


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?
				TCA	M4	M1	M2	M3	TC2		
DTR30223319/3	AAD0001241033	Carshell Assembly TC	CB1210	X						PRA.CB1210.DTR3022331 9/3.V25	YES

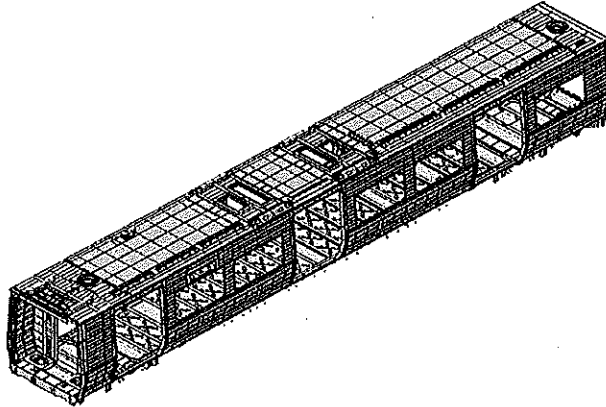
REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	09/04/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	09/04/2018
			CHECKER	Nosizo Pindela	09/04/2018
			COMPILER	Thanyani Mathegu	06/04/2018
1	2018/05/18	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality 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	Ntokozo Zwane	
TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
250	TC2	WUNGA 4.71497	27/05/24	SI.CB1210.322.V28	16

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

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



I - Documentation and Instruments

I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	D	M	M2	M3	M4	D						
DTR30223319/3						Y	28		✓		N/A	10/07/24

I.2 - Instruments Control






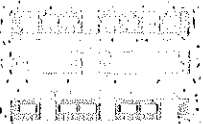






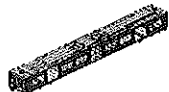




Monitoring and Measuring Instrument Control - Used for Special Process


Instruments	Validation	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
TUBULAR	52825-2	15/03/24	✓		10/07/24	10/07/24
30M TAPE	715 TP2084	14/03/24	✓		10/07/24	10/07/24
LASER TAPE	1254.25924	08/01/24	✓		10/07/24	10/07/24

1.3 Consumables

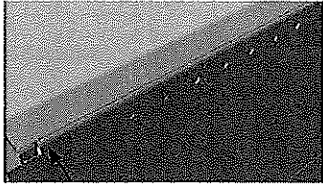
Welding Consumable Control - Used for Special Process



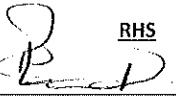
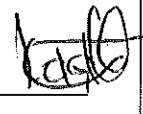
Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
AUTROD 308 LSI	1221880	MIG	✓		10/07/24	10/07/24
ERL 309 LSI	318394	MIG	✓		10/07/24	10/07/24

		DTR30223319/3 Carshell Assembly TC		Rev. V28 Date: 07/11/2023		Project: PRASA SI.CB1210.322.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	✓		 27/05/24	 27/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		 27/05/24	 27/05/24
03		Functional dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		 27/05/24	 27/05/24
04	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD00000210675	✓		 27/05/24	 27/05/24
05	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 27/05/24	 27/05/24
06		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 27/05/24	 27/05/24
07	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658	✓		 27/05/24	 27/05/24




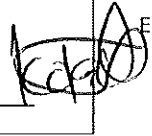
	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB1210.322.V28
		Date- 07/11/2023	
Welder traceability			

Roof ring welds

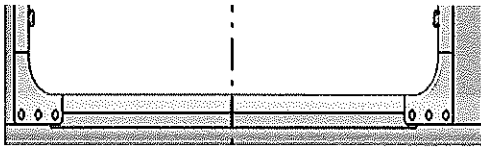


<div>LHS</div> Boiler maker (Name & Sign): <u>LAWRENCE </u>		<div>Welder (Name & Sign): <u>Thabang </u></div>	
<div>RHS</div> Boiler maker (Name & Sign): <u>Tim </u>		<div>Welder (Name & Sign): <u>Thabang </u></div>	


END 1

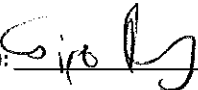
<div>LHS</div> Boiler maker (Name & Sign): <u>LAWRENCE </u>		<div>Welder (Name & Sign): <u>Thabang </u></div>	
<div>RHS</div> Boiler maker (Name & Sign): <u>Tim </u>		<div>Welder (Name & Sign): <u>Thabang </u></div>	

END 2




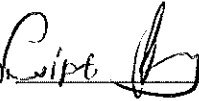
LHS


Boiler maker (Name & Sign): GERALD 

Welder (Name & Sign): Sipho 

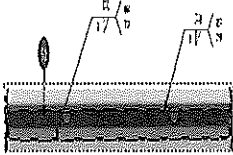
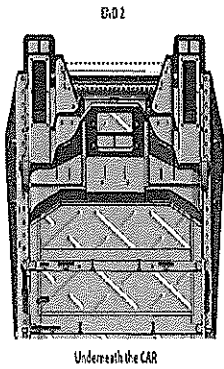
RHS

Boiler maker (Name & Sign): GERALD 

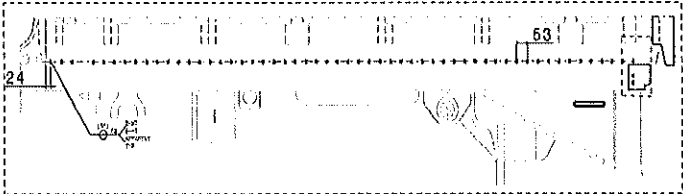
Welder (Name & Sign): Sipho 

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



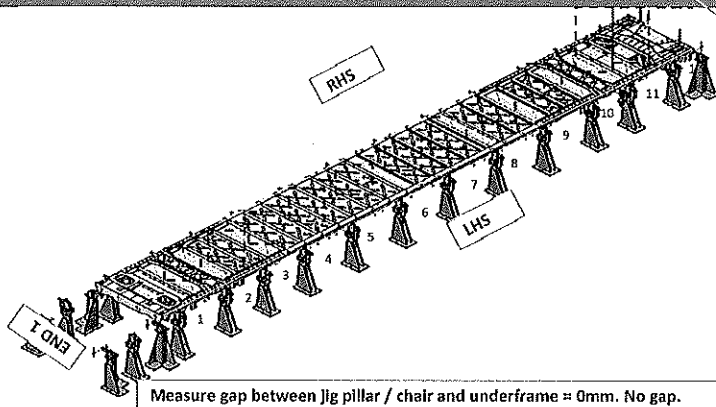
END 2
 Boiler maker (Name & Sign): *[Signature]*
 Welder (Name & Sign): *[Signature]*



FEDOLI
 Operator: *[Signature]*

	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB1210.322.V28
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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: 27/05/24

After Welding.

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

Signature Industrial Quality:  Date: 27/05/24

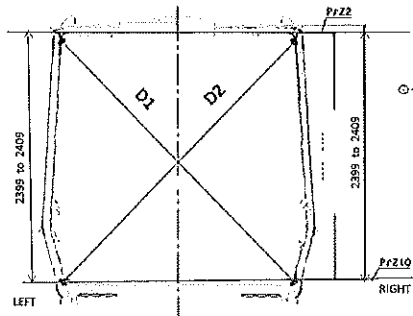
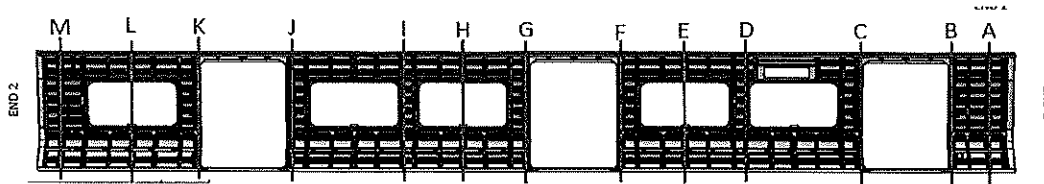


DTR30223319/3 Carshell Assembly TC

Rev.
V28
Date-
07/11/2023

Project: PRASA
SI.CB1210.322.V28

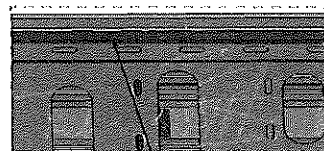
Specifications of Details for CBS measurement




Measurement positions on roof rail and sidewall omega corner



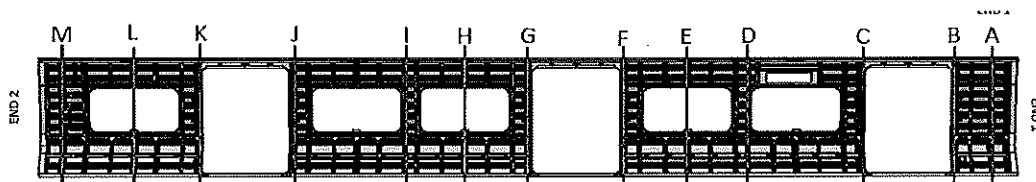
Measurement positions on sidewall and side sill corner



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



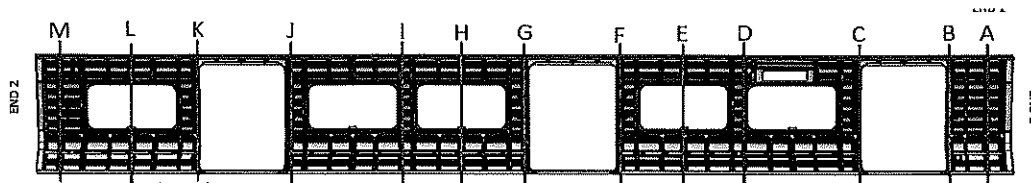
PME: The difference in Height values measured on the LHS and RHS should be $\leq 2\text{MM}$ on each point.

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3268	3268	0	2405	2405	0
B	3268	3269	1	2406	2405	1
C	3269	3268	1	2404	2406	2
D	3268	3268	0	2405	2405	0
E	3264	3266	2	2406	2405	1
F	3268	3268	0	2404	2406	2
G	3268	3267	1	2405	2406	1
H	3264	3265	1	2406	2404	0
I	3265	3265	0	2405	2406	1
J	3268	3268	0	2407	2405	2
K	3268	3269	1	2406	2405	1
L	3269	3265	4	2405	2405	0
M	3268	3269	1	2407	2406	1


27/05/24


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


AFTER WELDING



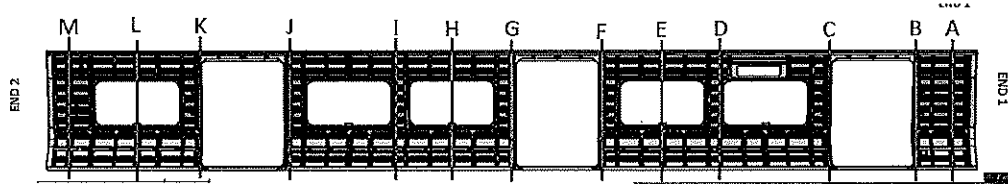
PME: The difference in Height values measured on the LHS and RHS should be $\leq 2\text{MM}$ on each point.

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3268	3269	1	2405	2405	0
B	3294	3294	0	2406	2406	2
C	3296	3295	1	2405	2405	0
D	3265	3265	0	2404	2405	1
E	3266	3264	2	2407	2406	1
F	3294	3296	2	2406	2405	1
G	3295	3295	0	2406	2406	0
H	3266	3265	1	2406	2407	2
I	3266	3266	0	2405	2405	0
J	3296	3295	1	2404	2406	2
K	3295	3295	0	2405	2404	1
L	3265	3268	3	2406	2406	0
M	3294	3295	1	2406	2407	1


 2.7/05/24

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

BEFORE WELDING



2270 to 2276

2268 a 2274

A 2275

B 2273

C 2272

D 2271

E 2276

F 2272

G 2273

H 2276

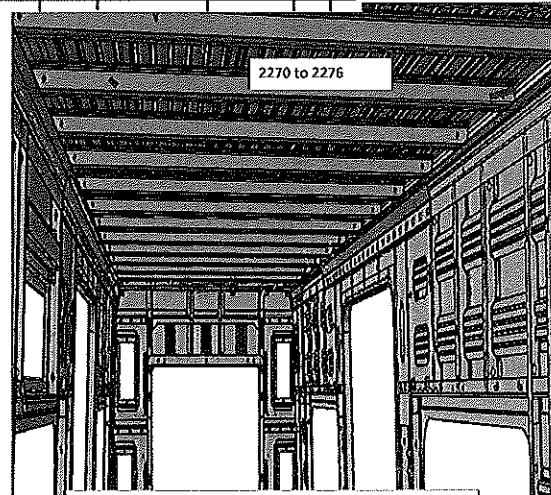
I 2277

J 2272

K 2271

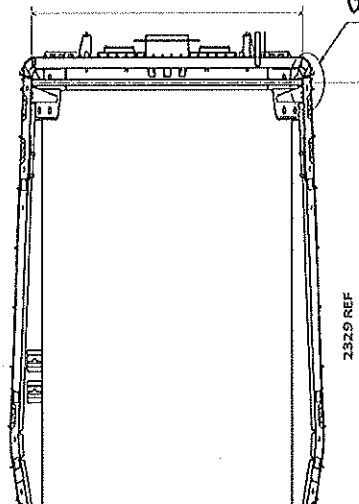
L 2273

M 2272

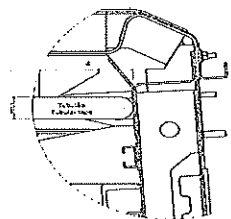


Do not consider reinforcement (Take measurements top area of zee profile)

2265 to 2271



2265 to 2271

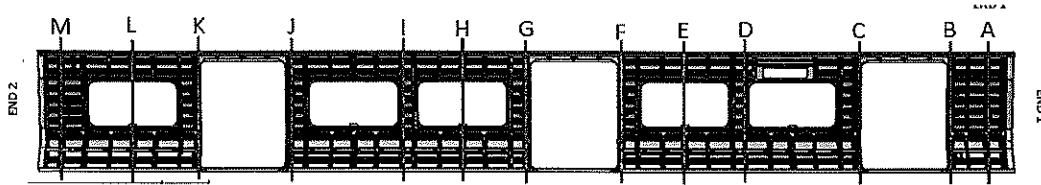


Detail 0

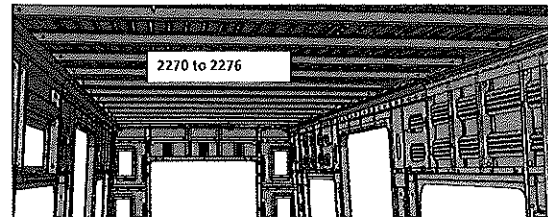
Consider the reinforcement area

27/05/24

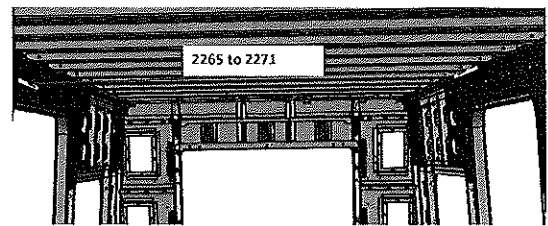
AFTER WELDING



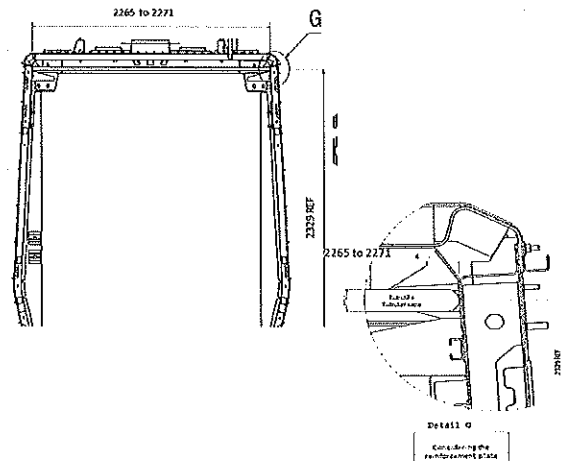
	2265 to 2271	2270 to 2276
A	N/A	2274
B	2268	N/A
C	2269	N/A
D	N/A	2275
E	N/A	2275
F	2266	N/A
G	2268	N/A
H	N/A	2275
I	N/A	2276
J	2270	N/A
K	2269	N/A
L	N/A	2273
M	2265	N/A



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



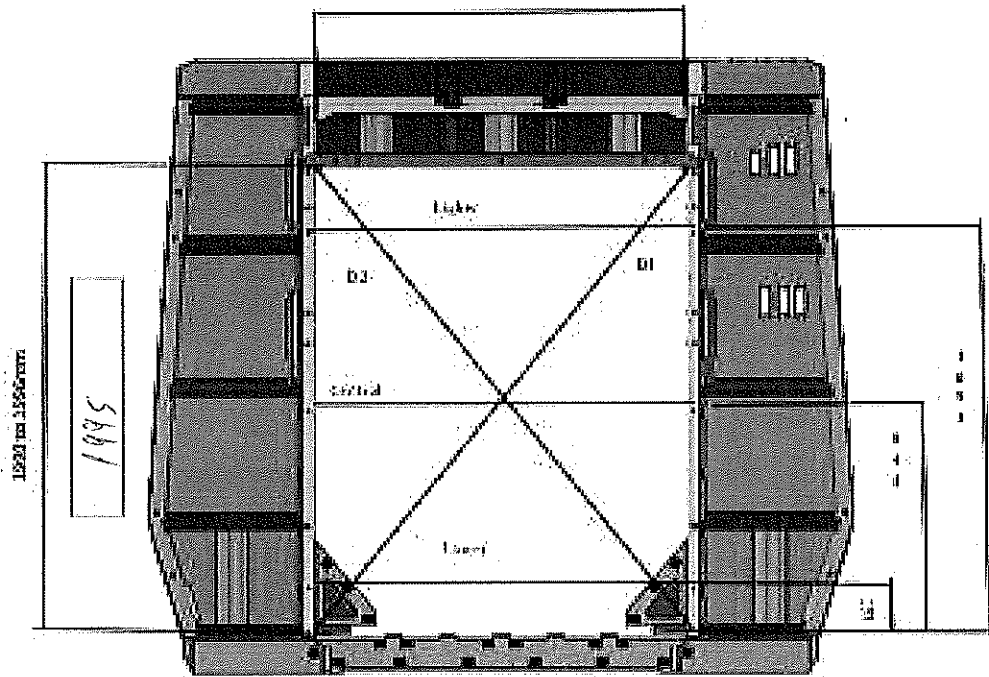
Take measurement close to radius (considering reinforcement)



27/05/2023

Specifications of Details for CBS measurement

Endframe 2



THESE ARE THE

DIAGONAL DIFFERENCE D1-D2 ≤ 3mm

Upper Distance

1382

D1

2444

Central Distance

1382

D2

2413

Lower Distance


1381




D1-D2

1

27/05/24




		DTR30223319/3 Carshell Assembly TC		Rev. V28		Project: PRASA			
				Date- 07/11/2023		SI.CB1210.322.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			Signature/Date (Manufacturing)	Signature/Date (Quality)	
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX						

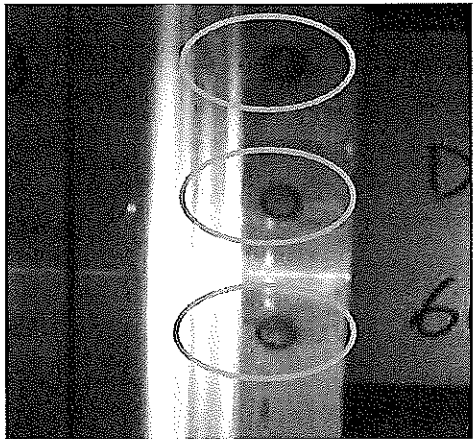
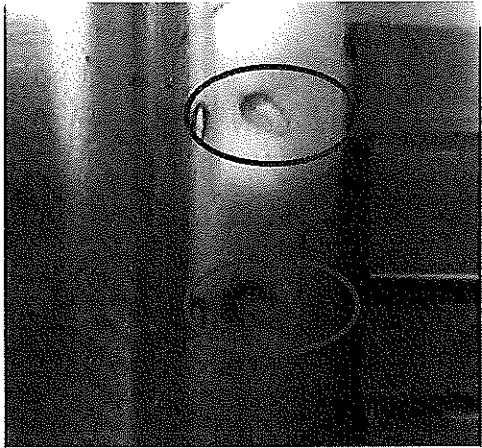
		DTR30223319/3 Carshell Assembly TC		Rev. V28	Project: PRASA SI.CB1210.322.V28	
				Date- 07/11/2023		
Self Inspection - Final Result						
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!	27/05/24	h.w.g.a. Operations		
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.	27/05/24	Nckow Quality		
	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

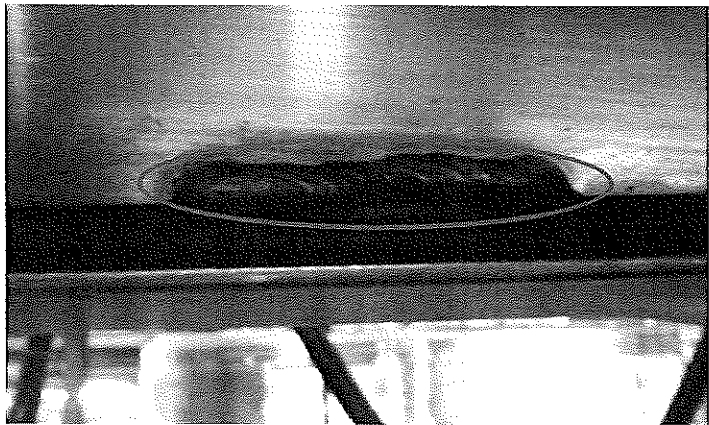
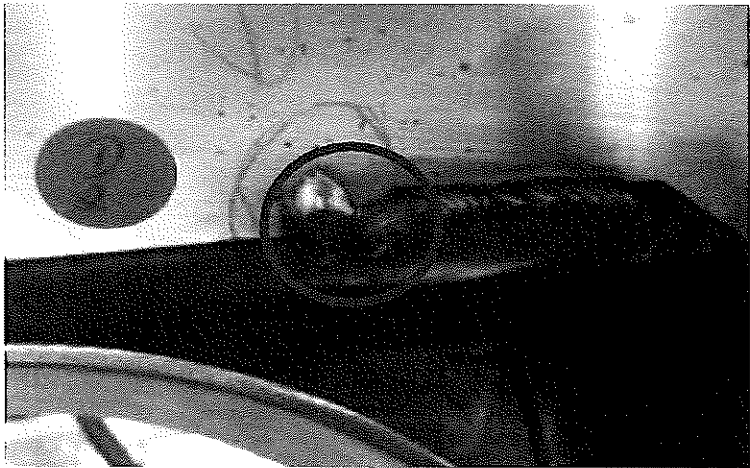
	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA SI.CB1210.322.V28
		Date- 07/11/2023	

ANNEXURE A: Spot Welding Quality Acceptance Standard



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

ANNEXURE B: Arc Welding Quality Acceptance Standard





APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

SELF INSPECTION SHEET


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APPLICATION REFERENCE

[illegible]

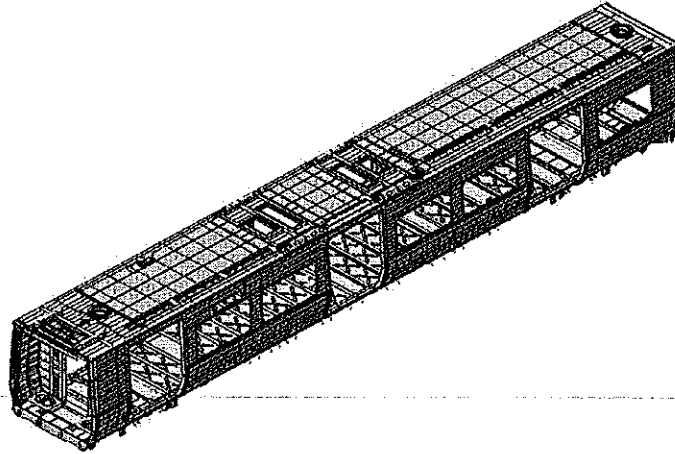
REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	09/04/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	09/04/2018
			CHECKER	Nosizo Pindela	09/04/2018
			COMPLIER	Thanyani Mathegu	06/04/2018
1	23/05/2018	Team leader and Quality Technician to sign final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	23/05/2018
			CHECKER	Nosizo Pindela	23/05/2018
			REVISD BY	Ramokone 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
			COMPLIER	Ramokone 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
			COMPLIER	Ramokone 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
			COMPLIER	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
			COMPLIER	Nosizo Pindela	13/03/2019
7	20/05/2019	Removed roof width	APPROVER	Itumeleng Modiba	20/05/2019
			CHECKER	Nosizo Pindela	20/05/2019
			REVISD BY	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
			REVISD BY	Nosizo Pindela	22/08/2019
15	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela	06/08/2020
			CHECKER	Bongane Masina	
			REVISD BY	Bongane Masina	
20	19/04/2021	New Baseline 10.2.6	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	
			REVISD BY	Bongane Masina	
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING	APPROVER	Mshombi Collins	17/08/2021
			CHECKER	Mulauzi Mpho	
			REVISD BY	Mulauzi Mpho	
25	20/02/2022	New Baseline 10.2.6	APPROVER	Mshombi Collins	20/02/2022
			CHECKER	Andani Muthelo	
			REVISD BY	Andani Muthelo	
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Mshombi Collins	14/06/2022
			CHECKER	Andani Muthelo	
			REVISD BY	Andani Muthelo	
27	19/10/2022	Addition of traceability for sealant application and welding	APPROVER	Mshombi Collins	19/10/2022
			CHECKER	Ntloko Zwane	
			REVISD BY	Amogelang Molamphe	
28	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntloko Zwane	
			REVISD BY	Amogelang Molamphe	
TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
230	TC2	Mash d. 410041	28/05/24	SI.CB2220.323.V28	17

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		Date- 28/10/2023	

Carro Car: TC1, TC2	NCR:	Work station: CB2220
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Safety Related



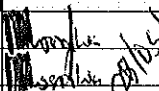
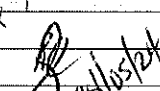
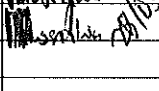
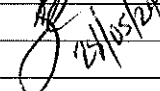
I - Documentation and Instruments

I.1 - Documentation Control

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

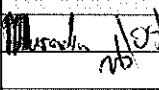
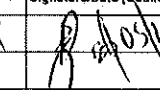
I.2 - Instruments Control










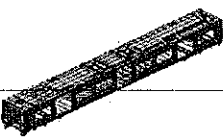





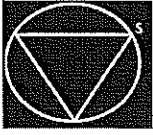




Monitoring and Measuring Instrument Control - Used for Special Process


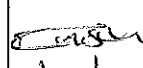
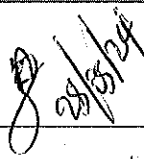

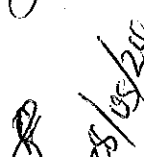
Instruments	Validation	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Tubular	32823-3	15/03/2025	✓			
Measuring tape	616710399	16/04/2025	✓			

I.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	373779	MIG	✓			

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				Date-	SI.CB2220.323.V29		
				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	✓		 28/05/24	 28/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		 28/05/24	 28/05/24
03	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 28/05/24	 28/05/24
04	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 28/05/24	 28/05/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 28/05/24  28/05/24	 28/05/24
06	N/A	Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		 28/05/24	 28/05/24
07		Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658	✓		 28/05/24	 28/05/24
08	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified: <div style="display: flex; justify-content: space-between;"> <div> Temperature Min - Max (1) Relative humidity Min - Max (1) </div> <div> Min-Max Min-Max </div> <div> 10°C - 35°C 25% - 60% </div> </div>	Sealant Batch No: <u>B317-08/24</u> Exp Date: <u>15/06/24</u> Actuals Temperature: <u>30°C</u> Humidity: <u>45%</u>	✓		 28/05/24	 28/05/24

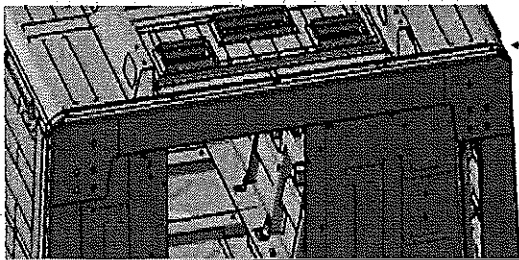
		DTR30223319/2 Carshell Assembly TC		Rev. 29	Project: PRASA		
				Date- 28/10/2023	SI.CB2220.323.V29		
09	NA	Verification of sealant application in certain regions in the drawing.	AAD0001241033	✓		 28/05/24	 28/05/24
10	NA	Verification of sealant application on the roof and sidewall finishers	Sealant must be: -Applied straight and even (1.5mm) -Free of gaps, cracks, damage and debris (flashes, dirt, dust) Refer to Annexure B	✓		 28/05/24	 28/05/24



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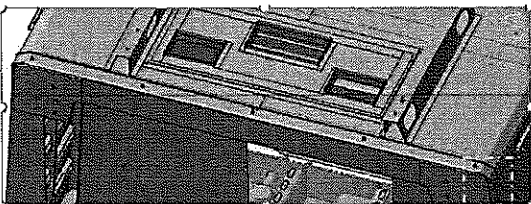
END 1
SEALANT

OPERATOR
(Name & sign):


Priscilla [Signature]

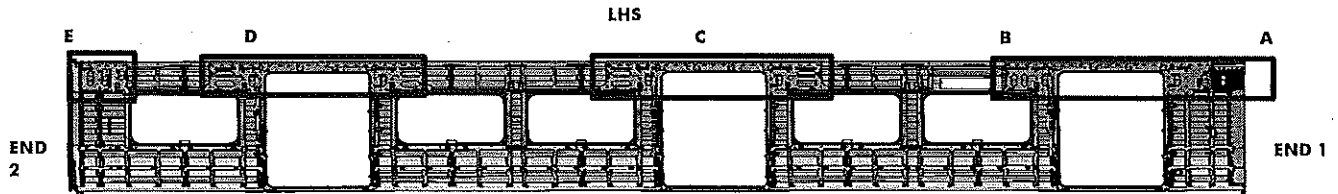
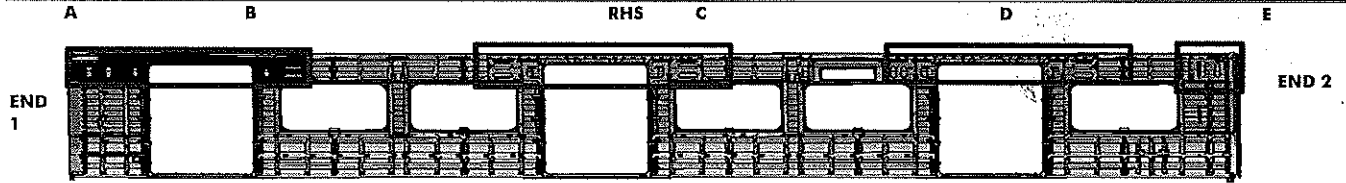
OPERATOR
(Name & sign):

Priscilla [Signature]




Priscilla [Signature]

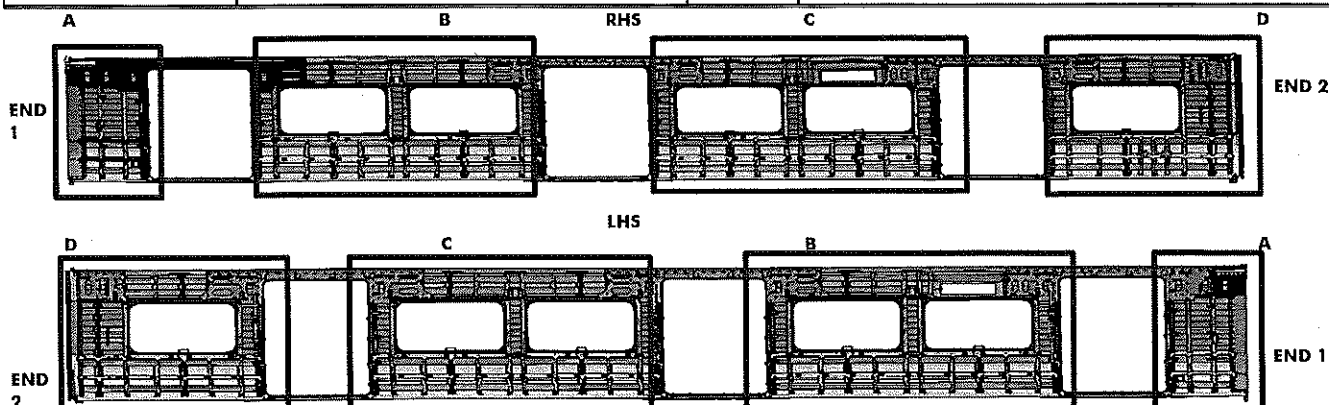
	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	



REINFORCEMENT WELDING


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

	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
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BRACKETING


C-RAILS:		Operator:	INSTALLATION Z. Scilla
		Operator:	
DOOR MECHANISMS:		Operator:	Tetelo
		Operator:	
TAPPING PADS		Operator:	Henri
		Operator:	
INSTALLATION & VERIFICATION			
SEAT & LUGGAGE BRACKETS:		Operator:	Mthobazi
		Operator:	
SEAT BRACKETS VERIFICATION:		Operator:	Mthobazi
		Operator:	
WELDING			
AREA	LHS		RHS
A (Seat brackets)	: Operator (Name&sign):	N/A	N/A
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	LINDO	LINDO
B (Seat brackets)	: Operator (Name&sign):	LINDO	LINDO
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	LINDO	LINDO
C (Seat brackets)	: Operator (Name&sign):	LINDO	LINDO
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	LINDO	LINDO
D (Seat brackets)	: Operator (Name&sign):	Mthobazi	Mthobazi
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	Mthobazi	Mthobazi

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

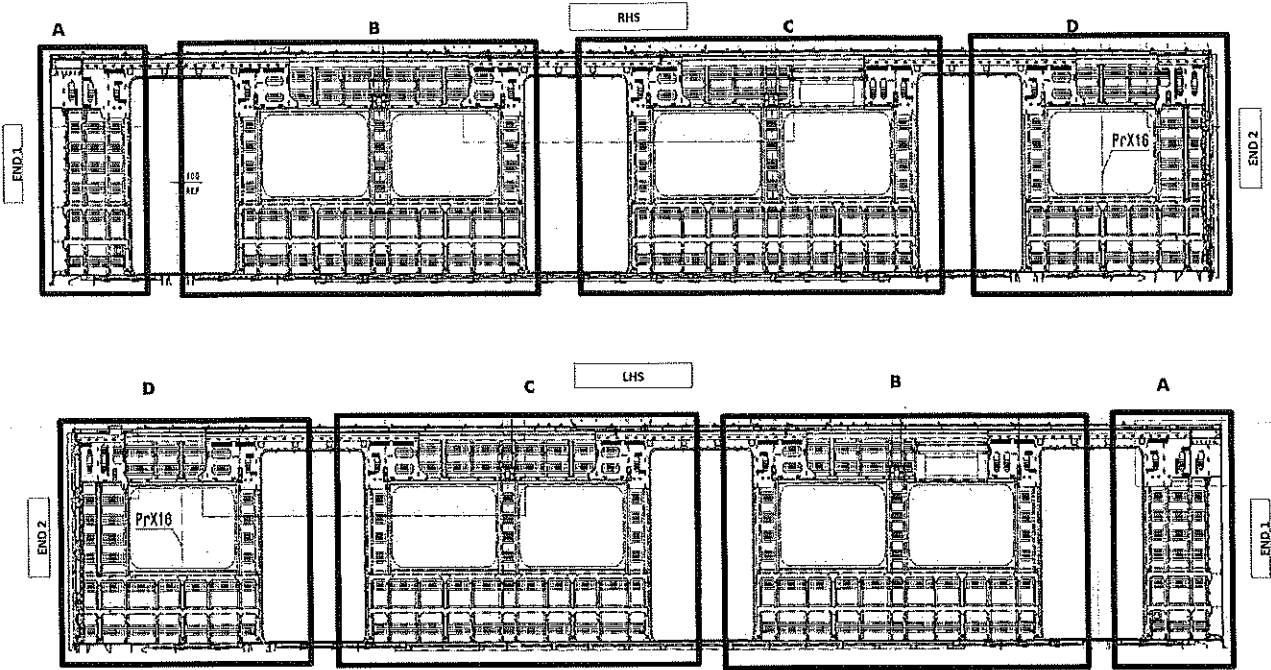
ENDS

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

END 2 TAPPING PADS WELDING: Operator (Name&sign): M. Masueto M. Kain

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

TC BRACKET INSTALLATION



QUANTITIES (TC)

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

ROOF ENDS:
 CRAILS 2 OFF END 2
 EARTH BUSH 4 OFF END 2

VERIFICATION BY: Mashadi

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

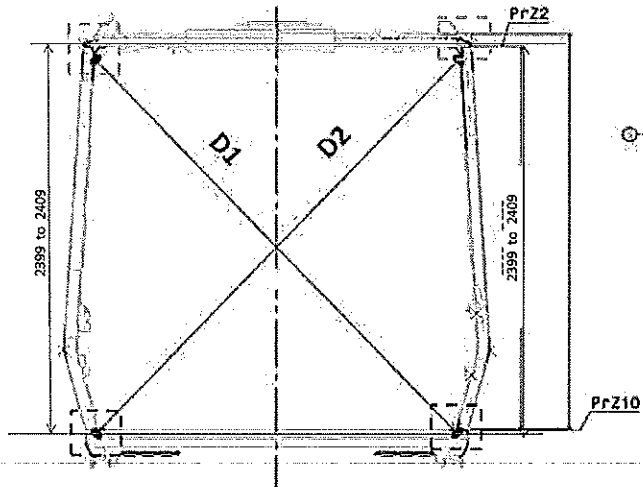
VERIFICATION BY: Mashadi



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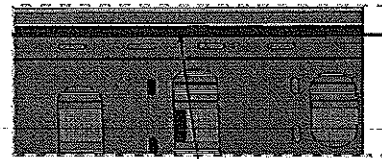
Project: PRASA
SI.CB2220.323.V29



Take measurement close to radius



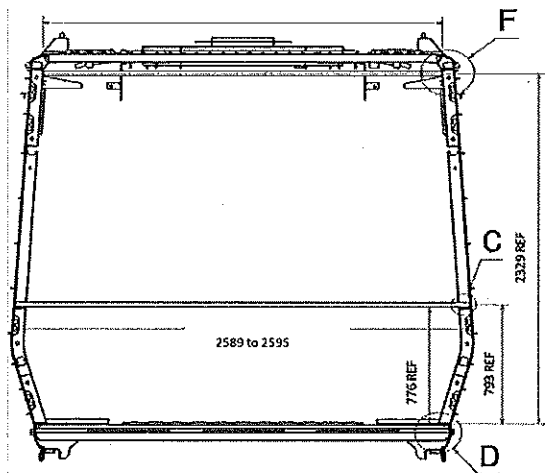
Measurement positions on roof rail and sidewall omega corner.



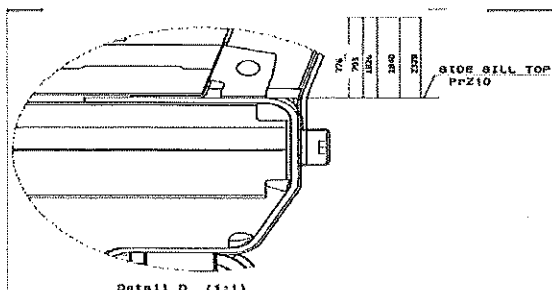
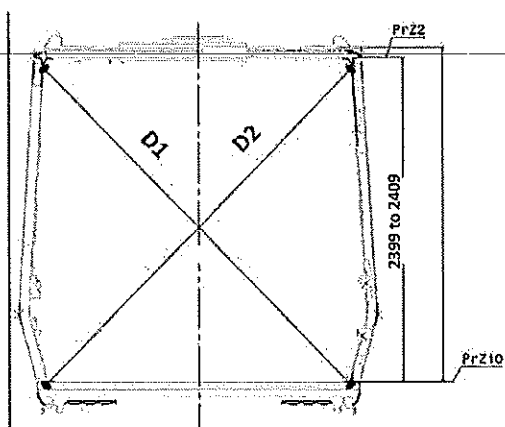
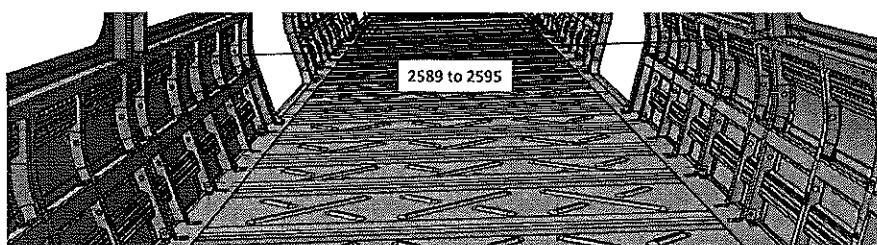
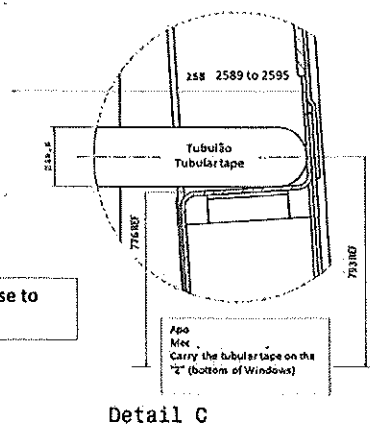
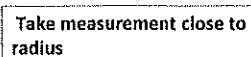
Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.



Take measurement close to radius

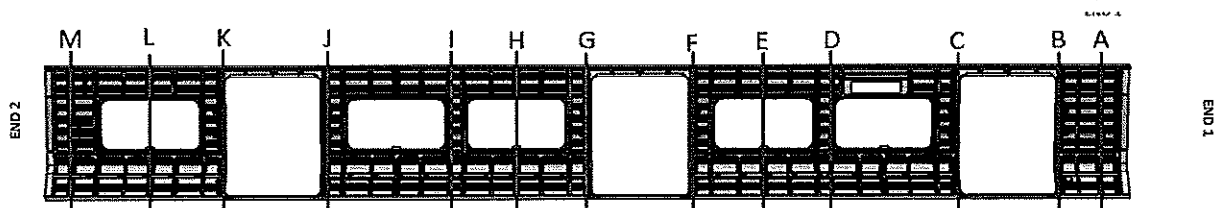




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BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3268	3267	1	
B	3298	3298	0	
C	3298	3298	0	
D	3265	3267	2	
E	3265	3267	2	
F	3296	3295	1	
G	3297	3297	0	
H	3264	3266	2	
I	3265	3266	1	
J	3299	3296	3	
K	3299	3297	2	
L	3265	3266	1	
M	3296	3297	1	



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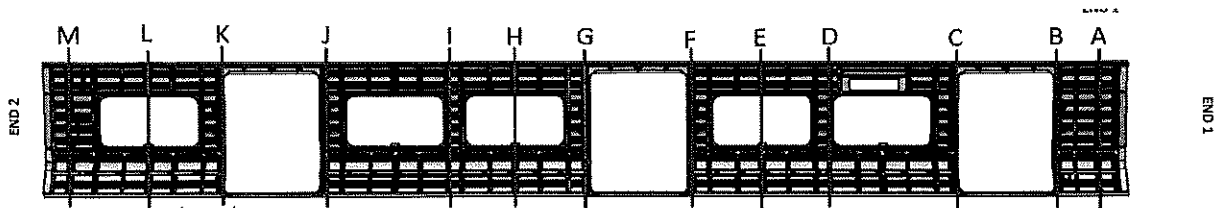
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Date-


28/10/2023

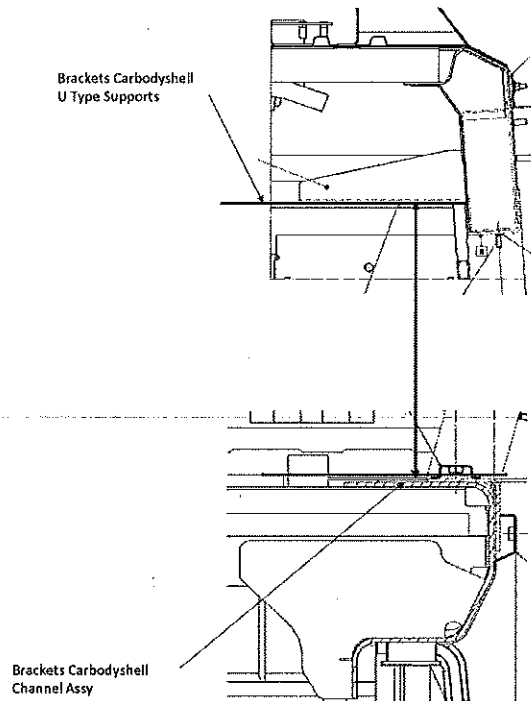
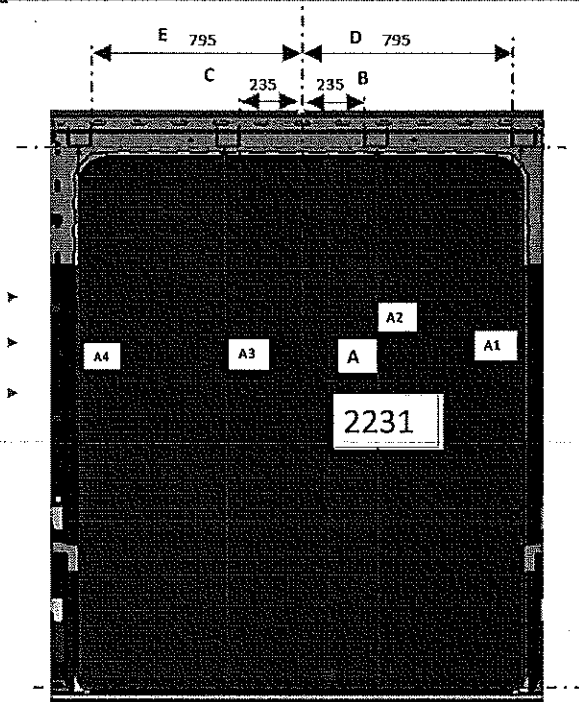
SI.CB2220.323.V29



AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3268	3265	3	2590
B	3299	3298	1	2589
C	3298	3298	0	2590
D	3268	3264	4	2591
E	3268	3265	3	2594
F	3298	3295	3	2591
G	3297	3295	2	2593
H	3265	3267	2	2595
I	3267	3265	2	2593
J	3298	3296	2	2592
K	3298	3299	1	2590
L	3267	3265	2	2591
M	3297	3296	1	2594

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		Specifications of Details for CBS measurement	



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

DOOR 3 - 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	235
C 234 to 236	236
D 794 to 796	795
E 794 to 796	794

DOOR 1 - RHS	
VALUE	ACTUAL
A1 2230 to 2232	2233
A2 2230 to 2232	2231
A3 2230 to 2232	2231
A4 2230 to 2232	2232
B 234 to 236	235
C 234 to 236	236
D 794 to 796	795
E 794 to 796	795

DOOR 2 - RHS	
VALUE	ACTUAL
A1 2230 to 2232	2233
A2 2230 to 2232	2232
A3 2230 to 2232	2232
A4 2230 to 2232	2233
B 234 to 236	236
C 234 to 236	234
D 794 to 796	796
E 794 to 796	794

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



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29

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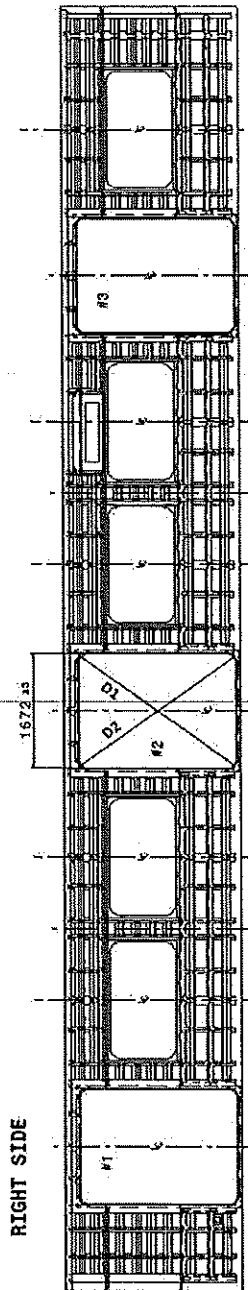
Date-

SI.CB2220.323.V29

28/10/2023

Specifications of Details for CBS measurement

End #2

Doors diagonal D1-D2 maximum difference ≤ 4 mm

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

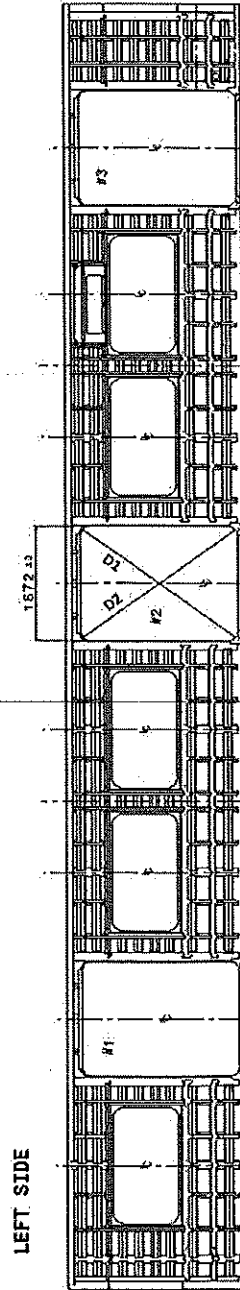
Doors length - 1672 ± 3 mm

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

RIGHT SIDE

End #1

End #1

Diagonal de portas - diferença D1-D2 ≤ 4 mm


	#1	#2	#3
D1	2768	2769	2750
D2	2753	2767	2748
D1-D2	2	2	2

Vão de Portas - 1672 ± 3 mm

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

LEFT SIDE

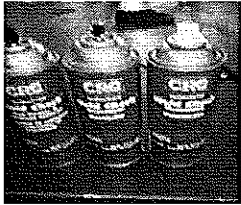
End #2

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

Specifications of Details for CBS measurement

Dye penetrant test

Dye-penetration test to be performed by quality personnel




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



II.2 - Check List REX

Check List Items

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

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

Self Inspection - Final Result


Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!		28/05/24	Mashudh	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)		28/05/24	Ntdkoro	
		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

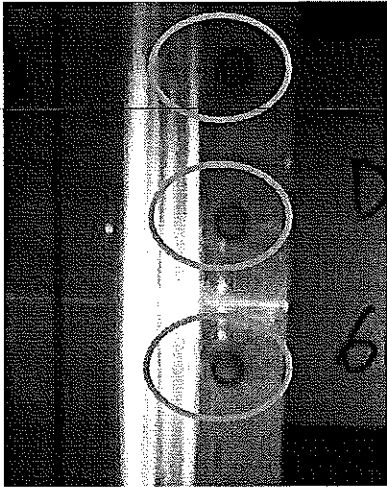
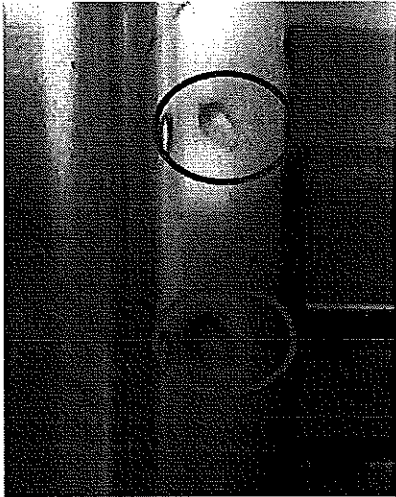
In case of "NO GO", the operations manager must define below action plan to ensure "GO":					
Item	Description	Action	Responsible	Due date	Status


Operations

Quality

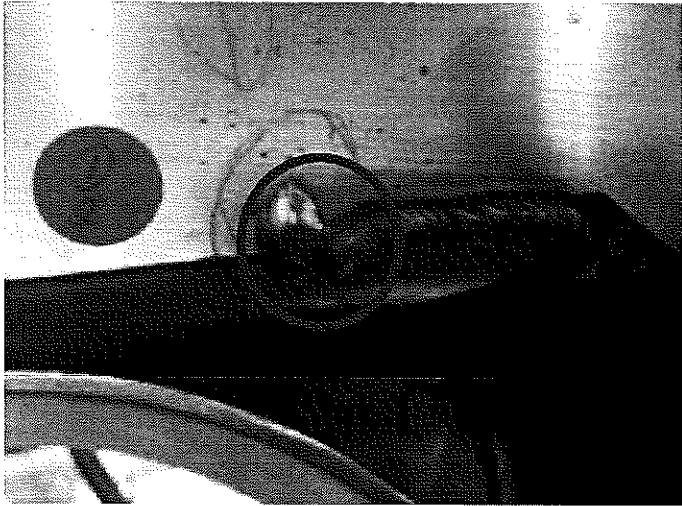
	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	


ANNEXURE A: Spot Welding Quality Acceptance Standard



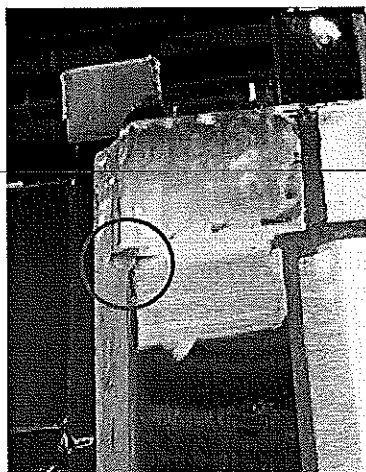
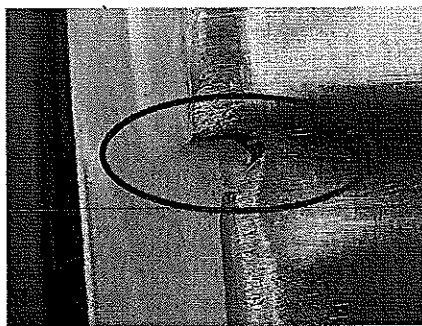
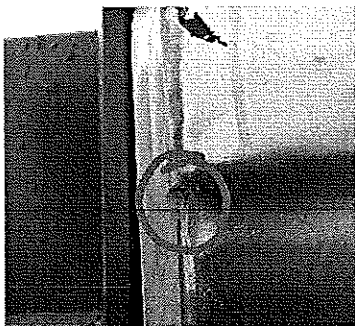
	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA SI.CB2220.323.V29
		Date-	
		28/10/2023	

ANNEXURE B: Arc Welding Quality Acceptance Standard



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

ANNEXURE B: Sealant



GIBELQ

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	TC1	M4	M1	M3	TC2	Work Instruction	Safety
DTR3000152195	AAD0001238563	DT0000023319 Carshell Assembly TC	CB2230	X					PRA.CB2230.DT00000123319.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 Mathagu	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 Molama	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 10.3.6	APPROVER	Timothy Maimela	28/01/2021
			CHECKER	Bongane Masina	28/01/2021
			COMPILER	Bongane Masina	28/01/2021
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	19/04/2021
			COMPILER	Bongane Masina	19/04/2021
25	20/04/2022	New Baseline change 10.3.1	APPROVER	Collins Mhombhi	20/02/2022
			CHECKER	Andani Muthelo	20/02/2022
			COMPILER	Andani Muthelo	20/02/2022
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Collins Mhombhi	14/06/2022
			CHECKER	Andani Muthelo	14/06/2022
			COMPILER	Andani Muthelo	14/06/2022
27	27/07/2022	Threshold measurements addition	APPROVER	Collins Mhombhi	26/07/2022
			CHECKER	Andani Muthelo	26/07/2022
			COMPILER	Andani Muthelo	26/07/2022
28	19/10/2022	Addition of traceability for sealant application	APPROVER	Collins Mhombhi	19/10/2022
			CHECKER	Ntokozo Zwane	19/10/2022
			COMPILER	Amogelang Mohlampe	19/10/2022
29	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntokozo Zwane	14/04/2023
			COMPILER	Amogelang Mohlampe	14/04/2023
30	06/11/2023	Added threshold traceability for boiler makers and welders	APPROVER	Tyson Ngobeni	06/11/2023
			CHECKER	Andani Muthelo	06/11/2023
			COMPILER	Ntokozo Zwane	06/11/2023

TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
280	TC2	KHOSE 417409	20.05.24	SI.CB2230.324.V29	12



DT00000223319 Carshell Assembly TC

Rev.
30

Date-

06/11/2023

Project: PRASA

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Carro
Car:

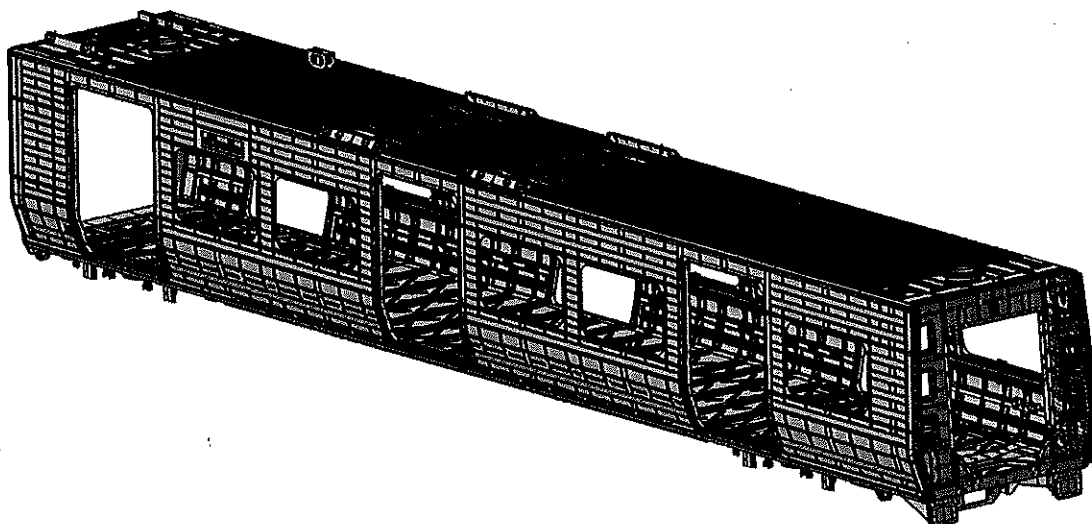
NCR:

Work station:

CB2230



Safety Related



I - Documentation and Instruments

I.1 - Documentation Control

Document	Type of car						Revision	Obsevation	OK	NOK	Signature/Date (Operations)	Signature/Date (Quality)
	TC1	M1	M2	M3	M4	TC2						
DT00000223319						X	V30		OL		N/A	30/05/24

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Validation	Calibration or Verification Validation Date	OK	NOK	Signature/Date (Operations)	Signature/Date (Quality)
MEASURING TAPE	C1B01914	25/04/25	OL		30/05/24	26/06/24
COMBINATION SQUARE	C1B0072	27/07/24	OL			26/06/24
TUBULAR	52713	26/06/25	OL			26/06/24

1.3 Consumables















Welding Consumable Control - Used for Special Process

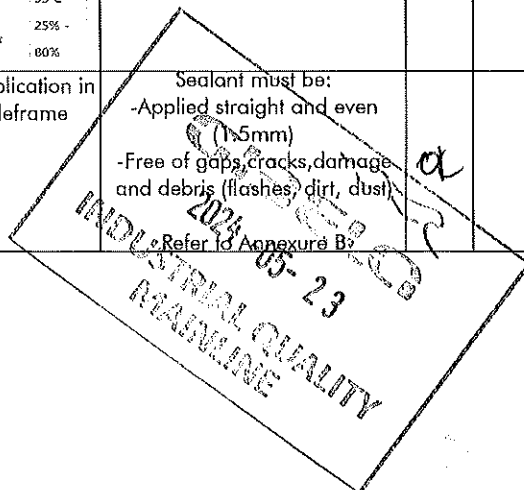
Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
AUTRO 308 LS	E221880	GTAW	OL		30/05/24	26/06/24
ER 308 L	1,4316	TIG	OL		30/05/24	26/06/24

INDUSTRIAL
MAINTENANCE

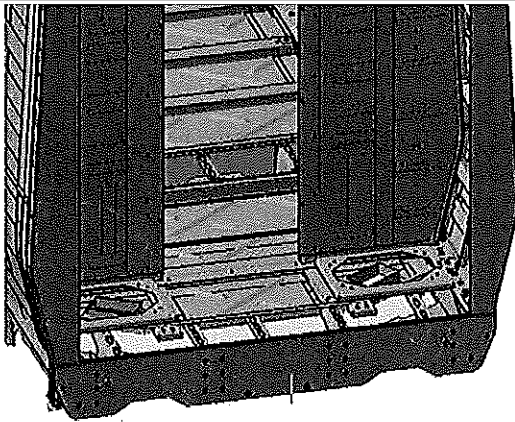
II - Control Activities of Production

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	<input checked="" type="checkbox"/>			 30.05.24	 30/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	<input checked="" type="checkbox"/>			 30.05.24	 30/05/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 DTD0000210675	<input checked="" type="checkbox"/>			 30.05.24	 30/05/24
04	N/A	Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	<input checked="" type="checkbox"/>			 30.05.24	 30/05/24
05	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658	<input checked="" type="checkbox"/>			 30.05.24	 30/05/24
06	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified: <div> <div>Temperature Min - Max (1)</div> <div>Min-Max</div> <div>10°C - 35°C</div> </div> <div> <div>Relative humidity Min - Max (1)</div> <div>Min-Max</div> <div>25% - 80%</div> </div>	Sealant Batch No: 70-03 Exp Date: <u> </u> / <u>06</u> / <u>24</u> Actuals Temperature: <u>23°C</u> Humidity: <u>50%</u>	<input checked="" type="checkbox"/>			 30.05.24	 30/05/24
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	<input checked="" type="checkbox"/>			 30.05.24	 30/05/24



VIEW A



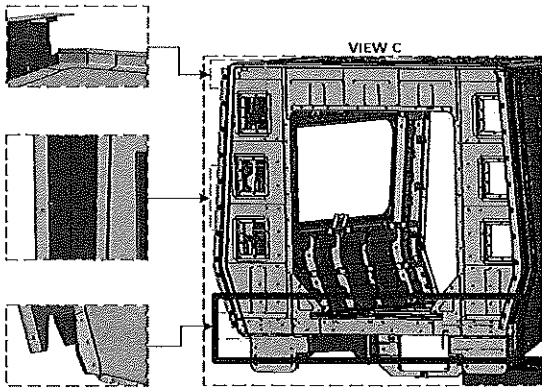
**END 1
SEALANT**

OPERATOR
(Name & sign):

Boitumelo *[Signature]*

OPERATOR
(Name & sign):

Buhle *[Signature]*



**END 2 SEALANT
(VIEW C)**

OPERATOR
(Name & sign):

Leroy *[Signature]*

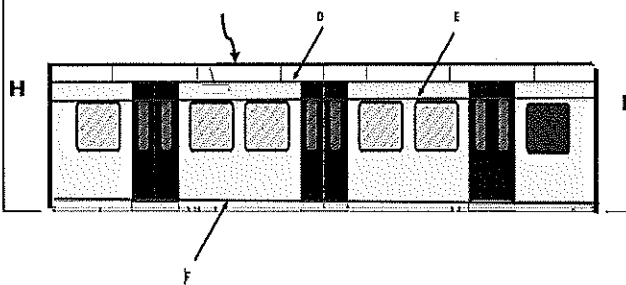
OPERATOR
(Name & sign):

Leroy *[Signature]*

OPERATOR
(Name & sign):

Leroy *[Signature]*

G



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

Operator(Name & sign):

LHS *DE, G, H, I* ^{top}

RHS

DE, F, G, H, I

Operator (Name & sign):

Smile

Boitumelo

Operator (Name & sign):

[Signature]

Buhle

Operator (Name & sign):

Tshenolo

Operator (Name & sign):

[Signature]

F, H, I

Operator (Name & sign):

Buhle

Boitumelo

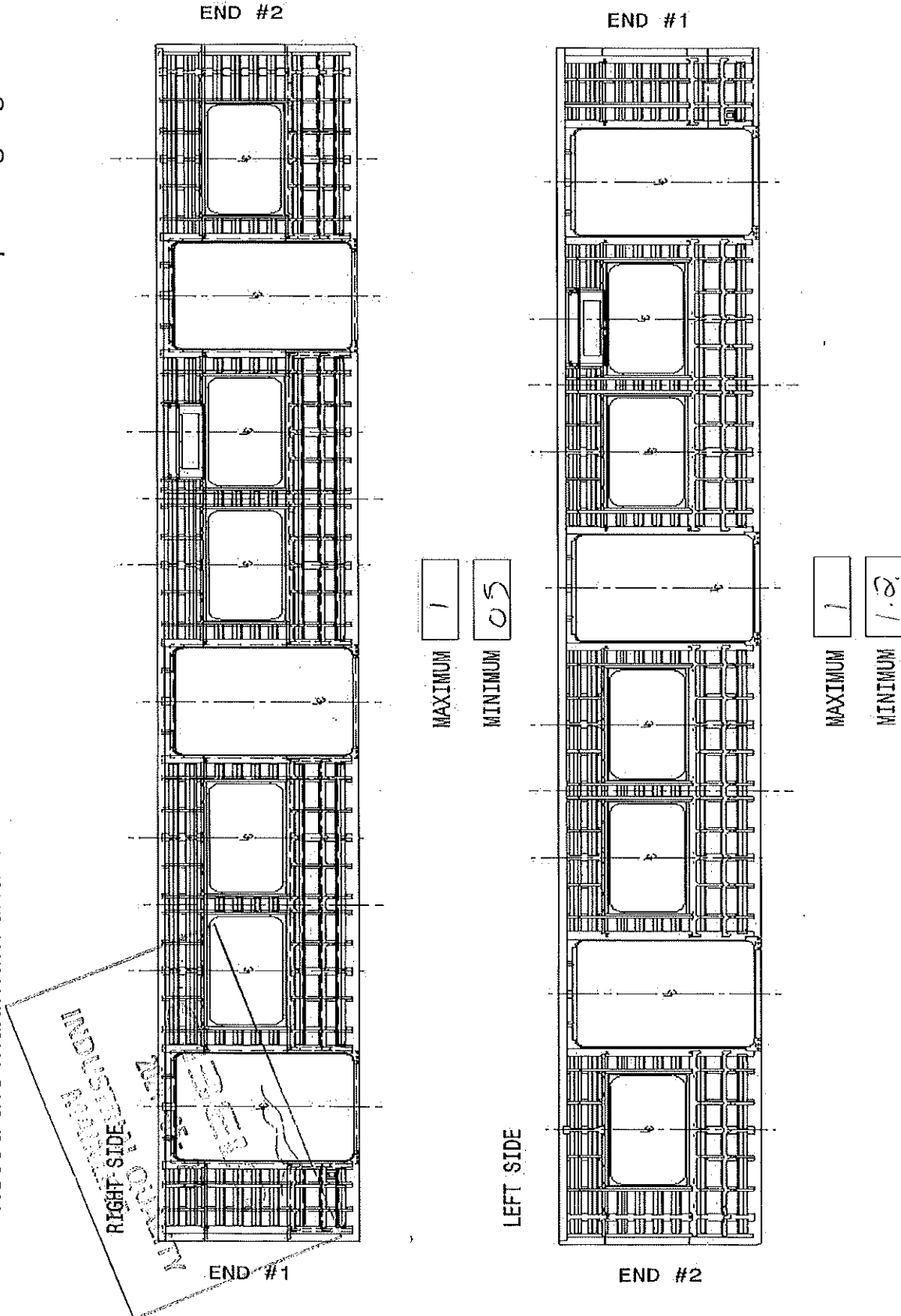
Gibelo

2024-05-23

INDUSTRIAL QUALITY
MAINLINE

Specifications of Details for CBS measurement CB2230

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





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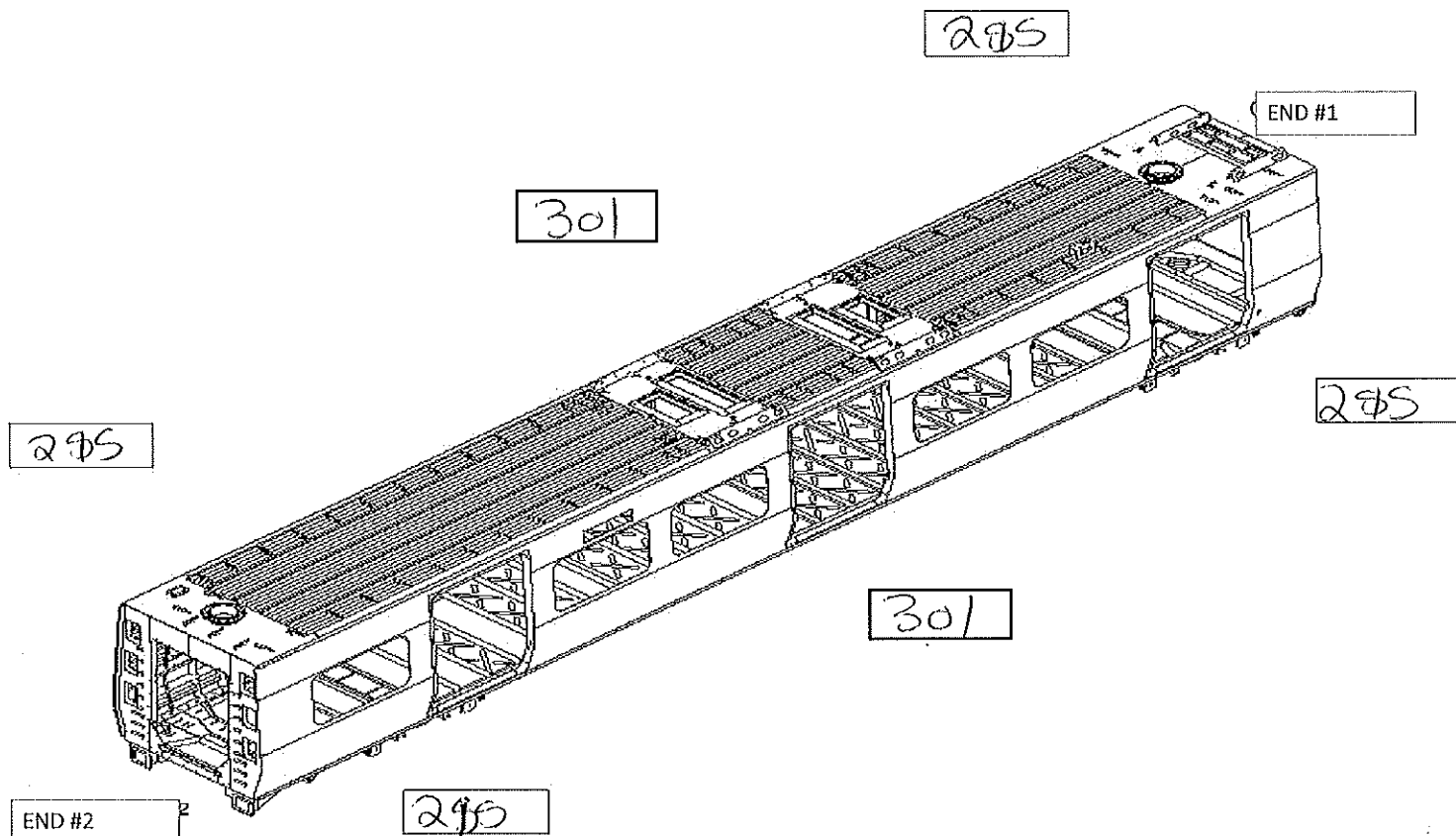
Date-
06/11/2023

Project: PRASA

SI.CB2230.324.V29

Specifications of Details for CBS measurement CB2230

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



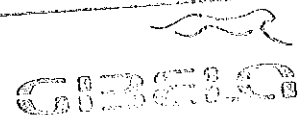
MEASURED CAMBER VALUES

RIGHT

16

LEFT

16

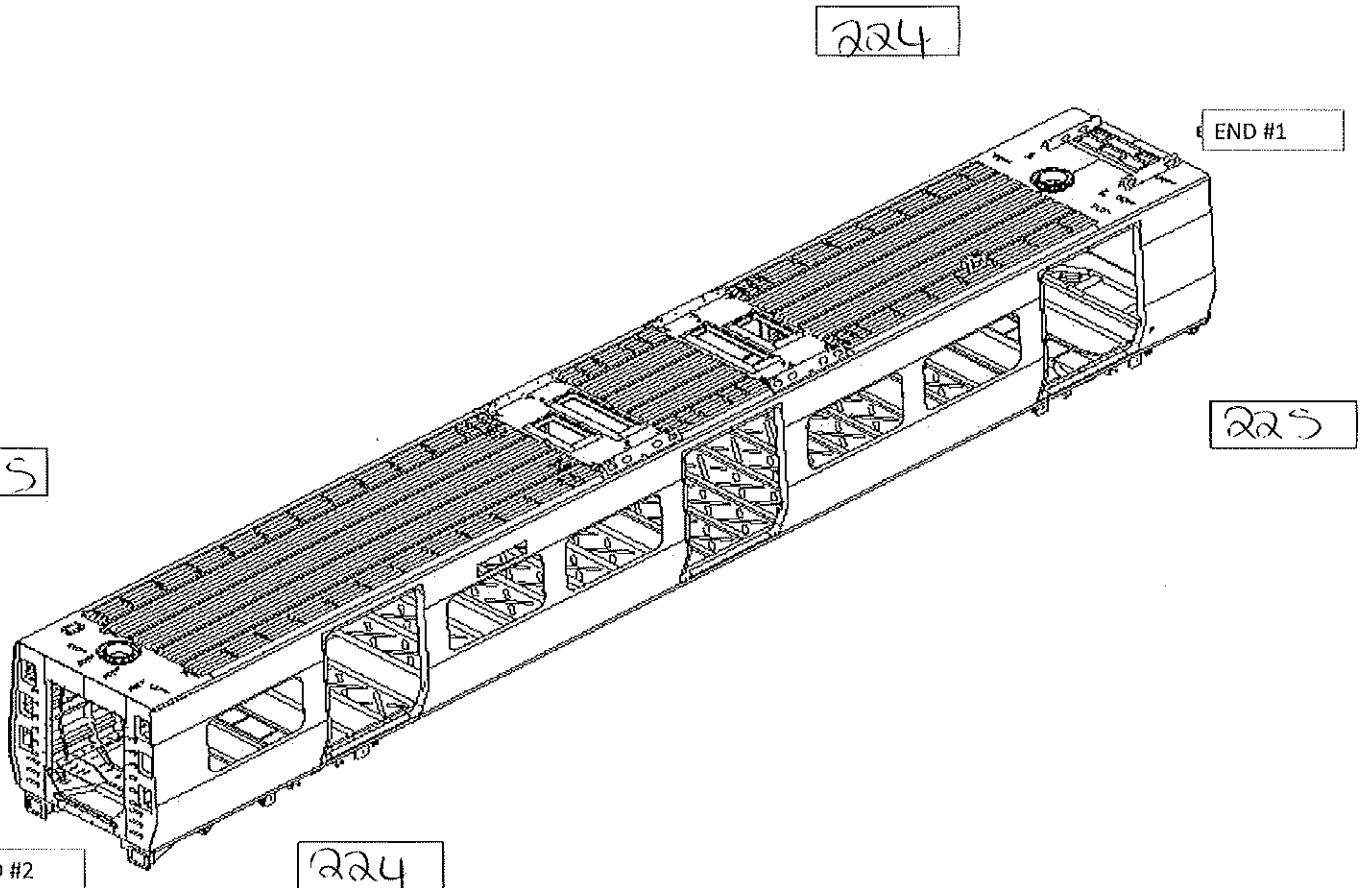


2024-05-23

INDUSTRIAL QUALITY
MANLINE

Specifications of Details for CBS measurement CB2230

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

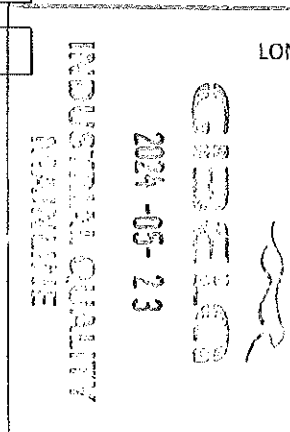
MEASURED TWIST VALUES END 2

LATERAL

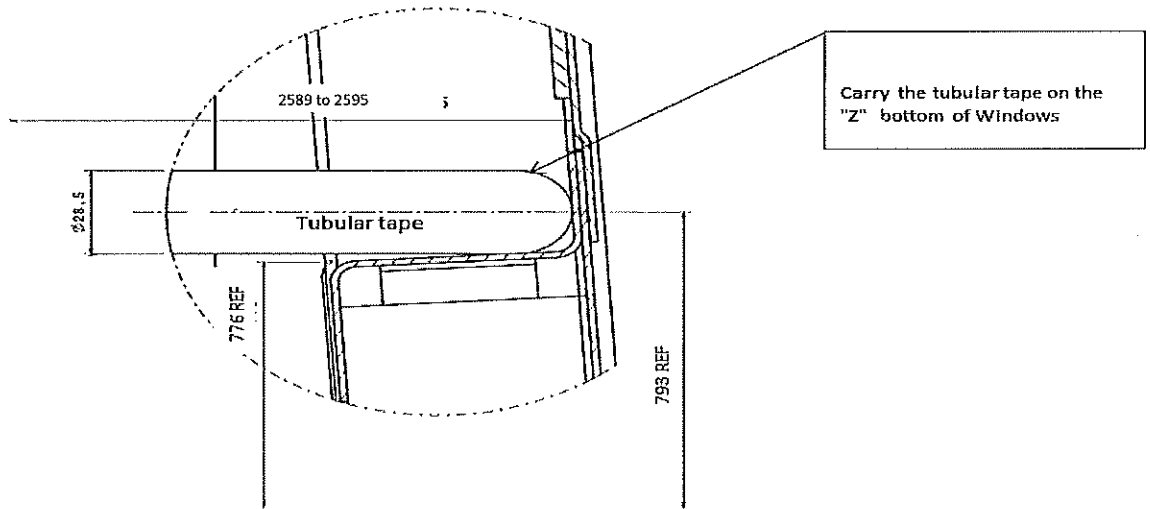
1

LONGITUDINAL

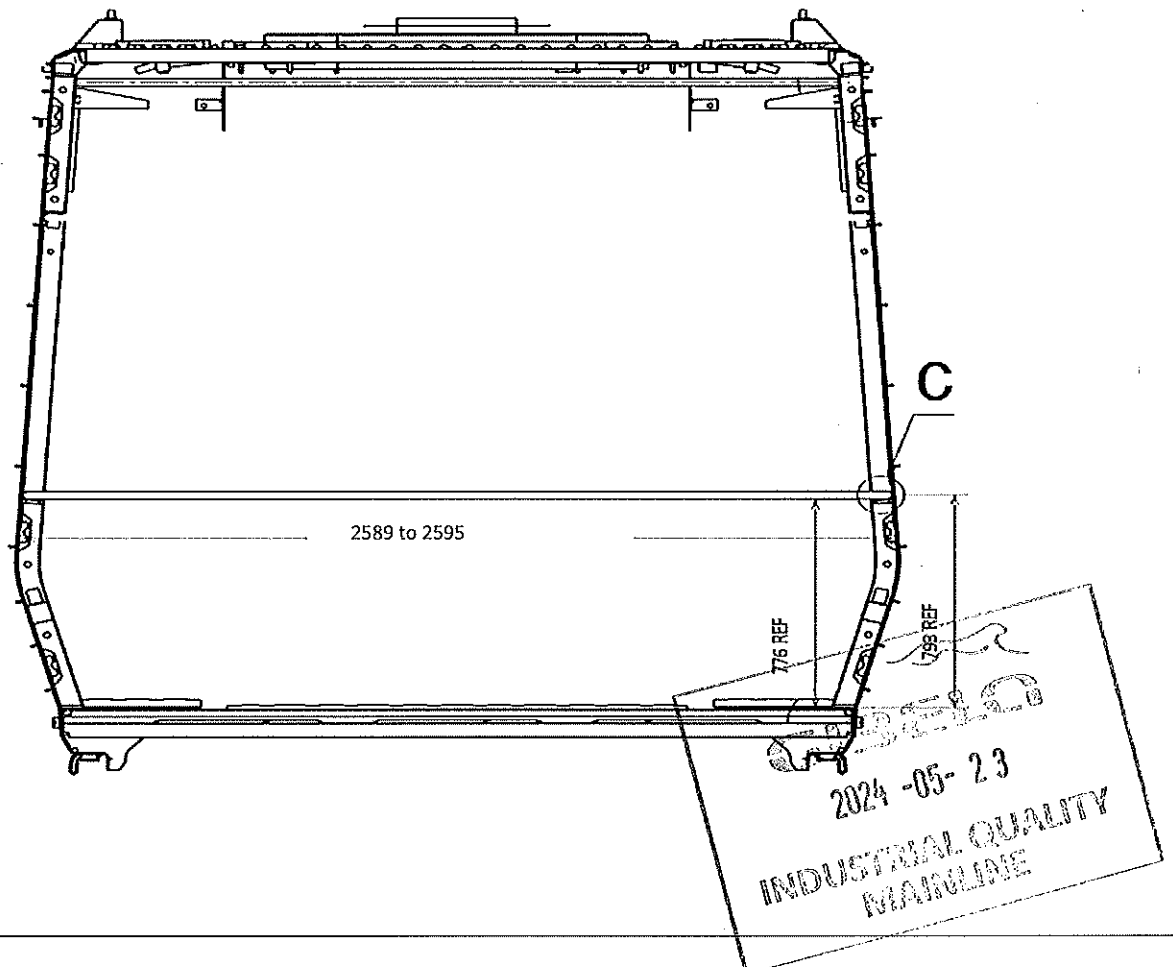
1



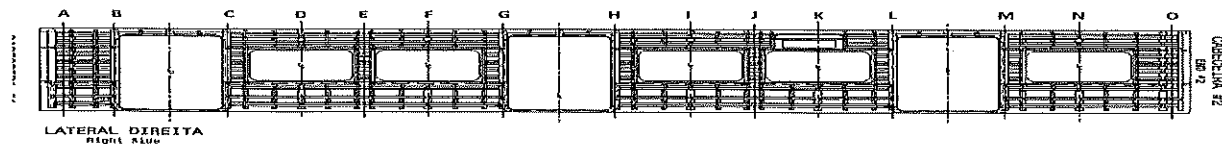
Details for measuring on the CB1230 stage, after completion of activities



Detail C



Specifications of Details for CBS measurement



2589 to 2595mm

A	25 91
B	25 94
C	25 93
D	25 93
E	25 94
F	25 89
G	25 94
H	25 97
I	25 94
J	25 95
K	25 89
L	25 94
M	25 93
N	25 94
O	25 98



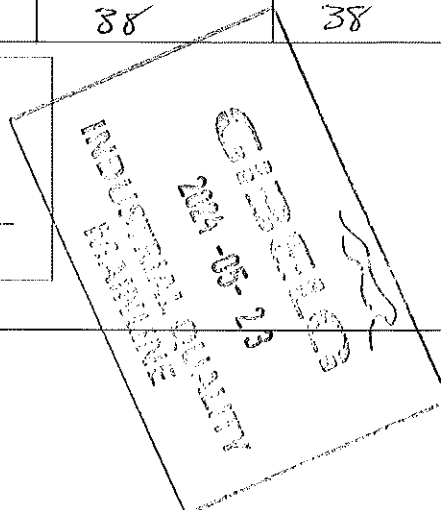
Threshold verification

Nominal value :38

Door 1		Door 2		Door 3	
L	R	L	R	L	R
87	38	38	38	87	38
Door 4		Door 5		Door 6	
L	R	L	R	L	R
88	38	38	38	38	38

BOILER MAKER: mmathapelo Wlada.

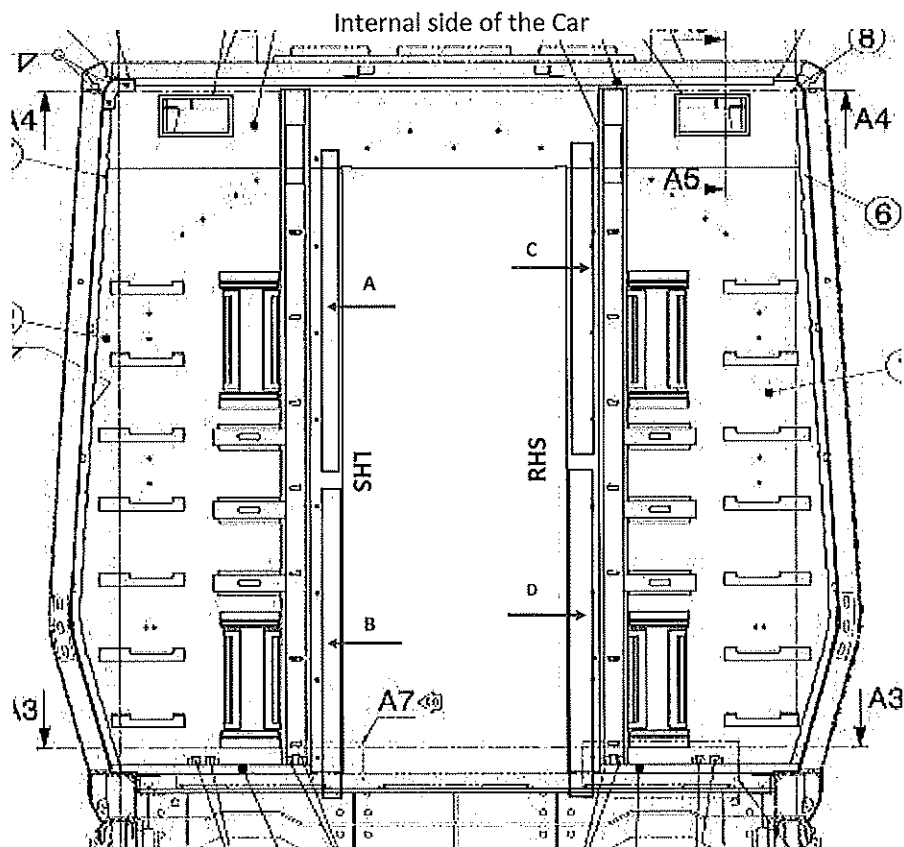
WELDER: mmathapelo Wlada.



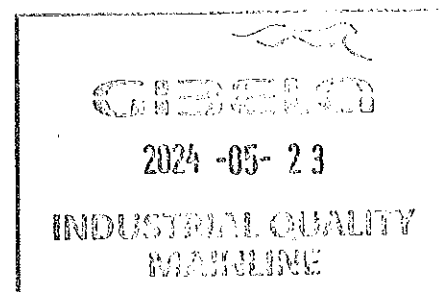
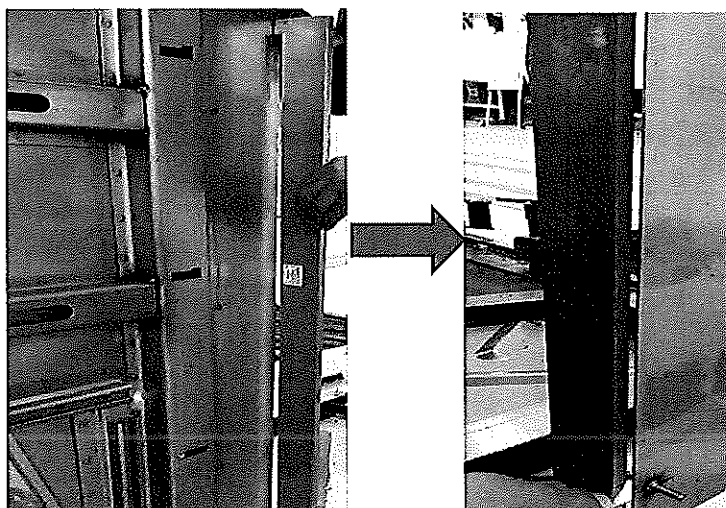
Specifications of Details for CBS measurement

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	9.2	9.9	1.6
B	9.1	9.9	0.8
C	10.2	10.8	0.6
D	11.0	11.0	0





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Dye penetrant test

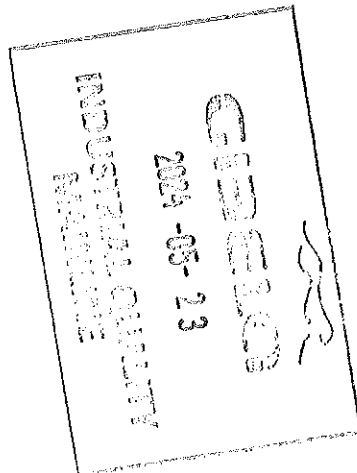
Dye-penetration test to be performed by quality personnel





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	Not OK	Signature/Date (Team Leader)	Signature/Date (Quality Technician)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX				



Self Inspection - Final Result

Is the car good to advance to the next workstation/process? (Approval of Operations Manager and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!		30.05.24	Phosy	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)		30/05/24	Andani	
	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)				

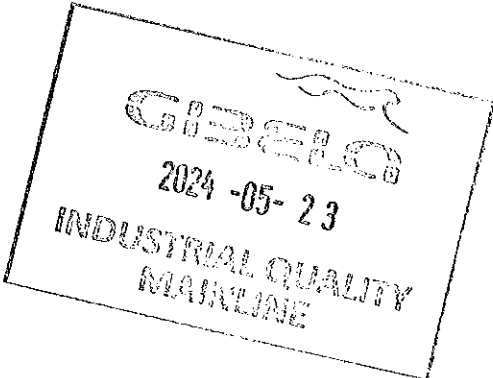
In case of "NO GO", describe blocking problems

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





DT00000223319 Carshell Assembly TC

Rev.
30

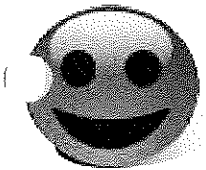
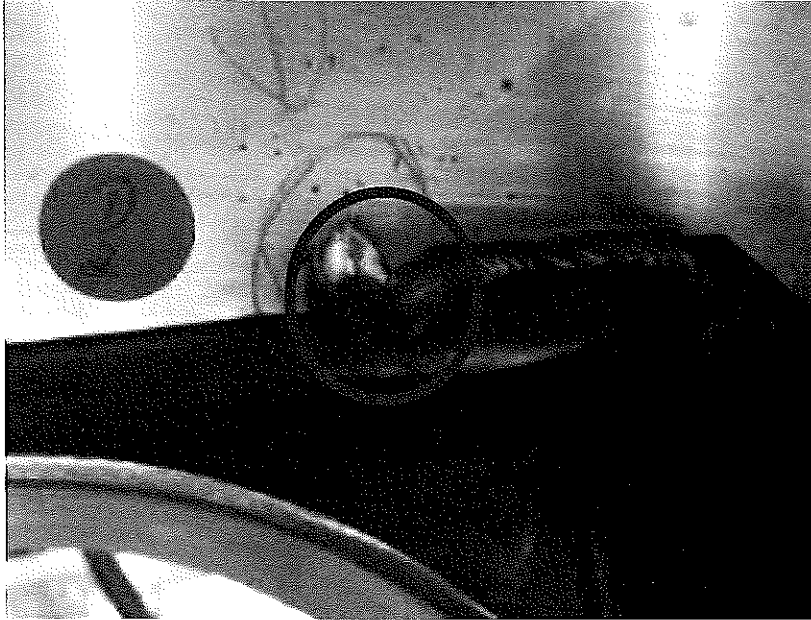
Date-

06/11/2023

Project: PRASA

SI.CB2230.324.V29

ANNEXURE A: Arc Welding Quality Acceptance Standard





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30

Date-

06/11/2023

Project: PRASA

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ANNEXURE B: Sealant

