


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

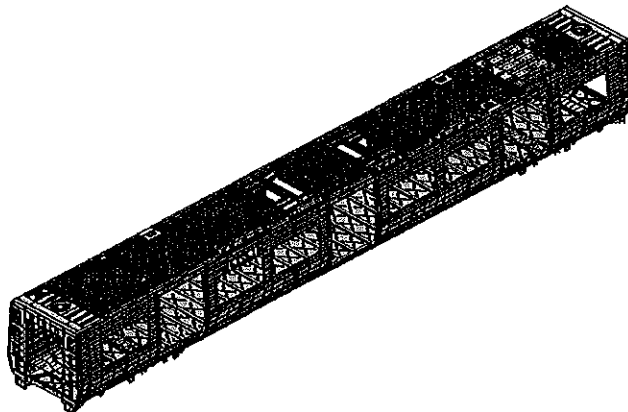
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 
				TC1	MA	M1	M2	M3	TC2		
<input type="checkbox"/> DTR30225487/3	AAD0001278566	CARBODYSHELL M1 ASSEMBLY	CB2210			<input checked="" type="checkbox"/>				PRA.CB2210.DTR30225487/3.V25	YES
<input type="checkbox"/>											
REV	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 CB2210	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 10.2.6	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							
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						
209	M1	LUNGWA 471497	03/02/24	SI.CB2210.254.V28	17						

	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V28
		Date 07/11/2023	

Car: M1	NCR:	Work station: CB2210
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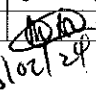


Safety Related



I - Documentation and Instruments Control





I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	P	D	S	M	F	U						
DTR30225487/3			X						✓			

03/02/24




I.2 - Instruments Control













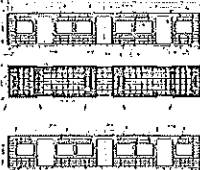




Monitoring and Measuring Instrument Control - Used for Special Process


Instruments	Serial number	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
TUBULAR	22713	04/10/23	✓		 03/02/24	
30 M TAPE	61870 0080	23/05/31	✓		 03/02/24	03/02/24
LASEIL TAPE	125425924	08/01/24	✓		 03/02/24	

1.3 Consumables

Welding Consumable Control - Used for Special Process

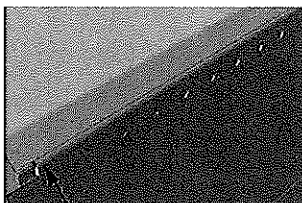
Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
E12 308LS1	327730-74791 (LOT)	MIG	✓		 03/02/24	
E12 309LS1	318394	MIG	✓		 03/02/24	03/02/24

		CARBODYSHELL M1 ASSEMBLY DTR30226487/3		Rev. 28 Date 07/11/2023	Project: PRASA SI.CB2210.254.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	✓		 03/02/24	 03/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓		 03/02/24	 03/02/24
03	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 03/02/24	 03/02/24
04	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 03/02/24	 03/02/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 03/02/24	 03/02/24
06		Functional dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓		 03/02/24	 03/02/24
07	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	✓		 03/02/24	 03/02/24

	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V28
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Welder Traceability

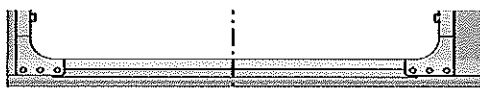
Roof ring welds



<u>LHS</u>	
Boiler maker (Name & Sign): <u>TUMILO</u>	Welder (Name & Sign): <u>Wissen</u> 03/02/24
<u>RHS</u>	
Boiler maker (Name & Sign): <u>TIMOTHY</u>	Welder (Name & Sign): <u>Wissen</u> 03/02/24 END 1

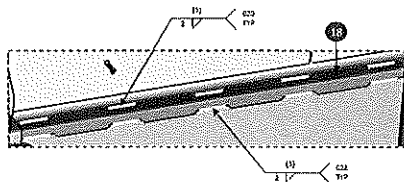
<u>LHS</u>	
Boiler maker (Name & Sign): <u>TUMILO</u>	Welder (Name & Sign): <u>Wissen</u> 03/02/24
<u>RHS</u>	
Boiler maker (Name & Sign): <u>TIMOTHY</u>	Welder (Name & Sign): <u>Wissen</u> 03/02/24 END 2

Door ring welds

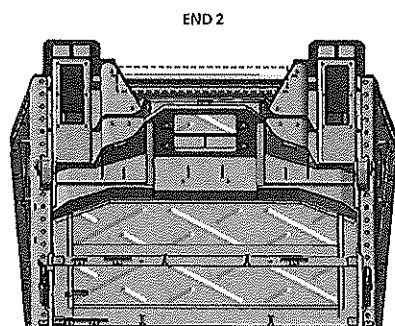


<u>LHS</u>
Boiler maker (Name & Sign): <u>INNOCENT</u>
Welder (Name & Sign): <u>KEITUMETSI</u>

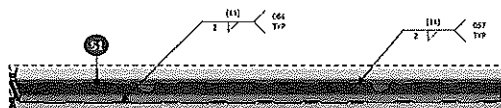
<u>RHS</u>
Boiler maker (Name & Sign): <u>INNOCENT</u>
Welder (Name & Sign): <u>KEITUMETSI</u>



Welder (Name & Sign):



Underneath the CAR




Boiler maker (Name & Sign):

Welder (Name & Sign):

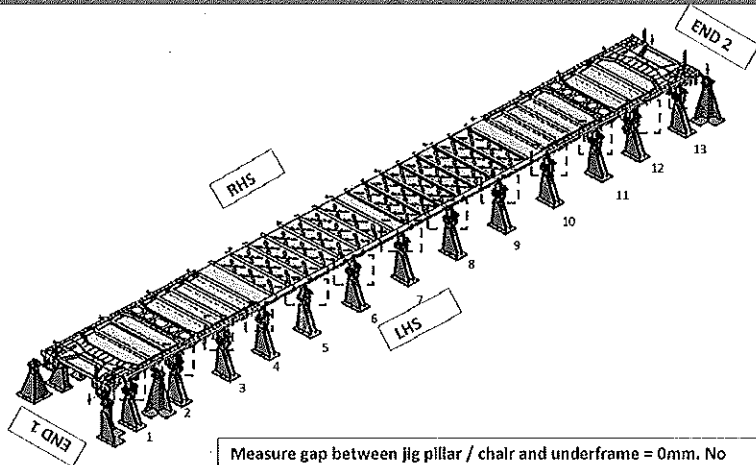


Operator:

WINGA

	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V28
		Date 07/11/2023	

Specifications of Details for CBS measurement




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

After loading and clamping

Fill in the gap foundon 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					NA								
Right Hand Side													

Signature Operations:  Date: 03/02/24

After Welding.

Fill in the gap found 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				NA									
Right Hand Side													

Signature Industrial Quality:  Date: 03/02/24

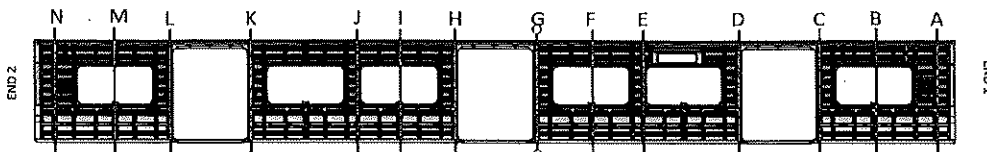


CARBODYSHELL M1 ASSEMBLY DTR30226487/3

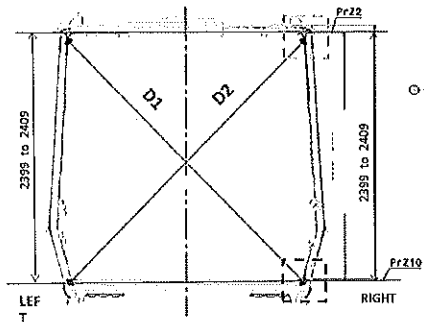
Rev.
28
Date
07/11/2023

Project: PRASA
SI, CB2210.254.V28

Specifications of Details for CBS measurement



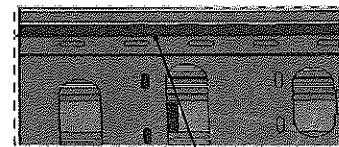
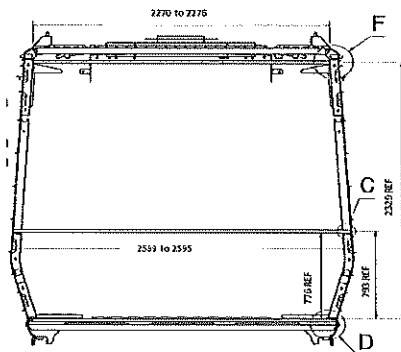
9



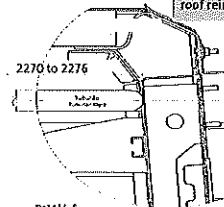
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side slit corner.



Reinforcement area measurement positions on roof reinforcement area.



D1416 P
D1416 P
D1416 P



CARBODYSHELL M1 ASSEMBLY DTR30226487/3

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28

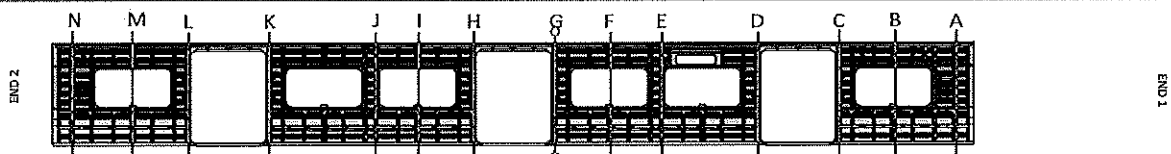
Date

07/11/2023

Project: PRASA

SI.CB2210.254.V28

Specifications of Details for CBS measurement

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

BEFORE WELDING

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

10/0
03/02/24



CARBODYSHELL M1 ASSEMBLY DTR30225487/3

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28

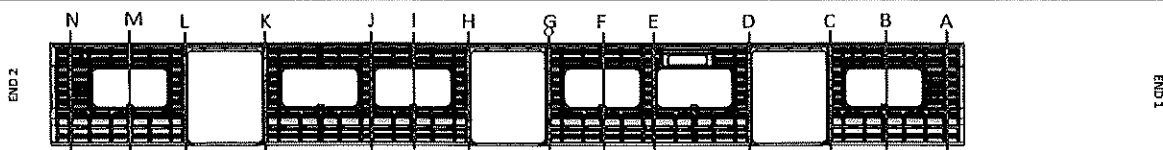
Project: PRASA

SI.CB2210.254.V28

Date

07/11/2023


Specifications of Details for CBS measurement

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

AFTER WELDING

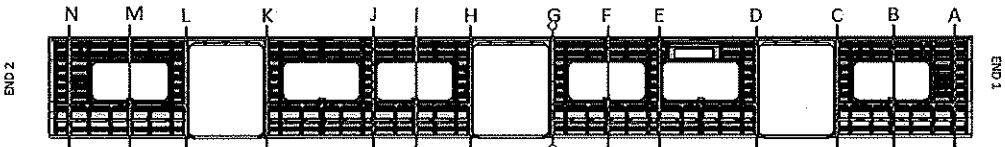
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3285	3295	0	2408	2408	0
B	3266	3268	2	2406	2405	1
C	3295	3294	1	2405	2405	0
D	3294	3294	0	2406	2404	2
E	3265	3265	0	2403	2405	2
F	3266	3264	2	2403	2405	2
G	3295	3294	1	2404	2404	0
H	3294	3295	1	2406	2405	1
I	3265	3264	1	2405	2407	2
J	3266	3266	0	2406	2406	0
K	3295	3295	0	2404	2405	1
L	3296	3295	1	2406	2405	1
M	3268	3266	2	2405	2405	0
N	3299	3299	0	2406	2407	1

03/02/24

	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V28
		Date 07/11/2023	

CBS measurement

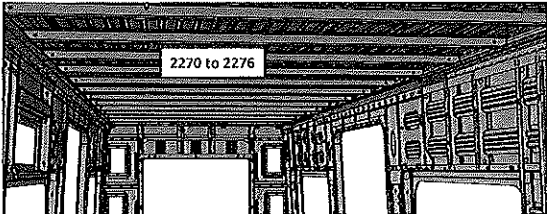
BEFORE WELDING



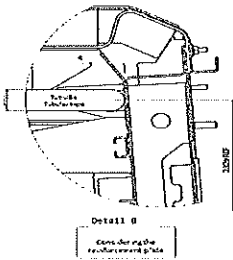
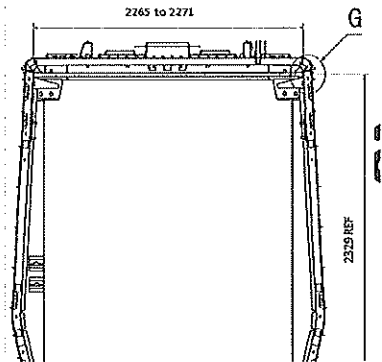
2270 to 2276

- A. 2271
- B. 2274
- C. 2276
- D. 2271
- E. 2275
- F. 2274
- G. 2271
- H. 2274
- I. 2275
- J. 2278
- K. 2271
- L. 2271
- M. 2273
- N. 2270

1990 to

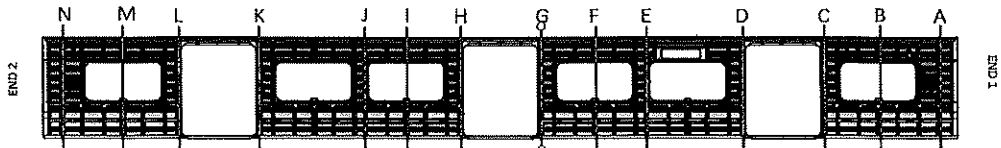


Do not consider reinforcement (Take measurements top area of zee profile

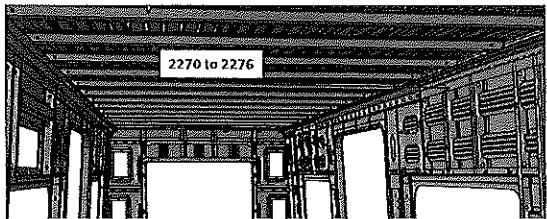


03/02/24

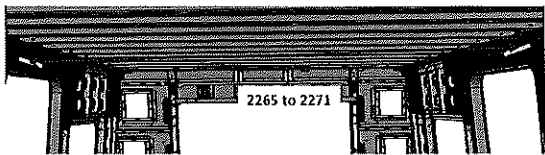
AFTER WELDING



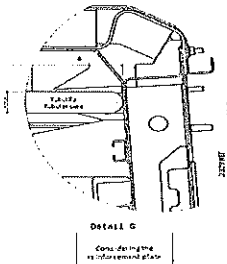
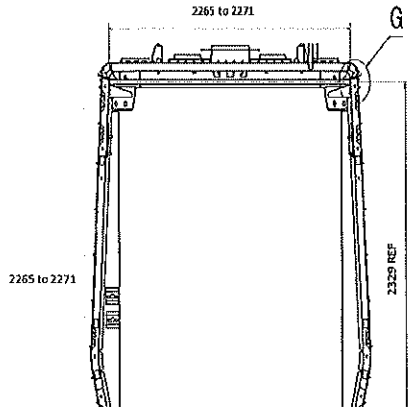
	2265 to 2271	2270 to 2276
END 2		
A	2265	NA
B	NA	2273
C	2268	NA
D	2270	NA
E	NA	2276
F	NA	2274
G	2266	NA
H	2269	NA
I	NA	2276
J	NA	2276
K	2268	NA
L	2270	NA
M	NA	2274
N	2269	NA



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



Take measurement close to radius (considering reinforcement)



03/02/24



CARBODYSHELL M1 ASSEMBLY DTR30225487/3

Rev.

28

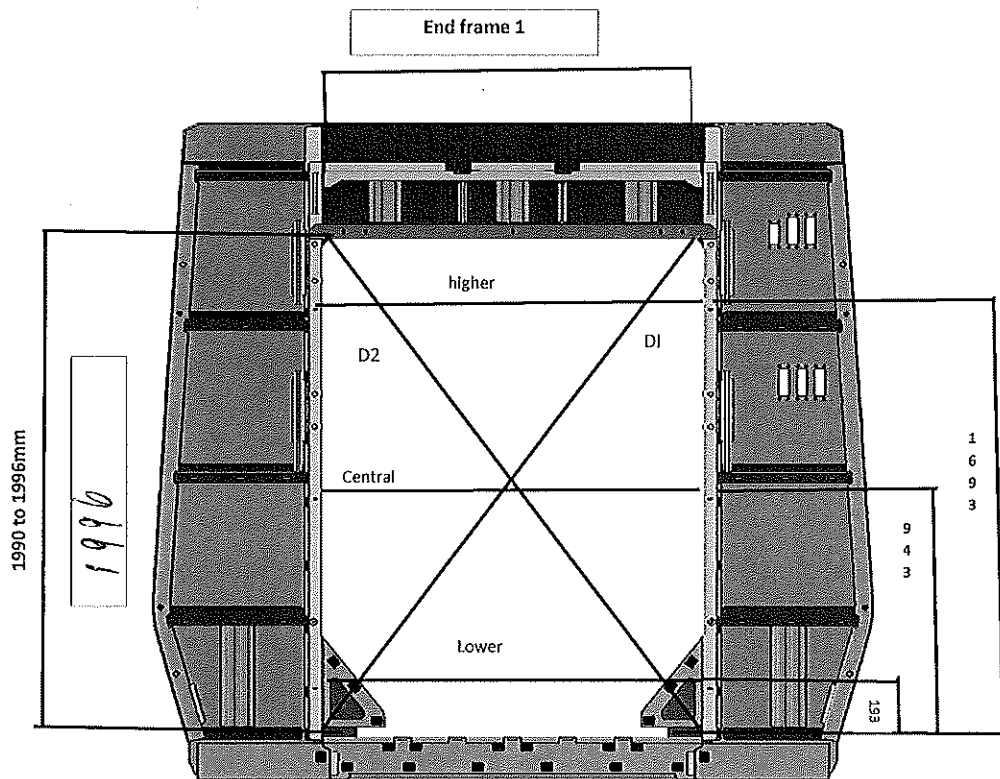
Date

07/11/2023

Project: PRASA

SI.CB2210.254.V28

Specifications of Details for CBS measurement



1380 to 1382 mm

DIAGONAL DIFFERENCE $D1-D2 \leq 3\text{mm}$

Higher Dimension

1382

D1

2416

Central Dimension

1382

D2

2414

Lower Dimension

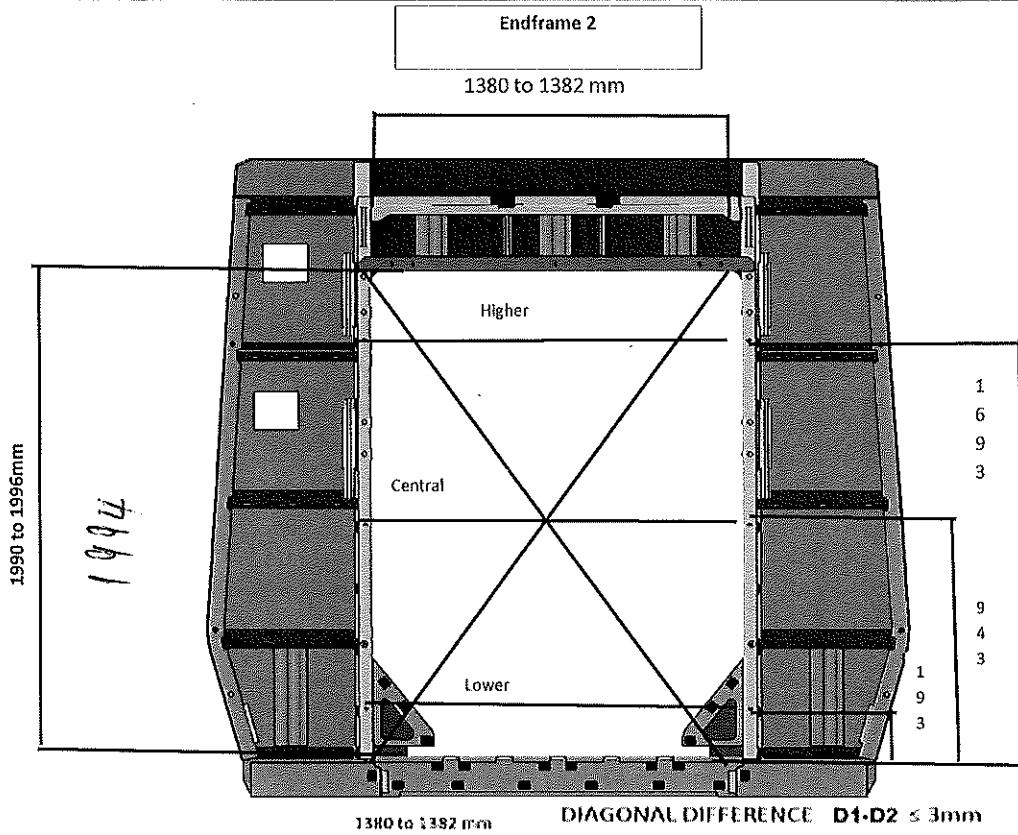
1381

D1-D2

2

03/02/20

Specifications of Details for CBS measurement



Higher Dimension

1381

D1

2415

Central Dimension

1381

D2

2415

Lower Dimension

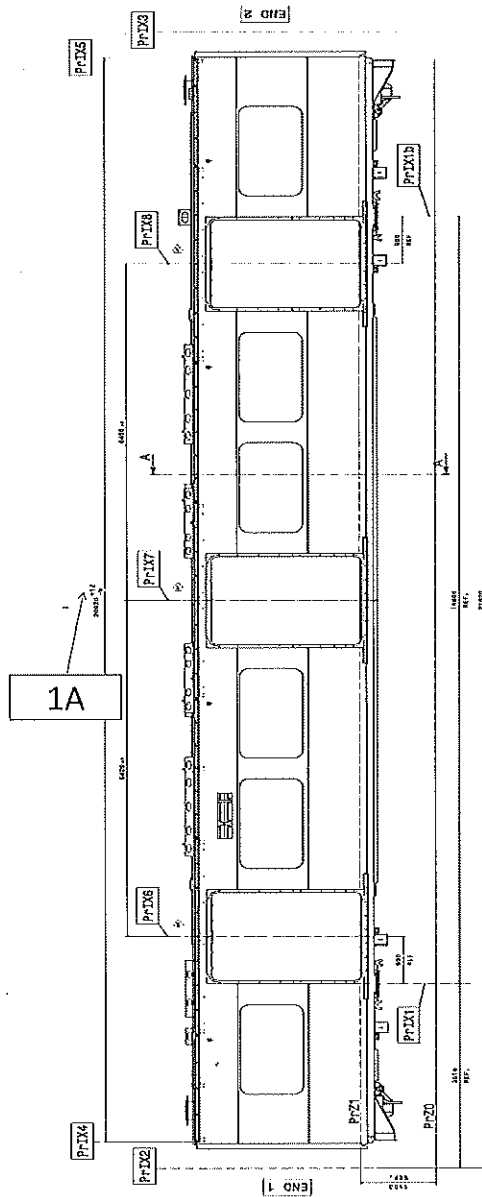
1380

D1-D2

0

03/02/24

Specifications of Details for CBS measurement




	LEFT SIDE	
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20615


	RIGHT SIDE	
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20613

Dye penetrant test



Dye-penetration test to be performed by quality personnel



		CARBODYSHELL M1 ASSEMBLY DTR30225407/3		Rev. 28		Project: PRASA			
				Date 07/11/2023		SI.CB2210.254.V28			
Item	Description of the Issue			OK	Signature/Date (Manufacturing)		Signature/Date (Quality)		
II.2 - Check List REX									
Check List Items									
Item	Picture/Drawing	Description	Criteria /Record	OK	Not OK	Open	Signature/Date (Manufacturing)	Signature/Date (Quality)	
01	N/A	To complete REX	Refer to REX. Max defects must be added on the REX						

	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.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)	03/02/24	LUNGA Operations	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	03/02/24	Richmond Industrial Quality	
		NO GO	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	

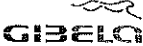
In case of "NO GO", describe blocking problems

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

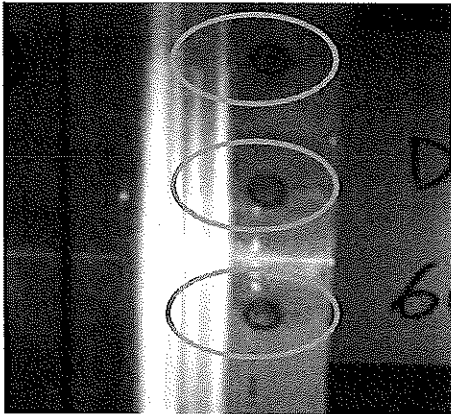
Item	Description		Responsible	Due date	Status


Operations

Quality

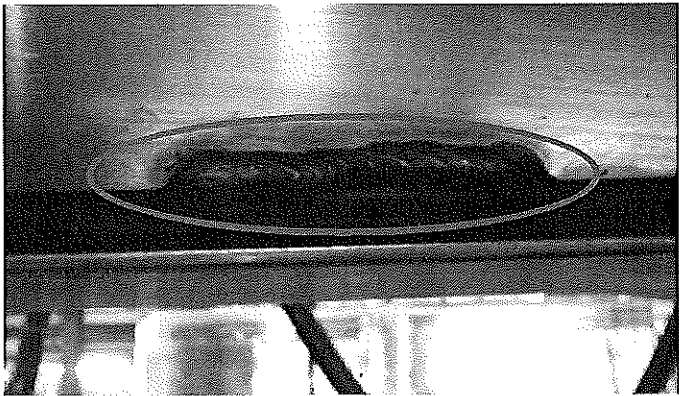
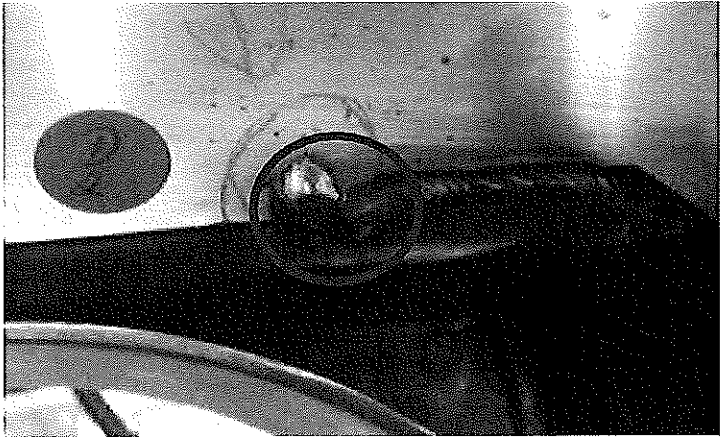
	CARBODYSHELL M1 ASSEMBLY DTR30226487/3	Rev. 28	Project: PRA5A SI.CB2210.254.V28
		Date 07/11/2023	

ANNEXURE A: Spot Welding Quality Acceptance Standard




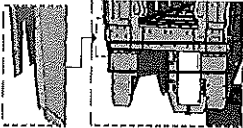

	CARBODYSHELL M1 ASSEMBLY DTR30226487/3	Rev. 28	Project: PRASA SI.CB2210.254.V28
		Date 07/11/2023	


ANNEXURE B: Arc Welding Quality Acceptance Standard

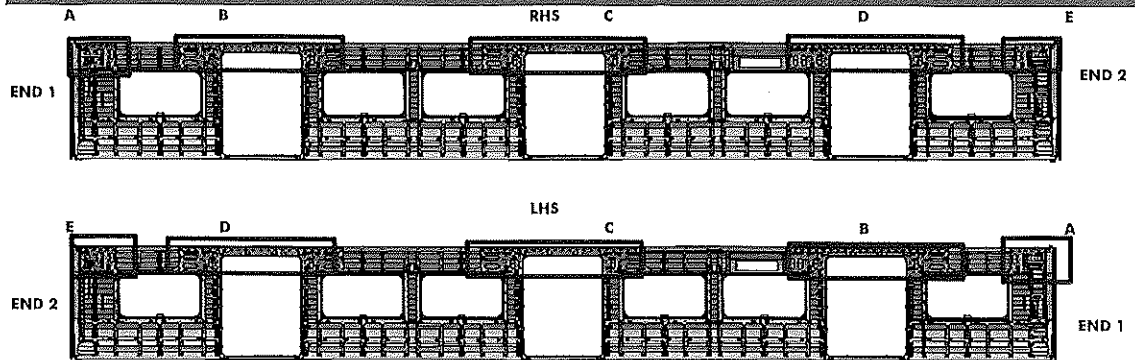


	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2		Rev.	Project: PRASA SI.CB2220.250.V29																																	
			29																																		
			Date																																		
			28/10/2023																																		
Car: M1,M3&M4		NCR:	Work station:		CB2220																																
<div style="display: flex; align-items: center;"> Safety Related </div>																																					
I - Documentation and Instruments Control																																					
I.1 - Documentation Control																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Document</th> <th colspan="6">Type of car</th> <th rowspan="2">Revision</th> <th rowspan="2">Observation</th> <th rowspan="2">OK</th> <th rowspan="2">NOK</th> <th rowspan="2">Signature/Date (Manufacturing)</th> <th rowspan="2">Signature/Date (Quality)</th> </tr> <tr> <th>TG1</th> <th>M1</th> <th>M2</th> <th>M3</th> <th>M4</th> <th>TG2</th> </tr> </thead> <tbody> <tr> <td>DTR30226487/2</td> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>29</td> <td>28/10/2023</td> <td style="text-align: center;">✓</td> <td></td> <td>N/A</td> <td> 06/02/24</td> </tr> </tbody> </table>						Document	Type of car						Revision	Observation	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)	TG1	M1	M2	M3	M4	TG2	DTR30226487/2	X						29	28/10/2023	✓		N/A	06/02/24
Document	Type of car						Revision	Observation	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)																									
	TG1	M1	M2	M3	M4	TG2																															
DTR30226487/2	X						29	28/10/2023	✓		N/A	06/02/24																									
I.2 - Instruments Control																																					
Monitoring and Measuring Instrument Control - Used for Special Process																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Instruments</th> <th>Serial number</th> <th>Calibration or Verification Validation Date</th> <th>OK</th> <th>NOK</th> <th>Signature/Date (Manufacturing)</th> <th>Signature/Date (Quality)</th> </tr> </thead> <tbody> <tr> <td>Measuring tape</td> <td>Gibbelq</td> <td>29/11/2024</td> <td style="text-align: center;">✓</td> <td></td> <td>06/02/24</td> <td> 06/02/24</td> </tr> <tr> <td>tubular</td> <td>22715-1</td> <td>29/11/2024</td> <td style="text-align: center;">✓</td> <td></td> <td>06/02/24</td> <td> 06/02/24</td> </tr> </tbody> </table>						Instruments	Serial number	Calibration or Verification Validation Date	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)	Measuring tape	Gibbelq	29/11/2024	✓		06/02/24	06/02/24	tubular	22715-1	29/11/2024	✓		06/02/24	06/02/24											
Instruments	Serial number	Calibration or Verification Validation Date	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)																															
Measuring tape	Gibbelq	29/11/2024	✓		06/02/24	06/02/24																															
tubular	22715-1	29/11/2024	✓		06/02/24	06/02/24																															
1.3 Consumables																																					
Welding Consumable Control - Used for Special Process																																					
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Filler Material</th> <th>Heat Number</th> <th>Welding Process</th> <th>OK</th> <th>NOK</th> <th>Signature/Date (Manufacturing)</th> <th>Signature/Date (Quality)</th> </tr> </thead> <tbody> <tr> <td>308</td> <td>32120-74</td> <td>Mig welding</td> <td style="text-align: center;">✓</td> <td></td> <td>06/02/24</td> <td> 06/02/24</td> </tr> </tbody> </table>						Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)	308	32120-74	Mig welding	✓		06/02/24	06/02/24																		
Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)																															
308	32120-74	Mig welding	✓		06/02/24	06/02/24																															

GIBELQ		CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2		Rev. 29 Date 28/10/2023	Project: PRASA SI.CB2220.250.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.CB2220.DTR30225487/2 Verification of fitment for all reinforcement brackets.	PRA.CB2220.DTR30225487/2	✓	06/02 	06/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓	06/02 	06/02/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	06/02 	06/02/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	06/02 	06/02/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓	06/02 	06/02/24
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.	✓	06/02 	06/02/24
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 (°) Min - Max 10°C - 35°C Relative humidity Min - Max (%) Min - Max 25% - 60%	Sealant Batch No: NR 70-03 Exp Date: 1/02/24 Actuals Temperature: 20°C Humidity: 45%	✓	06/02 	06/02/24
08	NA	Verification of sealant application in certain regions in the drawing.	AAD0001278566	✓	06/01 	06/02/24
09		Verification of safety welds	Approved according to DTD000210658 reference and Self inspection	✓	06/02 	06/02/24


	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA
		29	
		Date	
		28/10/2023	
		SI.CB2220.250.V29	
II - Self Inspection - Items to Check			
SEALANT APPLICATION			
	AREA 1 & 2 END 1		
	Operator (Name & sign): Priscilla		
	Operator (Name & sign): Priscilla		

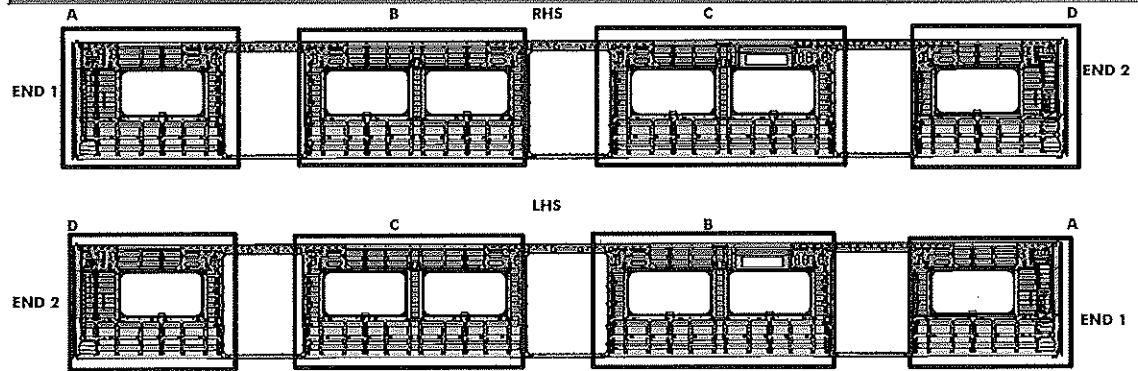
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA SI.CB2220.250.V29
		29	
		Date	
		28/10/2023	
II - Self Inspection - Items to Check			



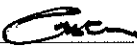

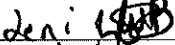

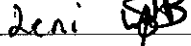

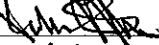
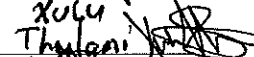


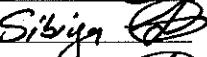
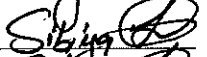

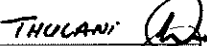
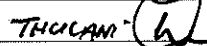
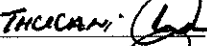
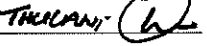











REINFORCEMENT WELDING


AREA	LHS	RHS
A	Operator (Name&sign): <i>Jolly Jolly</i>	<i>S. M. M. M.</i>
B	Operator (Name&sign): <i>Jolly Jolly</i>	<i>S. M. M. M.</i>
C	Operator (Name&sign): <i>M. M. M.</i>	<i>M. M. M.</i>
D	Operator (Name&sign): <i>Zanele</i>	<i>Nkululeka D. D.</i>
E	Operator (Name&sign): <i>Zanele</i>	<i>Nkululeka D. D.</i>

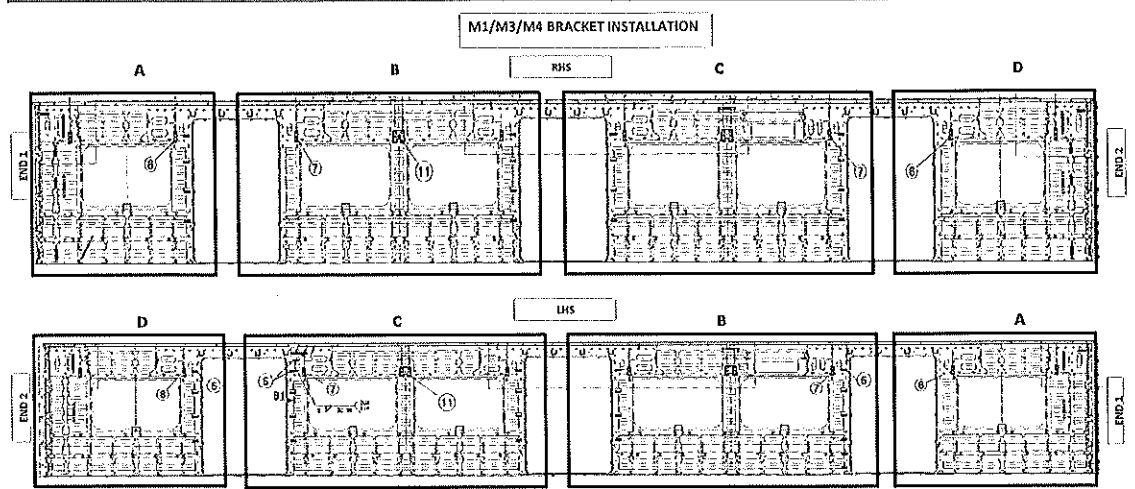
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA
		29	
		Date	SI.CB2220.250.V29
		28/10/2023	
II - Self Inspection - Items to Check			



BRACKETING

		INSTALLATION	
C-RAILS:	Operator:	Priscilla 	
	Operator:		
DOOR MECHANISMS:	Operator:	Tetelo 	
	Operator:		
TAPPING PADS	Operator:	Ntho	
	Operator:		
		INSTALLATION & VERIFICATION	
SEAT & LUGGAGE BRACKETS:	Operator:	Zeni 	
	Operator:	Tetelo 	
SEAT BRACKETS VERIFICATION:	Operator:	Zeni 	
	Operator:		
		WELDING	
AREA	LHS	RHS	
A (Seat brackets)	: Operator (Name&sign):		
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):		
B (Seat brackets)	: Operator (Name&sign):		
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):		
C (Seat brackets)	: Operator (Name&sign):		
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):		
D (Seat brackets)	: Operator (Name&sign):		
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):		
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	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA SI.CB2220.250.V29
		29	
		Date	
		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	6		
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: Tetelo

LHS				
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	2		
	B	8		
	C	8		
	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: N/A

QUANTITIES (M1)

RHS				
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	7	✓	
	B	8	✓	
	C	8	✓	
	D	6	✓	
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

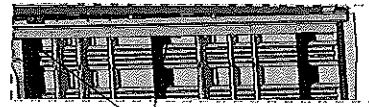
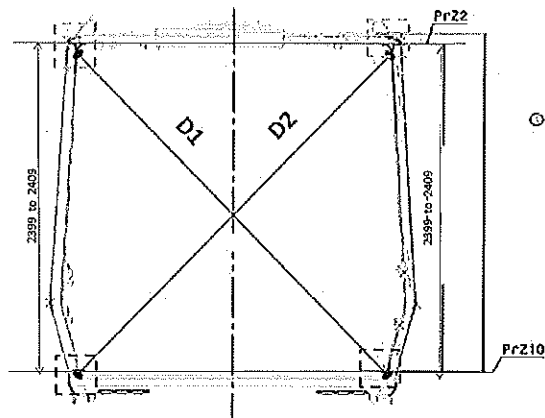
VERIFICATION BY: Tetelo

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

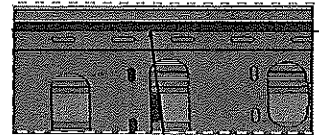
ROOF ENDS:
 C-RAILS 2 OFF EACH END
 EARTH BUSH 6 OFF EACH END

VERIFICATION BY: Tetelo

Specifications of Details for CBS measurement



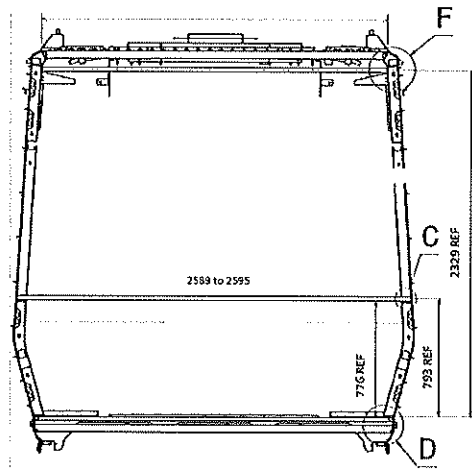
Measurement positions on roof rail and sidewall omega corner



Reinforcement area measurement positions on roof reinforcement area



Measurement positions on sidewall and side sill corner





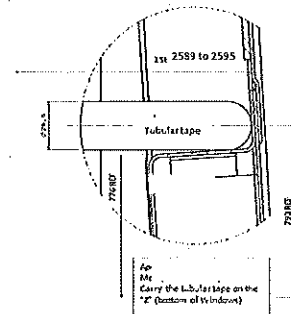
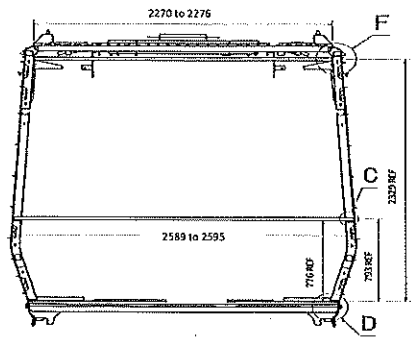
CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30225487/2

Rev.
29
Date
28/10/2023

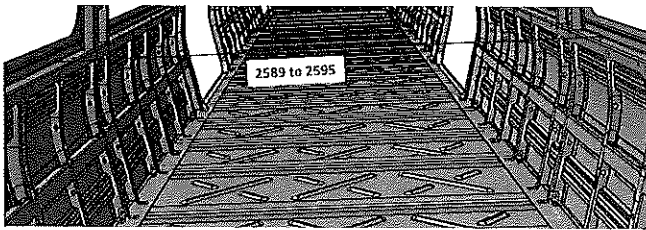
Project: PRASA

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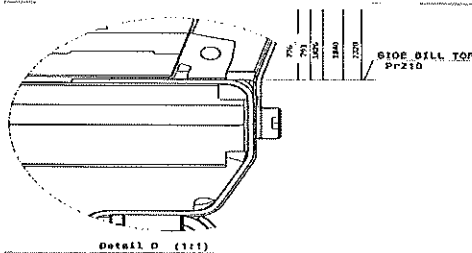
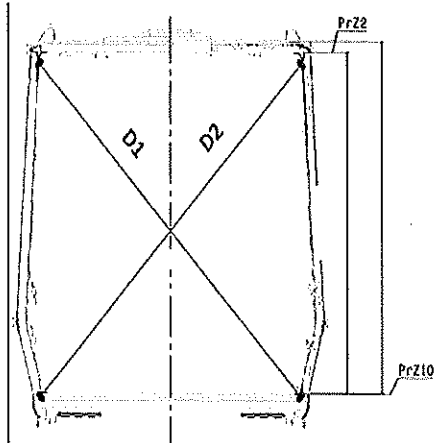
CBS measurement



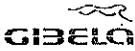
Detail C

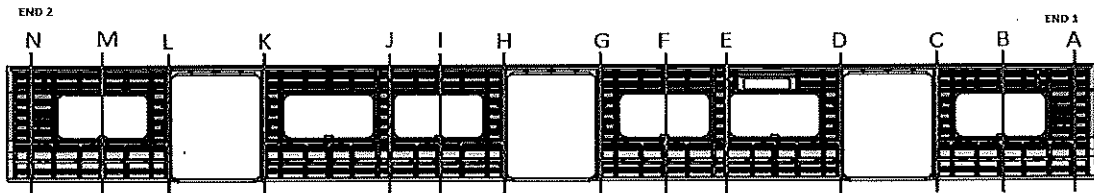


Take measurement close to
radius



Detail D (1:1)

	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA
		29	
		Date	
		28/10/2023	SI.CB2220.250.V29
CBS measurement			




BEFORE WELDING

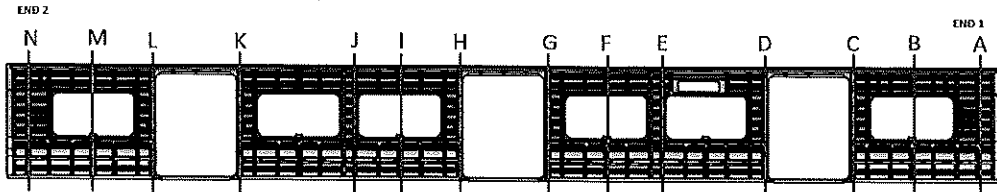
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3295	3295	0	
B	3293	3294	1	
C	3294	3295	1	
D	3295	3297	2	
E	3294	3295	1	
F	3293	3294	1	
G	3295	3294	1	
H	3294	3295	1	
I	3295	3296	1	
J	3296	3297	1	
K	3295	3294	1	
L	3294	3295	1	
M	3293	3294	1	
N	3295	3293	2	

7

N/A

	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA
		29	
		Date	
		28/10/2023	
SI.CB2220.250.V29			

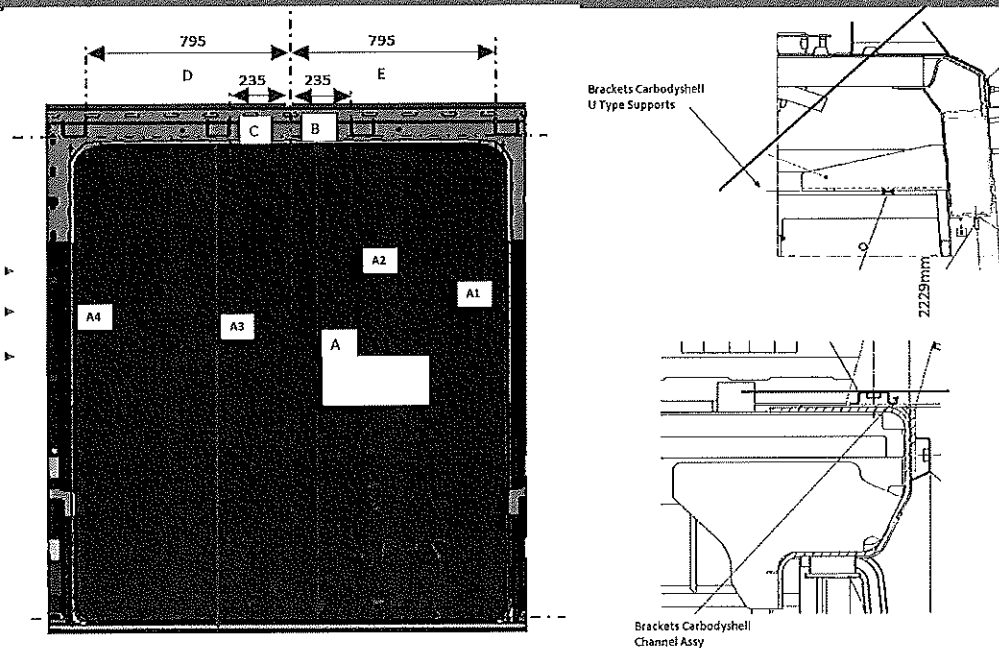
CBS measurement



AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3293	3295	2	2589
B	3295	3295	0	2590
C	3297	3295	2	2592
D	3297	3296	1	2590
E	3293	3295	2	2597
F	3295	3293	2	2595
G	3293	3295	2	2595
H	3294	3295	1	2594
I	3295	3294	1	2593
J	3293	3294	1	2590
K	3295	3293	2	2589
L	3296	3294	1	2590
M	3294	3293	1	2591
N	3295	3294	1	2592

Specifications of Details for CBS measurement CB1220



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

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

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

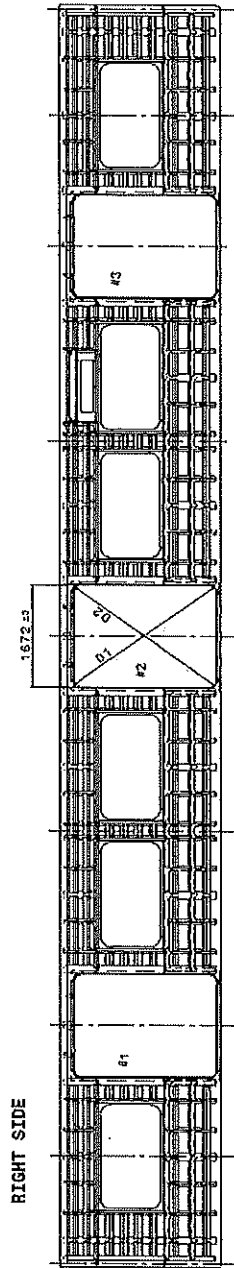
DOOR 1 - RHS		
	VALUE	ACTUAL
A1	2230 to 2232	2232
A2	2230 to 2232	2231
A3	2230 to 2232	2231
A4	2230 to 2232	2231
B	234 to 236	235
C	234 to 236	235
D	794 to 796	794
E	794 to 796	796

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

Specifications of Details for CBS measurement CB1220

End #2



RIGHT SIDE

End #1

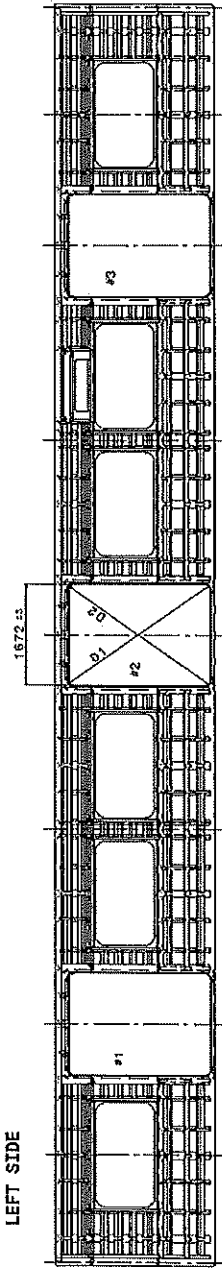
Doors diagonal D1-D2 maximum difference ≤4mm

#1	#2	#3
D1 2747	D1 2746	D1 2747
D2 2746	D2 2745	D2 2745
D1-D2 1	D1-D2 1	D1-D2 2

Doors Length - 1672 ±3mm

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

End #1



LEFT SIDE


End #2



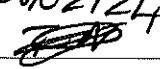
Doors diagonal D1-D2 maximum difference ≤4mm

#1	#2	#3
D1 2748	D1 2746	D1 2747
D2 2746	D2 2745	D2 2746
D1-D2 2	D1-D2 1	D1-D2 1

Doors Length - 1672 ±3mm

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

	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA SI.CB2220.250.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!)	06/02/24	Tobelo Operations	06/02/24 
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party)	06/02/24	Amo Industrial Quality	
			There are activities pending that impact/stop the activities of the next process Obs: (To describe problems below)		- Operations	06/02/24 
			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":

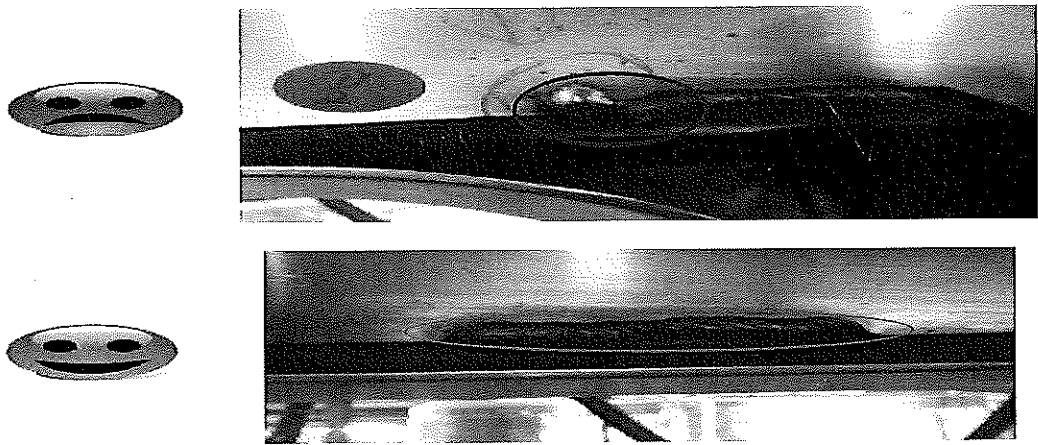
Item	Description	Responsible	Due date	Status


Operations

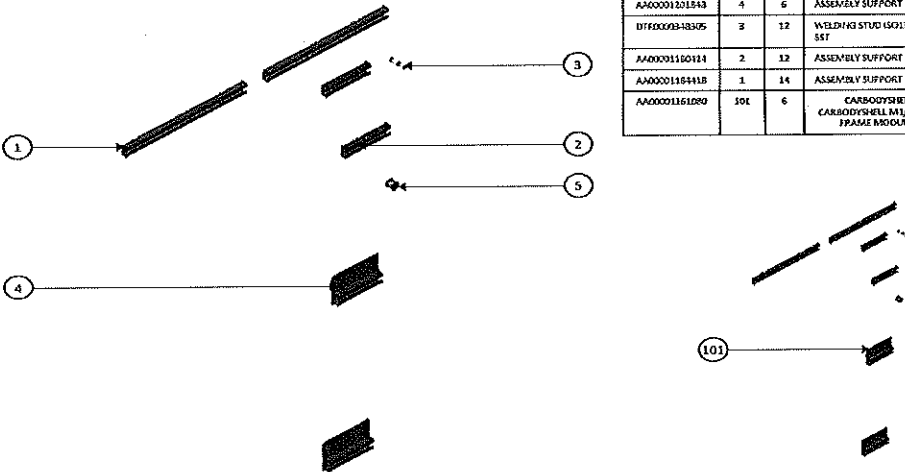
Quality

	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA SI.CB2220.250.V29
		29	
		Date	
		28/10/2023	

ANNEXURE A: Arc Welding Quality Acceptance Standard



Station: CB1220-004- U108 & U107



PART NO.	ITEM NO.	QTY	DESCRIPTION	MASS (KG)
DTT0020074208	5	6	EARTH STUD 6	0.036
AA00001101843	4	6	ASSEMBLY SUPPORT	0.371
DTF0000318305	3	12	WELDING STUD ISO13918 PT - M5x20 - SET	0.077
AA00001160114	2	32	ASSEMBLY SUPPORT	0.192
AA00001164418	1	14	ASSEMBLY SUPPORT	0.522
AA00001161080	101	6	CARBODYSHELL BRACKETS CARBODYSHELL M1/M3/M4 CAP(SIDE FRAME MODULE END - OFF)	32.132

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.

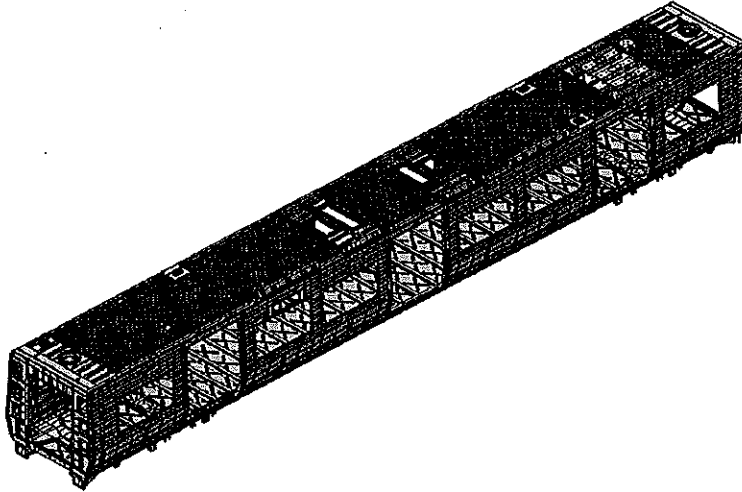
APPLICATION REFERENCE

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ?	
				TC1	M1	M2	M3	TC2				
<input type="checkbox"/>	DT00000225487	AAD0001278566	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB2230		X	X		X		PRA.CB2230.DT000002 25487.V20	YES
<input type="checkbox"/>												
<input type="checkbox"/>												
RE1	DATE	MODIFICATION CONTENT			RESPONSIBLE		NAME		DATE			
0	2018/08/02	GIBELA NEW CREATION			APPROVER	Philippe 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	Ramokone 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				
15	06/08/2020	New Baseline 10.2.6			APPROVER	Timothy Maimela		06/08/2020				
					CHECKER	Bongane Masina		06/08/2020				
					REVISED BY	Bongane Masina		06/08/2020				
20	19/04/2021	New Baseline change 10.3			APPROVER	Timothy Maimela		19/04/2021				
					CHECKER	Bongane Masina		19/04/2021				
					REVISED BY	Bongane Masina		19/04/2021				
25	20/02/2022	New Baseline change 10.3.1			APPROVER	Collins Mbombhi		20/02/2022				
					CHECKER	Andani Muthelo		20/02/2022				
					REVISED BY	Andani Muthelo		20/02/2022				
26	14/06/2022	Update minimum temperature requirement for sealant application			APPROVER	Collins Mbombhi		14/06/2022				
					CHECKER	Andani Muthelo		14/06/2022				
					REVISED BY	Andani Muthelo		14/06/2022				
27	26/07/2022	Threshold measurements addition			APPROVER	Collins Mbombhi		26/07/2022				
					CHECKER	Andani Muthelo		26/07/2022				
					REVISED BY	Andani Muthelo		26/07/2022				
28	17/10/2022	Added traceability of sealant application			APPROVER	Collins Mbombhi		17/10/2022				
					CHECKER	Ntokozo Zwane		17/10/2022				
					REVISED BY	Amogelang Mohlampe		17/10/2022				
29	14/04/2023	Added sealant batch number & welding consumables traceability			APPROVER	Vanessa Ntuli		14/04/2023				
					CHECKER	Ntokozo Zwane		14/04/2023				
					REVISED BY	Amogelang Mohlampe		14/04/2023				
30	06/11/2023	Added threshold traceability for boiler makers and welders			APPROVER	Ngobeni Tyson		06/11/2023				
					CHECKER	Andani Muthelo		06/11/2023				
					REVISED BY	Ntokozo Zwane		06/11/2023				
TRAINSET	CAR	OPERATOR NAME & ALPS NO		DATE	SELF INSPECTION NUMBER			PAGES				
209	MD1	Single 426955		06/02/24	SI.CB2230.256.V29			12				

	CARBODYSHELL M1,M3,M4 ASSEMBLY DT00000225487	Rev. 30	Project: PRASA SI.CB2230.256.V29
		Date 06/11/2023	
Car:	NCR:	Work station: CB2230	



Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car					Revision	Observation	OK		Signature/Date (Operations)	Signature/Date (Quality)
	M1	M2	M3	M4	TC2						
PRA.CB2230.DT00000225487	3					30		OK		N/A	06/02/24 8

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial number	Calibration or Verification Validation Date	OK		Signature/Date (Operations)	Signature/Date (Quality)
Tubular	22713	26/06/24	OK		06/02/24 8	8 06/02/24
Measuring Tape	GIB 0221	05/06/24	OK		06/02/24 8	







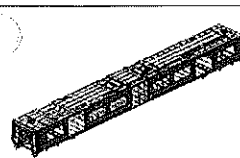


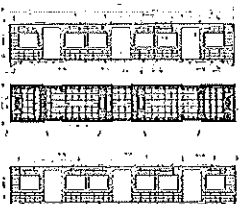











1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 L	31018	mig welding	OK		06/02/24 8	8 06/02/24

II - Self Inspection - Items to Check

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° PRA.CB1230.DT00000225487 Verification of fitment for all brackets.	PRA.CB1230.DT00000225487	OK		06/02/24 	 06/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	OK		06/02/24 	 06/02/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	OK		06/02/24 	 06/02/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	OK		06/02/24 	 06/02/24
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		06/02/24 	 06/02/24
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		06/02/24 	 06/02/24
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 (I) Min-Max 10°C - 35°C Relative humidity Min - Max (I) Min-Max 25% - 80%	Sealant Batch No: <u>1SR-70-03</u> Exp Date: <u>05/05/24</u> Actuals Temperature: <u>21°C</u> Humidity: <u>27%</u>	OK		06/02/24 	 06/02/24
08	N/A	Verification of sealant application on the roof and sidewall finishers.	Sealant must be: -Applied straight and even -Free of gaps, cracks, damage and debris (flashes, dirt, dust) Refer to Annexure B	OK		06/02/24 	 06/02/24
09	N/A	Verification of sealant application in certain regions in the drawing.	AAD0001278566	OK		06/02/24 	 06/02/24



CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000225487

Rev.
30

Date

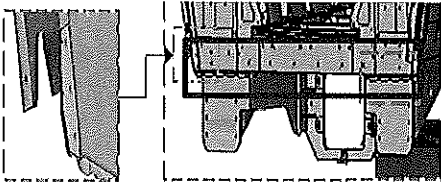
06/11/2023

Project: PRASA

SI.CB2230.256.V29

II - Self Inspection - Items to Check

AREA 1



END 2 SEALANT

OPERATOR
(Name & sign):

LEROY

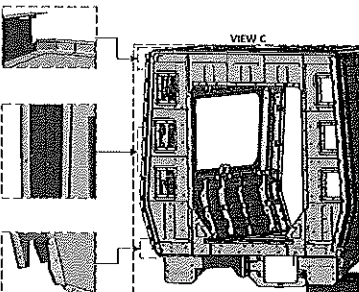
OPERATOR
(Name & sign):

LEROY

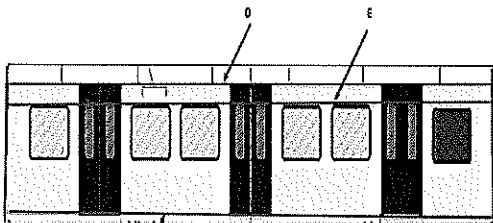
OPERATOR
(Name & sign):

LEROY

AREA 2 (VIEW C)



H



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

LHS

RHS

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

D,E,F,G,H,I

Operator (Name & sign): LERATO

Tshenolo

Operator (Name & sign):

Sihle

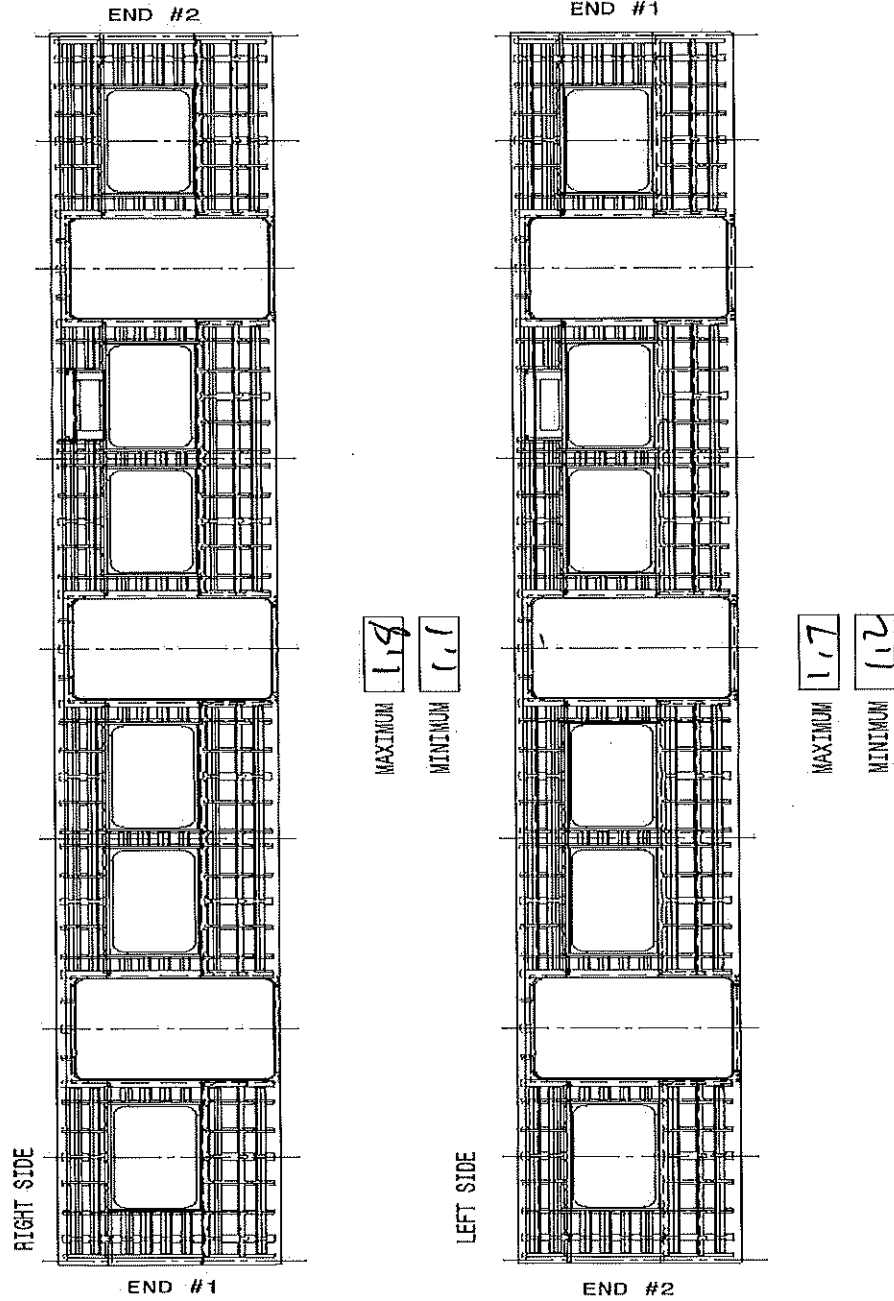
Operator (Name & sign): (F) Tshenolo

Operator (Name & sign): (F) Sihle

Operator (Name & sign): (F) Nonhlanhla

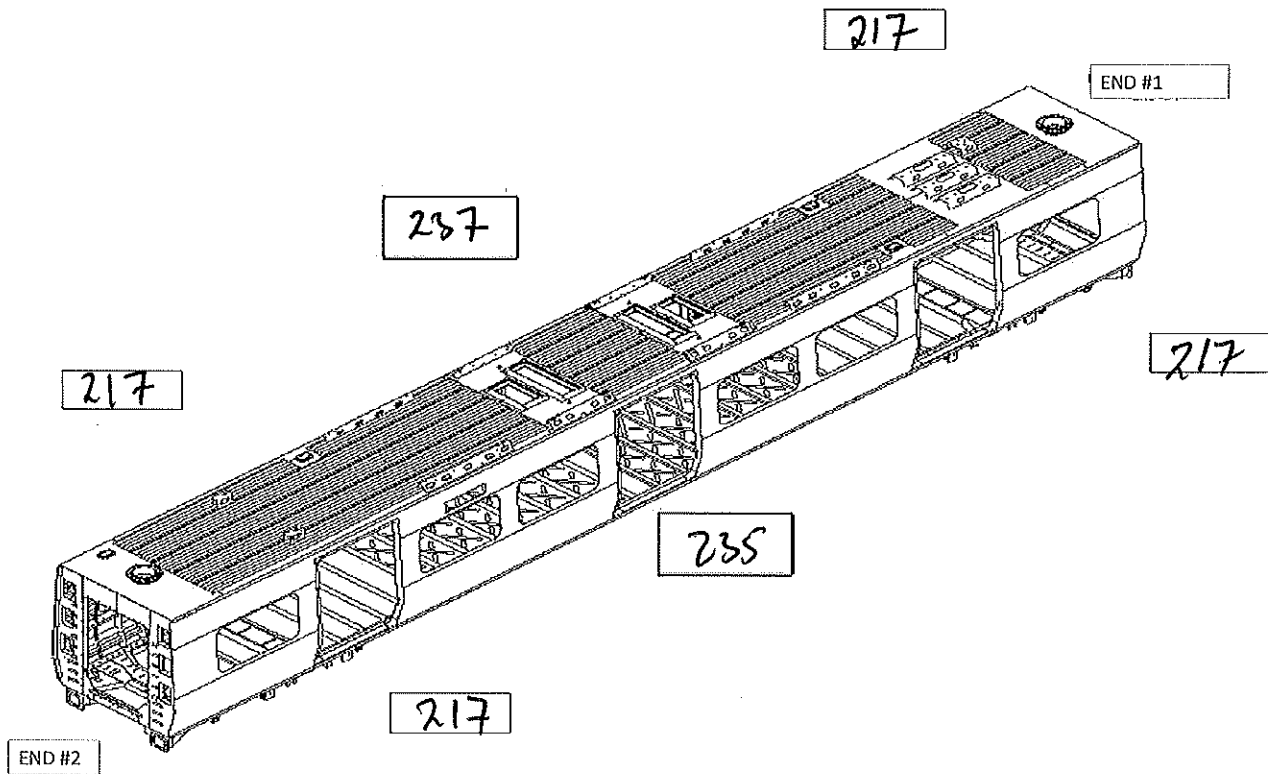
Specifications of Details for CBS measurement CB1230

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.



Specifications of Details for CBS measurement CB1230

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

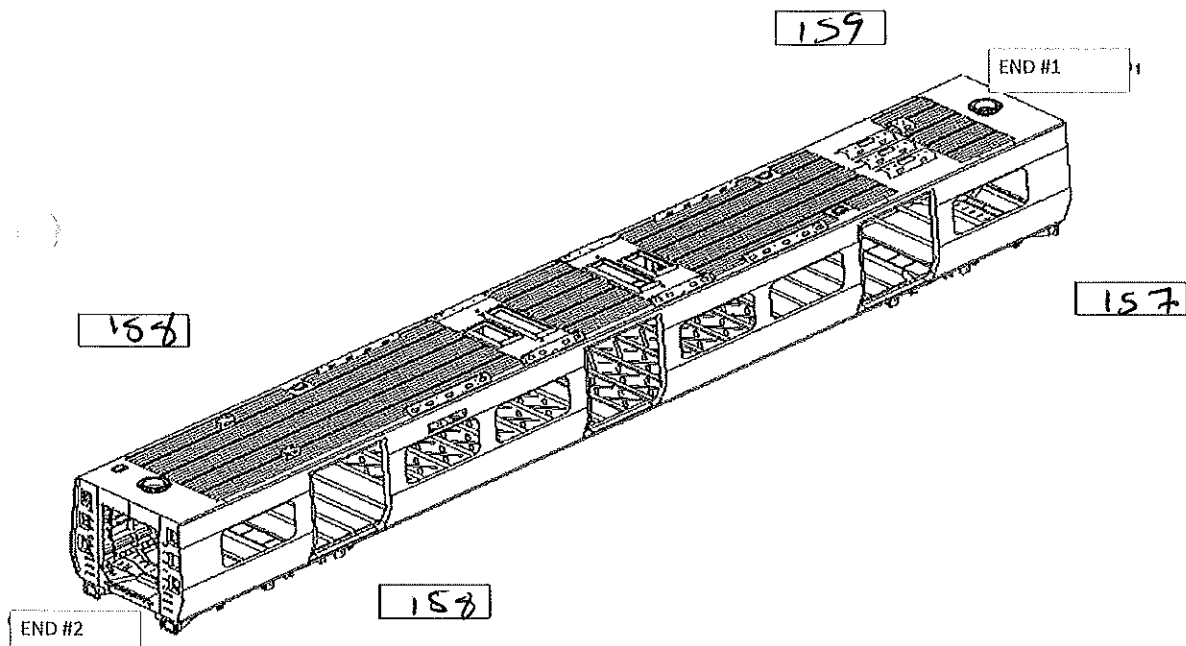


MEASURED CAMBER VALUES

RIGHT 11 18
LEFT 'a1 20

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

TRANVERSE

0

LONGITUDINAL

1

TWIST FOUND ON END 2

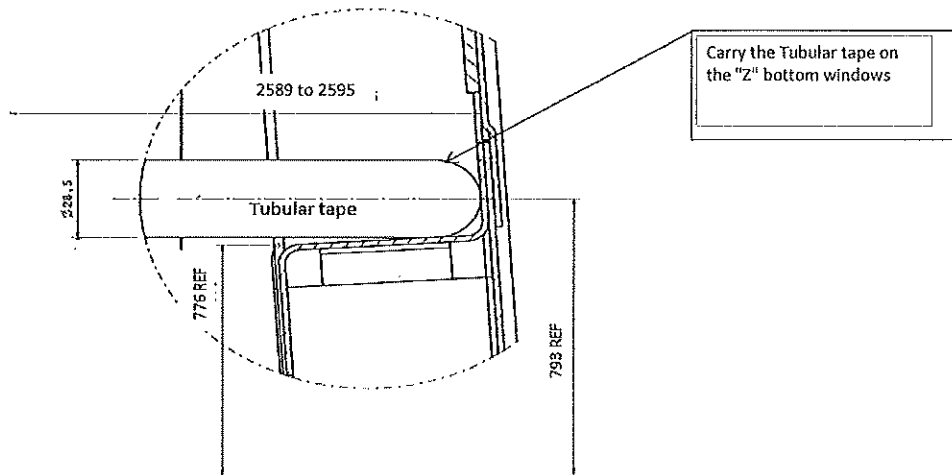
TRANVERSE

2

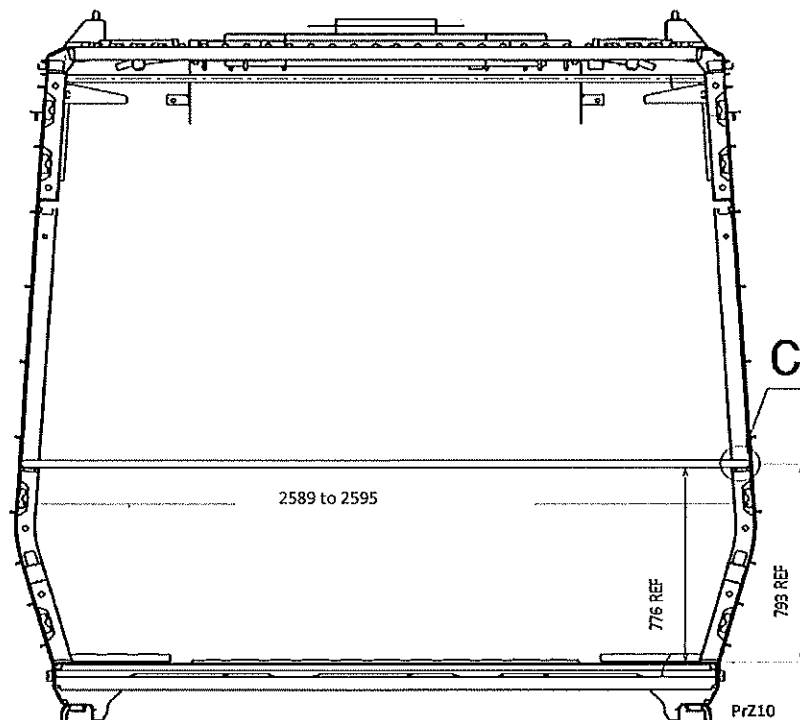
LONGITUDINAL

1

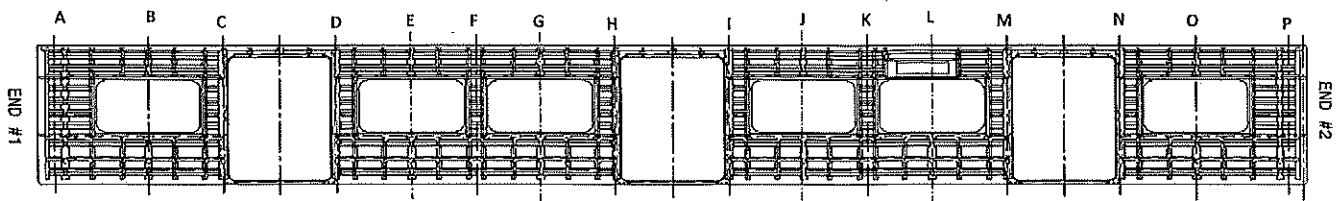
Specifications of Details for CBS measurement CB1230



Detail C

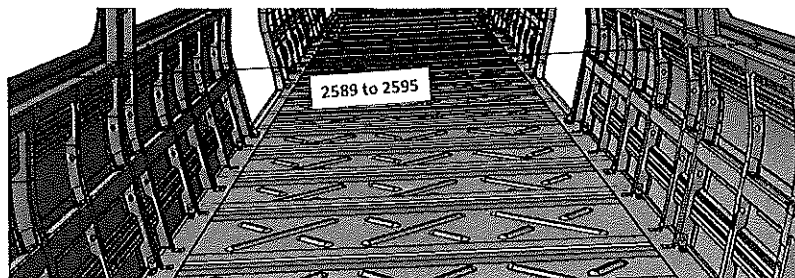


Specifications of Details for CBS measurement CB1230



2589 to 2595mm

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



Threshold verification

Nominal value :38

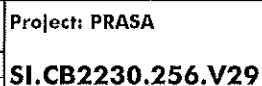
Door 1		Door 2		Door 3	
L	R	L	R	L	R
38	39	39	39	38	37
Door 4		Door 5		Door 6	
L	R	L	R	L	R
39	38	38	39	39	39

BOILER MAKER: EMMANUEL
WELDER: Zanele

Dye penetrant test

Dye-penetration test to be performed by quality personnel



[illegible]

Check List Items

10



CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000225487

Rev.

30

Date

08/11/2023

Project: PRASA

SI.CB2230.256.V29

Self Inspection - Final Result

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)			DATE	NAME	SIGNATURE
HOLD POINT	GO	(If activities are not complete, the missing activities must not impact the next stage)	06/02/24	Sinie Operations	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	06/02/24	Ntokozo 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

	CARBODYSHELL M1,M3,M4 ASSEMBLY DT00000225487	Rev.	Project: PRASA SI.CB2230.256.V29
		30	
		Date	
		06/11/2023	

ANNEXURE A: Arc Welding Quality Acceptance Standard

