


PRASA PROJECT


APPLICABLE FROM TRAINSET 100+ AS PER BASELINE 10.3.1

SELF INSPECTION SHEET

CONFIDENTIAL INFORMATION


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

APPLICATION REFERENCE

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 
				TC1	M4	M1	M2	M3	TC2		
<input type="checkbox"/>	OTR3000152640	AAD0001278566	CARBODYSHELL M1 ASSEMBLY	CB1210			X			PRA.CB1210.DTR30225 487/3.V25	YES
<input type="checkbox"/>											

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	10/01/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	10/01/2018
			CHECKER	Nosizo Pindela	10/01/2018
			COMPILER	Thanyani Mathegu	10/01/2018
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	2018/07/04	Certain dimensional checks moved to CB1220 and CB1230	APPROVER	Itumeleng Modiba	2018/07/04
			CHECKER	Nosizo Pindela	2018/07/04
			REVISED BY	Ramokone Motama	2018/07/04
3	2018/12/12	Added dimensional check points to CB1210	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	13/03/2019	Added D1 and D2 on Self - Inspection	APPROVER	Itumeleng Modiba	13/03/2019
			CHECKER	Nosizo Pindela	13/03/2019
			REVISED BY	Nosizo Pindela	13/03/2019
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 10.2.5	APPROVER	Timothy Maimela	06/08/2020
			CHECKER	Bongane Masina	
			REVISED BY	Bongane Masina	
20	19/04/2021	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	19/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombi collins	19/02/2022
			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	Zwane Ntokozo	
			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	

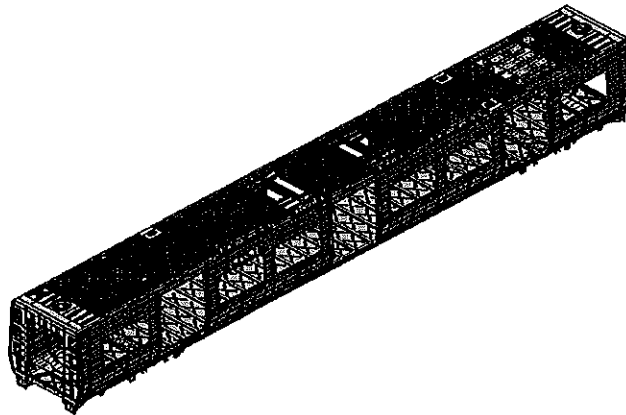
TRAINSET	CAR	OPERATOR NAME & ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES
TS 229	M1	Justice 410035	22/05/24	SI.CB1210.254.V28	17

	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB1210.254.V28
		Date 07/11/2023	

Car: M1	NCR:	Work station: CB1210
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Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	1	2	3	4	5	6						
DTR30225487/3	X						28		X		22/05/24	

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process










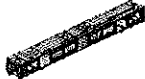


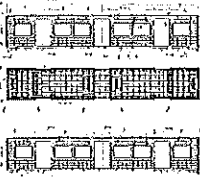





Instruments	Serial number	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
TUBULAR	32823-2	15/03/25	X			
LASER TAPE	125425924	08/02/25	X			
3D TAPE	G1870102	18/11/24	X		22/05/24	

1.3 Consumables


Welding Consumable Control - Used for Special Process

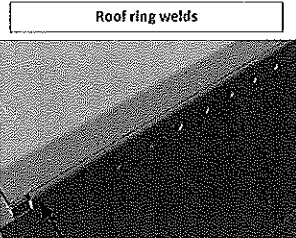
Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 LSI	314018-74097	MIG	X			
ER 308 L	214687-70322	MIG	X		22/05/24	

2023.08
2023.08
2023.08

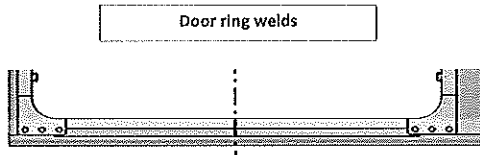
		CARBODYSHELL M1 ASSEMBLY DTR30225487/3		Rev. 28 Date 07/11/2023	Project: PRASA SI.CB1210.254.V28		
II - Self Inspection - Items to Check							
II.1 - Items to check							
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls, Endframes, Roof and Underframe)	DT00000311225	✓		22/05/24 	 22/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓		22/05/24 	 22/05/24
03	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 e DTD0000210675	✓		22/05/24 	 22/05/24
04	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		22/05/24 	 22/05/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		22/05/24 	 22/05/24
06		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓		22/05/24 	 22/05/24
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. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	✓		22/05/24 	 22/05/24

C1 - ...
 E1 - ...
 22-05-24

	CARBODYSHELL M1 ASSEMBLY DTR30226487/3	Rev. 28	Project: PRASA SI.CB1210.254.V28
		Date 07/11/2023	
Welder Traceability			

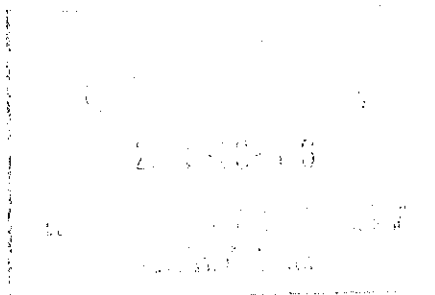



<u>LHS</u>	
Boiler maker (Name & Sign): <u>JUSTICE Ali</u>	Welder (Name & Sign): <u>Thebertus</u>
<u>RHS</u>	
Boiler maker (Name & Sign): <u>PONRO</u>	Welder (Name & Sign): <u>KERTU K. Madi</u>



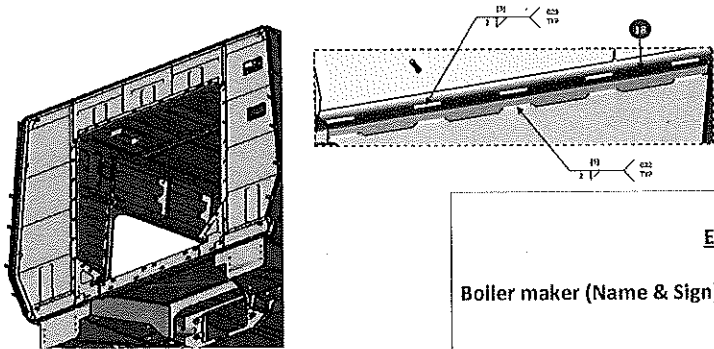
<u>LHS</u>
Boiler maker (Name & Sign): <u>LAWRENCE Ilye</u>
Welder (Name & Sign): <u>KERTU K. Madi</u>

<u>RHS</u>
Boiler maker (Name & Sign): <u>LAWRENCE Ilye</u>
Welder (Name & Sign): <u>KERTU K. Madi</u>



	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB1210.254.V28
		Date 07/11/2023	

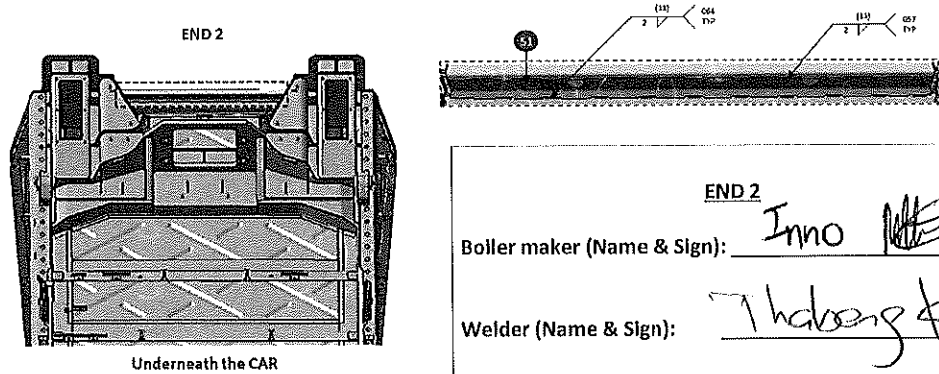
EUF Reinforcement Plates



END 1

Boiler maker (Name & Sign): Laurence Wilson

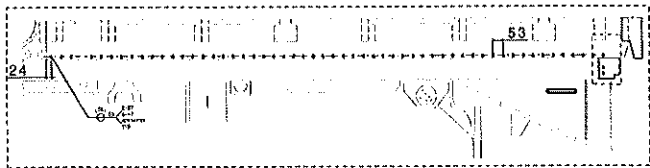
Welder (Name & Sign): Kenn K. M. M.



END 2


Boiler maker (Name & Sign): Inno

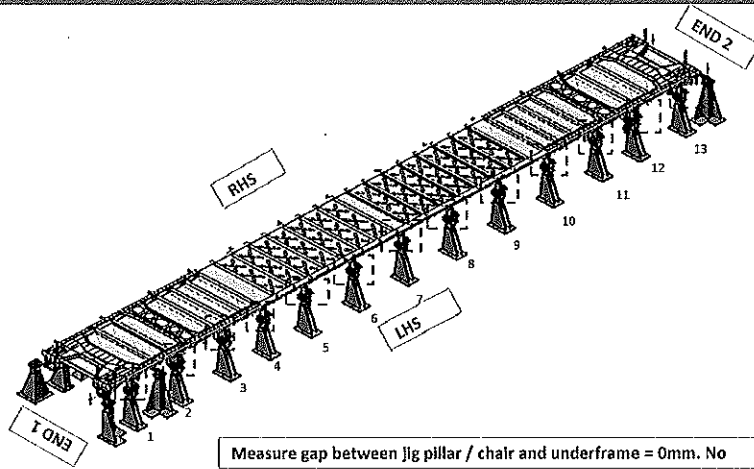
Welder (Name & Sign): Thabang



FEDOLI

OPERATOR: Laurence Wilson

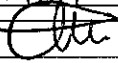
	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB1210.254.V28
		Date 07/11/2023	
Specifications of Details for CBS measurement			



After loading and clamping

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


	1	2	3	4	5	6	7	8	9	10	11	12	13
Left Hand Side	0	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	0

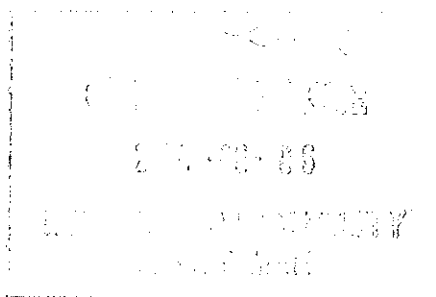
Signature Operations:  Date: 22/05/24

After Welding.

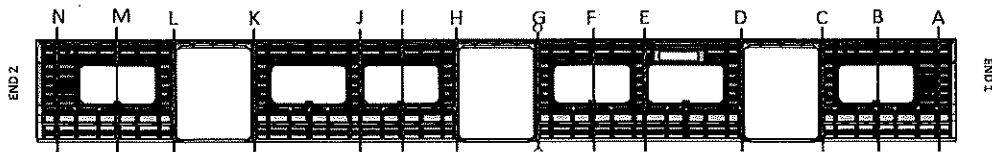
Fill in the gap found on each jig pillars / chair and underframe should be 0mm.

	1	2	3	4	5	6	7	8	9	10	11	12	13
Left Hand Side	0	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	0

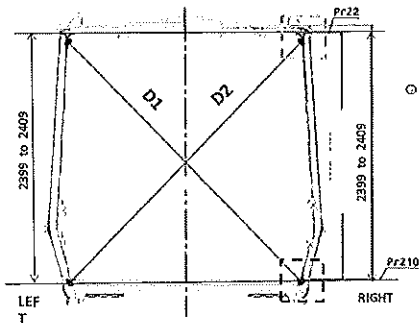
Signature Industrial Quality:  Date: 22/05/24



Specifications of Details for CBS measurement



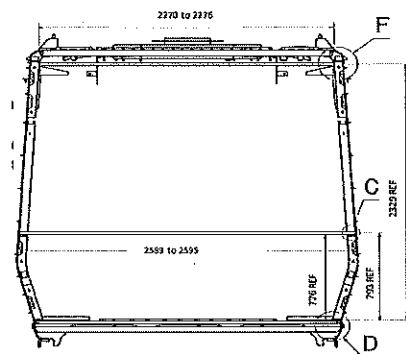
9



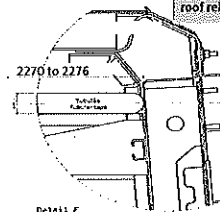
Measurement positions on roof rail and sidewall omega corner.



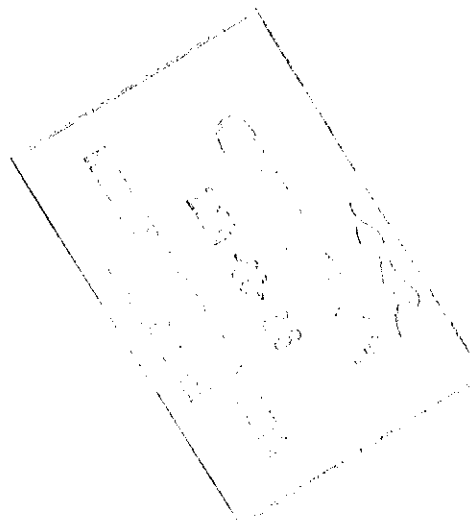
Measurement positions on sidewall and side all corner.



Reinforcement area measurement positions on roof reinforcement area.



Detail F
Don't consider the reinforcement





CARBODYSHELL M1 ASSEMBLY DTR30226487/3

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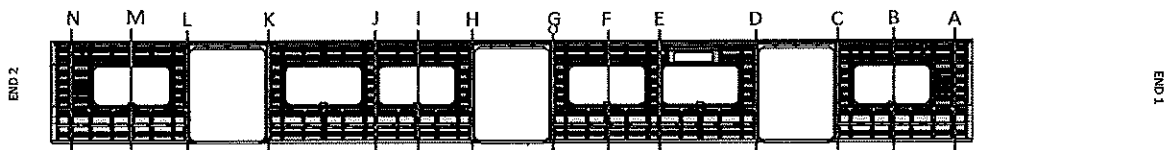
Date

07/11/2023

Project: PRA5A

SI.CB1210.254.V28

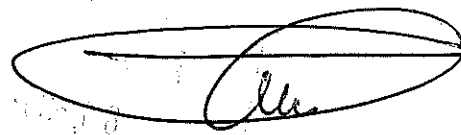
Specifications of Details for CBS measurement



PME Column LHS - RHS should be $\leq 2\text{MM}$ on each point.

BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3264	3264	0	2406	2404	2
B	3269	3266	2	2405	2405	0
C	3270	3268	2	2407	2405	2
D	3268	3268	0	2404	2404	0
E	3266	3264	2	2408	2406	2
F	3269	3267	2	2407	2406	1
G	3270	3269	1	2408	2408	0
H	3266	3265	1	2406	2406	0
I	3268	3266	2	2407	2405	2
J	3267	3267	0	2406	2406	0
K	3264	3264	0	2405	2405	0
L	3268	3268	0	2406	2404	2
M	3266	3264	2	2407	2405	2
N	3267	3264	3	2406	2405	1


 22/05/24



CARBODYSHELL M1 ASSEMBLY DTR30225487/3

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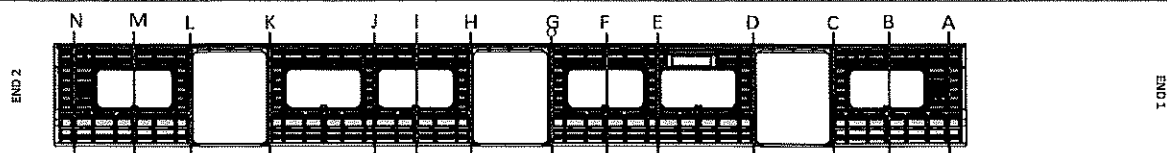
Date

07/11/2023

Project: PRASA

SI.CB1210.254.V28

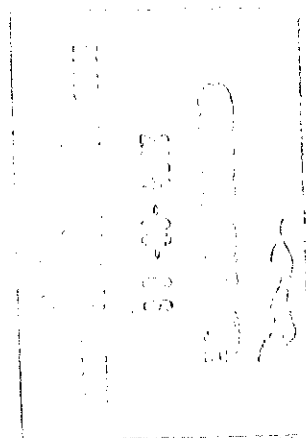
Specifications of Details for CBS measurement


PME Column LHS - RHS should be
≤ 2MM on each point.

AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3296	3294	2	2408	2407	1
B	3269	3269	0	2406	2406	0
C	3295	3295	0	2405	2405	0
D	3298	3296	2	2408	2406	2
E	3266	3266	0	2407	2405	2
F	3270	3269	1	2405	2404	1
G	3296	3294	2	2407	2405	2
H	3298	3296	2	2406	2406	0
I	3264	3264	0	2407	2406	1
J	3265	3265	0	2405	2405	0
K	3295	3294	1	2409	2407	2
L	3297	3295	2	2408	2406	2
M	3267	3265	2	2405	2405	0
N	3296	3296	0	2406	2406	0

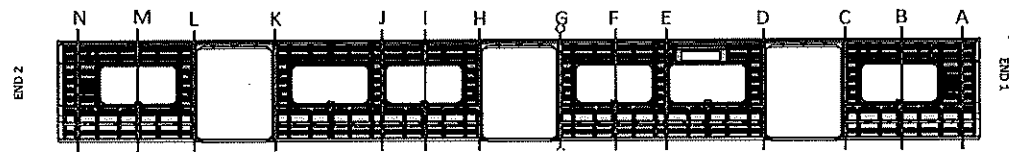
22/05/24



	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB1210.254.V28
		Date 07/11/2023	

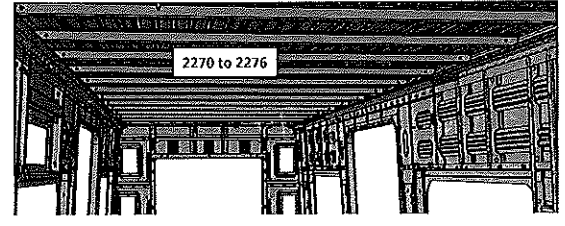
CBS measurement

BEFORE WELDING

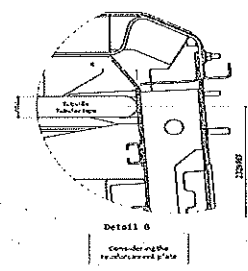
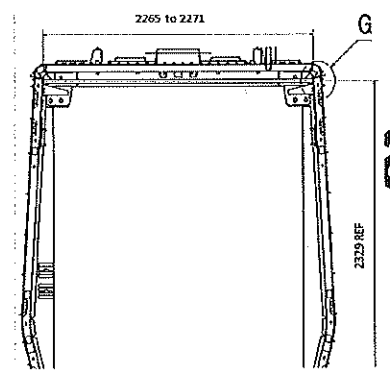


- 2270 to 2276
- A 2270
 - B 2274
 - C 2272
 - D 2273
 - E 2276
 - F 2275
 - G 2271
 - H 2274
 - I 2276
 - J 2276
 - K 2273
 - L 2270
 - M 2274
 - N 2272

1990 to



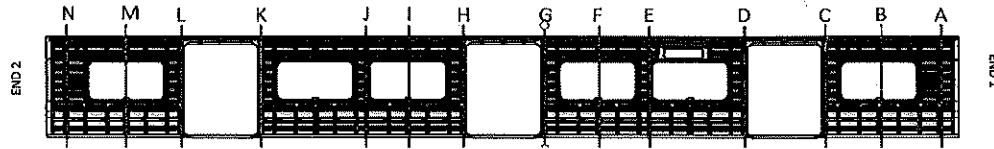
Do not consider reinforcement (Take measurements top area of zee profile



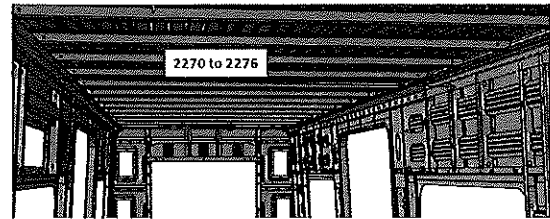
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20/05/24

CBS measurement

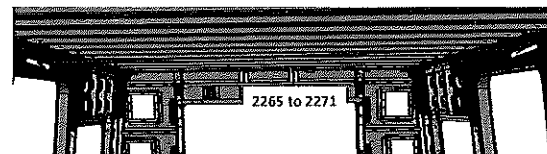
AFTER WELDING



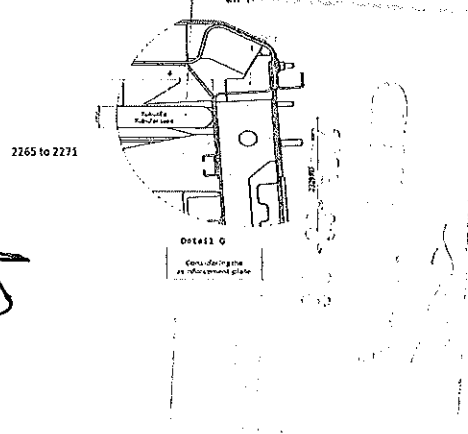
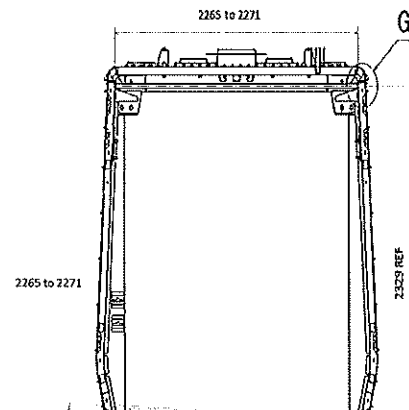
	2265 to 2271	2270 to 2276
A		2275
B	2268	
C		2273
D		2275
E	2270	
F	2270	
G		2274
H		2272
I	2265	
J	2267	
K		2270
L		2273
M	2269	
N		2276

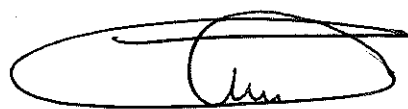


Do not consider reinforcement (Take measurements top area of zee profile



Take measurement close to radius (considering reinforcement)





22/05/24

22/05/24

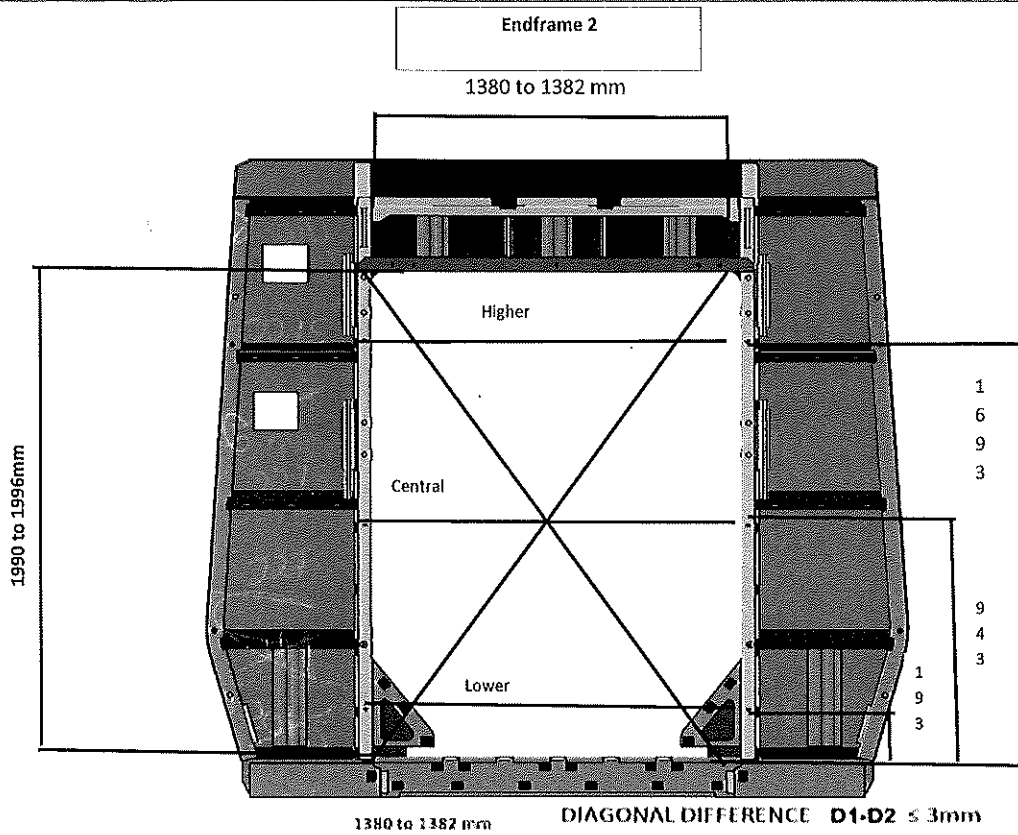


CARBODYSHELL M1 ASSEMBLY DTR30226487/3

Rev.
28
Date
07/11/2023

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Specifications of Details for CBS measurement

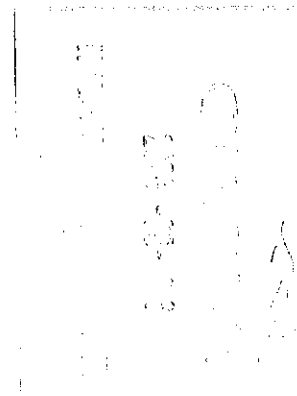


Higher Dimension 1380 D1 2416

Central Dimension 1381 D2 2416

Lower Dimension 1382 D1-D2 0

22/05/24





CARBODYSHELL M1 ASSEMBLY DTR30225487/3

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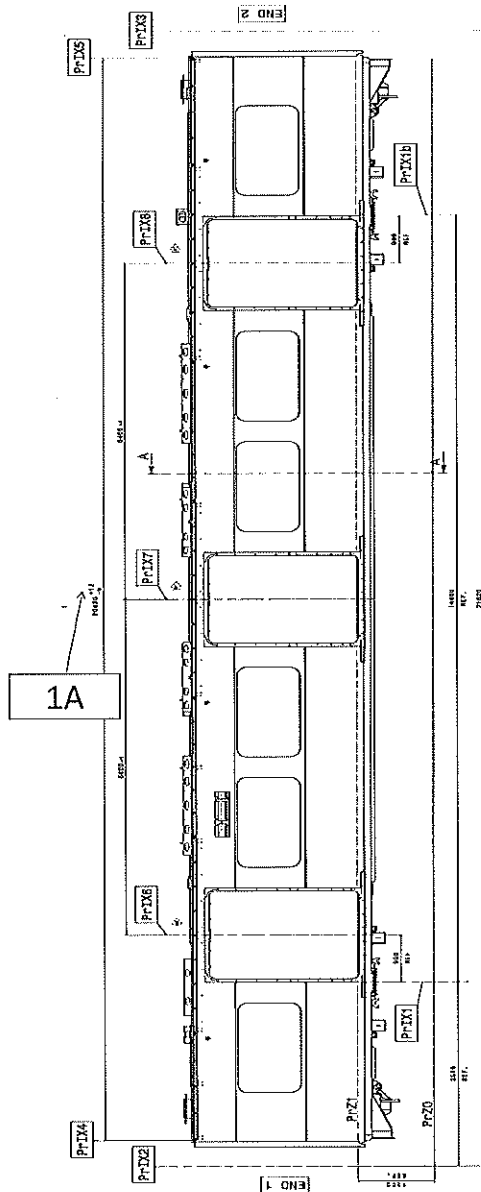
Date

07/11/2023

Project: PRASA

SI.CB1210.254.V28

Specifications of Details for CBS measurement



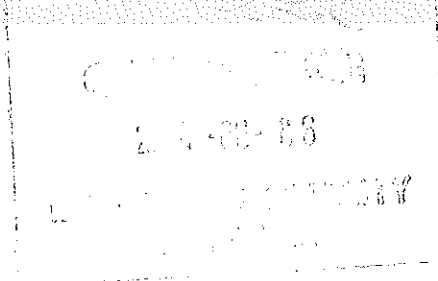
LEFT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20616

RIGHT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20616


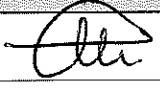
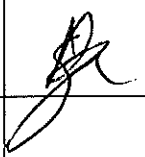

22/05/24

Dye penetrant test

Dye-penetration test to be performed by quality personnel

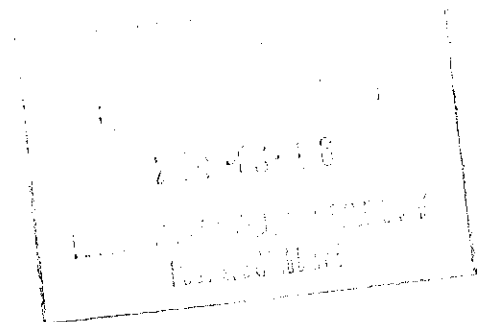


[illegible]

		CARBODYSHELL M1 ASSEMBLY DTR30225487/3		Rev. 28	Project: PRASA SI.CB1210.254.V28	
				Date 07/11/2023		
Self Inspection - Final Result						
				DATE	NAME	SIGNATURE
HOLD POINT		GO	(If activities are not complete, the missing activities must not impact the next stage)	22/05/24	JUSTICE Operations	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	20/05/24	M. Lebered Industrial Quality	
			There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)			
			There are non-conformities impact the quality of the product and there is no corrective action defined yet)			
In case of "NO GO", describe blocking problems						
In case of "NO GO", the operations manager must define below action plan to ensure "GO":						
Item	Description		Responsible	Due date	Status	

Operations

Quality



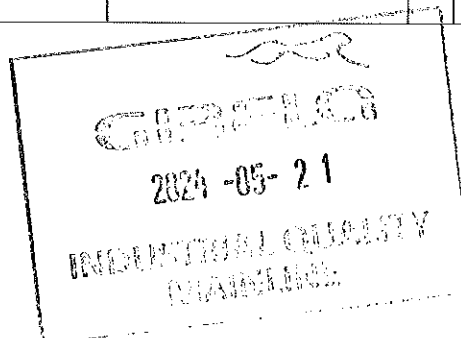












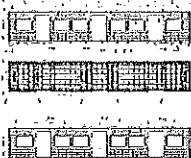












CONFIDENTIAL INFORMATION
This document and the information contemplated therein have to be considered as Confidential Information pursuant to the provisions of Clause 25 of the MSA, and treated as such.


APPLICATION REFERENCE												
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY	
				TCL	MA	PK	MR	MR	TCL			
<input type="checkbox"/>	DTR3022548/2	AAD0000778565	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB1220		X	X		X		PRA.CB1220.DTR3022548 7/2.V21	YES
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
REV	DATE	MODIFICATION CONTENT			RESPONSIBLE		NAME		DATE			
0	01/02/2018	GIBELA NEW CREATION			APPROVER	Itumeleng Modiba	01/02/2018					
					CHECKER	Nosizo Pindela	01/02/2018					
					COMPILER	Thanyani Mathegu	01/02/2018					
1	18/05/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager			APPROVER	Itumeleng Modiba	18/05/2018					
					CHECKER	Nosizo Pindela	18/05/2018					
					REVISED BY	Ramokone Motama	18/05/2018					
2	2018/07/05	Certain dimensional checks added and others moved to CB1210			APPROVER	Itumeleng Modiba	2018/07/05					
					CHECKER	Nosizo Pindela	2018/07/05					
					REVISED BY	Ramokone Motama	2018/07/05					
3	2018/06/12	Width tolerance as per DT0000336800			APPROVER	Itumeleng Modiba	2018/06/12					
					CHECKER	Nosizo Pindela	2018/06/12					
					REVISED BY	Nosizo Pindela	2018/06/12					
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 D1 and D2 on Self - Inspection length measurements			APPROVER	Itumeleng Modiba	13/03/2019					
					CHECKER	Nosizo Pindela	13/03/2019					
					REVISED BY	Nosizo Pindela	13/03/2019					
10	22/08/2019	New Baseline 10.2.5			APPROVER	Itumeleng Modiba	22/08/2019					
					CHECKER	Nosizo Pindela	22/08/2019					
					REVISED BY	Nosizo Pindela	22/08/2019					
15	06/08/2020	New Baseline 10.2.5			APPROVER	Timothy Maimela	06/08/2020					
					CHECKER	Bongane Masina	06/08/2020					
					REVISED BY	Bongane Masina	06/08/2020					
20	19/04/2021	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	Mthombi Collins	17/08/2021					
					CHECKER	Mpho Mulaudzi	17/08/2021					
					REVISED BY	Mpho Mulaudzi	17/08/2021					
25	20/02/2022	New Baseline change 10.3.1			APPROVER	Mthombi Collins	19/02/2022					
					CHECKER	Andani Muthelo	19/02/2022					
					REVISED BY	Andani Muthelo	19/02/2022					
26	14/06/2022	Update minimum temperature requirement for sealant application			APPROVER	Mthombi Collins	14/06/2022					
					CHECKER	Andani Muthelo	14/06/2022					
					REVISED BY	Andani Muthelo	14/06/2022					
27	17/10/2022	Addition of traceability for sealant application and welding			APPROVER	Mthombi Collins	17/10/2022					
					CHECKER	Ntokozo Zwane	17/10/2022					
					REVISED BY	Amogelang Mohlampe	17/10/2022					
28	14/04/2023	Added sealant batch number & welding consumables traceability			APPROVER	Vanessa Ntuli	14/04/2023					
					CHECKER	Ntokozo Zwane	14/04/2023					
					REVISED BY	Amogelang Mohlampe	14/04/2023					
29	28/10/2023	Addition of bracket quantity			APPROVER	Ngobeni Tyson	28/10/2023					
					CHECKER	Ntokozo Zwane	28/10/2023					
					REVISED BY	Amogelang Mohlampe	28/10/2023					
TRAINSET	CAR	OPERATOR NAME & ALPS NO		DATE	SELF INSPECTION NUMBER		PAGES					
229	M1	Mashindira 140041		23/05/2024	SI.CB1220.250.V29		14					

QUALITY
MANAGEMENT

	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev. 29	Project: PRASA SI.CB1220.250.V29																
		Date 28/10/2023																	
Car: M1,M3&M4	NCR:	Work station:		CB1220															
Safety Related																			
I - Documentation and Instruments Control																			
1.1 - Documentation Control																			
Document	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="5">Type of car</th> </tr> <tr> <th style="width: 10%;">TC1</th> <th style="width: 10%;">M1</th> <th style="width: 10%;">M3</th> <th style="width: 10%;">M4</th> <th style="width: 10%;">TC2</th> </tr> <tr> <td style="text-align: center;">✓</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>				Type of car					TC1	M1	M3	M4	TC2	✓				
Type of car																			
TC1	M1	M3	M4	TC2															
✓																			
DTR30225487/2	Revision	Observation	OK	Signature/Date (Manufacturing) Signature/Date (Quality)															
			✓	N/A															
1.2 - Instruments Control																			
Monitoring and Measuring Instrument Control - Used for Special Process																			
Instruments	Serial number	Calibration or Verification Validation Date	OK	Signature/Date (Manufacturing) Signature/Date (Quality)															
Tubular Measuring tape	32823-3 GIBTA0399	15/03/2025 16/06/2025	✓ ✓																
1.3 Consumables																			
Welding Consumable Control - Used for Special Process																			
Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing) Signature/Date (Quality)															
308 1.0mm	373779	MIG	✓																




	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA			
		29				
		Date				
		28/10/2023	SI.CB1220.250.V29			
II - Self Inspection - Items to Check						
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 CB1220 DTR30225487/2 Verification of funent for all reinforcement brackets.	PRA CB1220.DTR30225487/2	✓	 23/05/24	 23/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓	 23/05/24	 23/05/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 23/05/24	 23/05/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 23/05/24	 23/05/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓	 23/05/24	 23/05/24
06		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.	✓	 23/05/24	 23/05/24
07	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified: Temperature Min - Max (t) Min Max 10°C - 35°C Relative humidity Min - Max (t) Min Max 25% - 60%	Sealant Batch No: 13497 Exp Date: 01/06/24 Actuals Temperature: 19°C Humidity: 36%	✓	 23/05/24	 23/05/24
08	NA	Verification of sealant application in certain regions in the drawing.	AAD0001278565	✓	 23/05/24	 23/05/24
09		Verification of safety welds	Approved according to DTD000210658 reference and Self inspection	✓	 23/05/24	 23/05/24

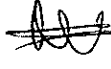
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA SI.CB1220.250.V29
		29	
		Date	
		28/10/2023	


II - Self Inspection - Items to Check


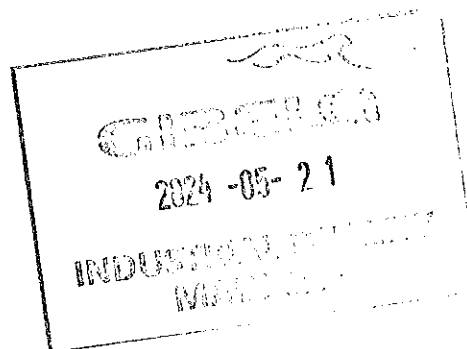
SEALANT APPLICATION




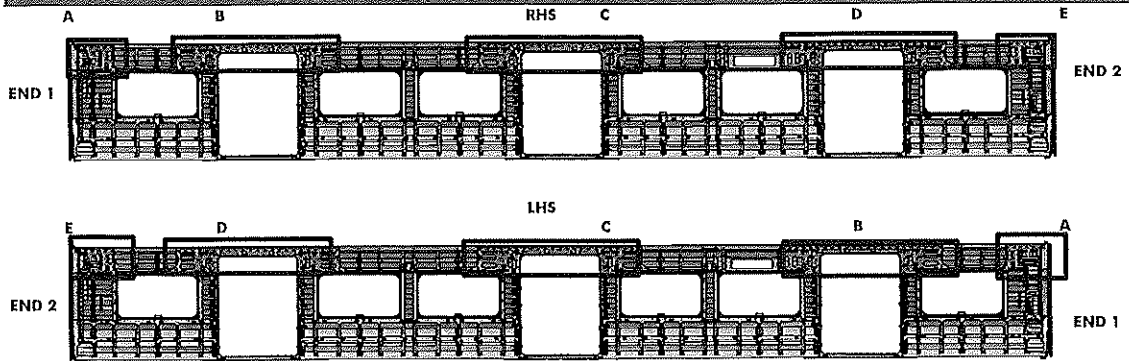
AREA 1 & 2 END 1

Operator (Name & sign):
Mithelozis 

Operator (Name & sign):
Mithelozis 

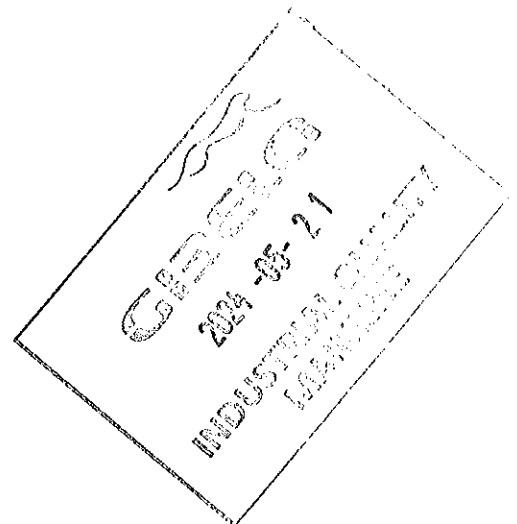




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		29	
		Date	
		28/10/2023	
II - Self Inspection - Items to Check			

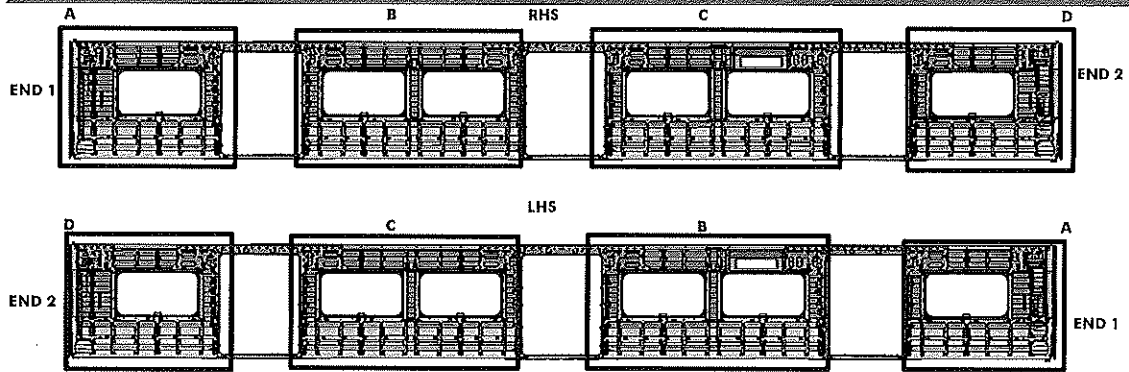


REINFORCEMENT WELDING

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



	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev. 29	Project: PRASA SI.CB1220.250.V29
		Date 28/10/2023	
		II - Self Inspection - Items to Check	



BRACKETING

INSTALLATION

C-RAILS: Operator: Pascalia

DOOR MECHANISMS: Operator: Asanda

TAPPING PADS: Operator: Levi

INSTALLATION & VERIFICATION

SEAT & LUGGAGE BRACKETS: Operator: Mthokozisi

SEAT BRACKETS VERIFICATION: Operator: Levi


WELDING

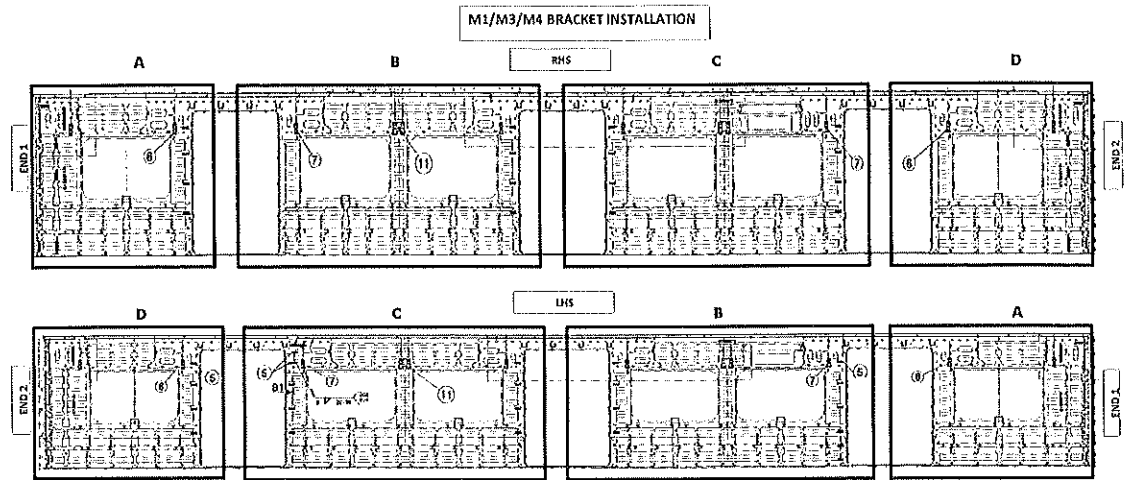
AREA	LHS	RHS
A (Seat brackets)	: Operator (Name&sign): <u>Mthokozisi</u>	<u>Mthokozisi</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>Mthokozisi</u>	<u>Mthokozisi</u>
B (Seat brackets)	: Operator (Name&sign): <u>Mthokozisi</u>	<u>Mthokozisi</u>
(C-rails, Luggage and earth bushes)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

ENDS

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

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

	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA
		29	
		Date	SI.CB1220.250.V29
		28/10/2023	
II - Self Inspection - Items to Check			



QUANTITIES (M3/M4)

RHS				
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	7		
	B	4		
	C	8		
	D	8		
SEAT BRACKETS	A	13		
	B	21		
	C	21		
	D	13		
EARTH BUSH	A	3		
	B	5		
	C	4		
	D	3		

ROOF ENDS:
 C-RAILS 2 OFF EACH END
 EARTH BUSH 6 OFF EACH END

VERIFICATION BY: _____

QUANTITIES (M1)

LHS				
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	2		
	B	8		
	C	11		
	D	8		
SEAT BRACKETS	A	13		
	B	21		
	C	21		
	D	13		
EARTH BUSH	A	3		
	B	5		
	C	6		
	D	2		

ROOF ENDS:
 C-RAILS 2 OFF EACH END
 EARTH BUSH 6 OFF EACH END

VERIFICATION BY: _____

QUANTITIES (M1)

RHS				
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	7	✓	
	B	8	✓	
	C	8	✓	
	D	8	✓	
SEAT BRACKETS	A	13	✓	
	B	21	✓	
	C	21	✓	
	D	13	✓	
EARTH BUSH	A	2	✓	
	B	4	✓	
	C	5	✓	
	D	3	✓	

ROOF ENDS:
 C-RAILS 2 OFF EACH END
 EARTH BUSH 6 OFF EACH END

VERIFICATION BY: Mashah

QUANTITIES (M1)

LHS				
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	2	✓	
	B	10	✓	
	C	11	✓	
	D	8	✓	
SEAT BRACKETS	A	13	✓	
	B	21	✓	
	C	21	✓	
	D	13	✓	
EARTH BUSH	A	3	✓	
	B	7	✓	
	C	6	✓	
	D	2	✓	

ROOF ENDS:
 C-RAILS 2 OFF EACH END
 EARTH BUSH 6 OFF EACH END

VERIFICATION BY: Mashah

2024-05-21
2024-05-21
2024-05-21

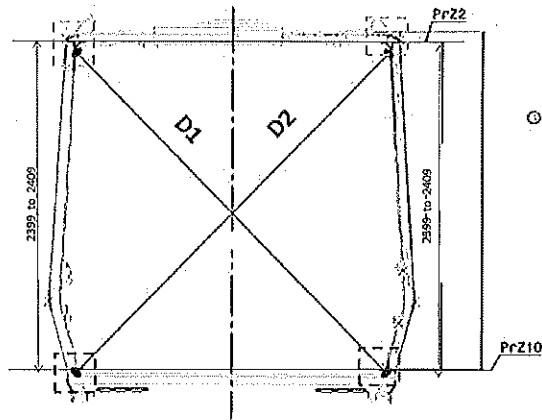


CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30225487/2

Rev.
29
Date
28/10/2023

Project: PRA5A
SI.CB1220.250.V29

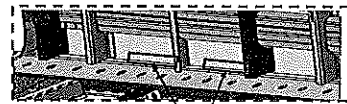
Specifications of Details for CBS measurement



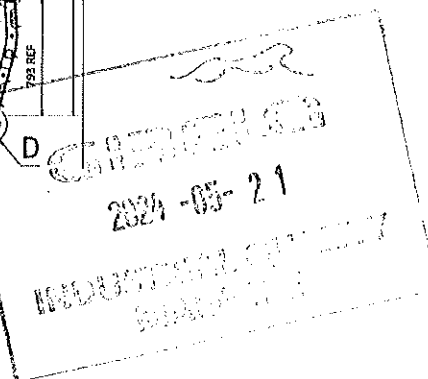
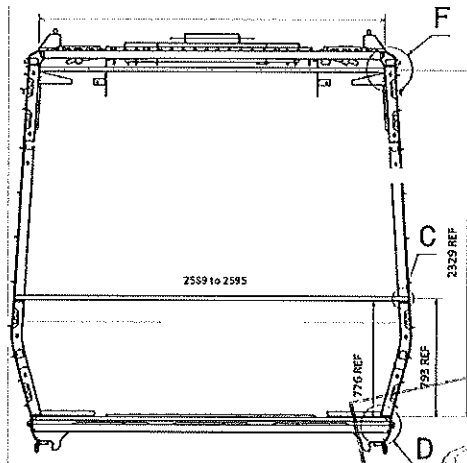
Measurement positions on roof rail and sidewall omega corner.



Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.





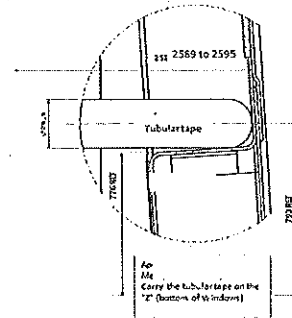
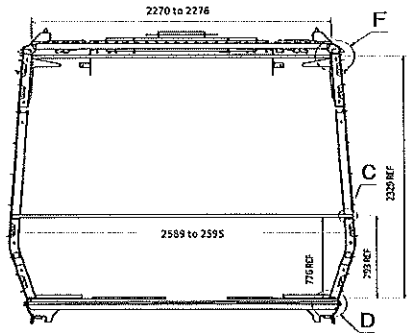
CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30226487/2

Rev.
29
Date
28/10/2023

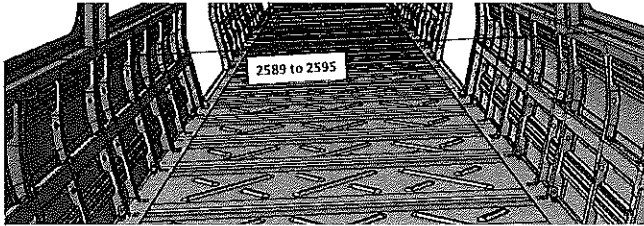
Project: PRA5A

SI.CB1220.250.V29

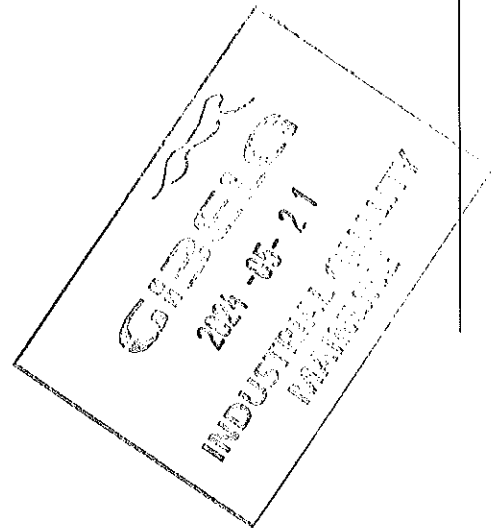
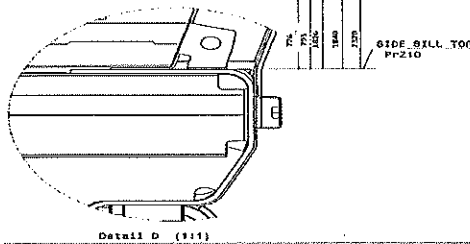
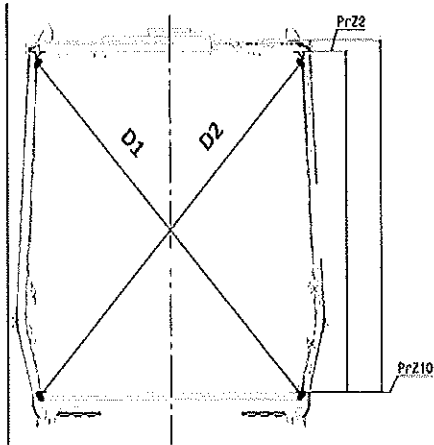
CBS measurement




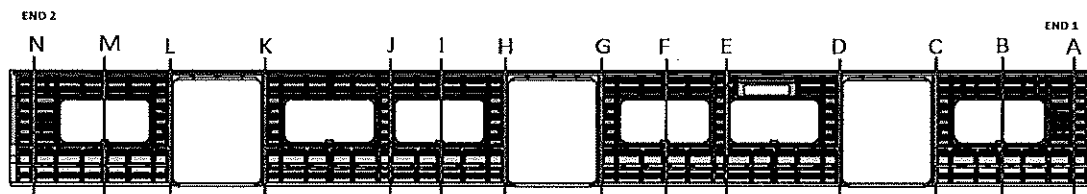
Detail C



Take measurement close to
radius

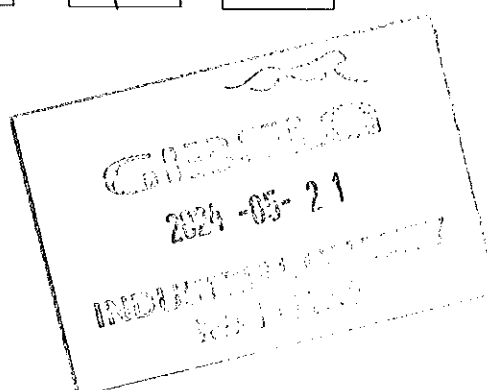


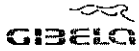
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		29	
		Date	
		28/10/2023	SI.CB1220.250.V29
CBS measurement			



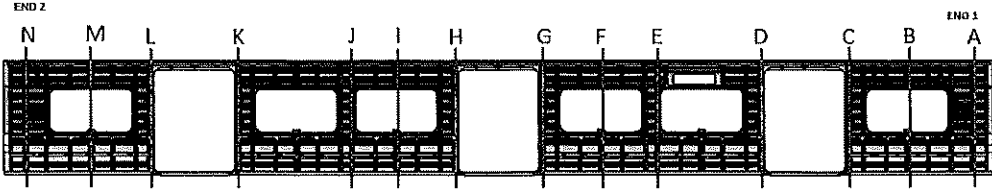
BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3298	3296	2	—
B	3262	3265	3	—
C	3295	3297	2	—
D	3295	3297	2	—
E	3264	3264	0	—
F	3264	3263	1	—
G	3299	3298	1	—
H	3298	3297	1	—
I	3263	3268	5	—
J	3264	3266	2	—
K	3296	3295	1	—
L	3294	3296	2	—
M	3264	3268	4	—
N	3298	3297	1	—



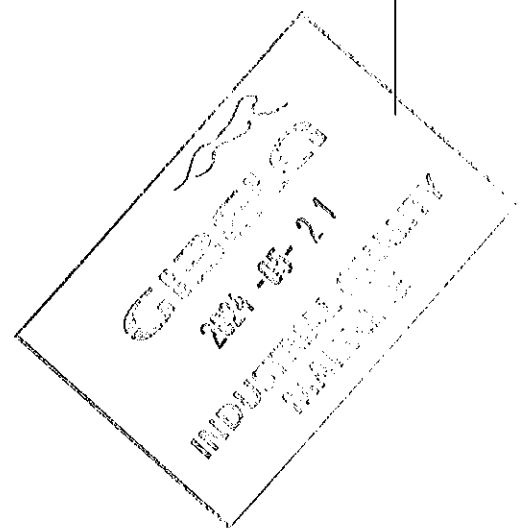
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		29	
		Date	
		28/10/2023	

CBS measurement

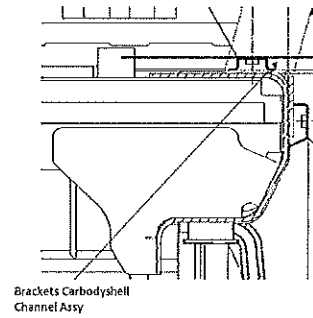
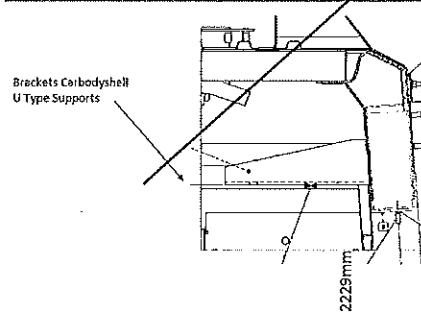
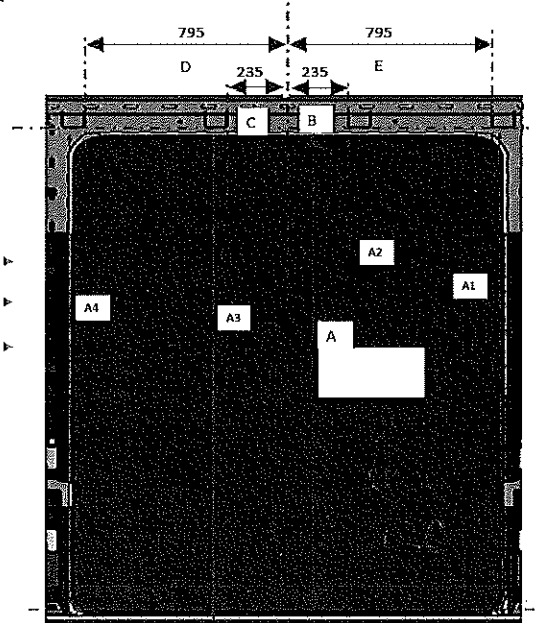


AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3298	3297	1	2594
B	3263	3265	2	2594
C	3296	3294	2	2592
D	3296	3298	2	2591
E	3265	3263	2	2594
F	3265	3263	2	2591
G	3298	3297	1	2593
H	3299	3297	2	2590
I	3265	3268	3	2594
J	3267	3264	3	2594
K	3296	3295	1	2590
L	3295	3297	2	2591
M	3265	3269	4	2595
N	3297	3298	1	2593



Specifications of Details for CBS measurement CB1220



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

DOOR 2 - LHS		
	VALUE	ACTUAL
A1	2230 to 2232	2233
A2	2230 to 2232	2232
A3	2230 to 2232	2232
A4	2230 to 2232	2233
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	794

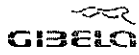
DOOR 2 - RHS		
	VALUE	ACTUAL
A1	2230 to 2232	2232
A2	2230 to 2232	2231
A3	2230 to 2232	2231
A4	2230 to 2232	2232
B	234 to 236	235
C	234 to 236	235
D	794 to 796	794
E	794 to 796	795

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

DOOR 3 - RHS		
	VALUE	ACTUAL
A1	2230 to 2232	2234
A2	2230 to 2232	2232
A3	2230 to 2232	2232
A4	2230 to 2232	2233
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	796

2024-05-21
INDUSTRIAL
KORONA



CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30226487/2

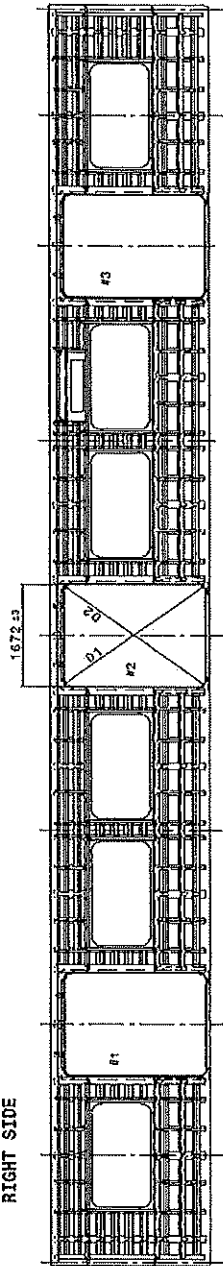
Rev.
29
Date
28/10/2023

Project: PRASA

SI.CB1220.250.V29

Specifications of Details for CBS measurement CB1220

End #2



End #1

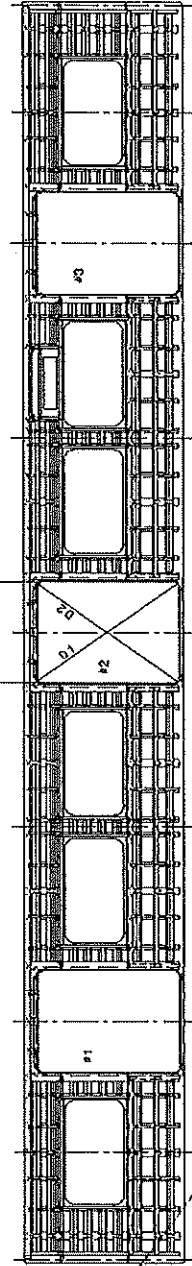
Doors diagonal D1-D2 maximum difference ≤4mm

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

Doors Length - 1672 ±3mm

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

End #1



End #2


Doors diagonal D1-D2 maximum difference ≤4mm


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

Doors Length - 1672 ±3mm

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

2024-03-21
INDUSTRIAL
ECONOMY

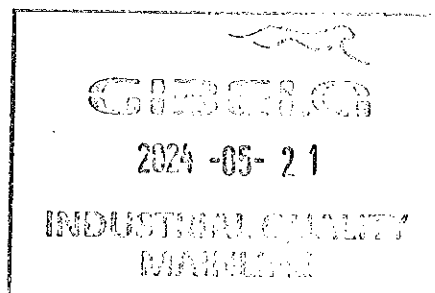
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA		
		29			
		Date	SI.CB1220.250.V29		
		28/10/2023			




CBS measurement (Manufacturing)				
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

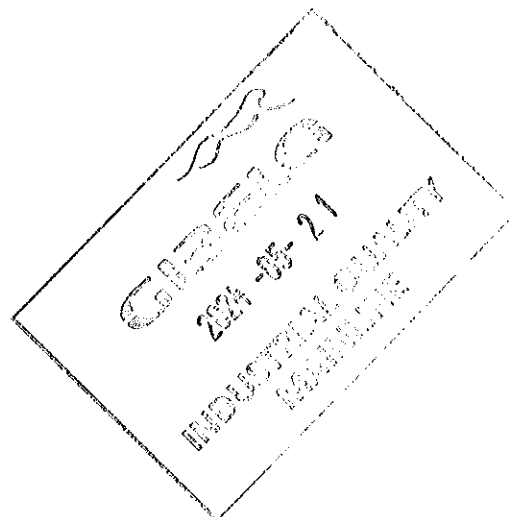
Check List Items							
Item	Picture/Drawing	Description	Criteria/Record	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX				



	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA SI.CB1220.250.V29			
		29				
		Date				
		28/10/2023				
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)	23/05/2024	Mashudh Operations		
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party	23/05/24	Andani Industrial Quality		
		There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)			Operations	
		There are non-conformities impact the quality of the product and there is no corrective action defined yet)			Industrial Quality	
In case of "NO GO", describe blocking problems						
In case of "NO GO", the operations manager must define below action plan to ensure "GO":						
Item	Description	Responsible	Due date	Status		

Operations

Quality



GIBELA

PRASA PROJECT

APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

SELF INSPECTION SHEET

CONFIDENTIAL INFORMATION

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

APPLICATION REFERENCE

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ?
				TC1	M4	M1	M2	M3	TC2		
<input type="checkbox"/> DT00000225487	AAD0001278566	CARBODY SHELL M1,M3,M4 ASSEMBLY	CB1230		X	X		X		PRA.CB1230.DT000002 25487.V20	YES
<input type="checkbox"/>											
<input type="checkbox"/>											
	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE						
0	2018/08/02	GIBELA NEW CREATION	APPROVER	Philipe Marques	2018/08/02						
			CHECKER	Nosizo Pindela	2018/08/02						
			COMPILER	Nosizo Pindela	2018/08/02						
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	2018/05/07	Certain dimensional checks moved to CB1220	APPROVER	Itumeleng Modiba	2018/05/07						
			CHECKER	Nosizo Pindela	2018/05/07						
			REVISED BY	Ramokane Motama	2018/05/07						
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						
			REVISED BY	Nosizo Pindela	13/03/2019						
10	23/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	23/08/2019						
			CHECKER	Nosizo Pindela	23/08/2019						
			REVISED BY	Nosizo Pindela	23/08/2019						
	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela	06/08/2020						
			CHECKER	Bongane Masina							
			REVISED BY	Bongane Masina							
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021						
			CHECKER	Bongane Masina							
			REVISED BY	Bongane Masina							
25	20/02/2022	New Baseline change 10.3.1	APPROVER	Collins Mbhombhi	20/02/2022						
			CHECKER	Andani Muthelo							
			REVISED BY	Andani Muthelo							
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Collins Mbhombhi	14/06/2022						
			CHECKER	Andani Muthelo							
			REVISED BY	Andani Muthelo							
27	19/10/2022	Addition of traceability for sealant application	APPROVER	Collins Mbhombhi	19/10/2022						
			CHECKER	Ntokozo Zwane							
			REVISED BY	Amogelang Mohlampe							
28	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023						
			CHECKER	Ntokozo Zwane							
			REVISED BY	Amogelang Mohlampe							
29	06/11/2023	Added thresholds traceability for boiler makers and welders	APPROVER	Tyson Ngobeni	06/11/2023						
			CHECKER	Andani Muthelo							
			REVISED BY	Ntokozo Zwane							
TRAINSET	CAR	OPERATOR NAME & ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES						
229	ma	Boitumelo 426963	24/05/2024	SI.CB1230.256.V28	11						



CARBODYSHELL M1,M3,M4 ASSEMBLY
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06/11/2023

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Car:

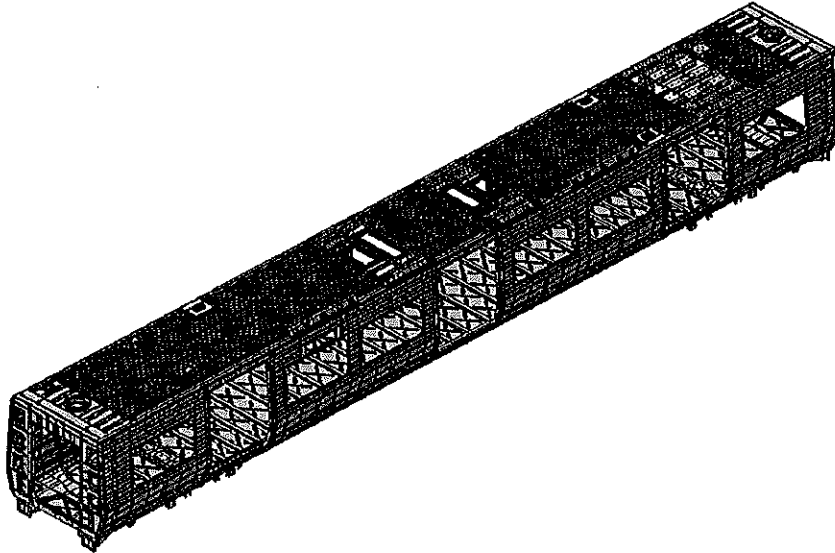
NCR:

Work station:

CB1230



Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car					Revision	Observation	OK	NOK	Remarks	Signature/Date (Operations)	Signature/Date (Quality)
	M1	M2	M3	M4	TC2							
PRA.CB1230.DT00000225487	✓					29		✓		N/A	24/05/24	24/05/24

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial number	Calibration or Verification Validation Date	OK	NOK	Signature/Date (Operations)	Signature/Date (Quality)
Tubular	22713	26/06/24	✓		24/05/24	24/05/24
measuring tape	4180794	26/06/24	✓		24/05/24	24/05/24
combination square	4180072	26/06/24	✓		24/05/24	24/05/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
308 LS	373779	MIG	✓		24/05/24	24/05/24



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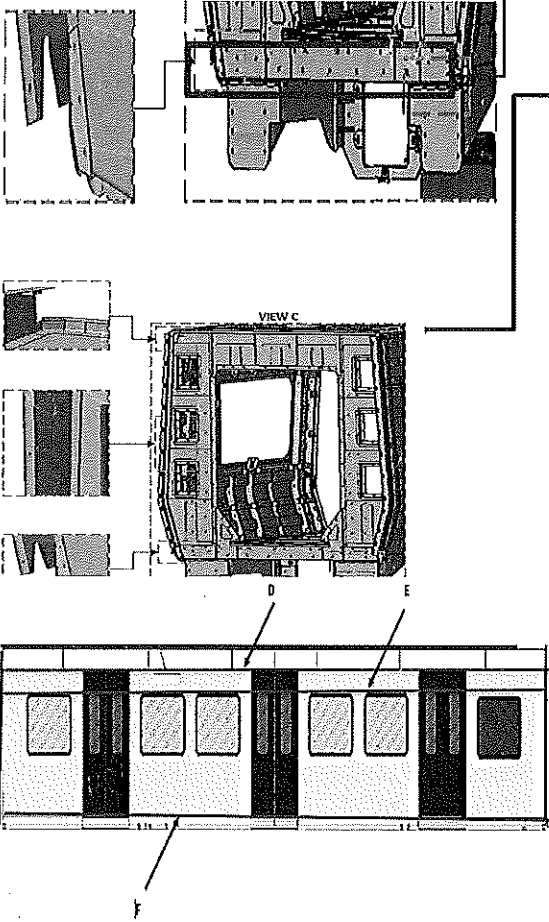
06/11/2023

II - Self Inspection - Items to Check

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	NO	NO OK	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB1230.DT00000225487 Verification of fitment for all brackets.	PRA.CB1230.DT00000225487	OK			 24/05/24	 24/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	OK			 24/05/24	 24/05/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	OK			 24/05/24	 24/05/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	OK			 24/05/24	 24/05/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	OK			 24/05/24	 24/05/24
06		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			 24/05/24	 24/05/24
07	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified: Temperature Min - Max (1) Min-Max 10°C - 35°C Relative humidity Min - Max (1) Min-Max 25% - 60%	Sealant Batch No: B2497 Exp Date: 06/24 Actuals Temperature: 20°C Humidity: 62%	OK			 24/05/24	 24/05/24
08	N/A	Verification of sealant application in regions of roof and sideframe.	Sealant applied in regions of roof and sideframe.	OK			 24/05/24	 24/05/24

AREA 1

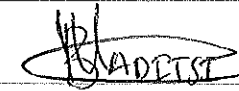


END 2 SEALANT

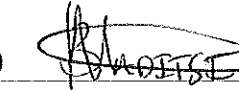
OPERATOR
(Name & sign):

Boitumelo 

OPERATOR
(Name & sign):

Boitumelo 

OPERATOR
(Name & sign):

Boitumelo 

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

Operator (Name & sign):

LHS

D, E, F, G, H, I

RHS

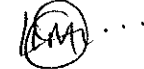
D, E, F, G, H, I

Operator (Name & sign):

Lerato


Lerato


Operator (Name & sign):





Operator (Name & sign):

ahlanhla 

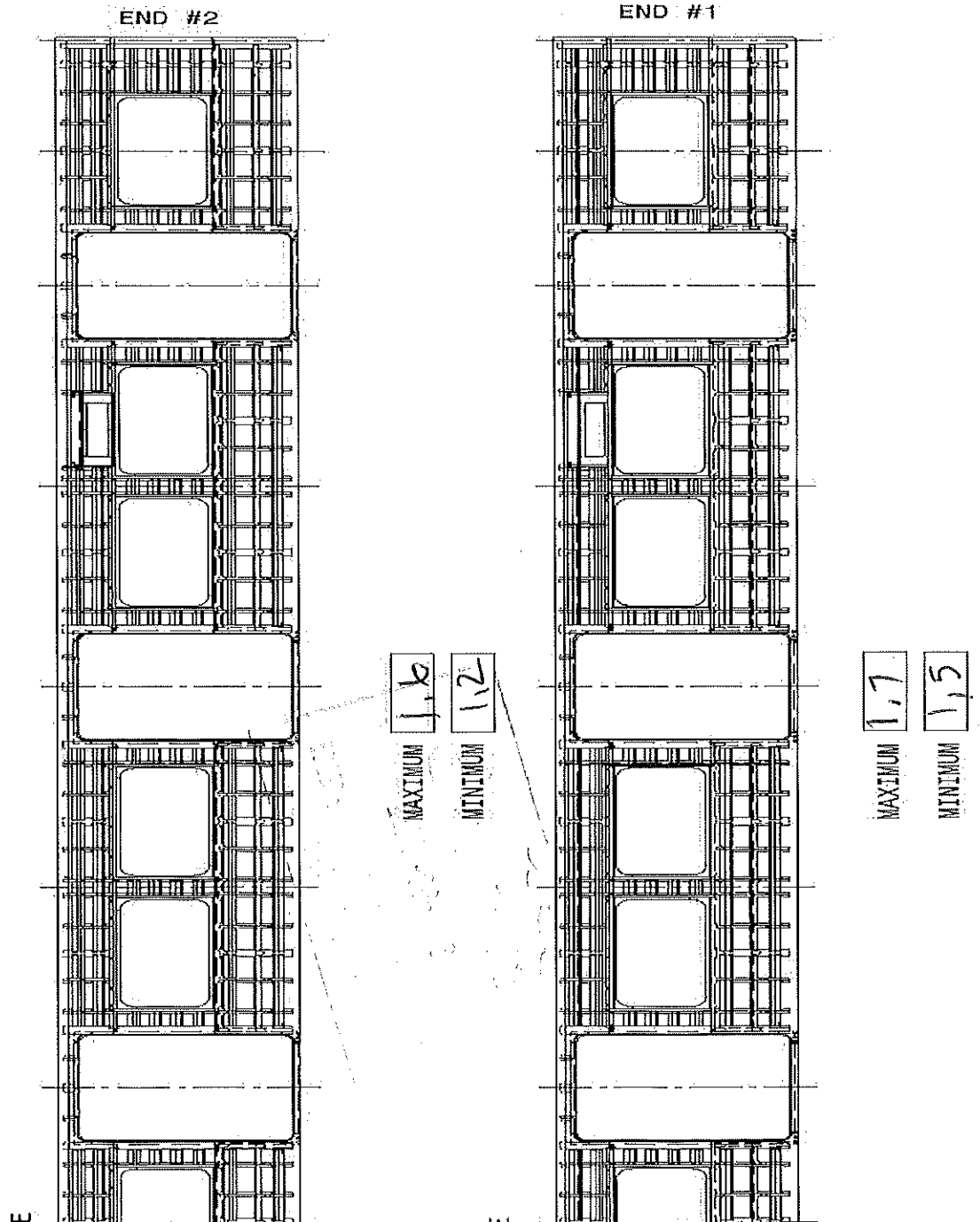
ahlanhla 

Operator (Name & sign):

Operator (Name & sign):

Specifications of Details for CBS measurement CB1230

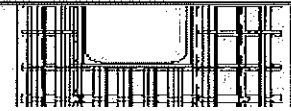
Flatness side left and right maximum of 2mm in the valley to peak measured in 900mm. Recod the maximum and minimum value found and indicate the corresponding region.



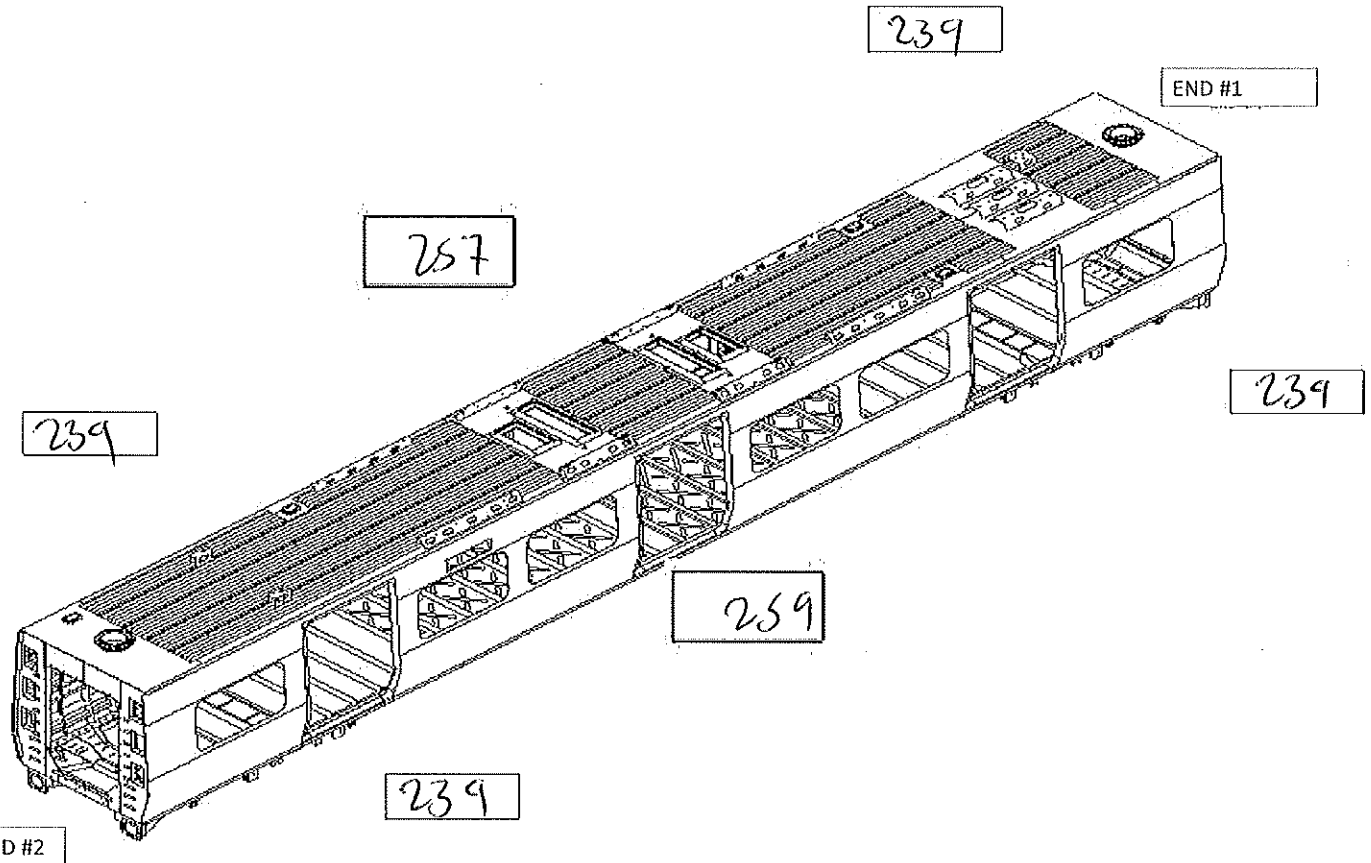
RIGHT SID



LEFT SID



Specified Camber for car out of jig is 18mm(-0mm + 2mm)



MEASURED CAMBER VALUES

RIGHT ¹ 20
LEFT ^{a1} 14



CARBODYSHELL M1,M3,M4 ASSEMBLY
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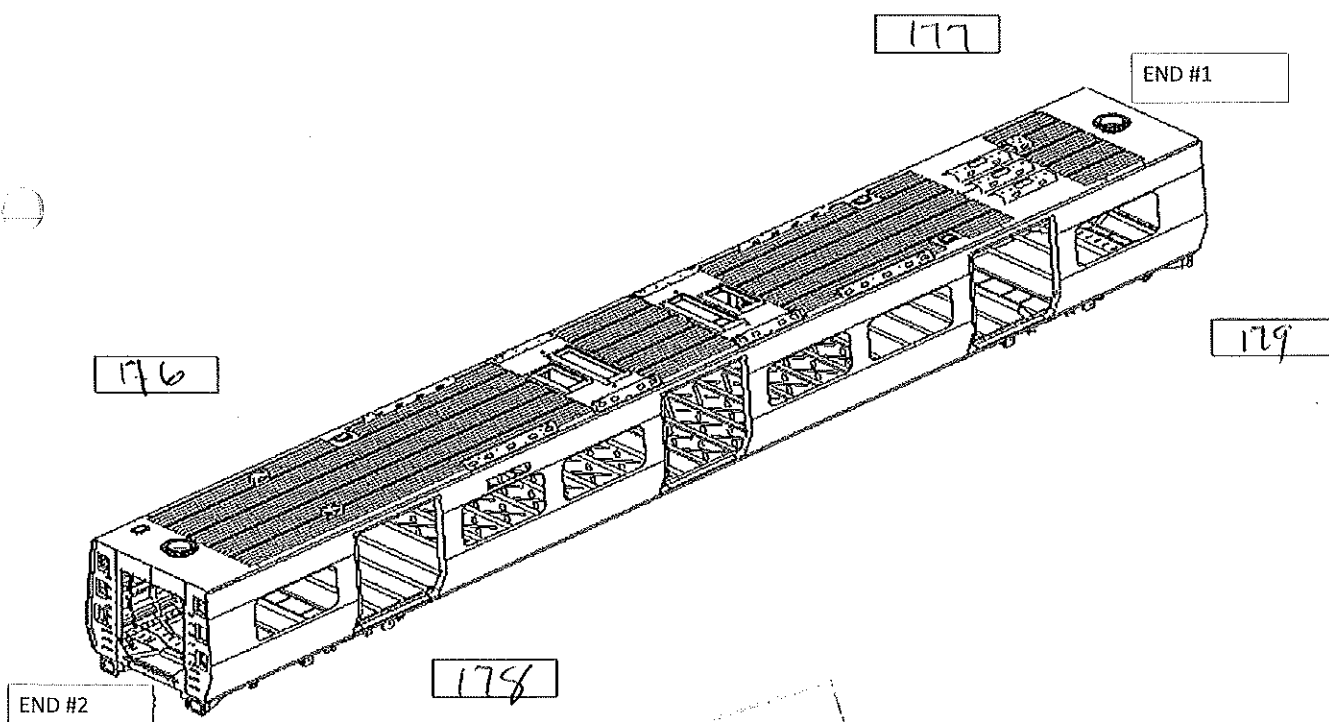
06/11/2023

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Specifications of Details for CBS measurement CB1230

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



TWIST FOUND ON END 1

TRANVERS

2

LONGITUDIN

1

TWIST FOUND ON END 2

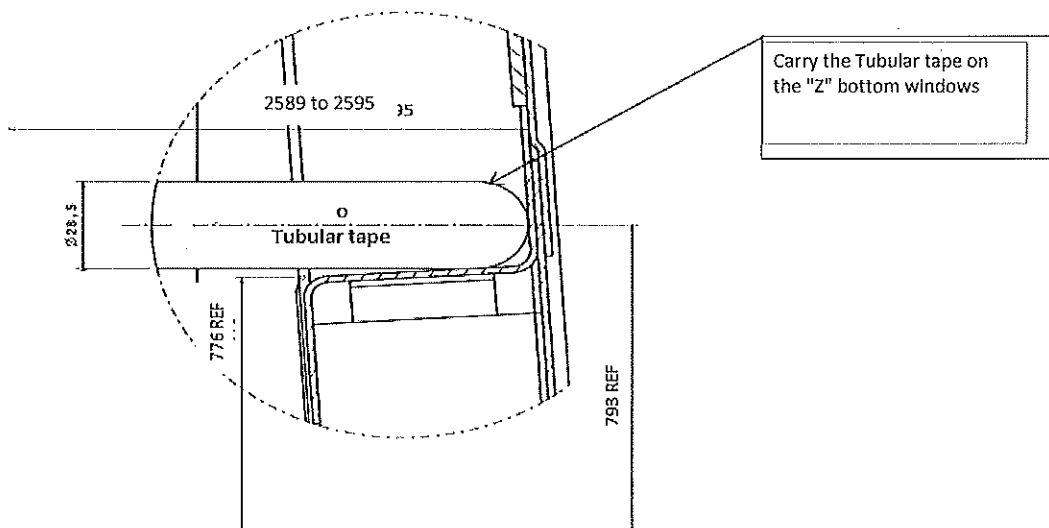
TRANVERSE

2

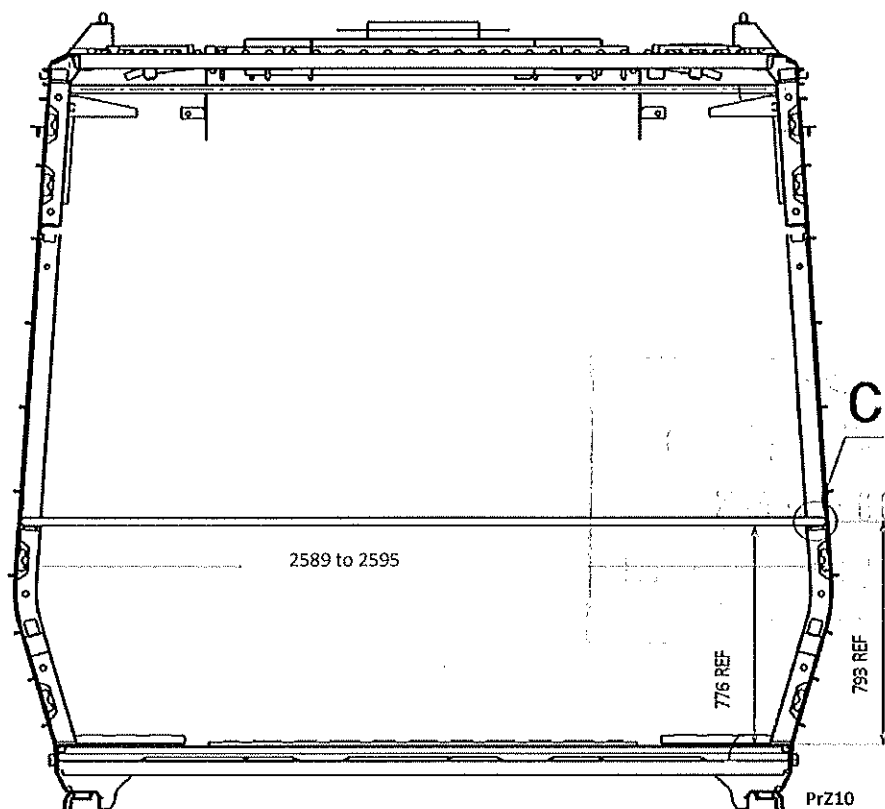
LONGITUDINAL

1

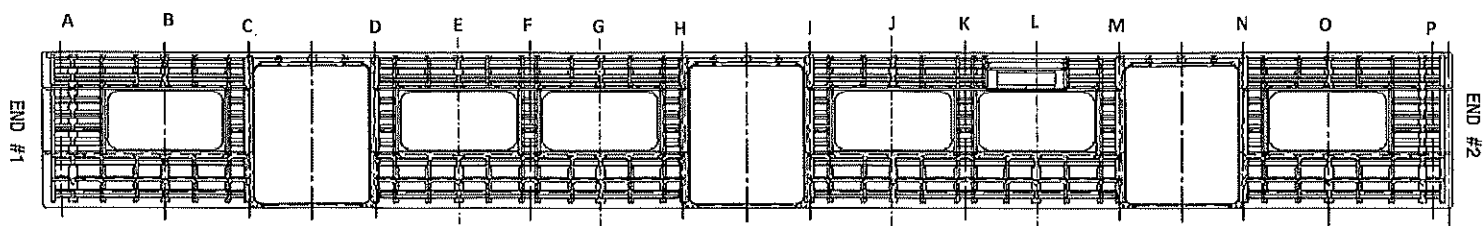
Specifications of Details for CBS measurement CB1230



Detail C

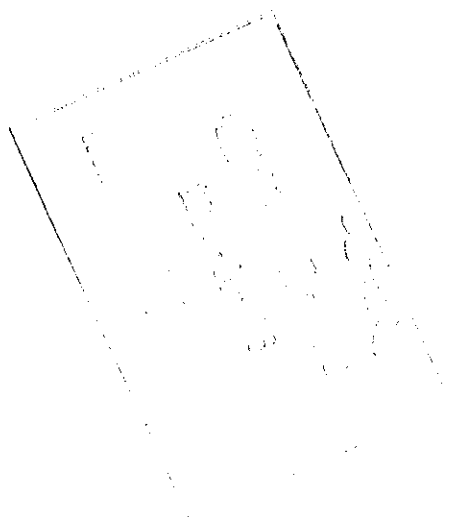


Specifications of Details for CBS measurement CB1230



2589 to 2595mm

A	2595
B	2592
C	2589
D	2595
E	2594
F	2594
G	2593
H	2595
I	2594
J	2594
K	2595
L	2589
M	2595
N	2594
O	2595
P	2595



Threshold verification

Nominal value :38

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

BOILER MAKER: Buhle R. Aguilera

WELDER: J. M. Chapelo



CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000225487

Rev.
29

Date

06/11/2023

Project: PRASA

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Self Inspection - Final Result

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

DATE

NAME

SIGNATURE

GO

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

24 May 2024

Bortumelo
Operations

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

24/05/24

Ntokoza
Industrial Quality

There 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	Responsible	Due date	Status

Operations

Quality

ANNEXURE A: Arc Welding Quality Acceptance Standard

