

**GIBELA**

**PRASA PROJECT**

APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

# SELF INSPECTION SHEET

## CONFIDENTIAL INFORMATION

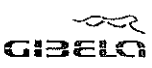
This document and the information contemplated therein have to be considered as Confidential Information pursuant to the provisions of Clause 25 of the MSA, and treated as such.

### APPLICATION REFERENCE

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ?
				TC1	M4	M1	M2	M3	TC2		
DTR30223319/3	AAD0001241033	Carshell Assembly TC	CB2210	X					X	PRA.CB2210.DTR3022331 9/3.V25	YES

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	09/04/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	09/04/2018
			CHECKER	Nosizo Pindela	09/04/2018
			COMPILER	Thanyani Mathegu	06/04/2018
1	2018/05/18	Team leader and Quality Technician to sign final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	2018/05/18
			CHECKER	Nosizo Pindela	2018/05/18
			REVISED BY	Ramokone Motama	2018/05/18
2	2018/06/18	MODIFICATION CONTENT	APPROVER	Itumeleng Modiba	2018/06/18
			CHECKER	Nosizo Pindela	2018/06/18
			REVISED BY	Ramokone Motama	2018/06/18
3	2018/12/12	Additional checkpoints	APPROVER	Itumeleng Modiba	2018/12/12
			CHECKER	Nosizo Pindela	2018/12/12
			REVISED BY	Ramokone Motama	2018/12/12
5	22/01/2019	As per Baseline 10.2	APPROVER	Itumeleng Modiba	22/01/2019
			CHECKER	Nosizo Pindela	22/01/2019
			REVISED BY	Vanessa Ntuli	22/01/2019
6	2019/11/03	Record D1 and D2 on Self - Inspection	APPROVER	Itumeleng Modiba	2019/11/03
			CHECKER	Nosizo Pindela	2019/11/03
			REVISED BY	Nosizo Pindela	2019/11/03
10	21/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	21/08/2019
			CHECKER	Nosizo Pindela	21/08/2019
			REVISED BY	Nosizo Pindela	21/08/2019
15	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela	06/08/2020
			CHECKER	Bongane Masina	06/08/2020
			REVISED BY	Bongane Masina	06/08/2020
20	19/04/2020	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	19/04/2021
			REVISED BY	Bongane Masina	19/04/2021
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING	APPROVER	Mbhombi Collins	17/08/2021
			CHECKER	Mpho Mulaudzi	17/08/2021
			REVISED BY	Mpho Mulaudzi	17/08/2021
25	21/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombi Collins	21/02/2022
			CHECKER	Andani Muthelo	21/02/2022
			REVISED BY	Andani Muthelo	21/02/2022
26	14/04/2023	Addition of welding consumable traceability	APPROVER	Ntuli Vanessa	14/04/2023
			CHECKER	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 Kelebene	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
224	TC2	LAWRENCE 482999	23/04/24	SI.CB2210.322.V28	16

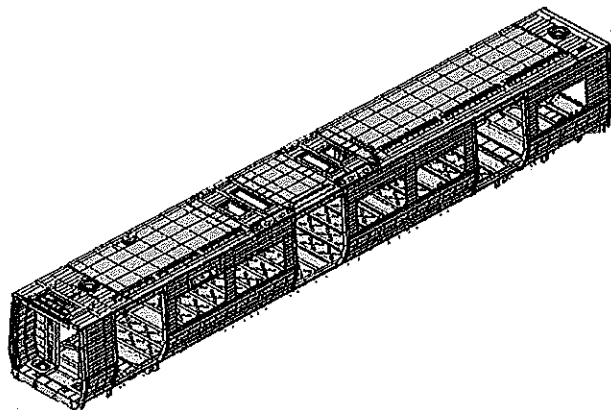


	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB2210.322.V28
		Date- 07/11/2023	

Car: TC1 & 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)
	1	2	3	4	5	6						
DTR30223319/3						✓	V28		✓		N/A	Signature 23/04/24 23/04/24

#### I.2 - Instruments Control

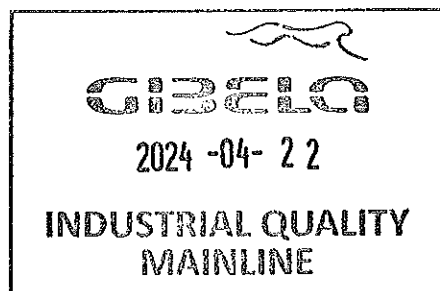
##### Monitoring and Measuring Instrument Control - Used for Special Process


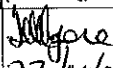
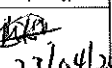

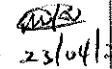
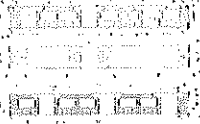

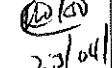
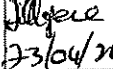
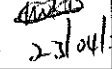
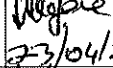
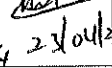
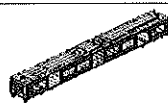
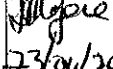
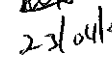
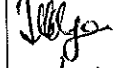
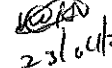
Instruments	Validation	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
LAZER TAPE	125425921	01/04/2024	✓		Signature 23/04/24	
30 M TAPE	GIBTP0049	24/11/2023	✓		Signature 23/04/24	
TUBULAR	82823-2	15/03/2024	✓		Signature 23/04/24	23/04/24

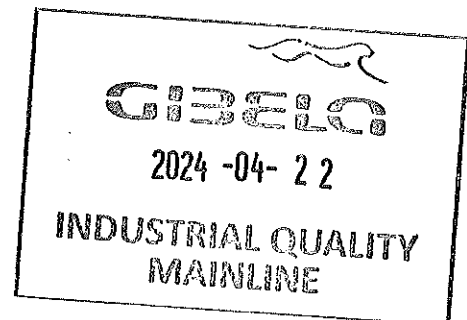
#### I.3 Consumables


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

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 LSI	314018-74097	MIG	✓		Signature 23/04	
ER 308 L	299687-70322	TIG	✓		Signature 23/04	23/04/24
ER 309 LSI	316283-73957	MIG	✓		Signature 23/04	



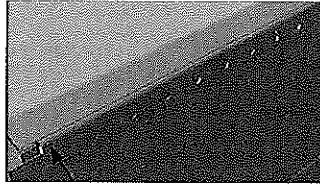
		DTR30223319/3 Carshell Assembly TC		Rev. V28	Project: PRASA		
				Date- 07/11/2023	SI.CB2210.322.V28		
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls, Endframes, Roof and Underframe)	DT00000284980	✓		 23/04/24	 23/04/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		 23/04/24	 23/04/24
03		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		 23/04/24	 23/04/24
04	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 23/04/24	 23/04/24
05	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 23/04/24	 23/04/24
06		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 23/04/24	 23/04/24
07	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658	✓		 23/04/24	 23/04/24



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

Welder traceability

Roof ring welds

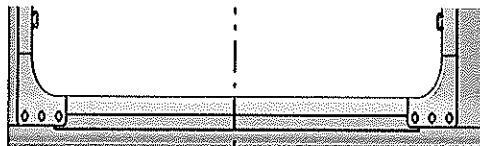


<div>LHS</div> <div>Boiler maker (Name &amp; Sign): <u>LINGA [Signature]</u></div>		<div>Welder (Name &amp; Sign): <u>KEITH [Signature]</u></div>	
<div>RHS</div> <div>Boiler maker (Name &amp; Sign): <u>LINGA [Signature]</u></div>		<div>Welder (Name &amp; Sign): <u>KEITH K. [Signature]</u></div>	

END 1


<div>LHS</div> <div>Boiler maker (Name &amp; Sign): <u>LINGA [Signature]</u></div>		<div>Welder (Name &amp; Sign): <u>KEITH K. [Signature]</u></div>	
<div>RHS</div> <div>Boiler maker (Name &amp; Sign): <u>LINGA [Signature]</u></div>		<div>Welder (Name &amp; Sign): <u>ROBERT [Signature]</u></div>	

END 2

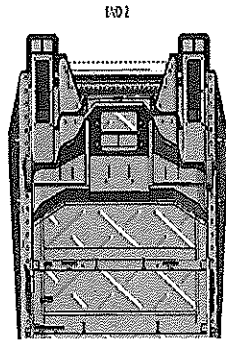


<div>LHS</div> <div>Boiler maker (Name &amp; Sign): <u>THOMAS [Signature]</u></div> <div>Welder (Name &amp; Sign): <u>KEITH K. [Signature]</u></div>	<div>RHS</div> <div>Boiler maker (Name &amp; Sign): <u>GERALD [Signature]</u></div> <div>Welder (Name &amp; Sign): <u>KEITH K. [Signature]</u></div>
--	--

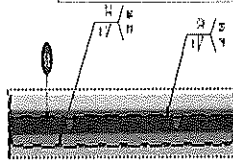


	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA
		Date: 07/11/2023	SI.CB2210.322.V28

EUF Reinforcement Plates



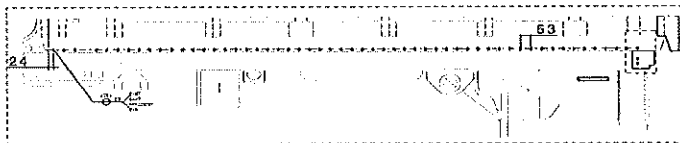
Underneath the CAR



END 2

Boiler maker (Name & Sign): Innocent M. M.

Welder (Name & Sign): KEITH K. M.




FEDOLI

Operator: Siphokazi

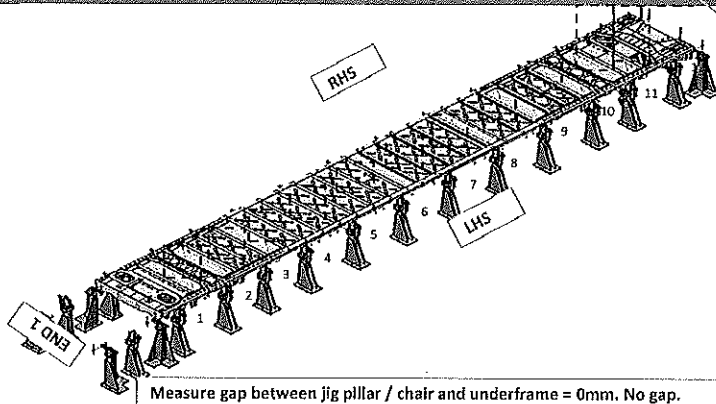
  
GIBELQ

2024 -04- 22

INDUSTRIAL QUALITY  
MAINLINE

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

Specifications of Details for CBS measurement

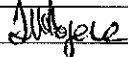


Measure gap between jig pillar / chair and underframe = 0mm. No gap.

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


After Loading Underframe and Clamping.

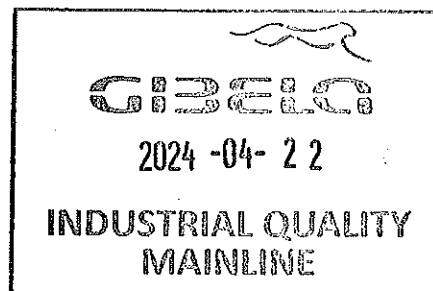
	1	2	3	4	5	6	7	8	9	10	11	12
Left Hand Side												
Right Hand Side												

Signature Operations:  Date: 23/04/24

After Welding.

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

Signature Industrial Quality:  Date: 23/04/24



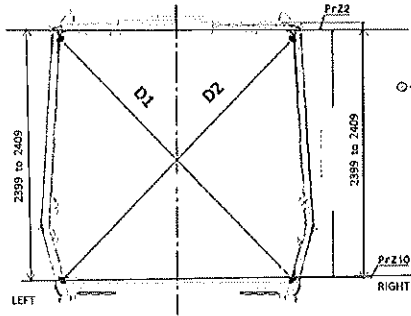
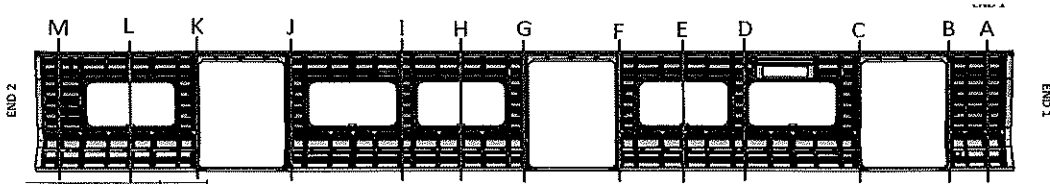


DTR30223319/3 Carshell Assembly TC

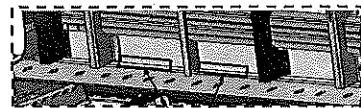
Rev.  
V28  
Date:  
07/11/2023

Project: PRASA  
SI.CB2210.322.V28

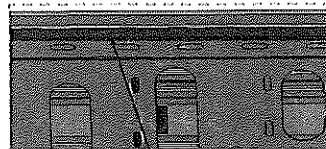
Specifications of Details for CBS measurement



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.

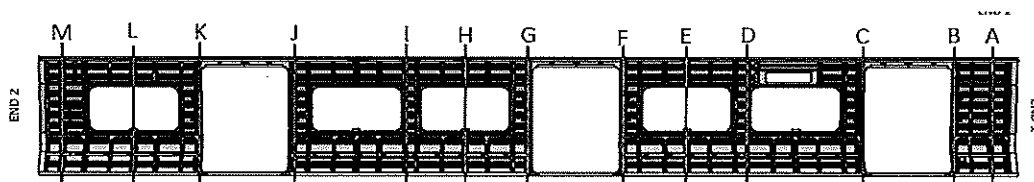


2024 -04- 22

INDUSTRIAL QUALITY  
MAINLINE

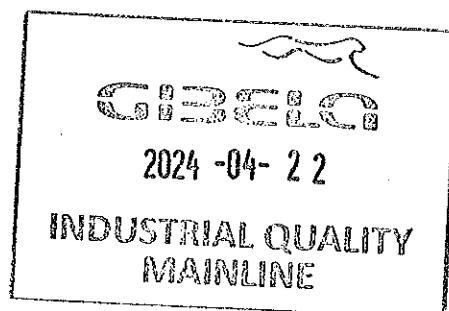
	DTR30223319/3 Carshell Assembly TC	Rev. V28 Date- 07/11/2023	Project: PRASA SI.CB2210.322.V28
Specifications of Details for CBS measurement			

BEFORE WELDING




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

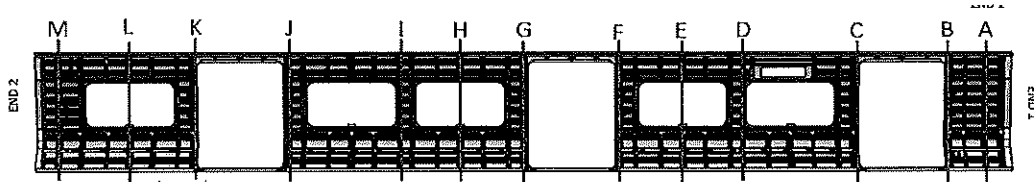
	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS $\leq 2$
A	3267	3267	0	2404	2405	1
B	3268	3267	2	2405	2403	2
C	3266	3267	1	2404	2404	0
D	3265	3266	1	2403	2404	1
E	3267	3267	0	2404	2404	0
F	3266	3266	0	2405	2405	0
G	3266	3267	1	2404	2404	0
H	3268	3266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





	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA
		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	3267	3267	0	2404	2405	1
B	3292	3294	2	2405	2403	2
C	3294	3294	0	2404	2404	0
D	3265	3266	1	2403	2404	1
E	3267	3267	0	2404	2404	0
F	3294	3296	2	2405	2405	0
G	3294	3294	0	2404	2404	0
H	3268	3266	2	2405	2404	1
I	3266	3267	1	2404	2405	1
J	3293	3295	2	2405	2405	0
K	3296	3295	1	2404	2404	0
L	3267	3267	0	2405	2406	1
M	3294	3294	0	2404	2404	0

GIBELCO

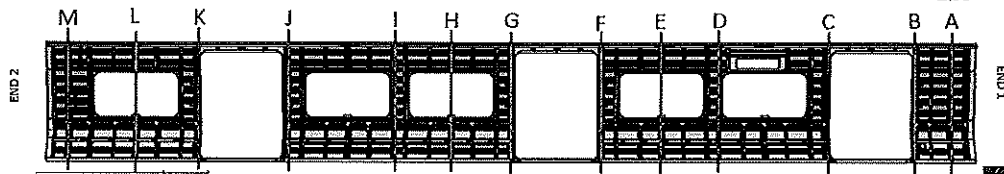
2024-04-22

INDUSTRIAL QUALITY  
MAINLINE

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

CBS measurement

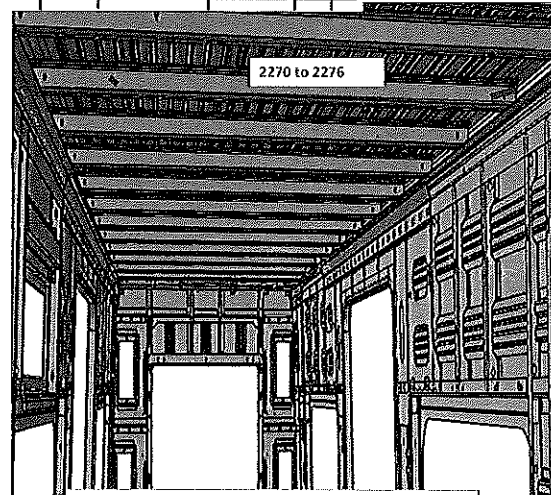
BEFORE WELDING



2270 to 2276

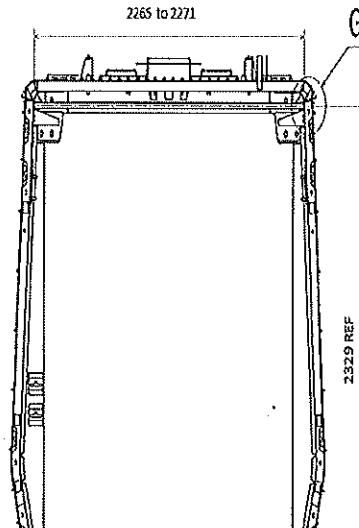
2268 a 2274

A	2270
B	2271
C	2274
D	2273
E	2271
F	2270
G	2274
H	2272
I	2271
J	2276
K	2272
L	2271
M	2274

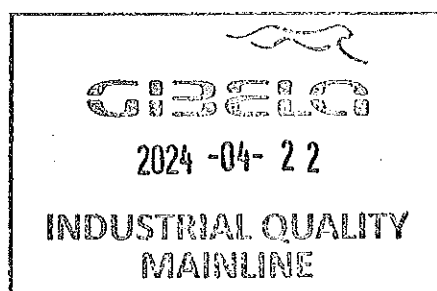
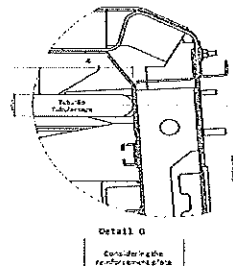


Do not consider reinforcement (Take measurements top area of zee profile)

2265 to 2271



2265 to 2271





DTR30223319/3 Carshell Assembly TC

Rev.

V28

Date

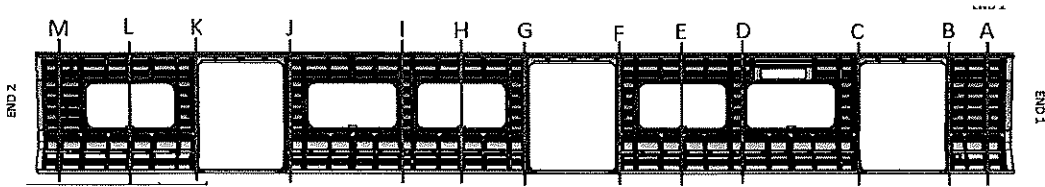
07/11/2023

Project: PRASA

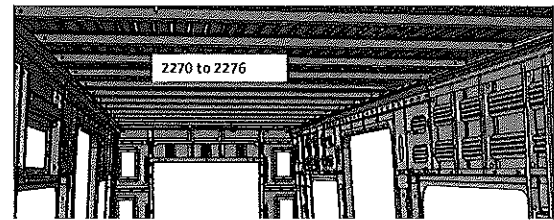
SI.CB2210.322.V28

## Specifications of Details for CBS measurement

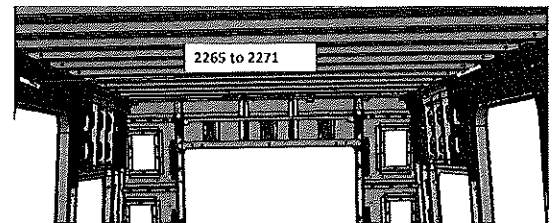
## AFTER WELDING



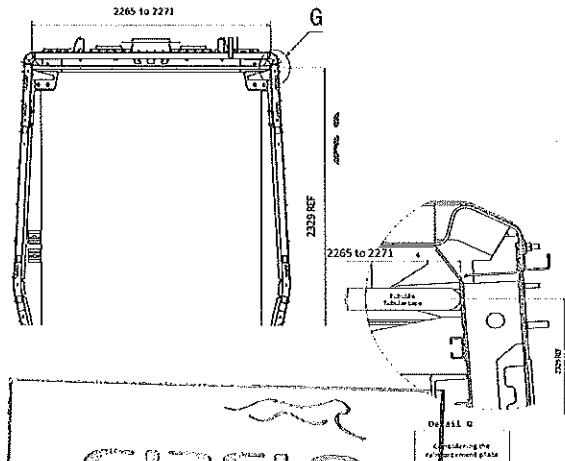
	2265 to 2271	2270 to 2276
A	N/A	2270
B	2267	N/A
C	2270	N/A
D	N/A	2273
E	N/A	2271
F	2266	N/A
G	2270	N/A
H	N/A	2272
I	N/A	2271
J	2271	N/A
K	2268	N/A
L	N/A	2271
M	2270	N/A



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



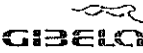
Take measurement close to radius ( considering reinforcement)



GIBELQ

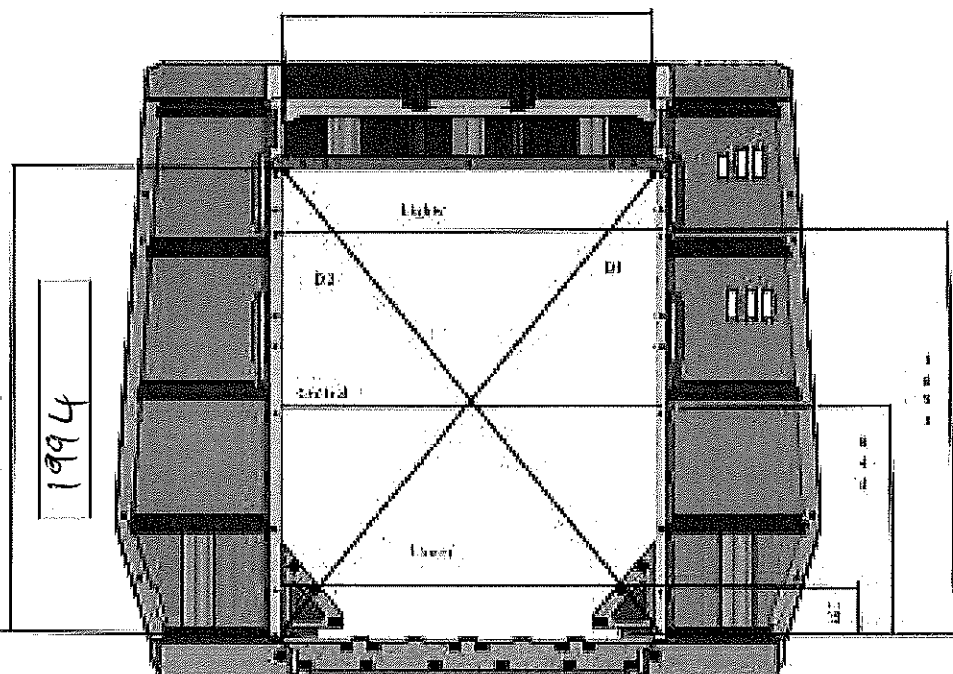
2024-04-22

INDUSTRIAL QUALITY  
MAINLINE

	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRA5A
		Date: 07/11/2023	SI.CB2210.322.V28

**Specifications of Details for CBS measurement**

Endframe 2



THEORETICAL mm

Upper Distance 1380

Central Distance 1381


Lower Distance 1380

DIAGONAL DIFFERENCE D1-D2 ≤ 3mm

D1 2415

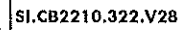
D2 2414


D1-D2 1

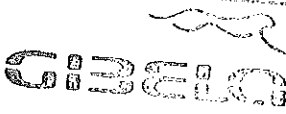



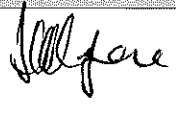

2024 -04- 22

**INDUSTRIAL QUALITY  
MAINLINE**



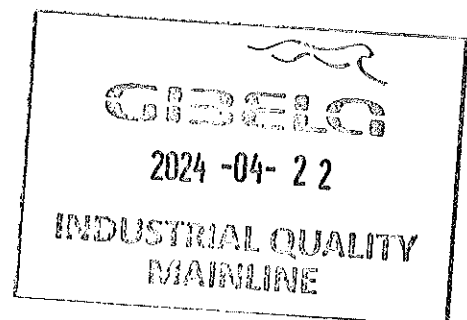
		DTR30223319/3 Carshell Assembly TC		Rev. V28	Project: PRASA			
				Date- 07/11/2023	SI.CB2210.322.V28			
Item	Description of the Issue				OK	Signature/Date (Manufacturing)		Signature/Date (Quality)
II.2 - Check List REX								
Check List Items								
Item	Picture/Drawing	Description	Criteria /Record	OK	NOT OK	REWORK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX					


  
2024 -04- 22  
INDUSTRIAL QUALITY  
MAINLINE

		DTR30223319/3 Carshell Assembly TC		Rev. V28	Project: PRASA SI.CB2210.322.V28	
				Date- 07/11/2023		
Self Inspection - Final Result						
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!	23/04/24	LAURENCE		
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.	23/04/24	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	

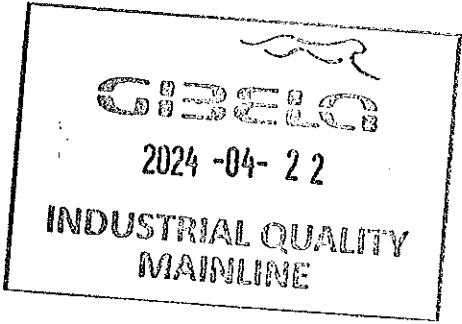
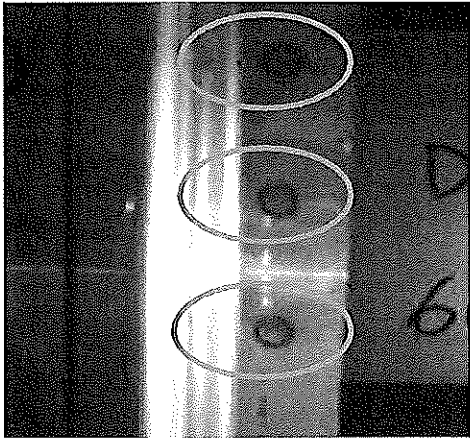
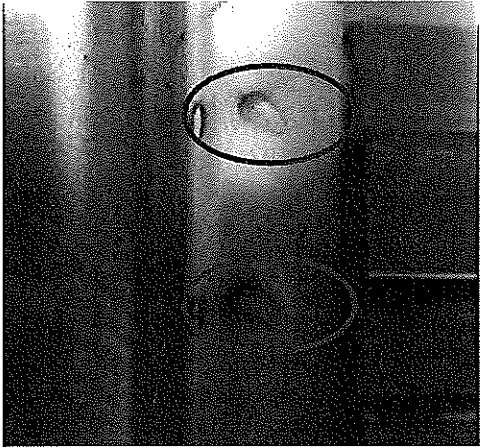
Operations

Quality

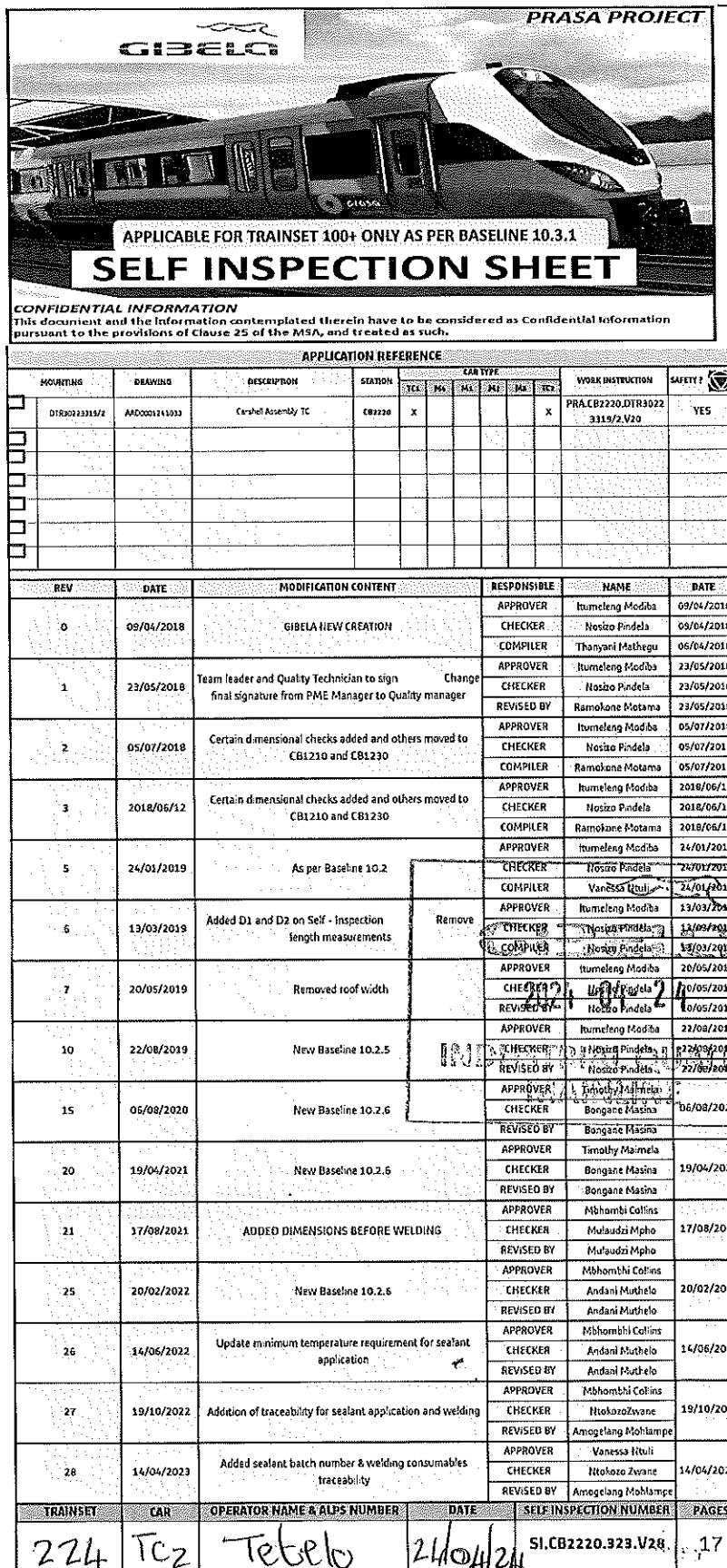



	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB2210.322.V28
		Date- 07/11/2023	

ANNEXURE A: Spot Welding Quality Acceptance Standard





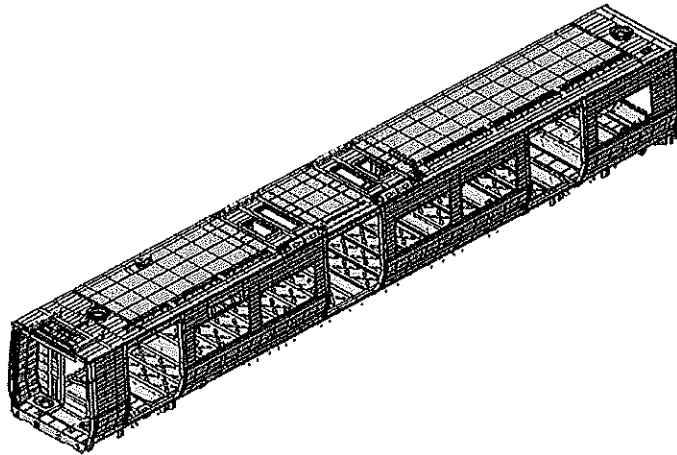


	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

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



Safety Related



### I - Documentation and Instruments

#### I.1 - Documentation Control

Document	Type of car					Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	TC1	TC2	TC3	TC4	TC5						
DTR30223319/2						29	24/04/24	✓		N/A	24/04/24

#### I.2 - Instruments Control

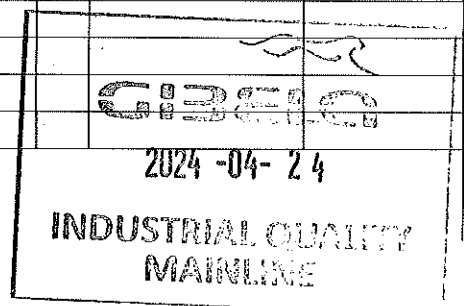
##### Monitoring and Measuring Instrument Control - Used for Special Process


Instruments	Validation	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Turbular	32823-2	15/08/23	✓		24/04/24	24/04/24
Measuring Tape	GIBELO 396	12/04/25				

#### 1.3 Consumables

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

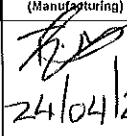
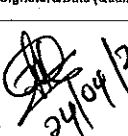
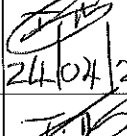
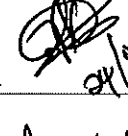
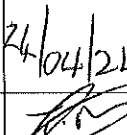
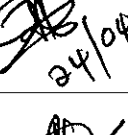
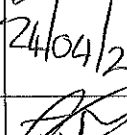
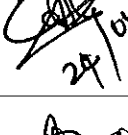
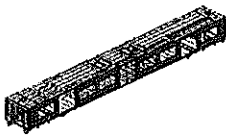
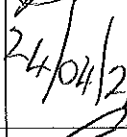
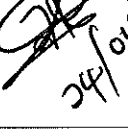
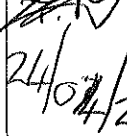
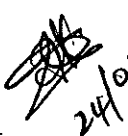
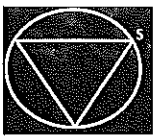
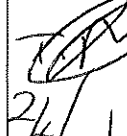


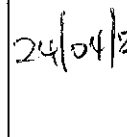
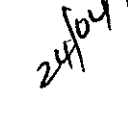
Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Welding - wire	E231067	MIGr Welding	✓		24/04/24	24/04/24




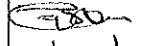



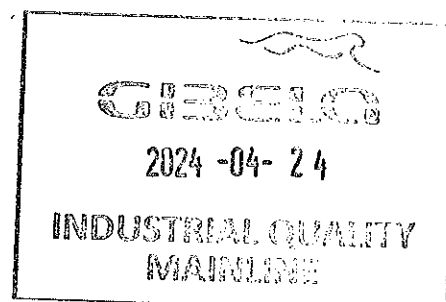
	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

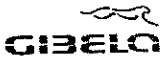
II - Control Activities of Production

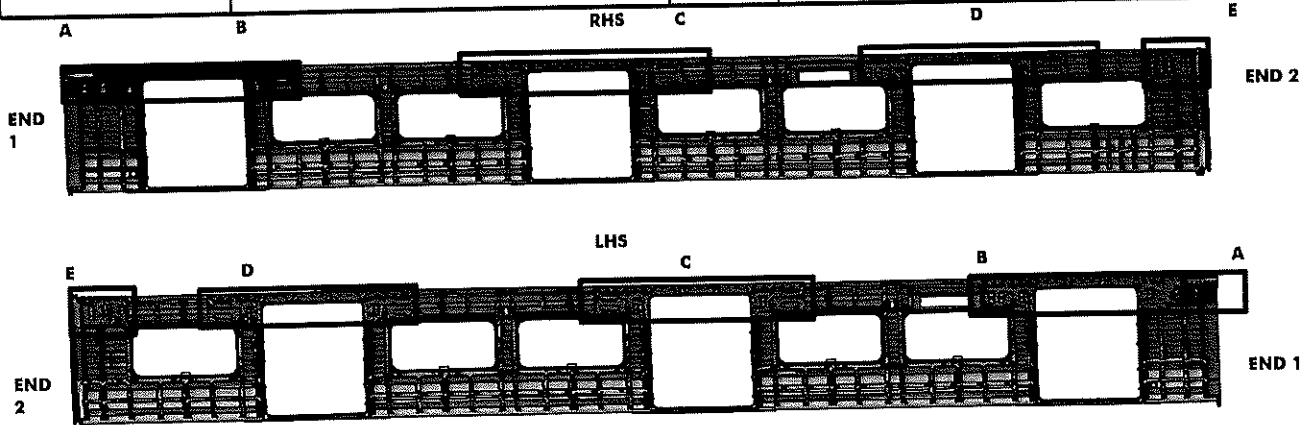
II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK		Signature/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	✓		 24/04/24	 24/04/2024
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		 24/04/24	 24/04/2024
03	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 24/04/24	 24/04/2024
04	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 24/04/24	 24/04/2024
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 24/04/24	 24/04/2024
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.	✓		 24/04/24	 24/04/2024
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	✓		 24/04/24	 24/04/2024
08	N/A	Before application of sealant record the expiry date and make sure that the <del>com</del> temperature and humidity are within specified values  as per Works Instructions as Specified Temperature: 10°C - 35°C Relative humidity: 25% - 60% 2024-04-24 INDUSTRIAL QUALITY MAINLINE	Sealant Batch No: B3497-63 Exp Date: 09/06/24 Actuals Temperature: 20°C Humidity: 30%	✓		 24/04/24	 24/04/2024

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

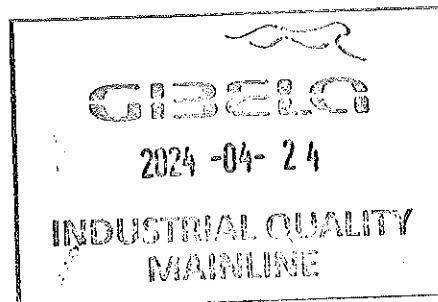



	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

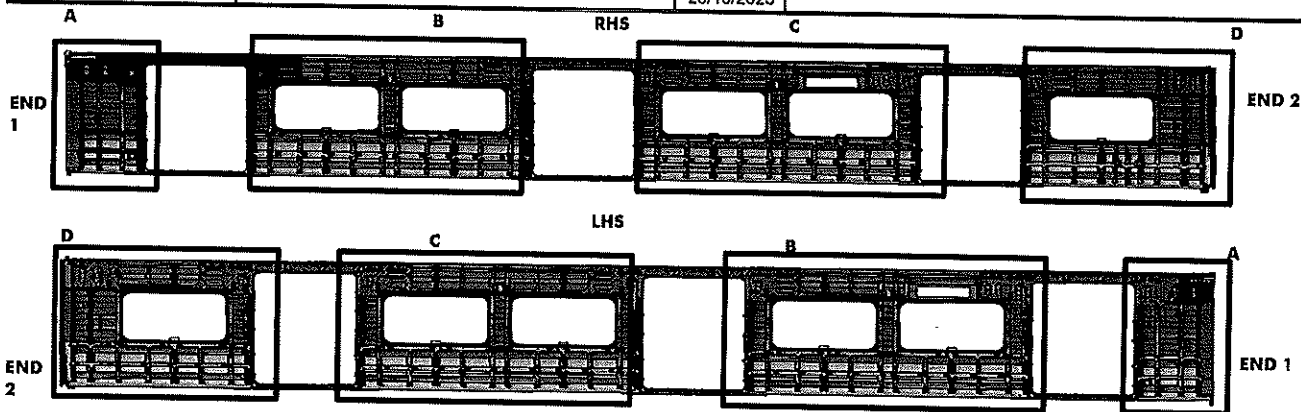


### REINFORCEMENT WELDING

AREA	LHS	RHS
A	Operator (Name&sign): <u>Nokulunga D. M.</u>	Operator (Name&sign): <u>Nokulunga D. M.</u>
B	Operator (Name&sign): <u>[Signature]</u>	Operator (Name&sign): <u>[Signature]</u>
C	Operator (Name&sign): <u>[Signature]</u>	Operator (Name&sign): <u>[Signature]</u>
D	Operator (Name&sign): <u>Sibuya D.</u>	Operator (Name&sign): <u>THULANI L.</u>
E	Operator (Name&sign): <u>Sibuya D.</u>	Operator (Name&sign): <u>THULANI L.</u>



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

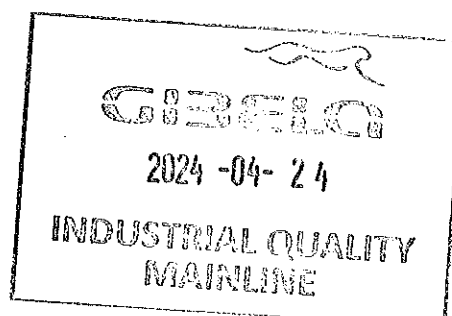


### BRACKETING


C-RAILS:	Operator:	INSTALLATION <u>Priscilla</u>
	Operator:	
DOOR MECHANISMS:	Operator:	<u>Mashudu</u>
	Operator:	
TAPPING PADS	Operator:	<u>THOMAS</u>
	Operator:	
		INSTALLATION & VERIFICATION
SEAT & LUGGAGE BRACKETS:	Operator:	<u>Meloko</u>
	Operator:	
SEAT BRACKETS VERIFICATION:	Operator:	<u>Teleso</u>
	Operator:	

### WELDING

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



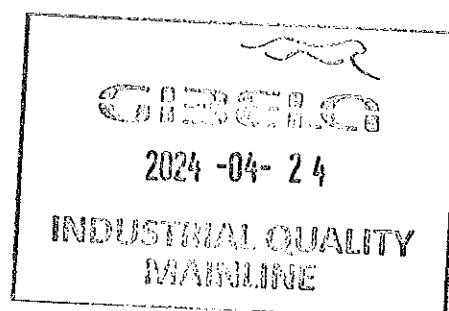


	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

ENDS

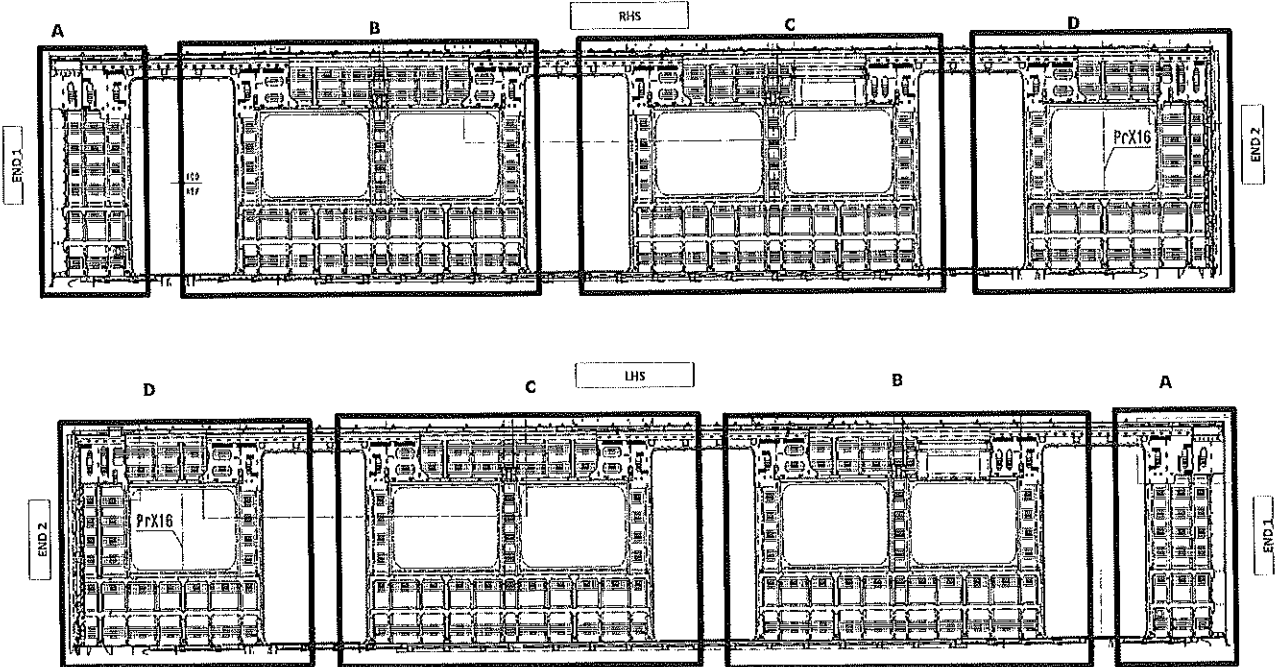
END 2 TAPPING PADS WELDING: Operator (Name&sign):

THULAN. 





TC BRACKET INSTALLATION



QUANTITIES (TC)

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

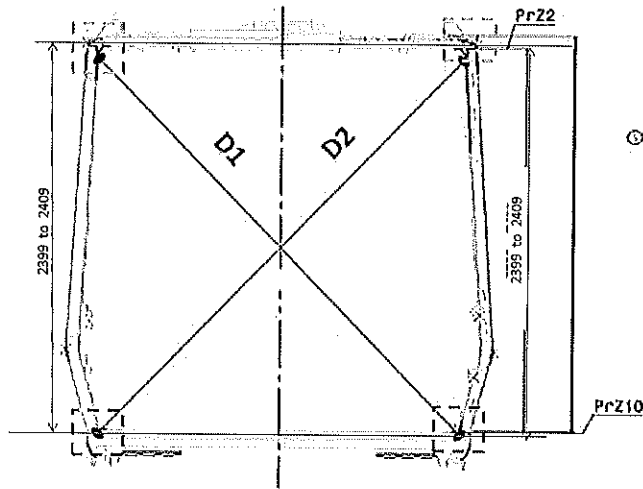
ROOF ENDS:  
 C-RAILS 2 OFF END 2  
 EARTH BUSH 4 OFF END 2

VERIFICATION BY: Tetelo

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

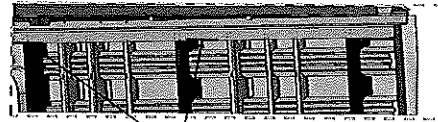
ROOF ENDS:  
 C-RAILS 2 OFF END 2  
 EARTH BUSH 4 OFF END 2

VERIFICATION BY: Tetelo

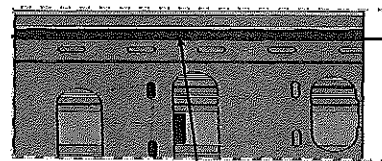


Take measurement close to radius

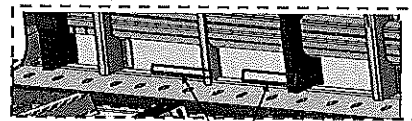
①



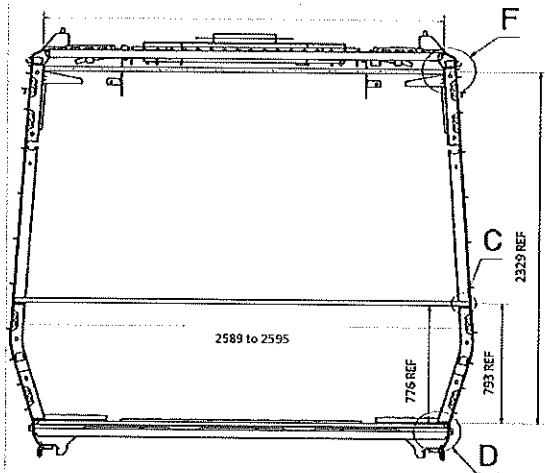
Measurement positions on roof rail and sidewall omega corner.



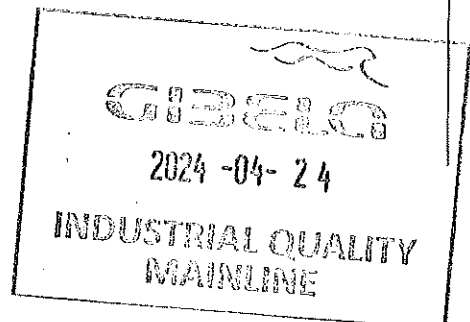
Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.



Take measurement close to radius





DTR30223319/2 Carshell Assembly TC

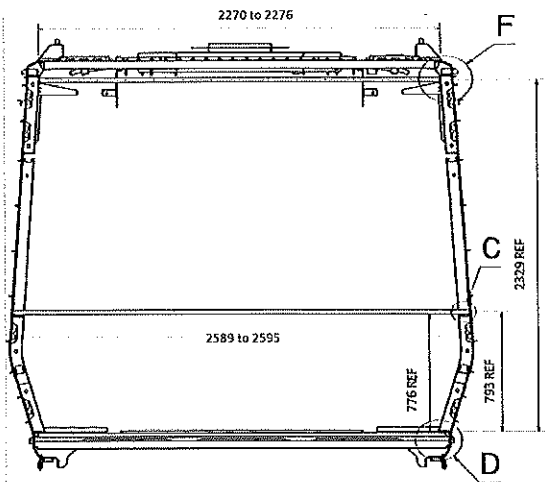
Rev.  
29

Project: PRASA

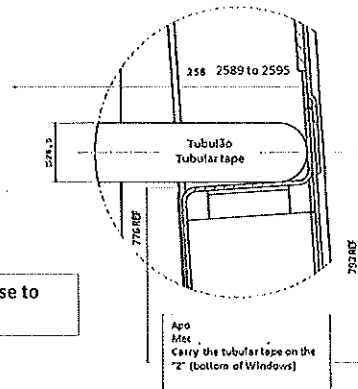
Date-

SI.CB2220.323.V29

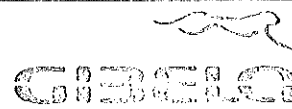
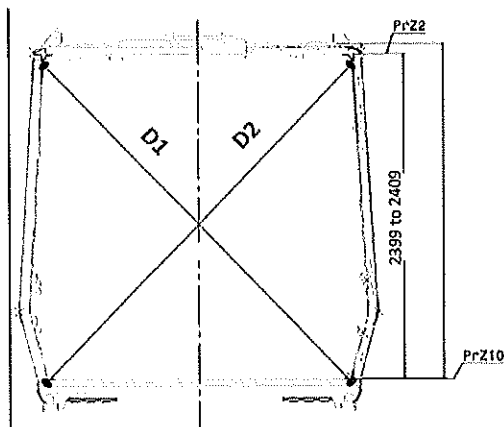
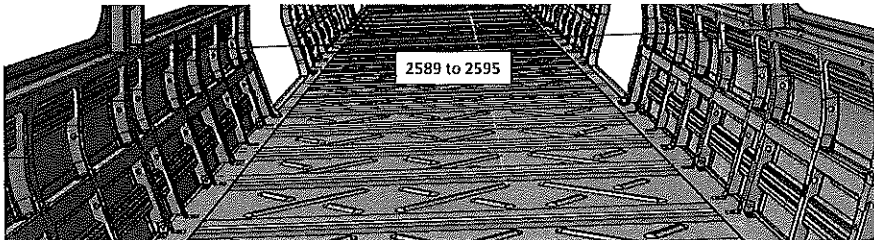
28/10/2023



Take measurement close to  
radius

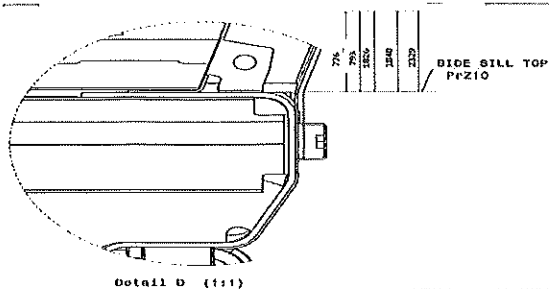


Detail C




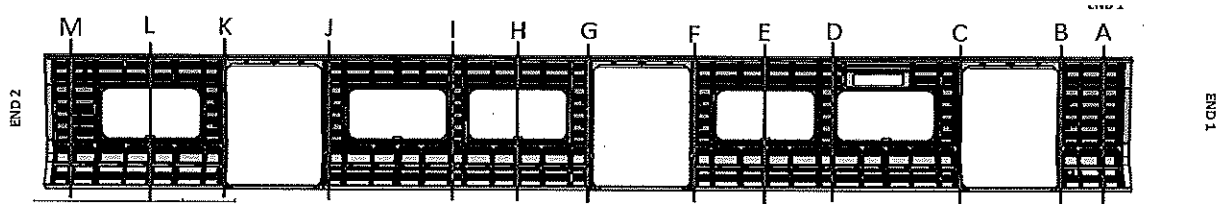
2024-04-24

INDUSTRIAL QUALITY  
MAINLINE



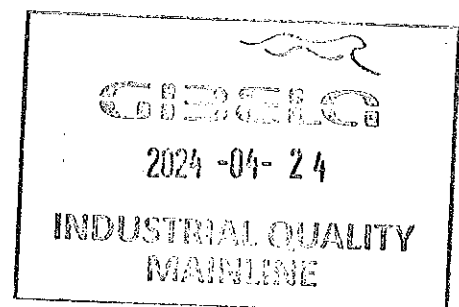
Detail D (1:1)

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



**BEFORE WELDING**

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





DTR30223319/2 Carsheli Assembly TC

Rev.

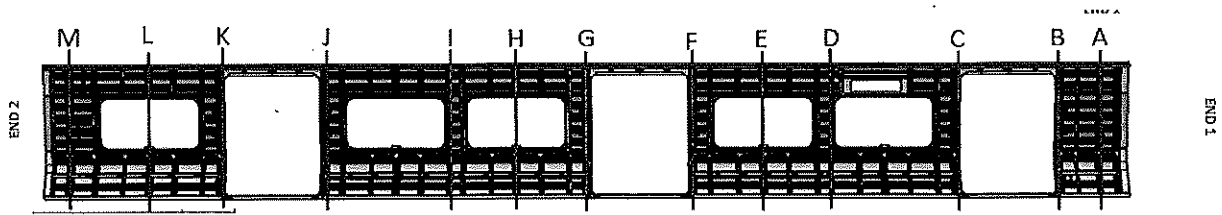
29

Project: PRASA

Date-

28/10/2023


SI.CB2220.323.V29

AFTER WELDING

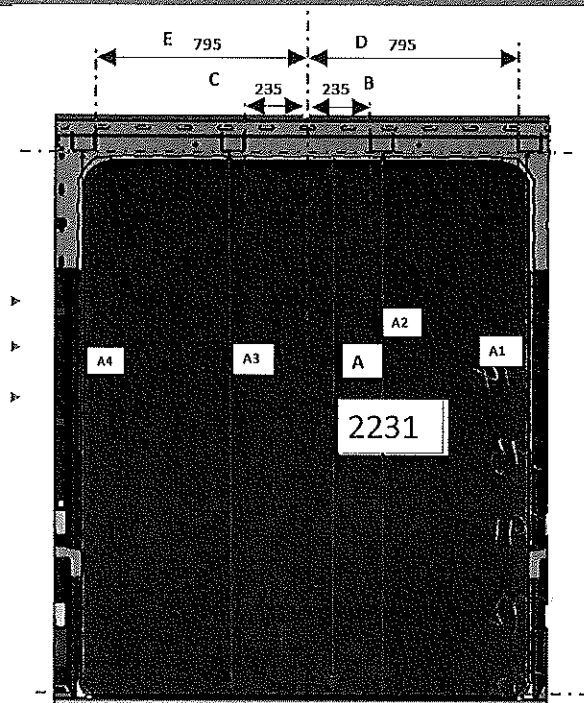
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3266	3268	2	2594
B	3297	3298	1	2593
C	3299	3300	1	2591
D	3268	3266	2	2592
E	3266	3264	2	2593
F	3300	3298	2	2591
G	3298	3296	2	2592
H	3268	3266	2	2593
I	3269	3296	3	2594
J	3299	3297	2	2593
K	3297	3299	2	2594
L	3268	3266	2	2593
M	3297	3296	1	2590

2024-04-24

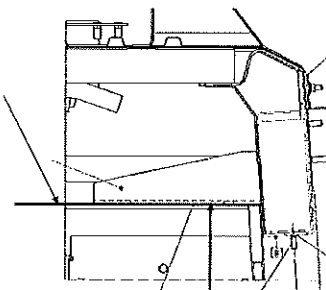
INDUSTRIAL QUALITY  
MAINLINE

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

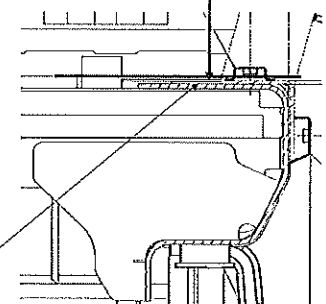
Specifications of Details for CBS measurement



Brackets Carbodyshell  
U Type Supports



Brackets Carbodyshell  
Channel Assy



DOOR 1 - LHS

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

DOOR 3 - LHS

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

DOOR 1 - RHS

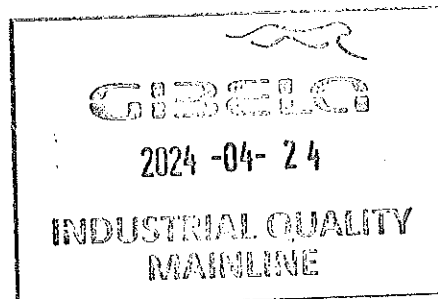
	VALUE	ACTUAL
A1	2230 to 2232	2230
A2	2230 to 2232	2231
A3	2230 to 2232	2232
A4	2230 to 2232	2230
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	796

DOOR 2 - RHS

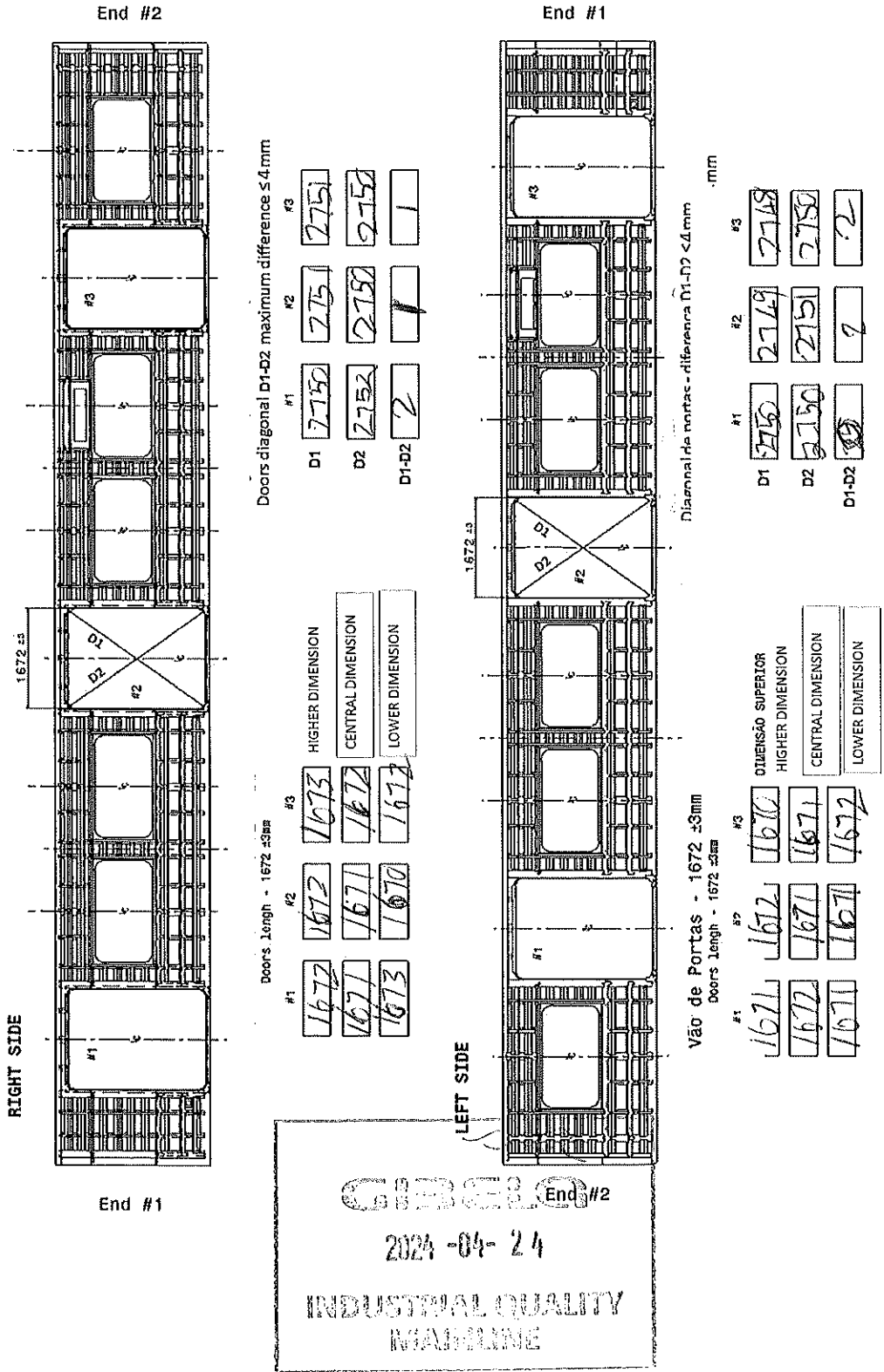
	VALUE	ACTUAL
A1	2230 to 2232	2232
A2	2230 to 2232	2232
A3	2230 to 2232	2231
A4	2230 to 2232	2231
B	234 to 236	234
C	234 to 236	235
D	794 to 796	794
E	794 to 796	794


DOOR 3 - RHS

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



Specifications of Details for CBS measurement



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

Specifications of Details for CBS measurement

Dye penetrant test

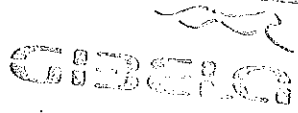
Dye-penetration test to be performed by quality personnel




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

II.2 - Check List REX




Check List Items							
Item	Picture/Drawing	Description	Criteria /Record	OK	Not OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX				


  
2024-04-24
  
INDUSTRIAL QUALITY
  
MARLINE



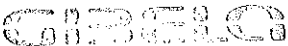

	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA	
		Date-		SI.CB2220.323.V29
		28/10/2023		

Self Inspection - Final Result

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT		GO	If activities are not complete, the missing activities must not impact the next stage!	24/04/24	Tebelo	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	24/04/2024	Amo	
		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!			

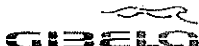
In case of "NO GO", describe blocking problems



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

Tebelo	 2024-04-24 INDUSTRIAL QUALITY MAINLINE
Operations	
	

Quality





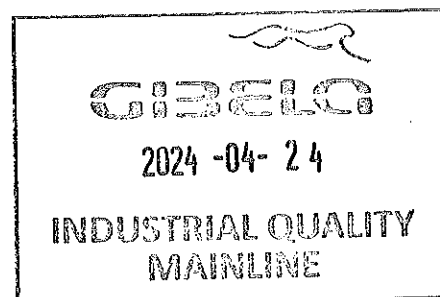



APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

## 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	MA	M1	M2	M3	TC2			
DT00000223319	AAD0003238953	DT00000223319 Carshell Assembly TC	CB1230	X						X	PRA.CB1230.DT00000012 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 Mbombhni	20/02/2022						
				CHECKER	Andani Muthelo	20/02/2022						
				COMPILER	Andani Muthelo	20/02/2022						
26	14/06/2022	Update minimum temperature requirement for sealant application		APPROVER	Collins Mbombhni	14/06/2022						
				CHECKER	Andani Muthelo							
				COMPILER	Andani Muthelo							
27	26/07/2022	Threshold measurements addition		APPROVER	Collins Mbombhni	26/07/2022						
				CHECKER	Andani Muthelo							
				COMPILER	Andani Muthelo							
28	17/10/2022	Addition of traceability for sealant application		APPROVER	Collins Mbombhni	17/10/2022						
				CHECKER	Ntokozo Zwane							
				COMPILER	Amogelang Mohlampe							
29	14/04/2023	Added sealant batch number & welding consumables traceability		APPROVER	Vanessa Ntuli	14/04/2023						
				CHECKER	Ntokozo Zwane							
				COMPILER	Amogelang Mohlampe							
30	06/11/2023	Added traceability for thresholds for boiler makers and welders		APPROVER	Tyson Ngobeni	06/11/2023						
				CHECKER	Andani Muthelo							
				COMPILER	Ntokozo Zwane							
TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER		DATE	SELF INSPECTION NUMBER		PAGES					
TS004	TC2	KISS A17459		25-04-24	SI.CB1230.324.V28		14					





DT00000223319 Carshell Assembly TC

Rev.  
30Date-  
08/11/2023

Project: PRASA

SI.CB1230.324.V29

Carro  
Car:

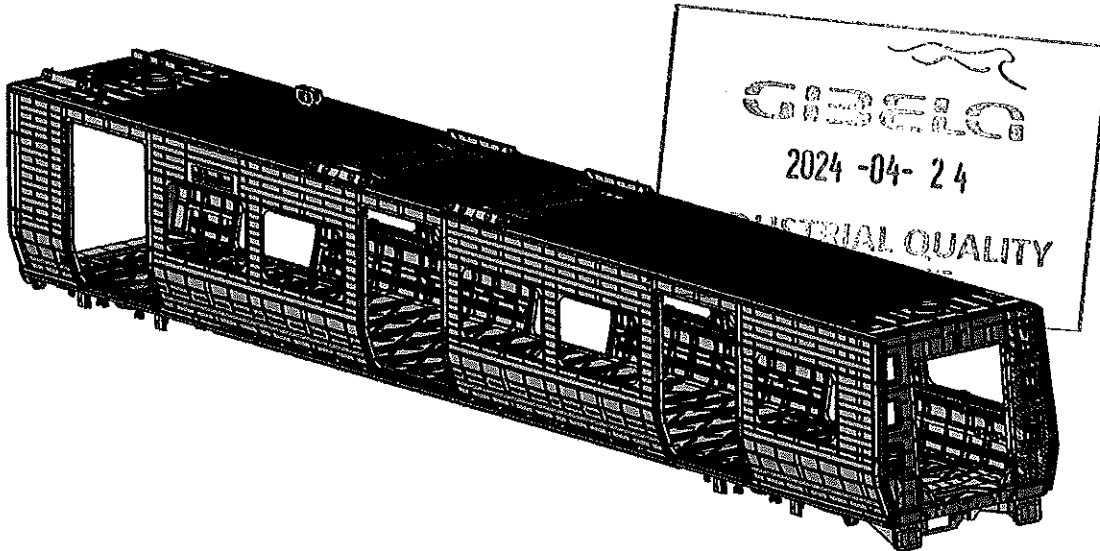
NCR:

Work station:

CB1230



Safety Related



## I - Documentation and Instruments

## I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK		Signature/Date (Operations)	Signature/Date (Quality)
	TC1	M1	M2	M3	M4	TC2						
DT00000223319						X	V29		OK		N/A	E 25/04/24, 25/04/24

## 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)
MEASURING TAPE	GIBTA0318	2025/05/22	OK		E 25/04/24	25/04/24
TUBULAR	22615	02/07/2024	OK		E 25/04/24	25/04/24
COMBINATION SQUARE	GIBSQ0098	27/07/2024	OK		E 25/04/24	25/04/24

## 1.3 Consumables

## Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Aubert 308L Si	E221880	MIG	OK		E 25/04/24	25/04/24
ER 308 L	E-150-4343A	TIG	OK		E 25/04/24	25/04/24



DT00000223319 Carshell Assembly TC

Rev.  
30

Date-















06/11/2023

Project: PRASA

SI.CB1230.324.V29

## 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			 25/04/24	 25/04/24						
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	OK			 25/04/24	 25/04/24						
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 DTD0000210675	OK			 25/04/24	 25/04/24						
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			 25/04/24	 25/04/24						
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			 25/04/24	 25/04/24						
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 (I)</td><td>Min-Max</td><td>10°C - 35°C</td></tr><tr><td>Relative humidity Min - Max (I)</td><td>Min-Max</td><td>25% - 60%</td></tr></table>	Temperature Min - Max (I)	Min-Max	10°C - 35°C	Relative humidity Min - Max (I)	Min-Max	25% - 60%	Sealant Batch No: <u>SE 70-03</u> Exp Date: <u>1/05/24</u>  Actuals Temperature: <u>21 °C</u> Humidity: <u>62 %</u>	OK			 25/04/24	 25/04/24
Temperature Min - Max (I)	Min-Max	10°C - 35°C												
Relative humidity Min - Max (I)	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	OK			 25/04/24	 25/04/24						

GIBELCO

2024-04-24

INDUSTRIAL QUALITY  
MAINLINE



DT00000223319 Carshell Assembly TC

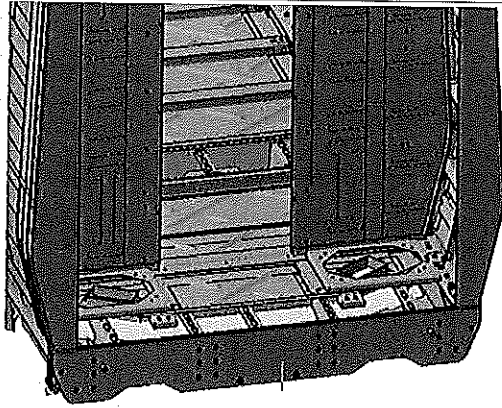
Rev.  
30

Date-  
06/11/2023

Project: PRASA

SI.CB1230.324.V29

VIEW A



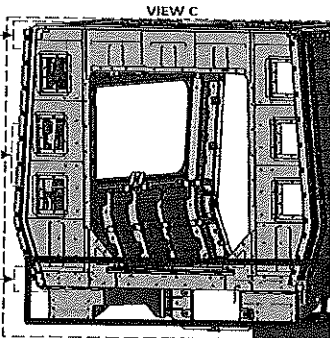
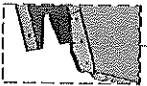
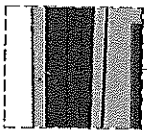
END 1  
SEALANT

OPERATOR  
(Name & sign):

Silve

OPERATOR  
(Name & sign):

Silve



OPERATOR  
(Name&sign):

LEROY

OPERATOR  
(Name&sign):

LEROY

OPERATOR  
(Name&sign):

LEROY

GIBELQ

2024-04-24

INDUSTRIAL QUALITY  
MAINLINE



DT00000223319 Carshell Assembly TC

Rev.  
30

Date-  
06/11/2023

Project: PRASA

SI.CB1230.324.V29

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

LHS

RHS

Operator (Name & sign): D, E, G

G, D

Operator (Name & sign): LERATO (LM)...

Bule Alaba

HI (TOP)

Operator (Name & sign): LERATO (LM)...

E.F. (HI)

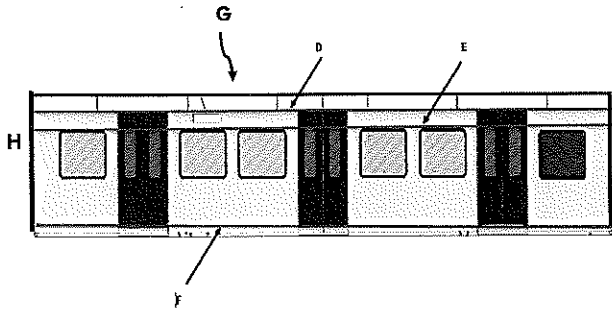
Operator (Name & sign): (F) (HI Bottom)

Silile

Operator (Name & sign): Silile

Ishenolo

Operator (Name & sign): Ishenolo



GIBELQ

2024-04-24

INDUSTRIAL QUALITY  
MAINLINE

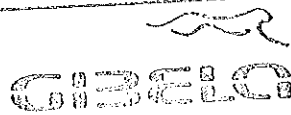
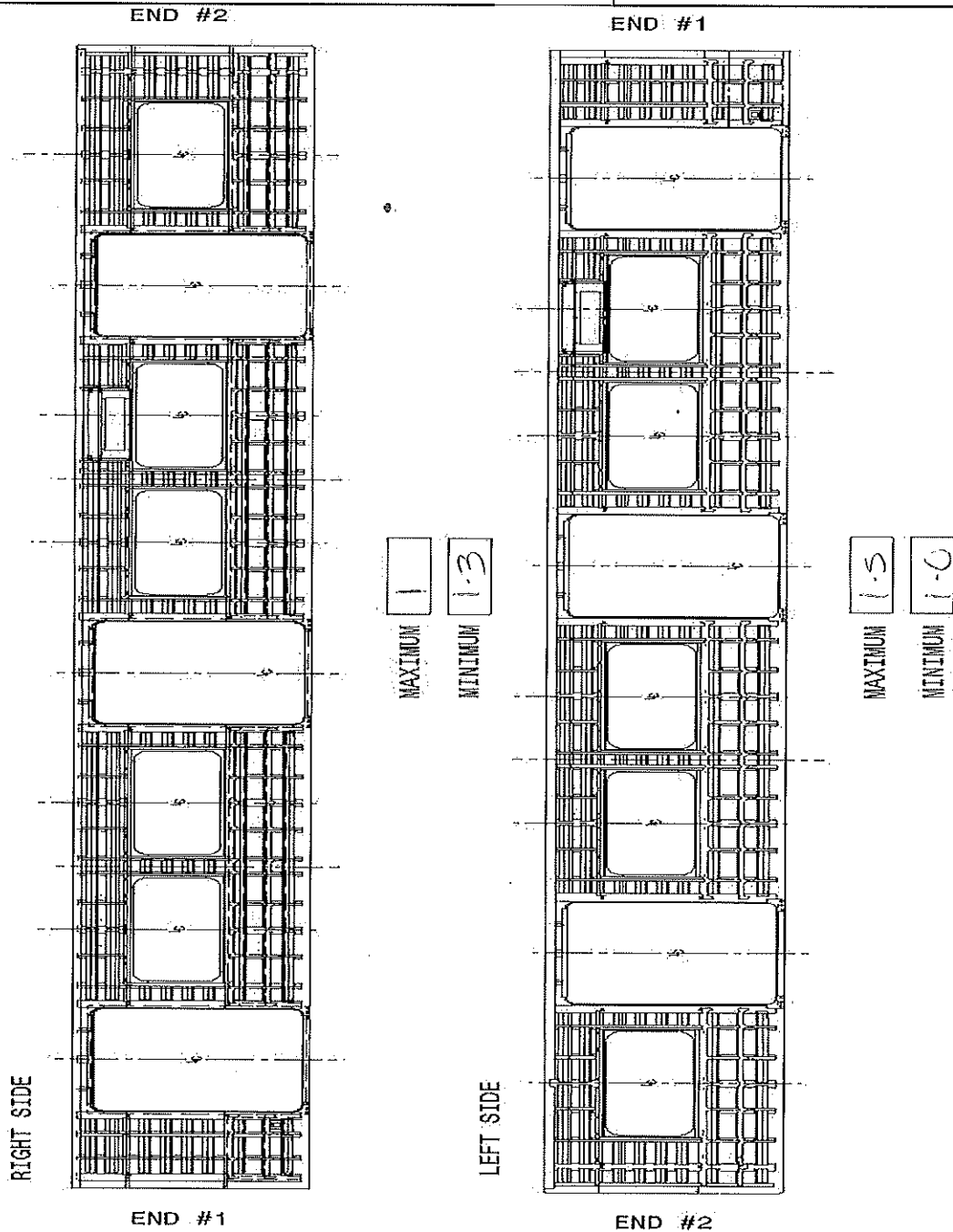


DT00000223319 Carshell Assembly TC

Rev.  
30  
Date-  
06/11/2023

Project: PRASA  
SI.CB1230.324.V29

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



2024-04-24

INDUSTRIAL QUALITY  
MAINLINE





DT00000223319 Carshell Assembly TC

Rev.  
30

Date-

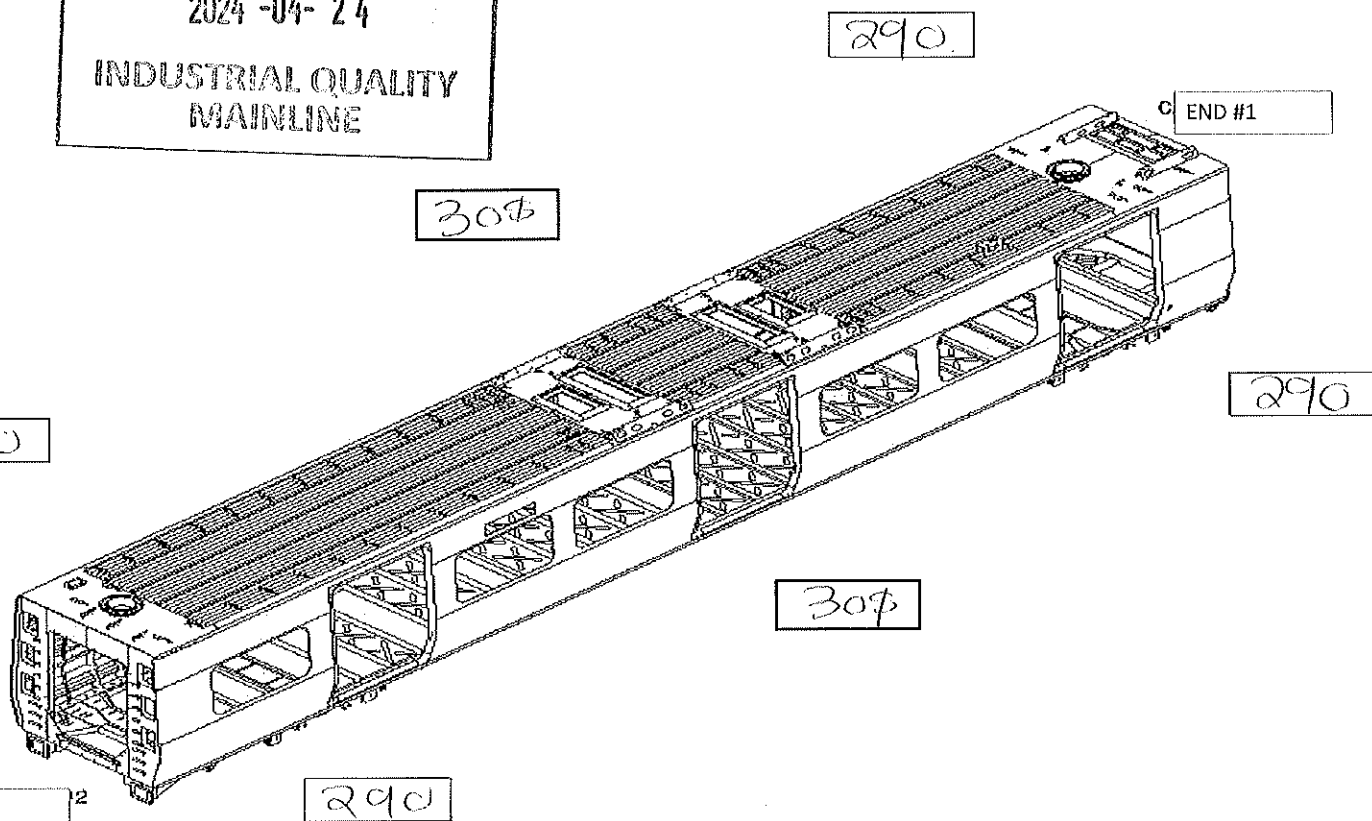
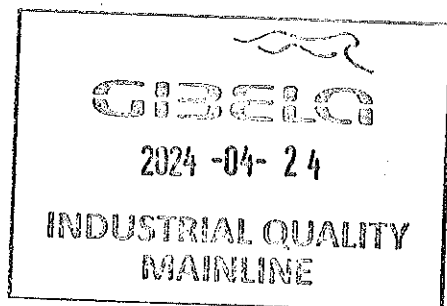
06/11/2023

Project: PRASA

SI.CB1230.324.V29

Specifications of Details for CBS measurement CB1230

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



MEASURED CAMBER VALUES

RIGHT

-

1φ

Di

LEFT

.1

1φ



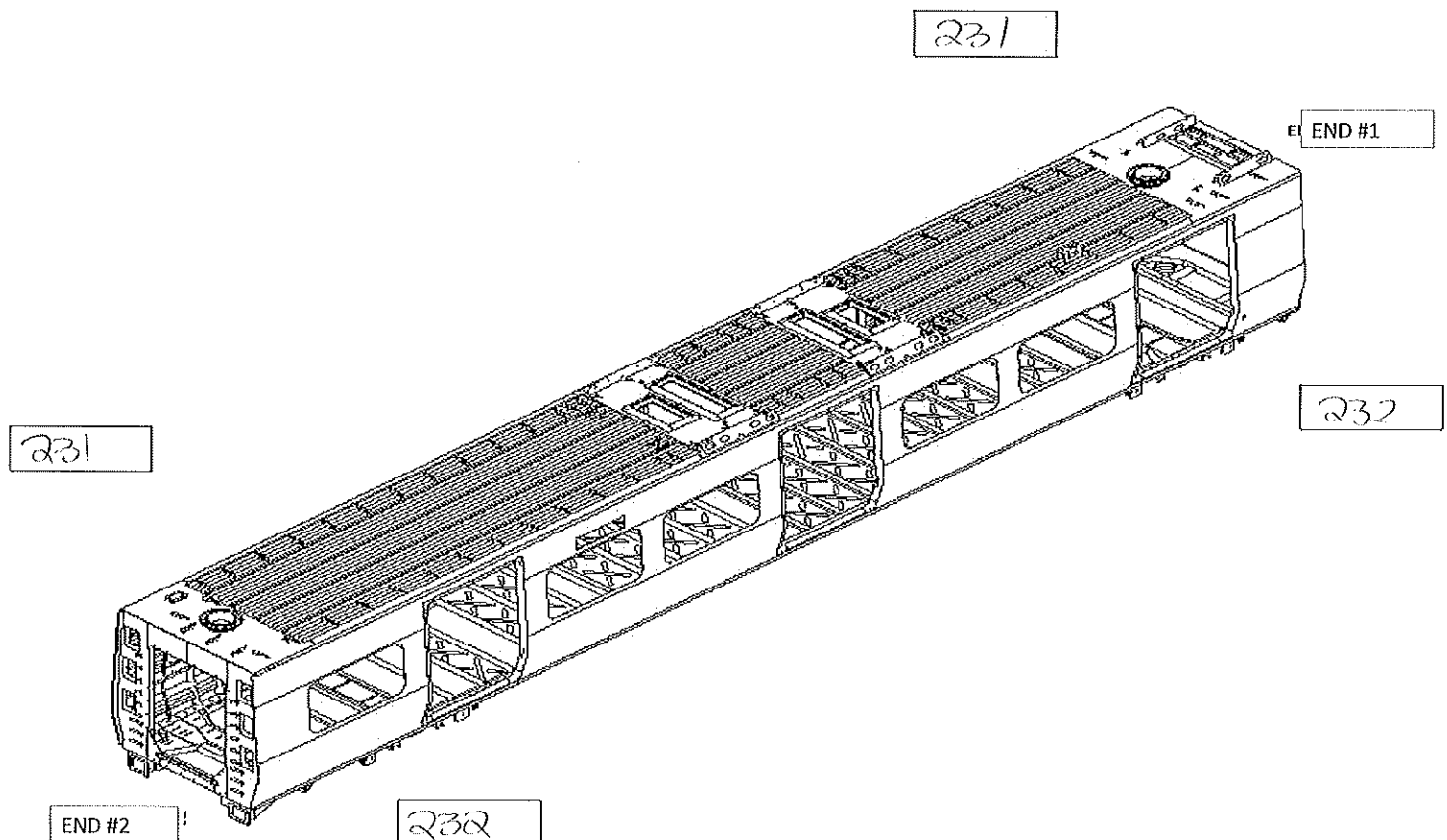
DT00000223319 Carshell Assembly TC

Rev.  
30  
Date-  
06/11/2023

Project: PRASA  
SI.CB1230.324.V29

### Specifications of Details for CBS measurement CB1230

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



MEASURED TWIST VALUES END 1

LATERAL

1

LONGITUDINAL

1

0

MEASURED TWIST VALUES END 2

LATERAL

1

LONGITUDINAL

0



2024-04-24

INDUSTRIAL QUALITY  
MAINLINE

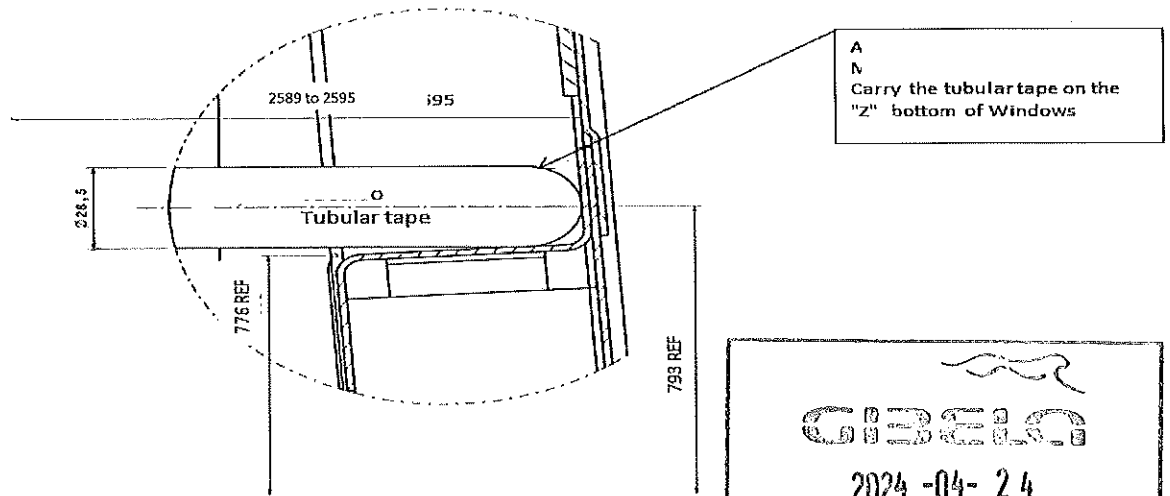


DT00000223319 Carshell Assembly TC

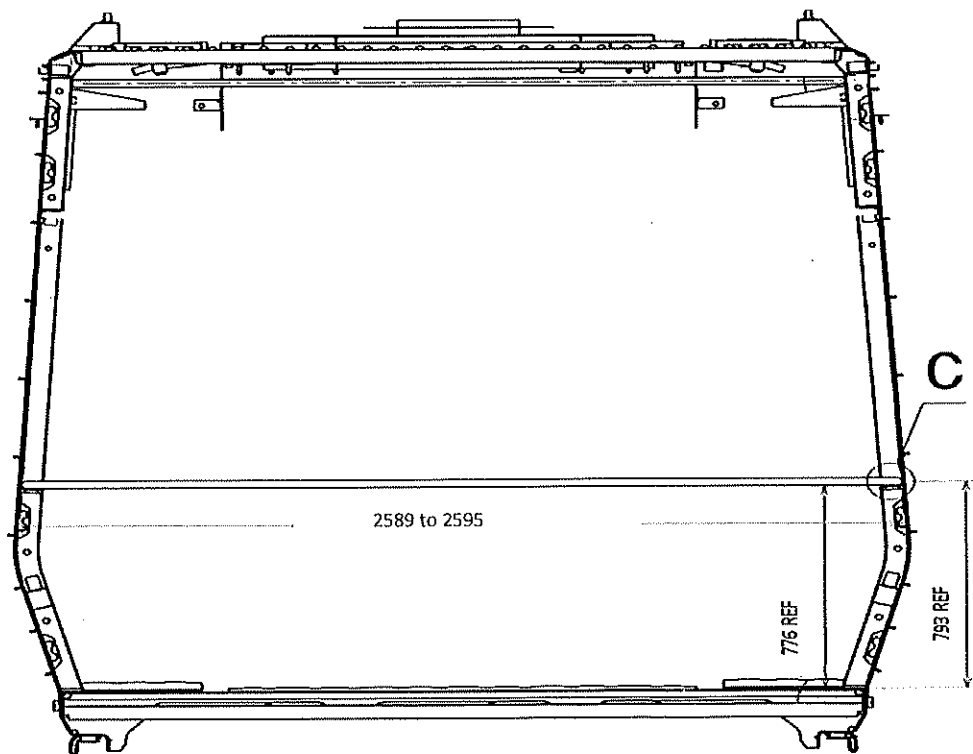
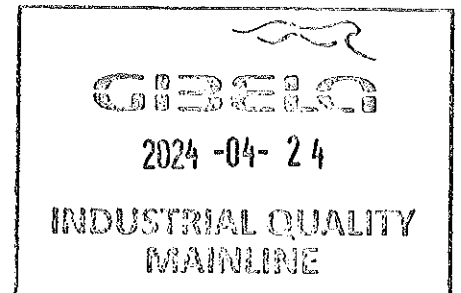
Rev.  
30  
Date-  
06/11/2023

Project: PRASA  
SI.CB1230.324.V29

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



Detail C





DT00000223319 Carshell Assembly TC

Rev.

30

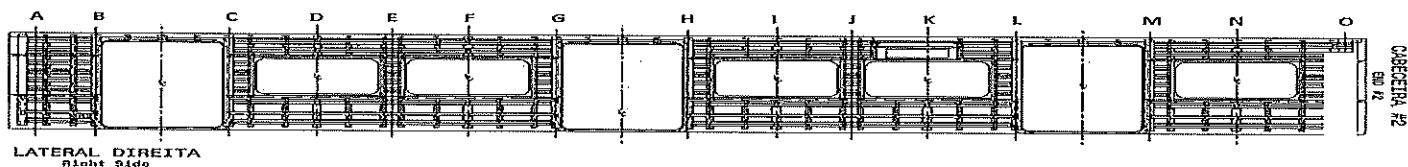
Project: PRASA

Date-

06/11/2023

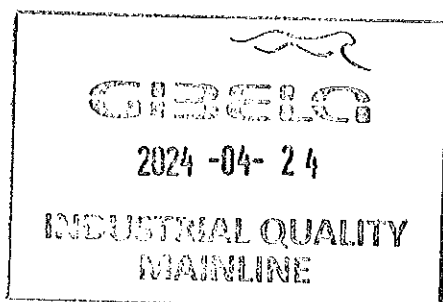
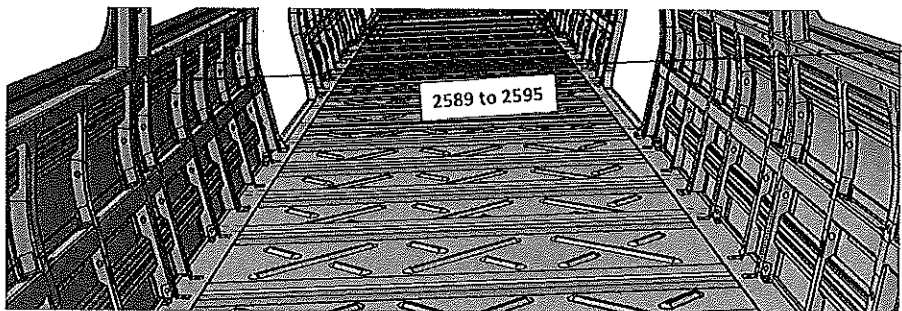
SI.CB1230.324.V29

## Specifications of Details for CBS measurement



2589 to 2595mm

A	2596
B	2594
C	2594
D	2595
E	2590
F	2589
G	2591
H	2595
I	2592
J	2589
K	2591
L	2591
M	2595
N	2590
O	2595



## Threshold verification

Nominal value :38

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

BOILER MAKER:

Leni

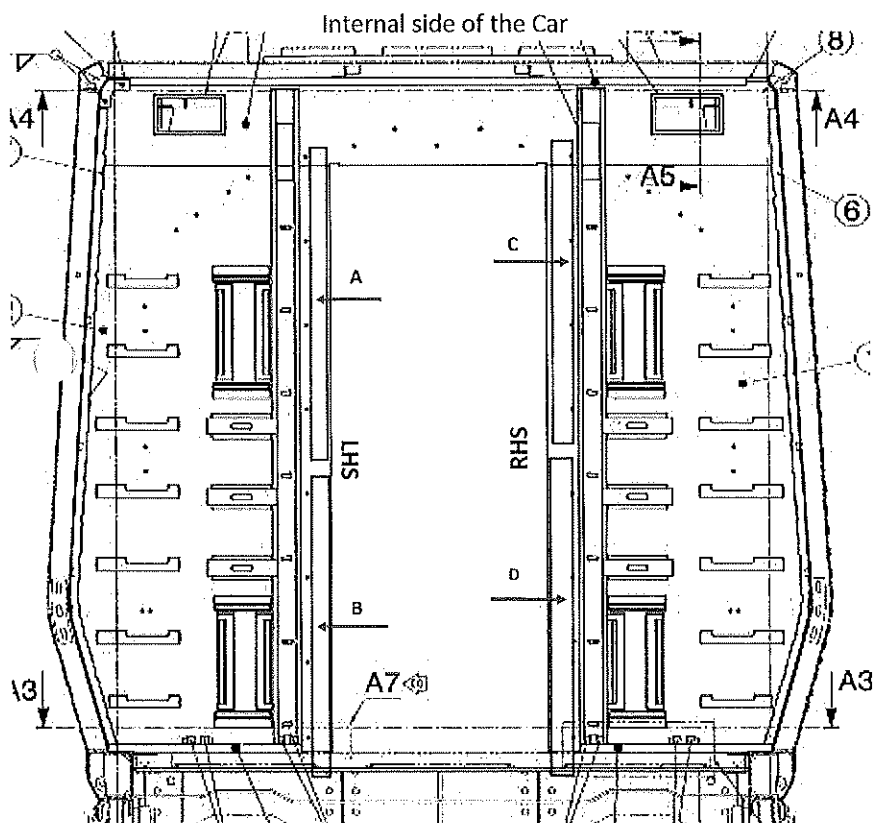
WELDER:

Madini

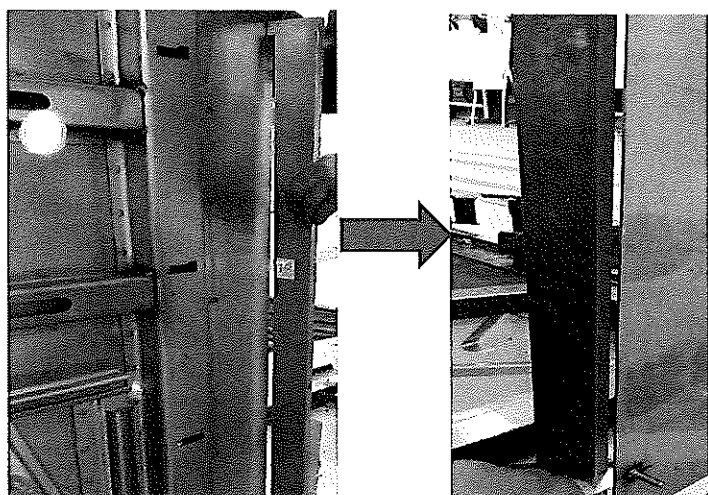
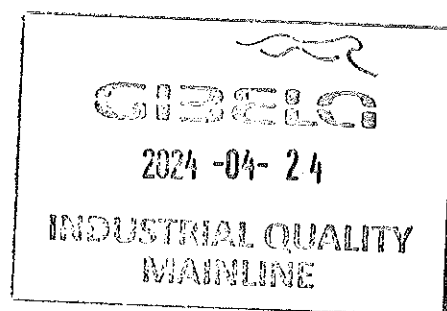
### Specifications of Details for CBS measurement

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	9.2	1
B	9.3	10.2	0.3
C	10.1	10.3	0.4
D	10.9	11.2	0.3





DT00000223319 Carshell Assembly TC

Rev.  
30

Date-

06/11/2023

Project: PRASA

SI.CB1230.324.V29

**Dye penetrant test**

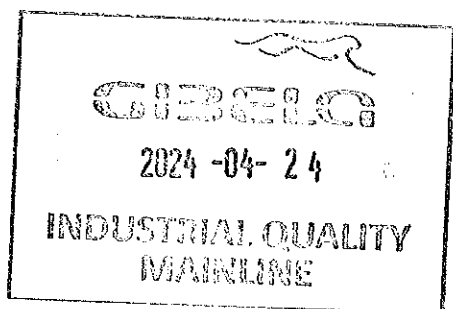
Dye-penetration test to be performed by quality personnel



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

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

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





DT00000223319 Carshell Assembly TC

Rev.  
30

Date-

08/11/2023

Project: PRASA

SI.CB1230.324.V29

## Self Inspection - Final Result

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

DATE

NAME

SIGNATURE

HOLD POINT

GO

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

26/04/24

Bortunelo  
Operations

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

26/04/24

Andoni  
Industrial QualityThere are activities pending that impact/stop the activities of the next process  
Obs: (To describe problems below)

Operations

There are non-conformities impact the quality of the product and there is no corrective action defined yet)

Industrial Quality

In case of "NO GO", describe blocking problems

In case of "NO GO", the operations manager must define below action plan to ensure "GO":

Item	Description	Action	Responsible	Due date	Status

  
Operations

Quality

GIBELQ

2024-04-24

INDUSTRIAL QUALITY  
MAINLINE

## ANNEXURE A: Arc Welding Quality Acceptance Standard

