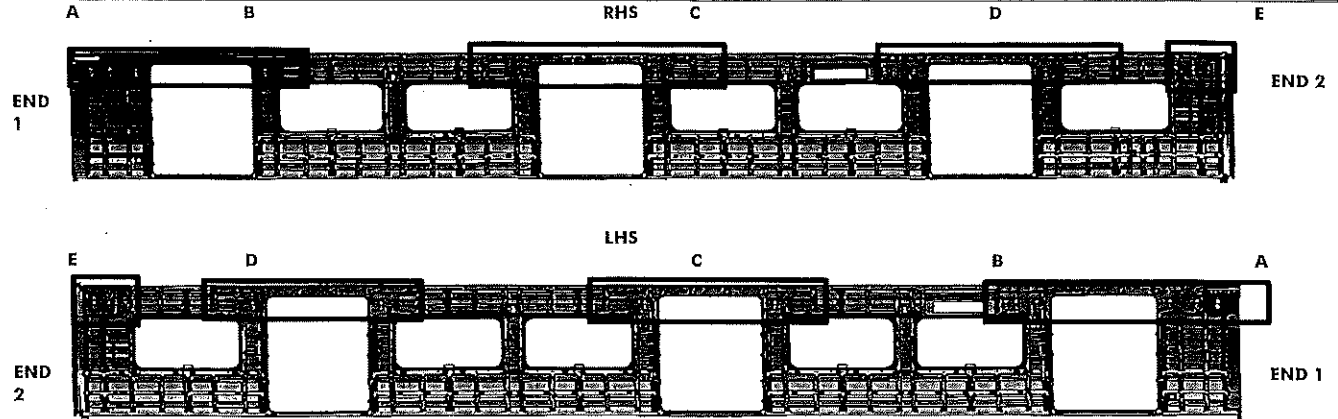
Priscilla [Signature]

OPERATOR
(Name & sign):

Priscilla [Signature]



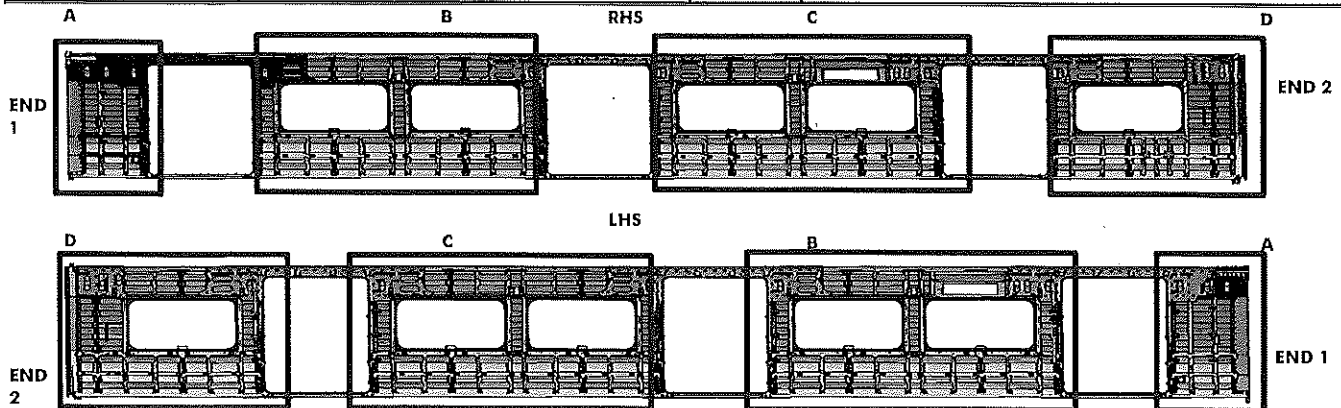
	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB1220.323.V29
		Date-	
		28/10/2023	



REINFORCEMENT WELDING

AREA	LHS	RHS
A	Operator (Name&sign): <u>Nkulanezi Djeu</u>	<u>Mundehlo</u>
B	Operator (Name&sign): <u>Nkulanezi Djeu</u>	<u>Thulani</u>
C	Operator (Name&sign): <u>Thulani</u>	<u>Thulani</u>
D	Operator (Name&sign): <u>Thulani</u>	<u>Thulani</u>
E	Operator (Name&sign): <u>Thulani</u>	<u>Thulani</u>

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



BRACKETING

C-RAILS: Operator: INSTALLATION
DOOR MECHANISMS: Operator: Piscilla
TAPPING PADS: Operator: Teodoro
SEAT & LUGGAGE BRACKETS: Operator: Monsieur, Masuadu
SEAT BRACKETS VERIFICATION: Operator: Mkuzi, A. Johnny
Operator: Levi

AREA	WELDING	
	LHS	RHS
A (Seat brackets)	Operator (Name&sign): <u>Teodoro</u>	Operator (Name&sign): <u>Teodoro</u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign): <u>Teodoro</u>	Operator (Name&sign): <u>Teodoro</u>
B (Seat brackets)	Operator (Name&sign): <u>Teodoro</u>	Operator (Name&sign): <u>Teodoro</u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign): <u>Teodoro</u>	Operator (Name&sign): <u>Teodoro</u>
C (Seat brackets)	Operator (Name&sign): <u>Monsieur, Masuadu</u>	Operator (Name&sign): <u>Monsieur, Masuadu</u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign): <u>Monsieur, Masuadu</u>	Operator (Name&sign): <u>Monsieur, Masuadu</u>
D (Seat brackets)	Operator (Name&sign): <u>Monsieur, Masuadu</u>	Operator (Name&sign): <u>Monsieur, Masuadu</u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign): <u>Monsieur, Masuadu</u>	Operator (Name&sign): <u>Monsieur, Masuadu</u>

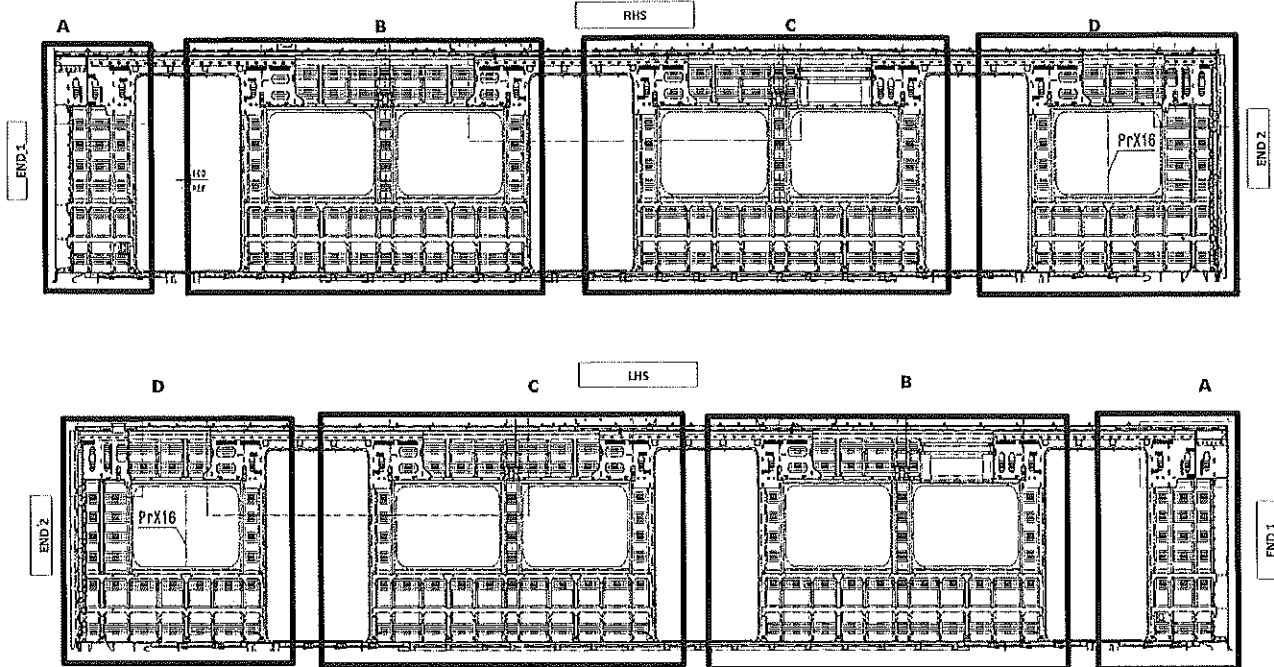
	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB1220.323.V29
		Date-	
		28/10/2023	

ENDS

END 2 TAPPING PADS WELDING: Operator (Name&sign): M. Marsiglio A.O.

[Faint circular stamp or signature]

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	4		
EARTH BUSH	A	1		
	B	4		
	C	5		
	D	4		

ROOF ENDS:

CRAILS 2 OFF END 2
EARTH BUSH 4 OFF END 2

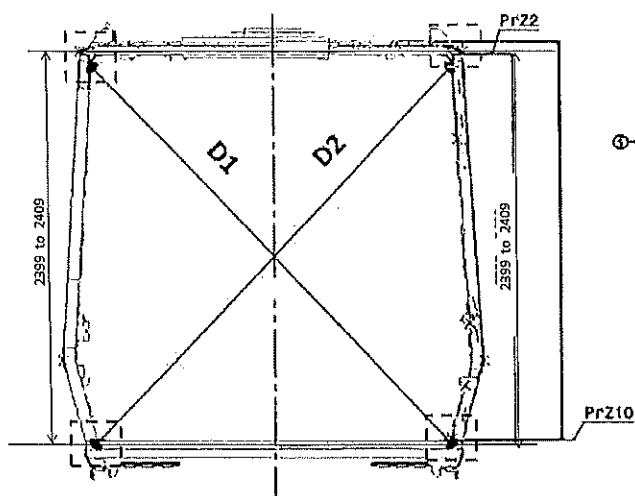
VERIFICATION BY: _____

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

ROOF ENDS:

CRAILS 2 OFF END 2
EARTH BUSH 4 OFF END 2

VERIFICATION BY: [Signature]

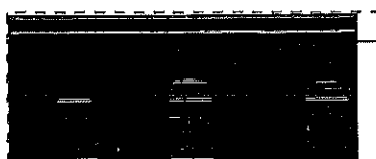


Take measurement close to radius

①



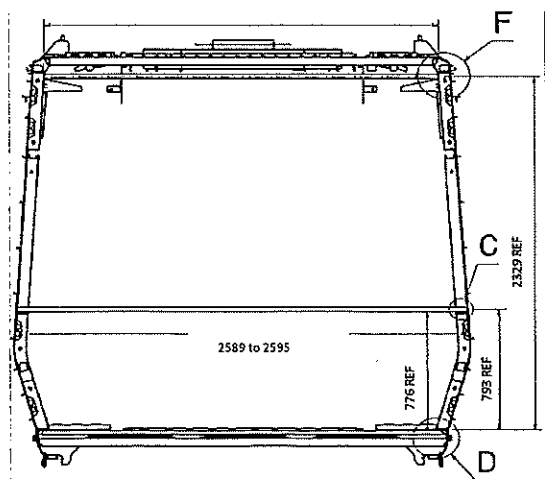
Measurement positions on central and side wall flanges



Reinforcement area measurement positions on top reinforcement area



Measurement positions on side wall and side wall corner



Take measurement close to radius



DTR30223319/2 Carshell Assembly TC

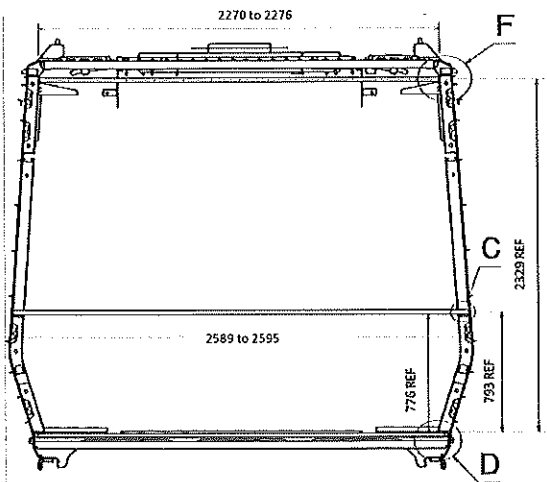
Rev.
29

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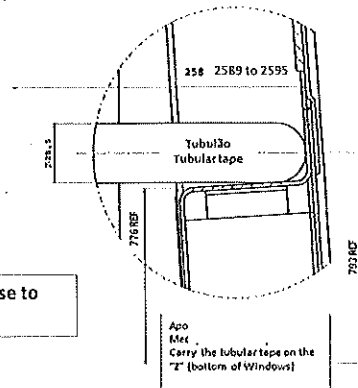
28/10/2023

Project: PRASA

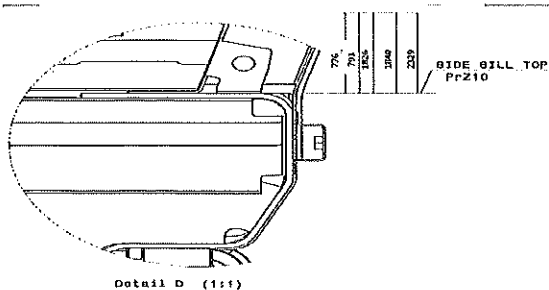
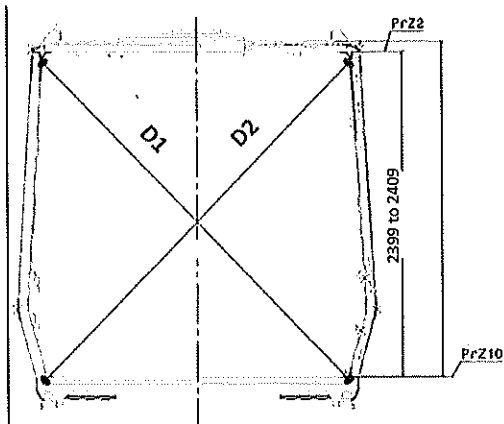
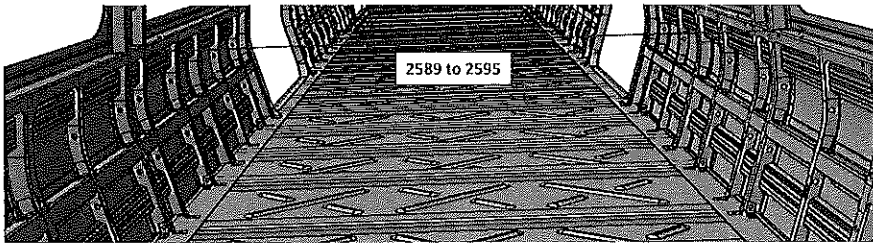
SI.CB1220.323.V29



Take measurement close to radius



Detail C





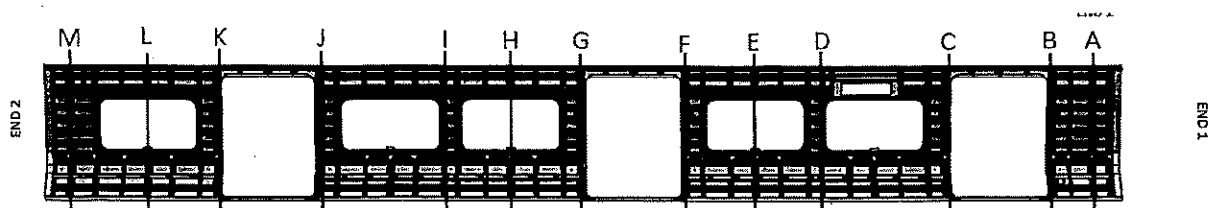
DTR30223319/2 Carshell Assembly TC

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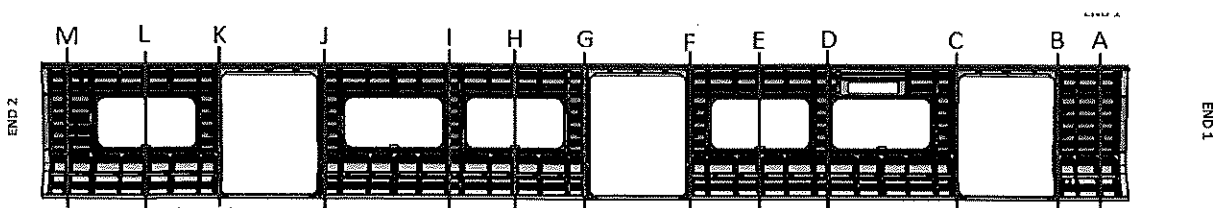
Date-
28/10/2023

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BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3295	3294	1	
B	3294	3294	0	
C	3297	3299	2	
D	3268	3266	2	
E	3267	3266	1	
F	3299	3298	1	
G	3299	3298	1	
H	3267	3266	1	
I	3267	3269	2	
J	3298	3295	3	
K	3299	3297	2	
L	3265	3269	4	
M	3295	3298	3	

N/A

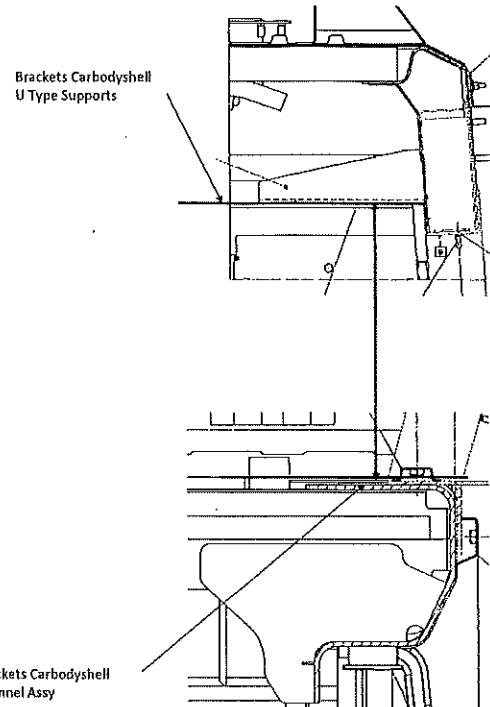
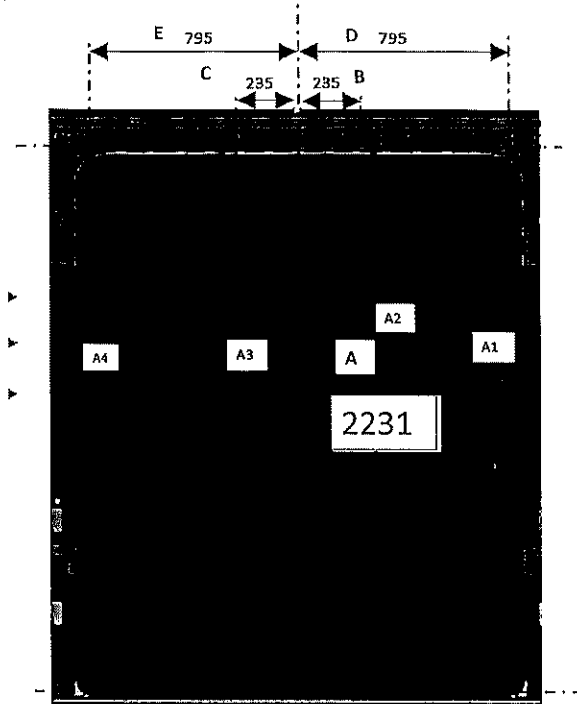


AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3296	3298	2	2592
B	3297	3298	1	2594
C	3298	3298	0	2594
D	3266	3269	3	2593
E	3268	3265	3	2594
F	3298	3301	3	2594
G	3298	3298	0	2594
H	3269	3267	2	2595
I	3266	3269	3	2593
J	3299	3294	5	2590
K	3299	3297	2	2594
L	3266	3270	4	2591
M	3295	3297	2	2592

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		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	2232
A2	2230 to 2232	2231
A3	2230 to 2232	2231
A4	2230 to 2232	2232
B	234 to 236	236
C	234 to 236	235
D	794 to 796	796
E	794 to 796	795

DOOR 3 - LHS

	VALUE	ACTUAL
A1	2230 to 2232	2233
A2	2230 to 2232	2232
A3	2230 to 2232	2232
A4	2230 to 2232	2233
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	2231
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	796

DOOR 2 - RHS

	VALUE	ACTUAL
A1	2230 to 2232	2233
A2	2230 to 2232	2232
A3	2230 to 2232	2232
A4	2230 to 2232	2233
B	234 to 236	234
C	234 to 236	234
D	794 to 796	796
E	794 to 796	796

DOOR 3 - RHS

	VALUE	ACTUAL
A1	2230 to 2232	2232
A2	2230 to 2232	2231
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

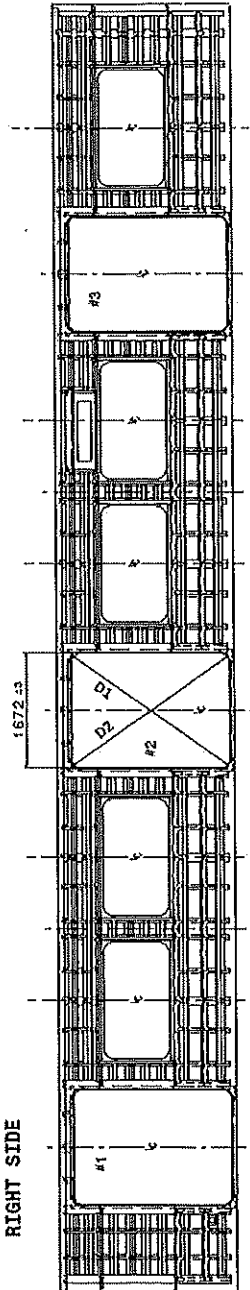


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Specifications of Details for CB5 measurement

End #2



End #1

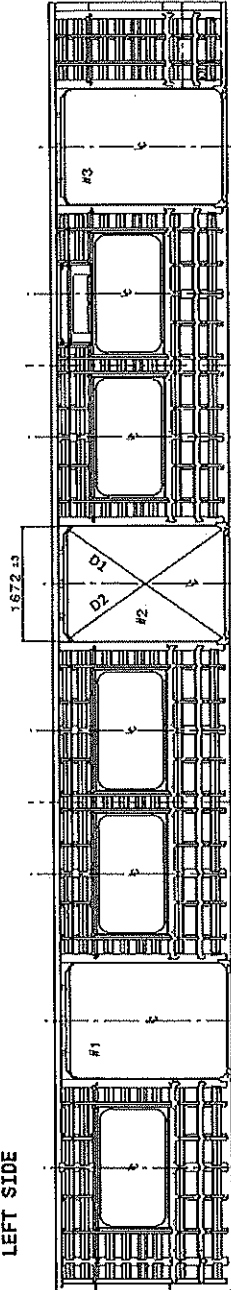
Doors diagonal D1-D2 maximum difference $\leq 4\text{mm}$

	#1	#2	#3
D1	2769	2750	2767
D2	2768	2768	2769
D1-D2	1	2	2

Doors length - 1672 $\pm 3\text{mm}$

	#1	#2	#3
HIGHER DIMENSION	1673	1671	1670
CENTRAL DIMENSION	1673	1672	1670
LOWER DIMENSION	1672	1672	1671

End #1



End #2

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

	#1	#2	#3
D1	2750	2769	2750
D2	2768	2767	2769
D1-D2	2	2	1

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

	#1	#2	#3
DIMENSÃO SUPERIOR	1670	1671	1673
HIGHER DIMENSION	1670	1671	1672
CENTRAL DIMENSION	1669	1671	1672
LOWER DIMENSION			

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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	Qty	Signature/Date (Manufacturing)	Signature/Date (Quality)

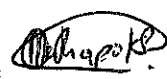
N.2 - Check List REX

Check List Items

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

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		28/10/2023		

Self Inspection - Final Result

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!	05/02/24	Machudi		
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	07/02/24	Richmond		
	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

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

REF: REFLECTIVITY AND RATIO												
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 	
				TC1	M6	M3	M2	M1	TC2			
☐	DT00000223319	AAD0001238963	DT00000223319 Carshell Assembly TC	CB1180						X	PRA.CB1230.DT0000012 23319.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 Remove Door Measurements	APPROVER	Itumeleng Modiba	13/03/2019
			CHECKER	Nosizo Pindela	13/03/2019
			COMPILER	Nosizo Pindela	13/03/2019
7	17/09/2019	Added Cab Fire Barrier Flatness Measurements	APPROVER	Itumeleng Modiba	17/09/2019
			CHECKER	Nosizo Pindela	17/09/2019
			COMPILER	Nosizo Pindela	17/09/2019
10	20/09/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	20/09/2019
			CHECKER	Nosizo Pindela	20/09/2019
			COMPILER	Nosizo Pindela	20/09/2019
15	28/01/2021	New Baseline 10.2.6	APPROVER	Timothy Maimela	28/01/2021
			CHECKER	Bongane Masina	28/01/2021
			COMPILER	Bongane Masina	28/01/2021
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	19/04/2021
			COMPILER	Bongane Masina	19/04/2021
25	20/04/2022	New Baseline change 10.3.1	APPROVER	Collins 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	
			COMPILER	Andani Muthelo	
27	26/07/2022	Threshold measurements addition	APPROVER	Collins Mhombhi	26/07/2022
			CHECKER	Andani Muthelo	
			COMPILER	Andani Muthelo	
28	17/10/2022	Addition of traceability for sealant application	APPROVER	Collins Mhombhi	17/10/2022
			CHECKER	Ntokozo Zwane	
			COMPILER	Amogelang Mohlampe	
29	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntokozo Zwane	
			COMPILER	Amogelang Mohlampe	
30	06/11/2023	Added traceability for thresholds for boiler makers and welders	APPROVER	Tyson Ngobeni	06/11/2023
			CHECKER	Andani Muthelo	
			COMPILER	Ntokozo Zwane	
TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
210	TC1	Gibela 436955	03/02/24	SI.CB1230.324.V28	14



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Date-

SI.CB1230.324.V29

06/11/2023

Carro
Car:

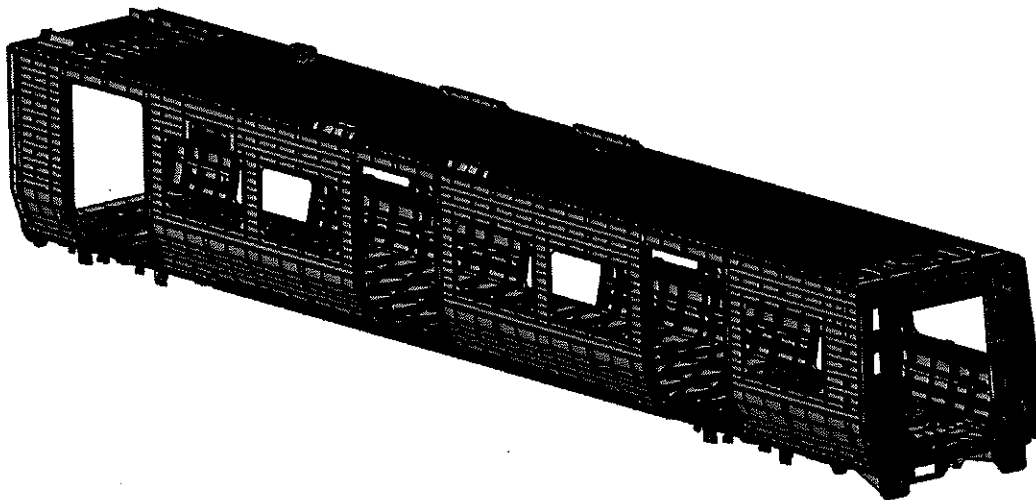
NCR:

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)
	TC1	M1	M2	M3	M4	TC2						
DT00000223319	X						30		OK		N/A	08/02/24 8 08/02/24

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)
Tubular	02713	06/06/24	OK		08/02/24 8	
Measuring tape	GIB2941	06/06/24	OK		08/02/24 8	08/02/24
Combination Square	GIB0072	07/07/24	OK		08/02/24 8	08/02/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

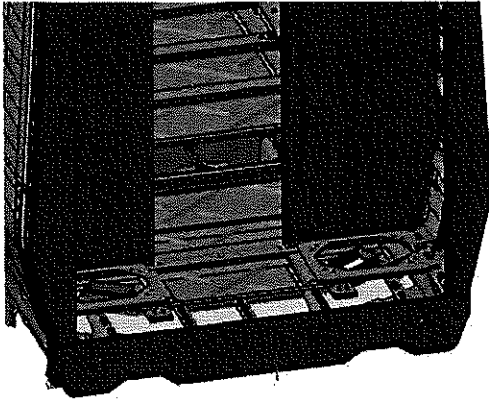
Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 L	310180	Mig Welding	OK		08/02/24 8	
ER 308 L	0996	Tig Welding	OK		08/02/24 8	08/02/24

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	OK			08/02/24 S	08/02/24 
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	OK			08/02/24 S	08/02/24 
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 DTD0000210675	OK			08/02/24 S	08/02/24 
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.	OK			08/02/24 S	08/02/24 
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	OK			08/02/24 S	08/02/24 
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 (I) Min-Max Relative humidity Min - Max (I) Min-Max 10°C - 35°C 25% - 80%	Sealant Batch No: <u>ISR 70-03</u> Exp Date: <u> </u> / <u>05</u> / <u>24</u> Actuals Temperature: <u>26°C</u> Humidity: <u>61%</u>	OK			08/02/24 S	08/02/24 
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	OK			08/02/24 S	08/02/24 

VIEW A



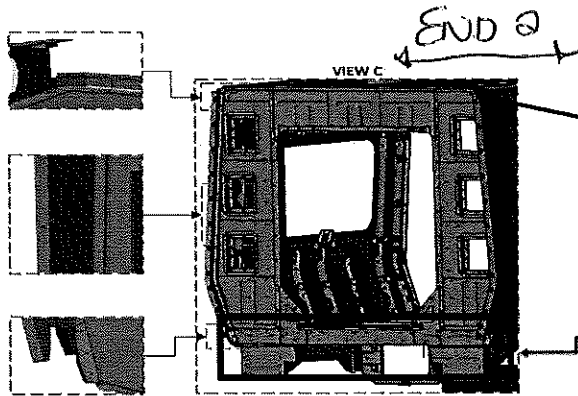
**END 1
SEALANT**

OPERATOR
(Name & sign):

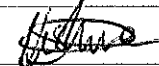
Sinle 

OPERATOR
(Name & sign):

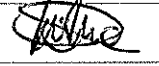
Sinle 



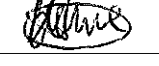
OPERATOR
(Name&sign):

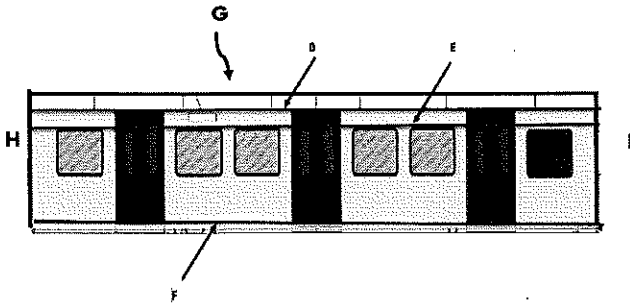
LERDY 

OPERATOR
(Name&sign):

LERDY 

OPERATOR
(Name&sign):

LERDY 



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

Operator (Name & sign) : D,E,F,G,H,I

RHS
D,E,F,G,H,I

Operator (Name & sign) : Shile

Operator (Name & sign) : Shile

Operator (Name & sign) : [Signature]

Operator (Name & sign) : [Signature]

Operator (Name & sign) : _____

Operator (Name & sign) : _____

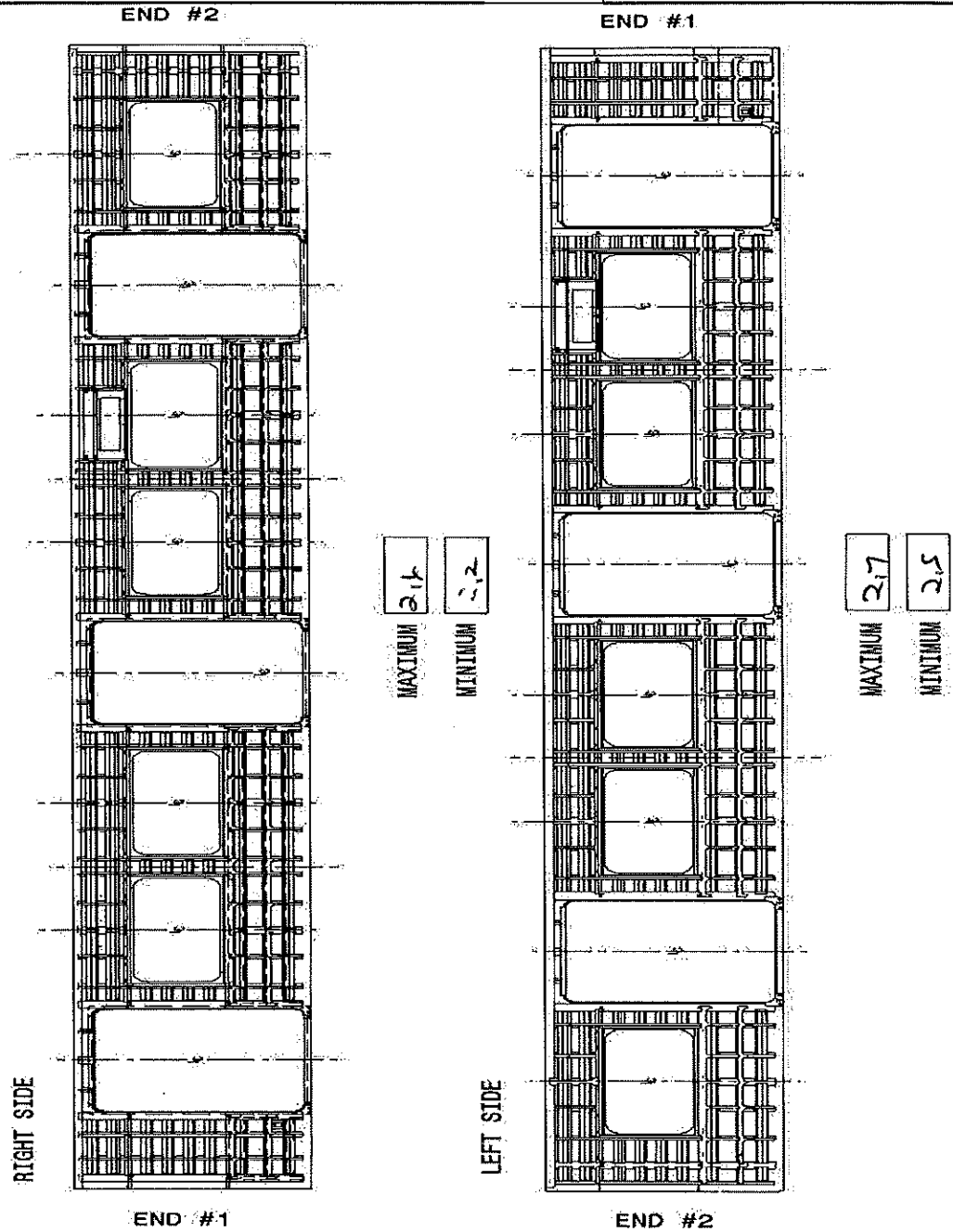
Operator (Name & sign) : _____

Operator (Name & sign) : _____

Operator (Name & sign) : _____

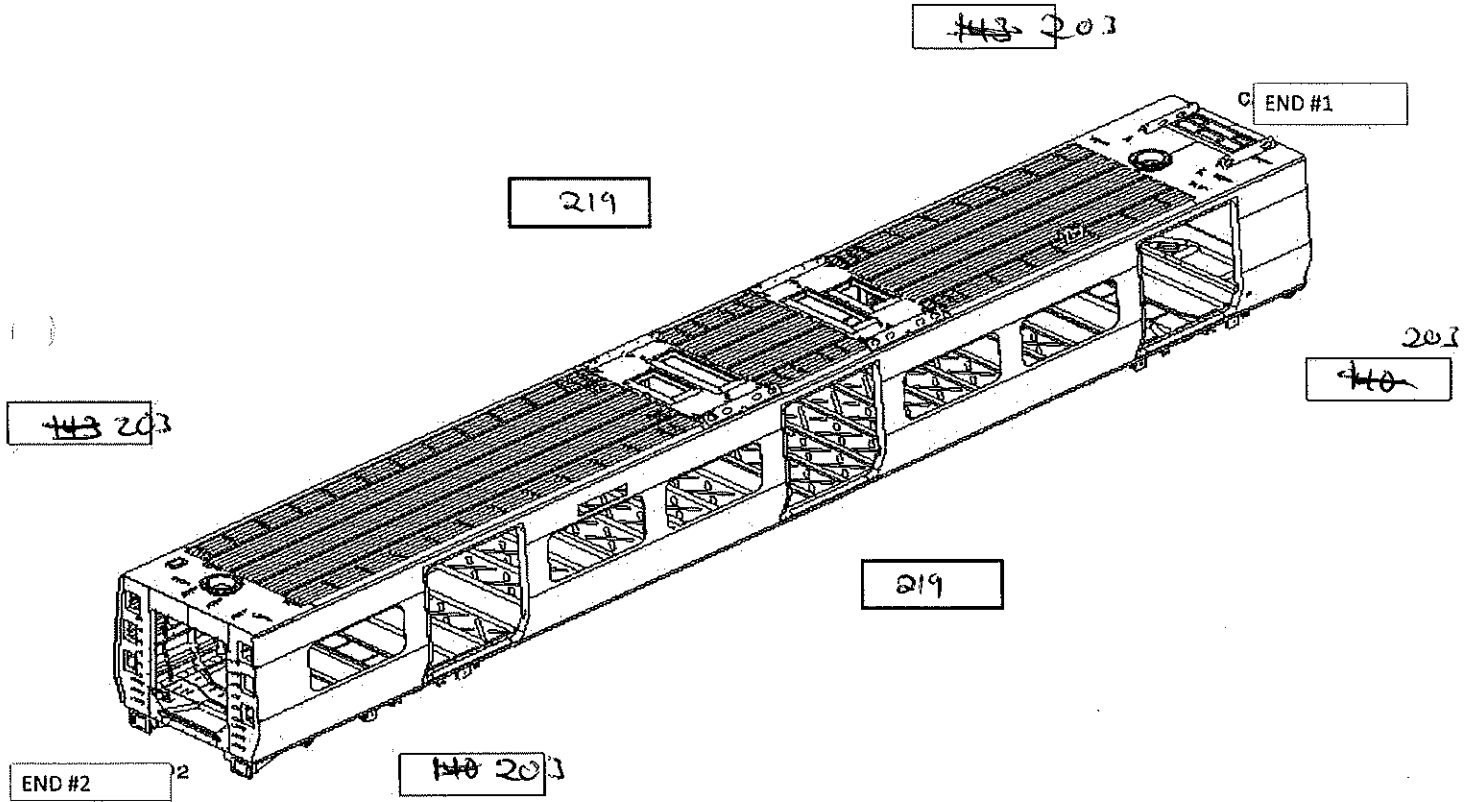
Operator (Name & sign) : _____

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.



Specifications of Details for CBS measurement CB1230

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



MEASURED CAMBER VALUES

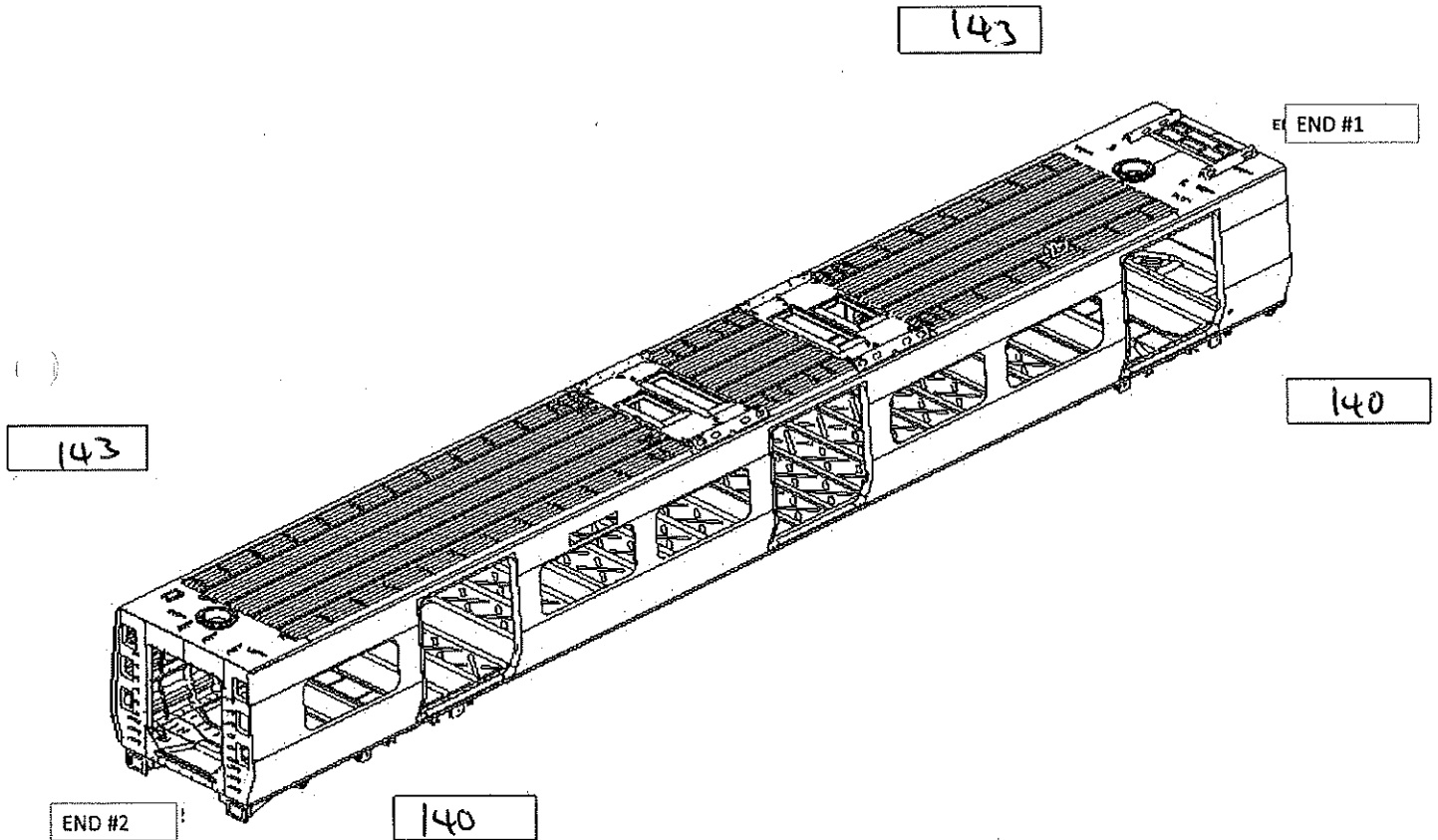
RIGHT - 16

LEFT - 16

D1

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

3

LONGITUDINAL

1

0

MEASURED TWIST VALUES END 2

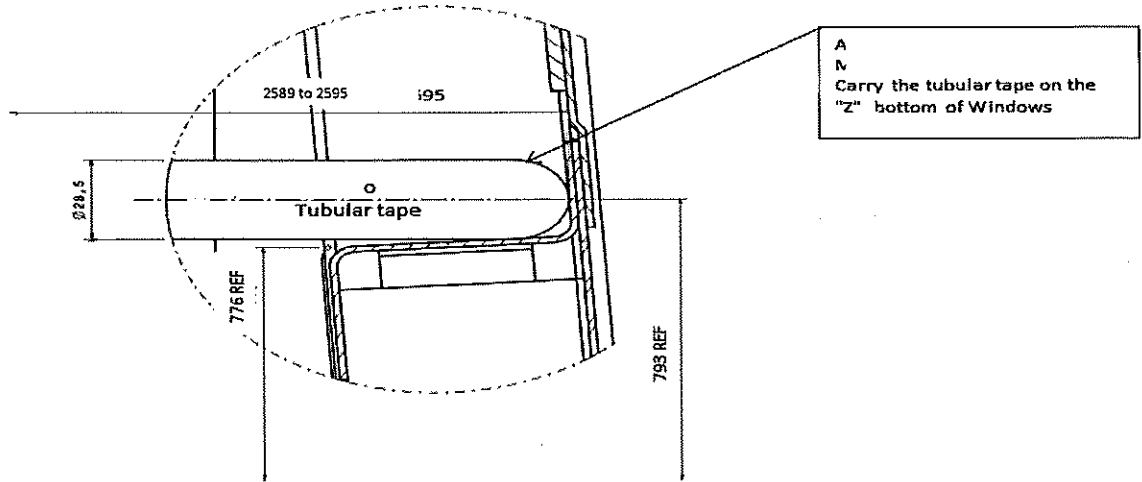
LATERAL

3

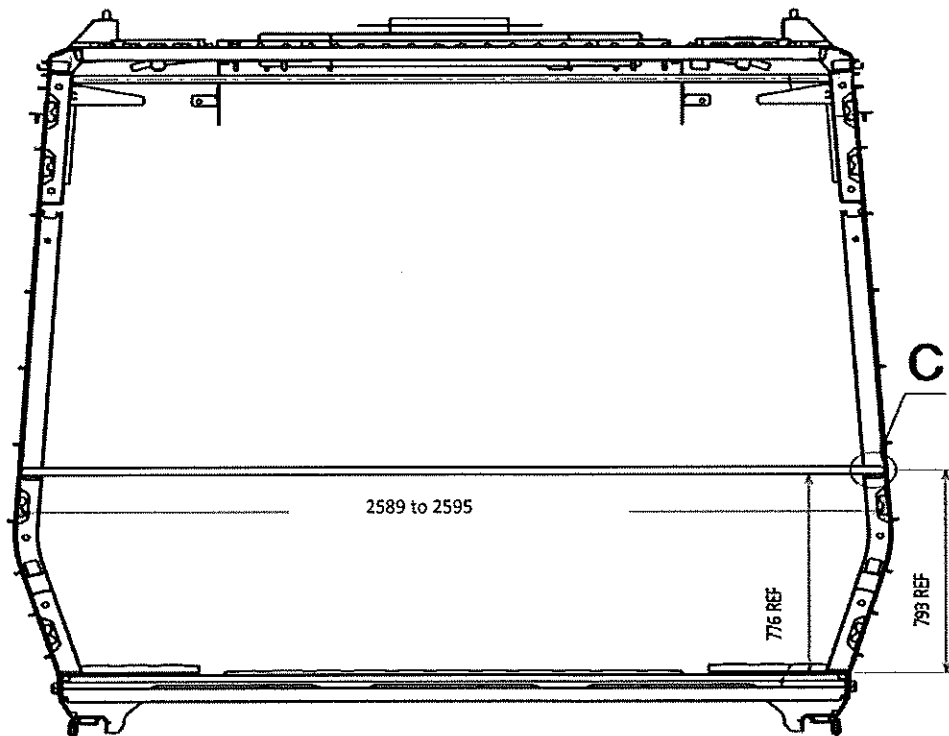
LONGITUDINAL

0

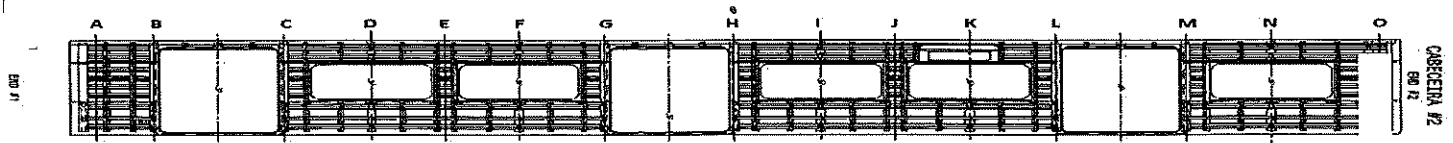
Details for measuring on the CB1230 stage, after completion of activities



Detail C

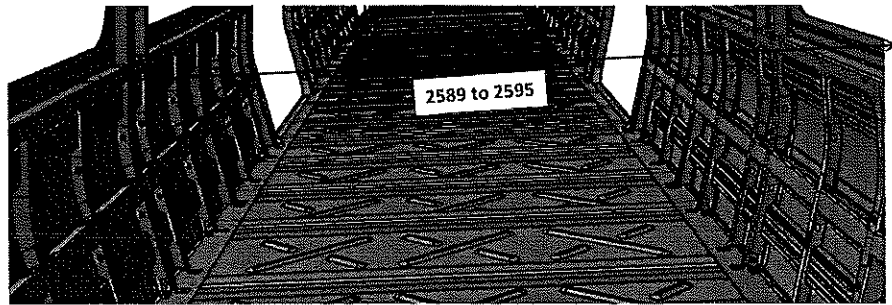


Specifications of Details for CBS measurement


LATERAL DIREITA
Right Side

2589 to 2595mm

A	2590
B	2595
C	2591
D	2591
E	2592
F	2592
G	2593
H	2590
I	2590
J	2594
K	2593
L	2592
M	2591
N	2590
O	2592



Threshold verification				Nominal value :38	
Door 1		Door 2		Door 3	
L	R	L	R	L	R
38	39	38	38	39	39
Door 4		Door 5		Door 6	
L	R	L	R	L	R
38	39	39	38	38	38

BOILER MAKER:

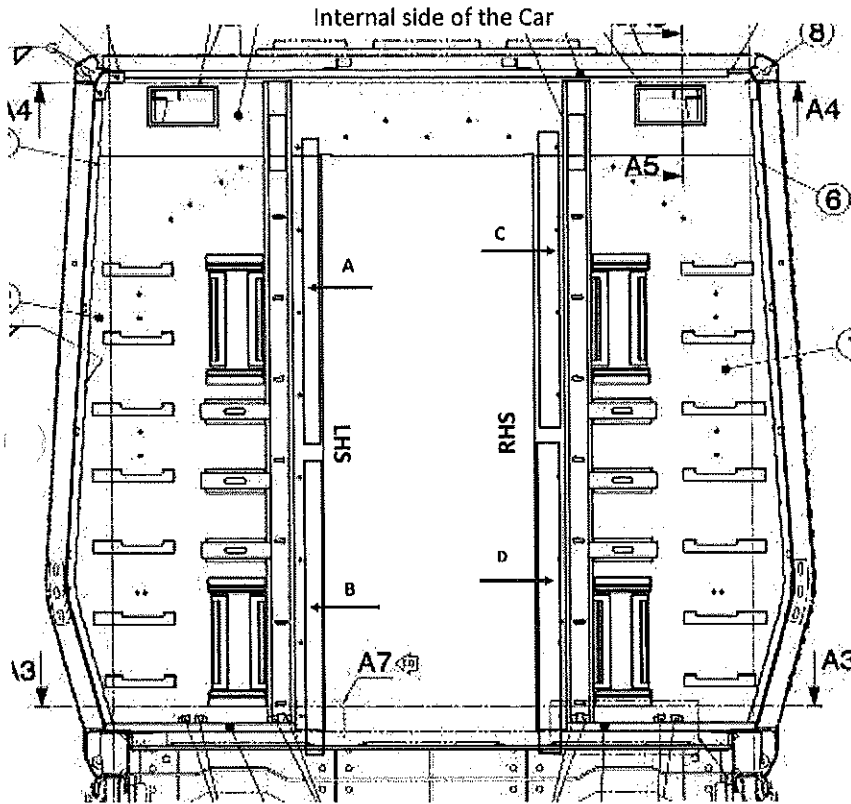
WELDER:

Tshendo C. M. M.
NONHIAHIA (M)

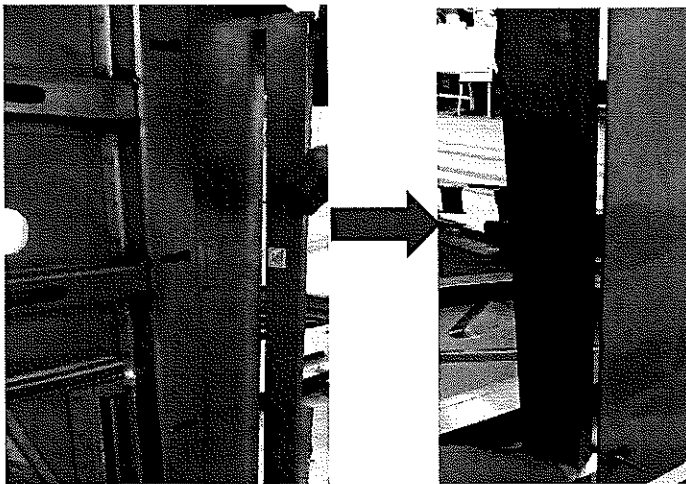
Specifications of Details for CBS measurement

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	7.4	9	1.4
B	8	10	2
C	11.2	12	0.8
D	9	10.5	1.5





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06/11/2023

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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				

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

Self Inspection - Final Result

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!	08/02/24	Sinle Operations		
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	08/02/24	Richmond Industrial Quality		
		There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)		Operations		
		There are non-conformities impact the quality of the product and there is no corrective action defined yet)		Industrial Quality		

In case of "NO GO", describe blocking problems

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

Operations

Quality