

GIBELA

PRASA PROJECT


APPLICABLE FROM TRAINSET 190+ AS PER BASELINE 10.4

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		
DTR3000152644	AAD0001278565	CARBODYSHELL M3,M4 ASSEMBLY	CB2210		X			X		PRA.CB2210.DTR30225 487/3.V30	YES

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	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	Mbhombi collins	17/08/2021
			CHECKER	Mpho Mulaudzi	17/08/2021
			REVISED BY	Mpho Mulaudzi	17/08/2021
25	19/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombi collins	19/02/2022
			CHECKER	Andani Muthelo	19/02/2022
			REVISED BY	Andani Muthelo	19/02/2022
26	14/04/2023	Addition of welding consumable traceability	APPROVER	Ntuli Vanessa	14/04/2023
			CHECKER	Mohlamphe Amogelang	14/04/2023
			REVISED BY	Mohlamphe Amogelang	14/04/2023
28	07/11/2023	Added traceability for welding sections	APPROVER	Ngobeni,Tyson	07/11/2023
			CHECKER	Mohlamphe Amogelang	07/11/2023
			REVISED BY	Ntokozo Zwane	07/11/2023

TRAINSET	CAR	OPERATOR NAME& ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES
229	M4	LUNGA 4714097	21/05/24	SI.CB2210.254.V30	17

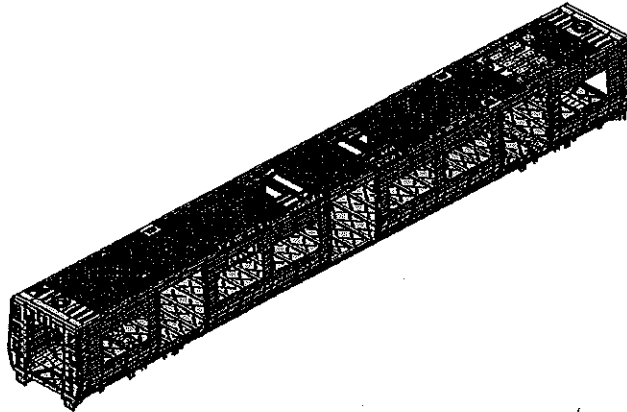
QUALITY
MANAGEMENT

	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V30
		Date 07/11/2023	

Car: M3 & M4	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	M	N	O	S	U						
DTR30225487/3					X		28		✓		21/05/24	21/05/24

I.2 - Instruments Control

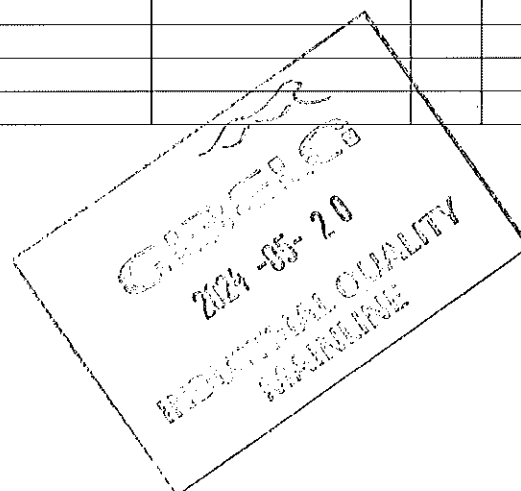
Monitoring and Measuring Instrument Control - Used for Special Process











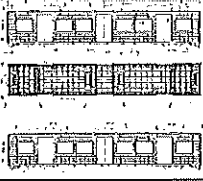




Instruments	Serial number	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
TUBULAR	52825-2	15/03/24	✓		21/05/24	21/05/24
30M TAPE	618TP0084	14/03/24	✓		21/05/24	21/05/24
LASER TAPE	125425924	02/01/24	✓		21/05/24	21/05/24

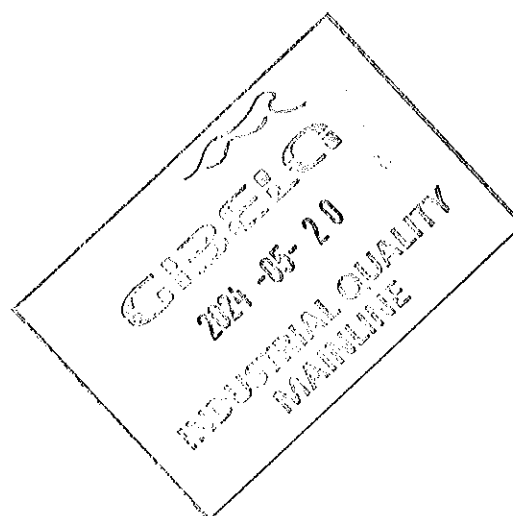
1.3 Consumables


Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
AUTROD 308 LSI	1221880	MIG	✓		21/05/24	21/05/24
E.R. 309 LSI	318344	MIG	✓		21/05/24	21/05/24

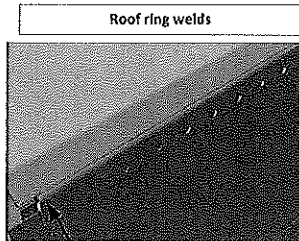



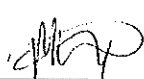
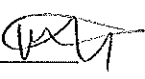
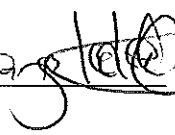
		CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 28 Date 07/11/2023	Project: PRASA SI.CB2210.254.V30			
II - Self Inspection - Items to Check							
II.1 - Items to check							
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓		 21/05/24	 21/05/24
02	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 21/05/24	 21/05/24
03	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 21/05/24	 21/05/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 21/05/24	 21/05/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		 21/05/24	 21/05/24
06	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.	✓		 21/05/24	 21/05/24

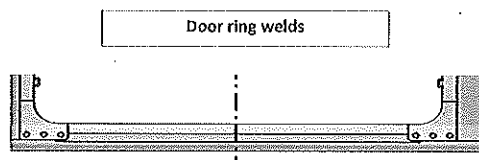



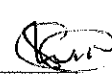
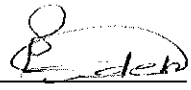

	CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3	Rev. 28	Project: PRASA SI.CB2210.254.V30
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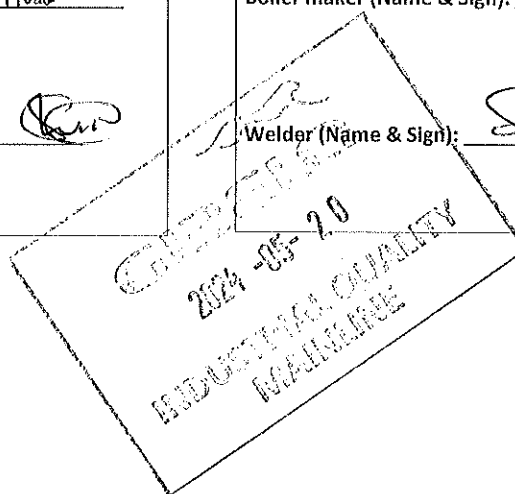
Welding Traceability



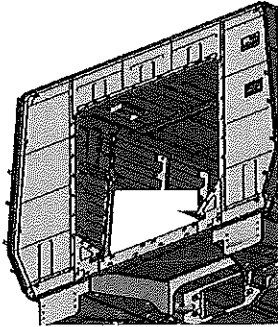
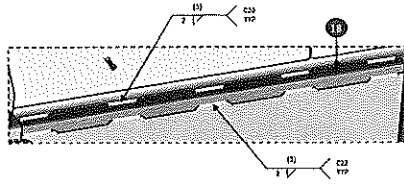
<div style="border: 1px solid black; text-align: center; padding: 2px; display: inline-block;">LHS</div>	
Boiler maker (Name & Sign): <u>GERALD </u>	Welder (Name & Sign): <u>MTHOKOLISI </u>
<div style="border: 1px solid black; text-align: center; padding: 2px; display: inline-block;">RHS</div>	
Boiler maker (Name & Sign): <u>MTHOKOLISI </u>	Welder (Name & Sign): <u>ihabang </u>



<div style="text-align: center; padding-bottom: 5px;"> <div style="border: 1px solid black; text-align: center; padding: 2px; display: inline-block;">LHS</div> </div> Boiler maker (Name & Sign): <u>GERALD </u> Welder (Name & Sign): <u>SIPHO KAZI </u>	<div style="text-align: center; padding-bottom: 5px;"> <div style="border: 1px solid black; text-align: center; padding: 2px; display: inline-block;">RHS</div> </div> Boiler maker (Name & Sign): <u>Tim </u> Welder (Name & Sign): <u>SIPHO KAZI </u>
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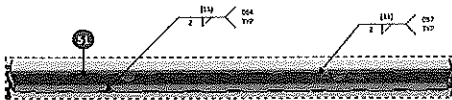
EU Reinforcement Plates



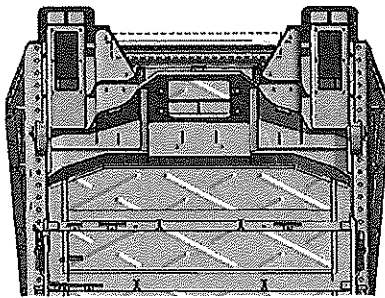
END 1

Boiler maker (Name & Sign):

Welder (Name & Sign):



END 2

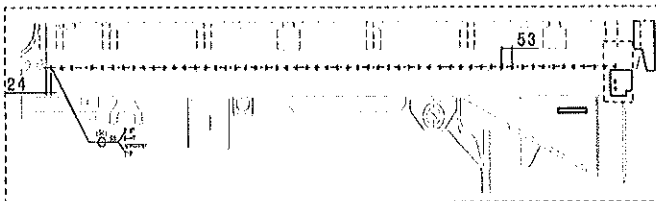


Underneath the CAR

END 2

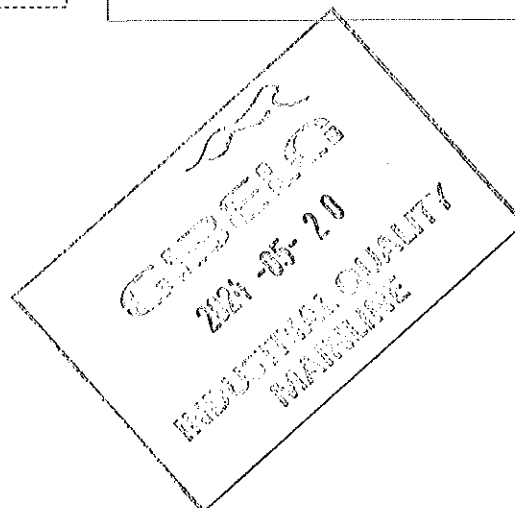
Boiler maker (Name & Sign):


Welder (Name & Sign):



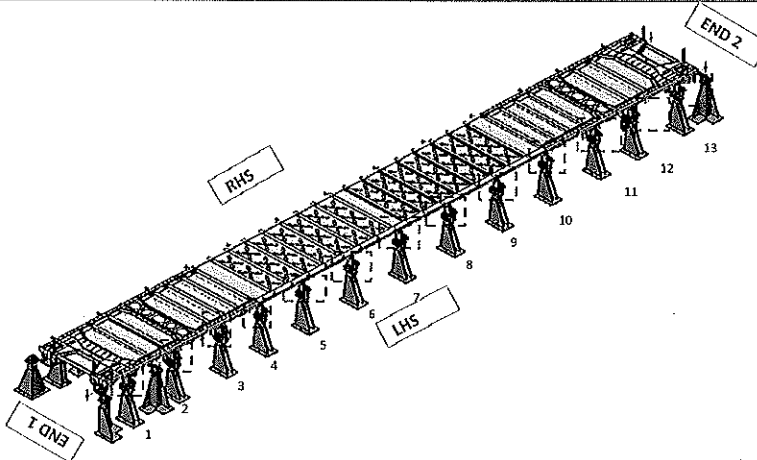
FEDOLI

Operator:



	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V30
		Date 07/11/2023	

Specifications of Details for CBS measurement



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

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: 21/05/24

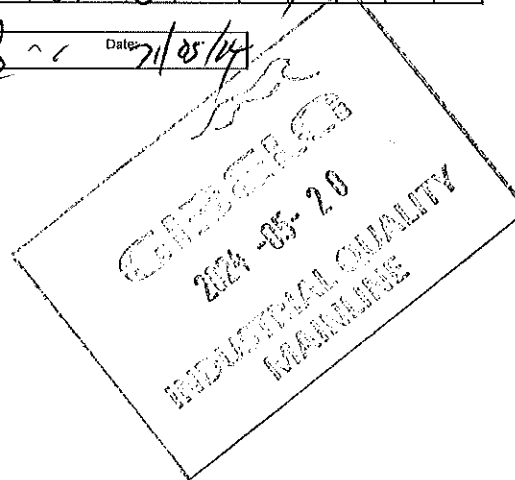
After Welding.

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	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: 21/05/24





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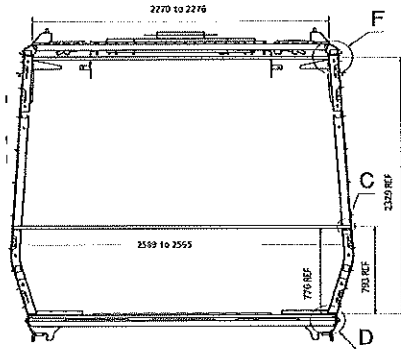
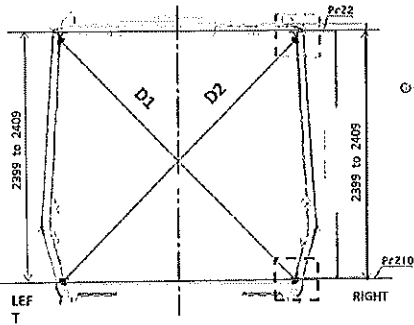
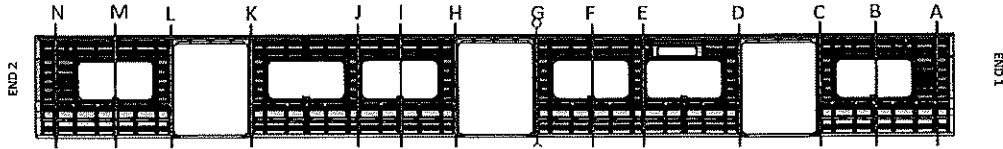
Project: PRA5A

SI.CB2210.254.V30

Date

07/11/2023

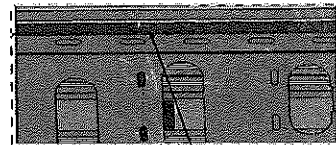
Specifications of Details for CBS measurement



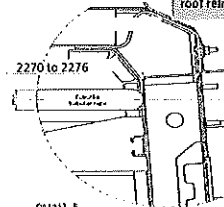
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.

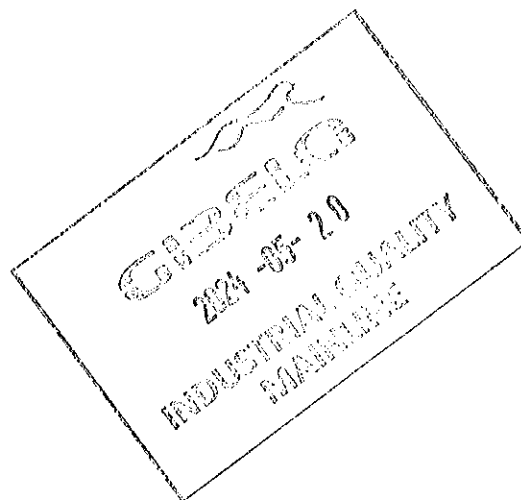


Reinforcement area measurement positions on roof reinforcement area.



Detail F

On Transferring Measurement





CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3

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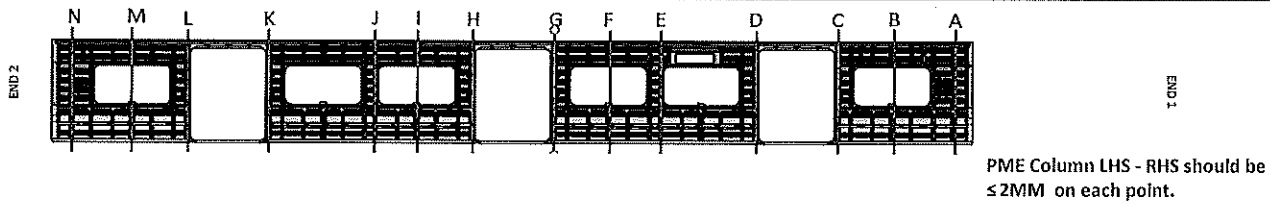
Date

07/11/2023

Project: PRASA

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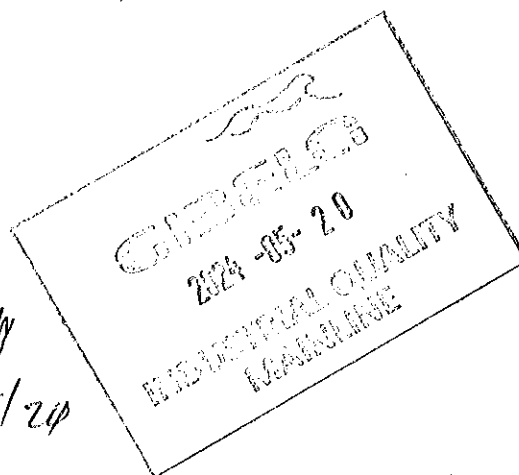
Specifications of Details for CBS measurement



BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3269	3269	0	2407	2406	1
B	3268	3265	3	2406	2406	0
C	3267	3267	0	2406	2405	1
D	3269	3268	1	2405	2407	2
E	3266	3266	0	2406	2406	0
F	3268	3264	1	2405	2407	2
G	3268	3268	0	2407	2406	1
H	3266	3267	1	2405	2405	0
I	3264	3265	1	2405	2406	1
J	3266	3266	0	2406	2406	2
K	3269	3267	2	2407	2406	1
L	3268	3268	0	2406	2405	1
M	3269	3265	4	2406	2406	0
N	3268	3269	1	2407	2406	1

21/05/24





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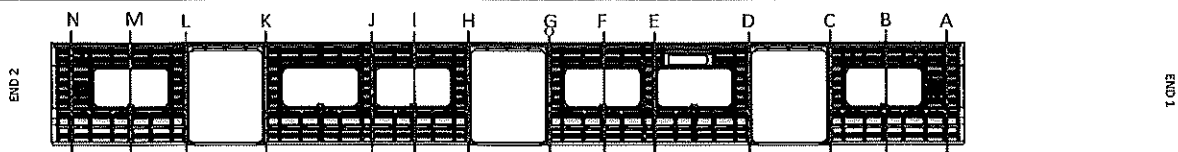
Date

07/11/2023

Project: PRASA

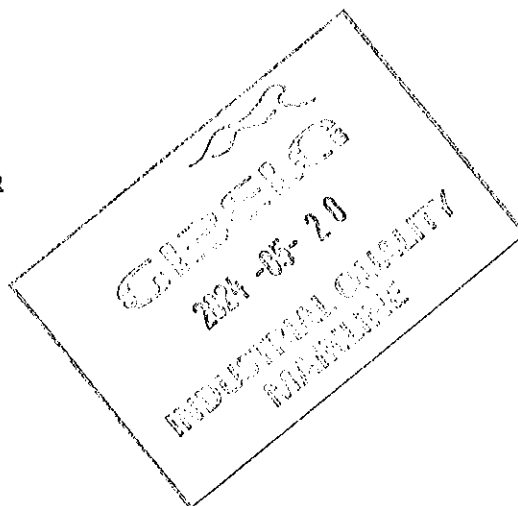
SI.CB2210.254.V30


Specifications of Details for CBS measurement

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

AFTER WELDING

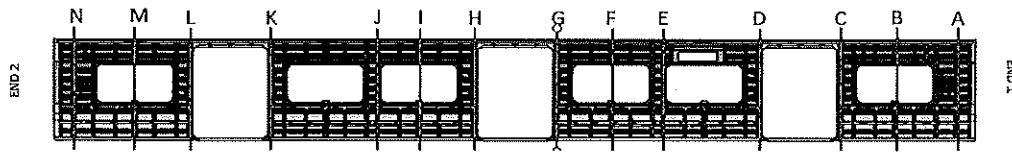
	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3295	3295	0	2405	2407	2
B	3266	3268	2	2406	2406	0
C	3295	3295	0	2405	2404	1
D	3293	3294	1	2406	2405	1
E	3265	3265	0	2405	2406	1
F	3264	3265	1	2406	2406	0
G	3295	3295	0	2405	2407	2
H	3296	3294	2	2406	2405	1
I	3264	3265	1	2406	2405	1
J	3266	3265	1	2406	2406	0
K	3294	3294	0	2405	2406	1
L	3295	3295	0	2405	2405	0
M	3264	3268	4	2406	2407	1
N	3294	3295	1	2406	2406	0

10/10
21/05/24

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GBS measurement

BEFORE WELDING



2270 to 2276

A 2271

B 2273

C 2272

D 2274

E 2277

F 2276

G 2273

H 2272

I 2275

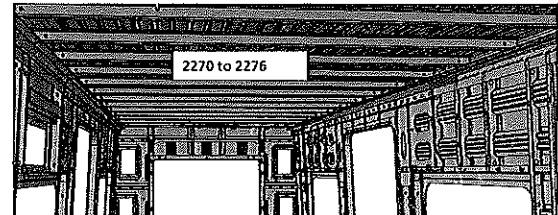
J 2277

K 2272

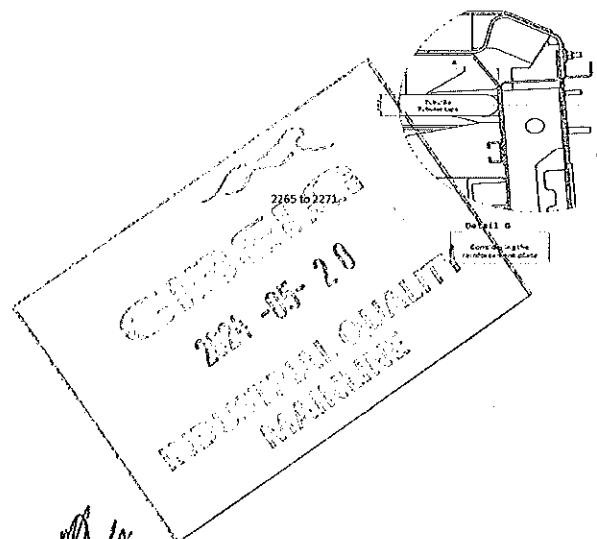
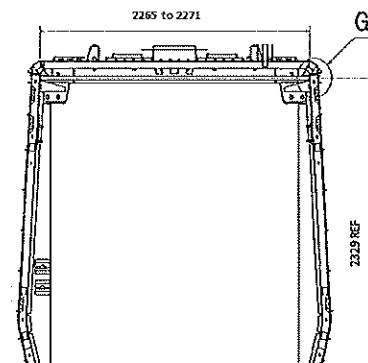
L 2271

M 2274

N 2272

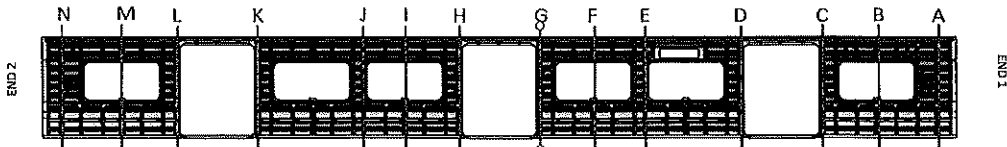


Do not consider reinforcement (Take measurements top area of zee profile

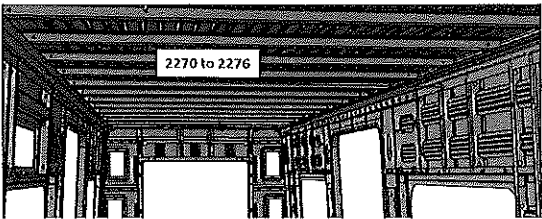


21/05/24

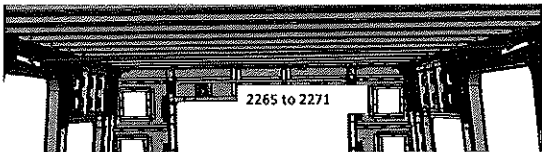
AFTER WELDING



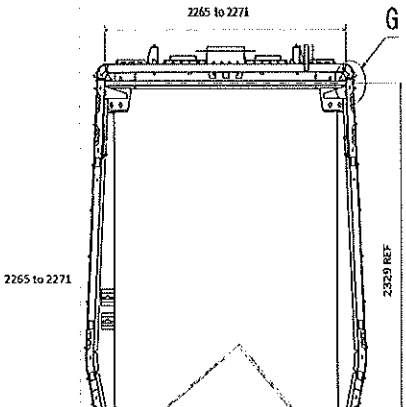
	2265 to 2271	2270 to 2276
A	2271	
B		2274
C	2265	
D	2269	
E		2276
F		2274
G	2270	
H	2269	
I		2275
J		2275
K	2268	
L	2269	
M		2273
N	2266	



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

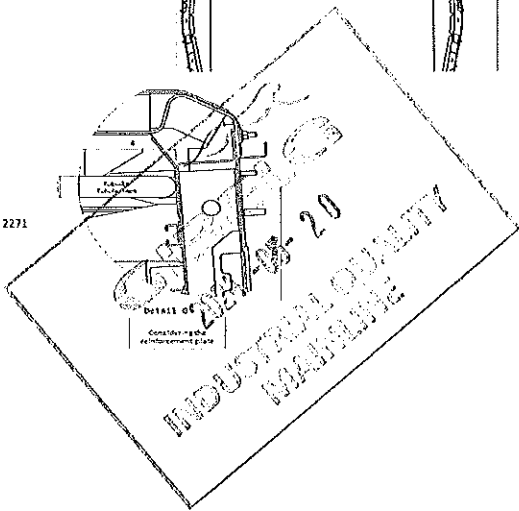


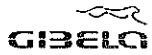
Take measurement close to radius (considering reinforcement)



21/05/24

2265 to 2271





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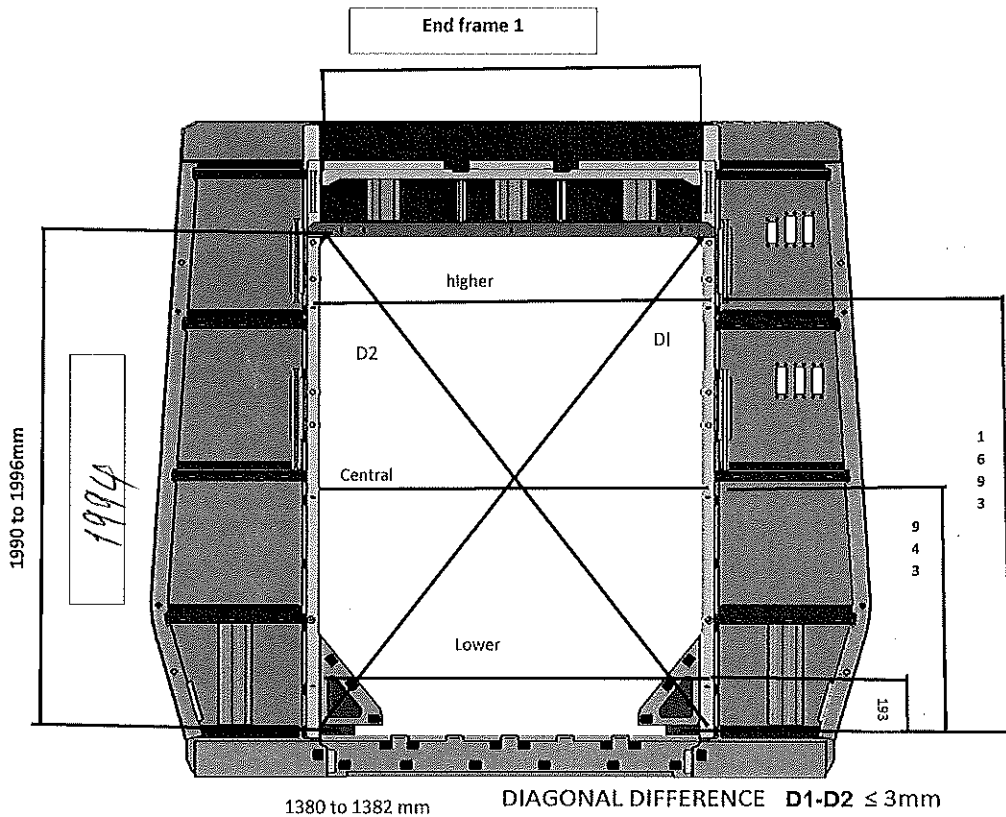
Date

07/11/2023

Project: PRA5A

SI.CB2210.254.V30

Specifications of Details for CBS measurement



Higher Dimension

1381

D1

2413

Central Dimension

1381

D2

2413

Lower Dimension

1380

D1-D2


0

GIBELQ

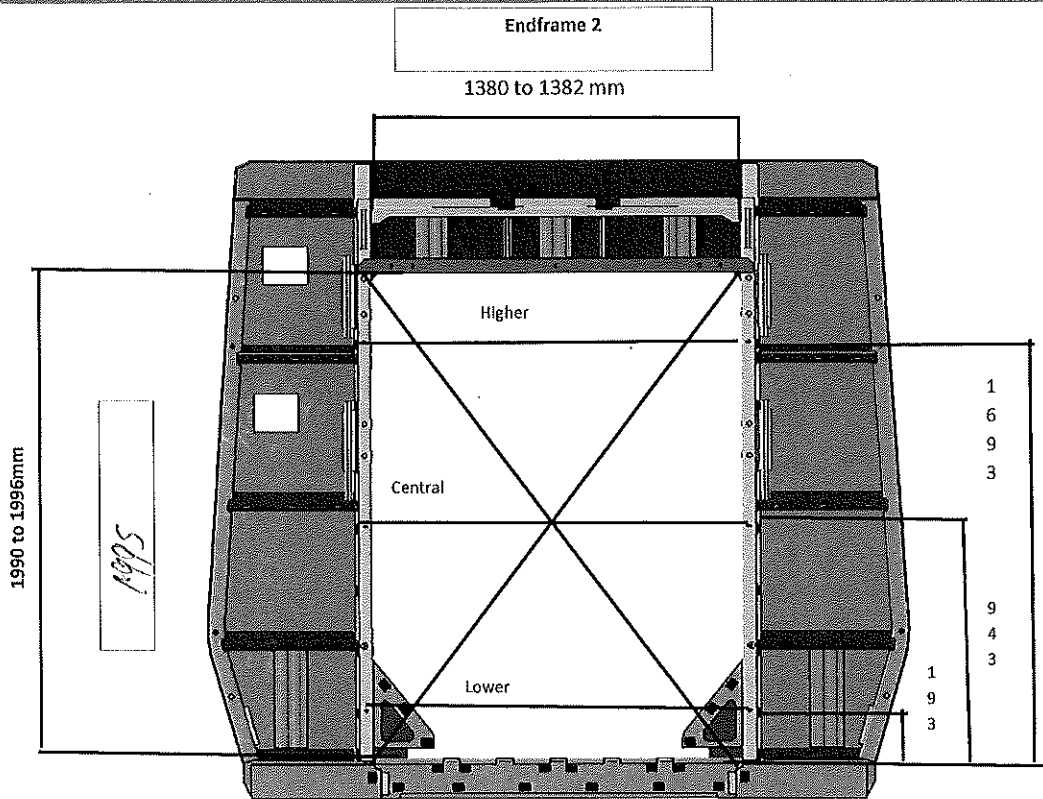
2024-05-20

INDUSTRIAL QUALITY
MANUFACTURE

21/05/24

	CARBODYSHELL M3,M4 ASSEMBLY DTR30225407/3	Rev. 28	Project: PRASA SI.CB2210.254.V30
		Date 07/11/2023	

Specifications of Details for CBS measurement

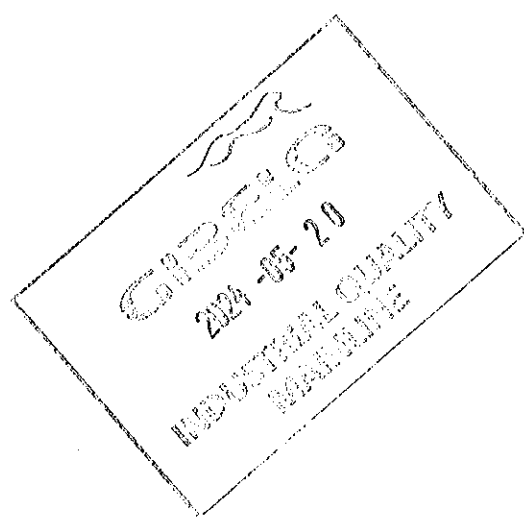


1380 to 1382 mm

DIAGONAL DIFFERENCE $D1-D2 \leq 3mm$

Higher Dimension	1382	D1	2413
Central Dimension	1381	D2	2414
Lower Dimension	1381	D1-D2	1


21/05/24





CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3

Rev.

28

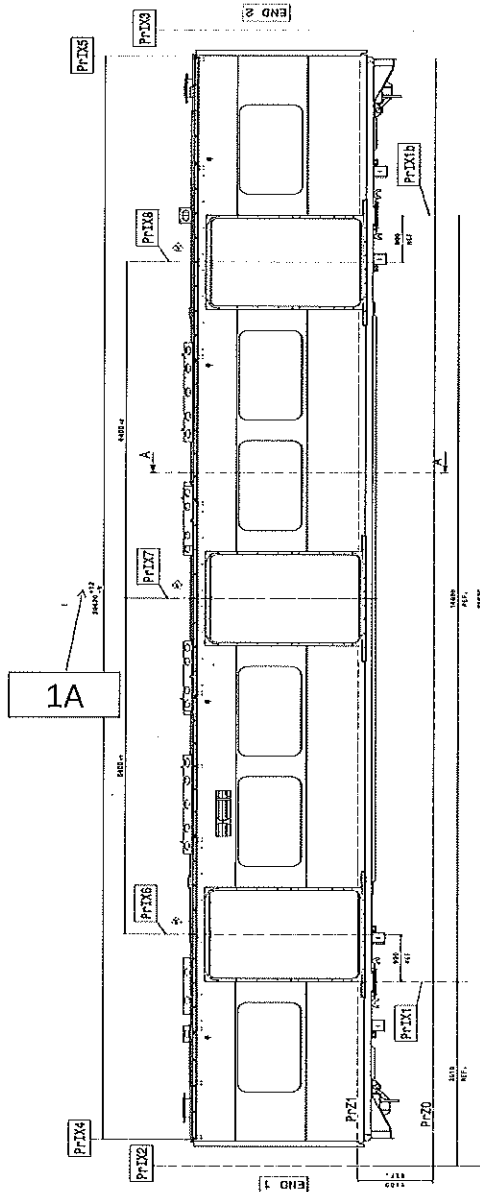
Date

07/11/2023

Project: PRASA

SI.CB2210.254.V30

Specifications of Details for CBS measurement

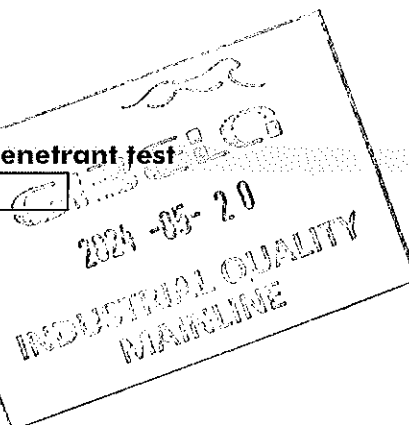



LEFT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	1887 20615 010

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


Dye penetrant test

Dye-penetration test to be performed by quality personnel



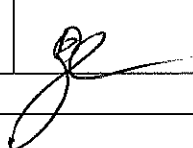


		CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3		Rev. 28	Project: PRASA		
				Date 07/11/2023	SI.CB2210.254.V30		
Item	Description of the Issue				OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
II.2 - Check List REX							
Check List Items							
Item	Picture/Drawing	Description	Criteria /Record	OK	Not OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX				



	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V30
		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)	21/05/24	kwir/Operations	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	23/05/24	Ntokore 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)	21/05/24	Ntokore Industrial Quality	

In case of "NO GO", describe blocking problems



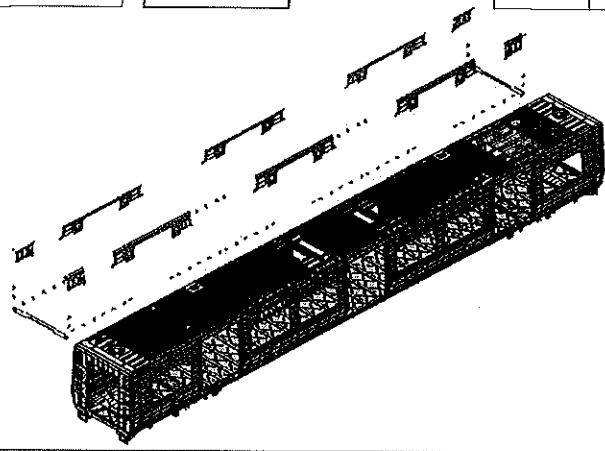
In case of "NO GO", the operations manager must define below action plan to ensure "GO":

Item	Description		Responsible	Due date	Status


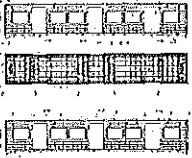


Operations


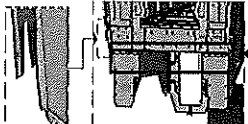

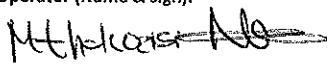
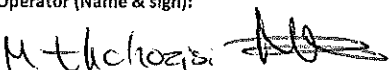
Quality

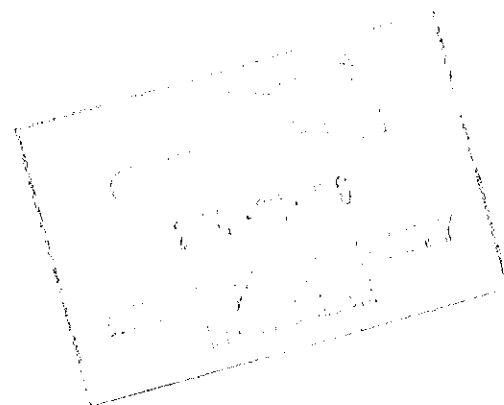



	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA																																		
		29																																			
		Date	SI.CB2220.250.V29																																		
		28/10/2023																																			
Car: M1,M3&M4	NCR:	Work station:	CB2220																																		
 Safety Related																																					
																																					
I - Documentation and Instruments Control																																					
I.1 - Documentation Control																																					
<table border="1"> <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">Signature/Date (Manufacturing)</th> <th rowspan="2">Signature/Date (Quality)</th> </tr> <tr> <th>TTC1</th> <th>M1</th> <th>M2</th> <th>M3</th> <th>M4</th> <th>T2</th> </tr> </thead> <tbody> <tr> <td>DTR30225487/2</td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td></td> <td>29</td> <td>28-10-2023</td> <td>X</td> <td>N/A</td> <td>22-05-24 [Signature]</td> </tr> </tbody> </table>		Document	Type of car						Revision	Observation	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)	TTC1	M1	M2	M3	M4	T2	DTR30225487/2					X		29	28-10-2023	X	N/A	22-05-24 [Signature]						
Document	Type of car						Revision	Observation						OK	Signature/Date (Manufacturing)	Signature/Date (Quality)																					
	TTC1	M1	M2	M3	M4	T2																															
DTR30225487/2					X		29	28-10-2023	X	N/A	22-05-24 [Signature]																										
I.2 - Instruments Control																																					
Monitoring and Measuring Instrument Control - Used for Special Process																																					
<table border="1"> <thead> <tr> <th>Instruments</th> <th>Serial number</th> <th>Calibration or Verification Validation Date</th> <th>OK</th> <th>Signature/Date (Manufacturing)</th> <th>Signature/Date (Quality)</th> </tr> </thead> <tbody> <tr> <td>measuring tape</td> <td>0748</td> <td>205 / 04 / 17</td> <td>X</td> <td>22-05-24 [Signature]</td> <td rowspan="2">[Signature]</td> </tr> <tr> <td>tubular</td> <td>32823</td> <td>15 / 03 / 2025</td> <td>X</td> <td>22-05-24 [Signature]</td> </tr> </tbody> </table>		Instruments	Serial number	Calibration or Verification Validation Date	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)	measuring tape	0748	205 / 04 / 17	X	22-05-24 [Signature]	[Signature]	tubular	32823	15 / 03 / 2025	X	22-05-24 [Signature]																			
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tubular	32823	15 / 03 / 2025	X	22-05-24 [Signature]																																	
1.3 Consumables																																					
Welding Consumable Control - Used for Special Process																																					
<table border="1"> <thead> <tr> <th>Filler Material</th> <th>Heat Number</th> <th>Welding Process</th> <th>OK</th> <th>Signature/Date (Manufacturing)</th> <th>Signature/Date (Quality)</th> </tr> </thead> <tbody> <tr> <td>308</td> <td>513779</td> <td>MIG</td> <td>X</td> <td>22-05-24 [Signature]</td> <td rowspan="5">[Signature]</td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)	308	513779	MIG	X	22-05-24 [Signature]	[Signature]																								
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308	513779	MIG	X	22-05-24 [Signature]	[Signature]																																

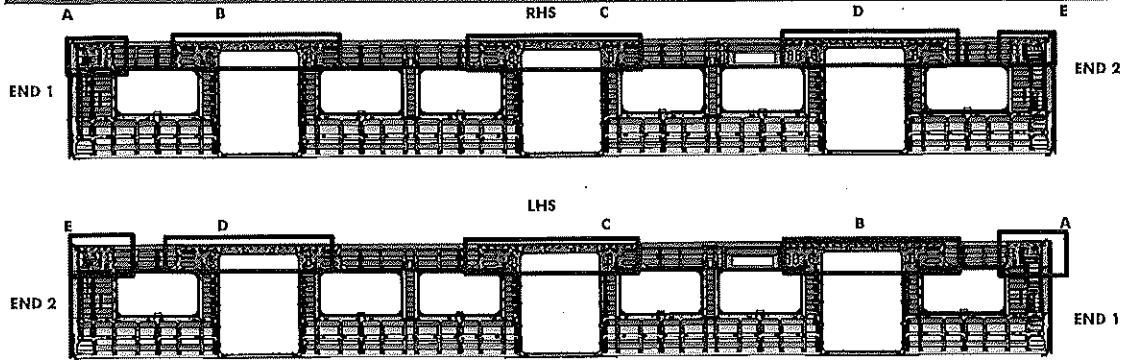
28-10-2023
 29-10-2023
 29-10-2023
 29-10-2023

GIBELQ		CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	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 filament for all reinforcement brackets.	PRA.CB2220.DTR30225487/2	/	22-05-24	22/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTB0000210675	/	22-05-24	22/05/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	/	22-05-24	22/05/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	/	22-05-24	22/05/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	/	22-05-24	22/05/24
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.	/	22-05-24	22/05/24
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 (°C) 10°C - 35°C Relative humidity Min - Max (%) 25% - 60%	Sealant Batch No: 13447 Exp Date: 01/06/24 Actuals Temperature: 13 Humidity: 03	/	22-05-24	22/05/24
08	NA	Verification of sealant application in certain regions in the drawing.	AAD0001278566	/	22-05-24	22/05/24
09		Verification of safety welds	Approved according to DTD000210658 reference and Self inspection	/	22-05-24	22/05/24


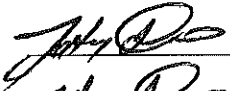






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		29	
		Date	
		28/10/2023	
II - Self Inspection - Items to Check			
<div style="text-align: center;">SEALANT APPLICATION</div> <div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="width: 40%;">   </div> <div style="width: 55%; border: 1px solid black; padding: 5px;"> <div style="text-align: center;">AREA 1 & 2 END 1</div> <div style="margin-top: 10px;"> Operator (Name & sign):  </div> <div style="margin-top: 10px;"> Operator (Name & sign):  </div> </div> </div>			




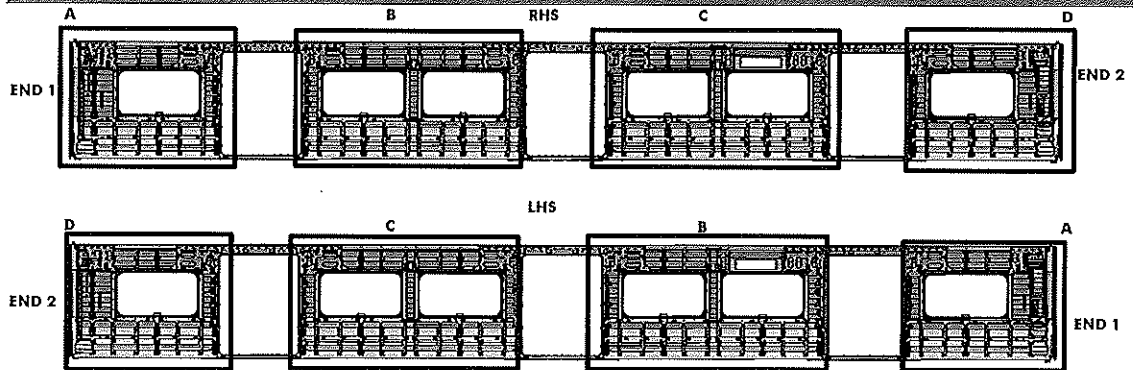
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA
		29	
		Date	SI.CB2220.250.V29
		28/10/2023	
II - Self Inspection - Items to Check			



REINFORCEMENT WELDING


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

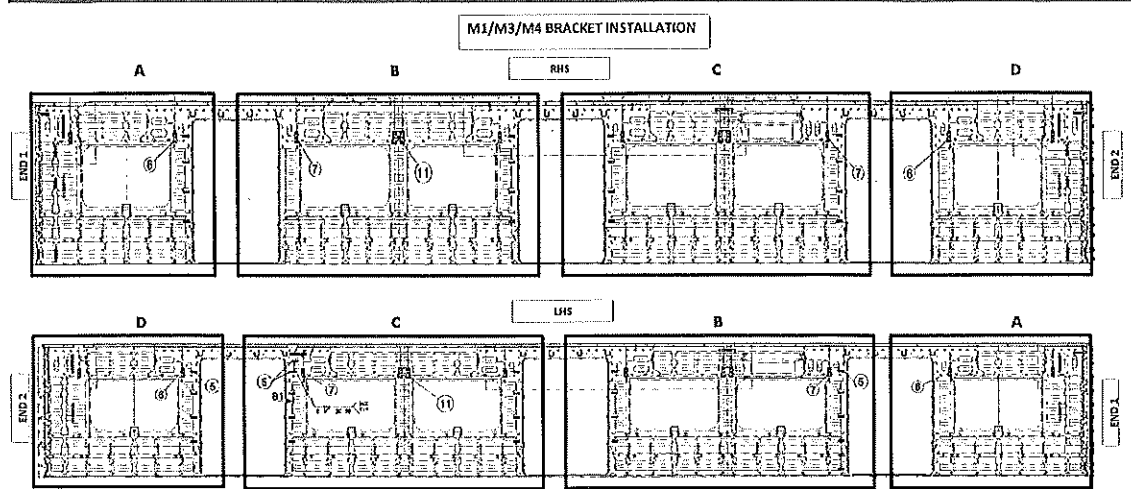
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		29	
		Date	
		28/10/2023	
II - Self Inspection - Items to Check			



BRACKETING


		INSTALLATION	
C-RAILS:	Operator:	<u>Felcio</u>	
	Operator:		
DOOR MECHANISMS:	Operator:	<u>Priscilla</u>	
	Operator:		
TAPPING PADS	Operator:	<u>LINDO</u>	
	Operator:	<u>Helene</u>	
		INSTALLATION & VERIFICATION	
SEAT & LUGGAGE BRACKETS:	Operator:	<u>Asmunda</u>	
	Operator:		
SEAT BRACKETS VERIFICATION:	Operator:	<u>Lani</u>	
	Operator:		
WELDING			
AREA	LHS	RHS	
A (Seat brackets)	: Operator (Name&sign):	<u>Jolly</u>	
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>LINDO</u>	
B (Seat brackets)	: Operator (Name&sign):	<u>LINDO</u>	
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>LINDO</u>	
C (Seat brackets)	: Operator (Name&sign):	<u>MMASUETO</u>	
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>MMASUETO</u>	
D (Seat brackets)	: Operator (Name&sign):	<u>MMASUETO</u>	
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	<u>MMASUETO</u>	
ENDS			
END 1 TAPPING PADS WELDING:	Operator (Name&sign):	<u>LINDO</u>	
END 2 TAPPING PADS WELDING:	Operator (Name&sign):	<u>MMASUETO</u>	

	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			



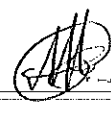
QUANTITIES (M3/M4)

		RHS			
	SECTION	QUANTITY	OK	NOK	
C-RAILS	A	7			
	B	4			
	C	6			
	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: ASAIDA 

QUANTITIES (M3/M4)

		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: ASAIDA 

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			

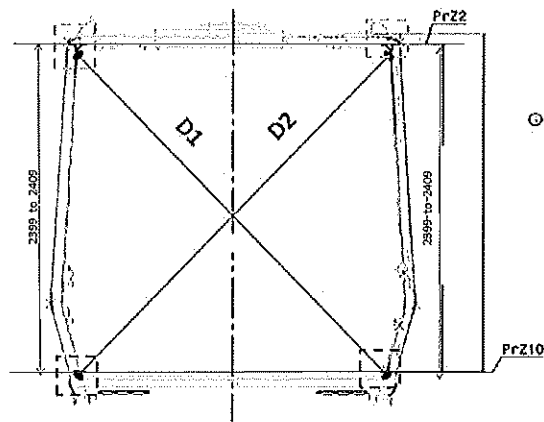
ROOF ENDS:
 C-RAILS 2 OFF EACH END
 EARTH BUSH 6 OFF EACH END
 VERIFICATION BY: _____

QUANTITIES (M1)

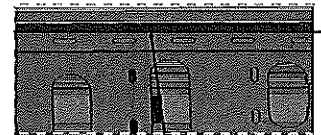
		LHS			
	SECTION	QUANTITY	OK	NOK	
C-RAILS	A	2			
	B	10			
	C	11			
	D	6			
SEAT BRACKETS	A	13			
	B	21			
	C	21			
	D	13			
EARTH BUSH	A	3			
	B	7			
	C	6			
	D	2			

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

Specifications of Details for CBS measurement



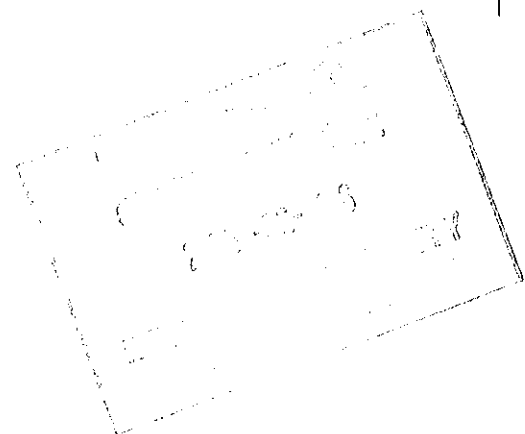
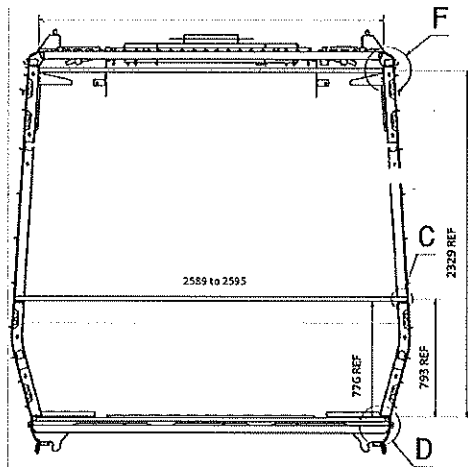
Measurement positions on roof rail and sidewall omega corner.



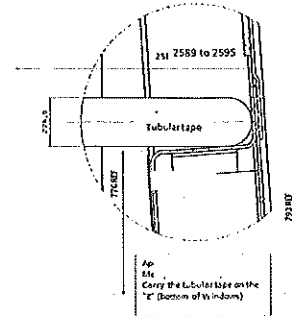
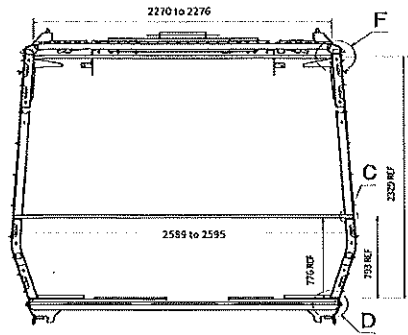
Reinforcement area measurement positions on roof reinforcement area.



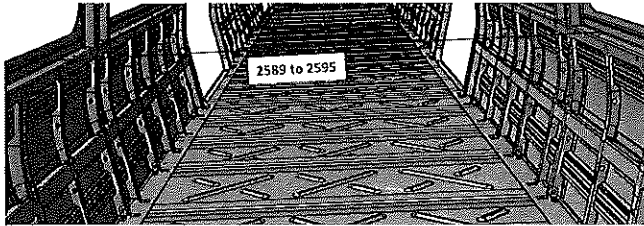
Measurement positions on sidewall and side sill corner.



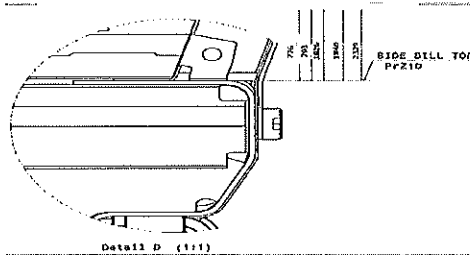
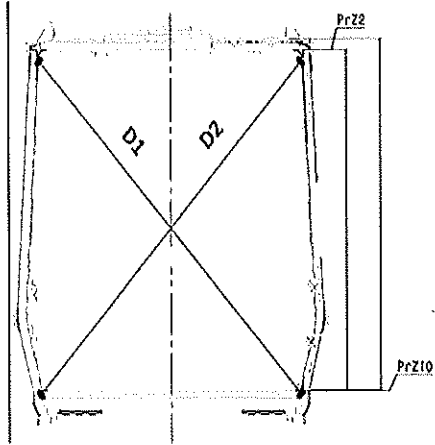
CBS measurement




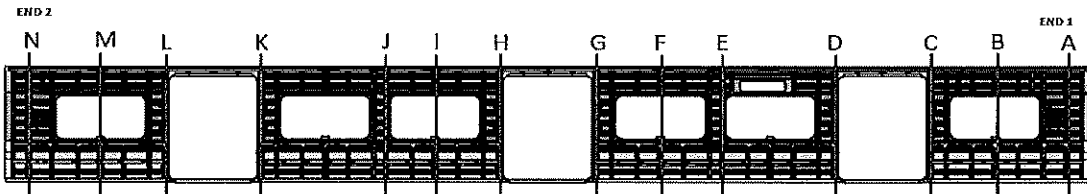
Detail C



Take measurement close to radius



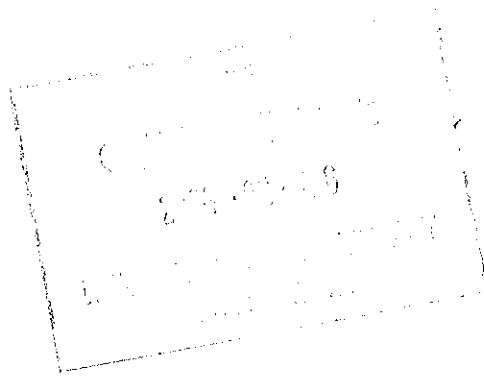
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA
		29	
		Date	
		28/10/2023	SI.CB2220.250.V29
CBS measurement			


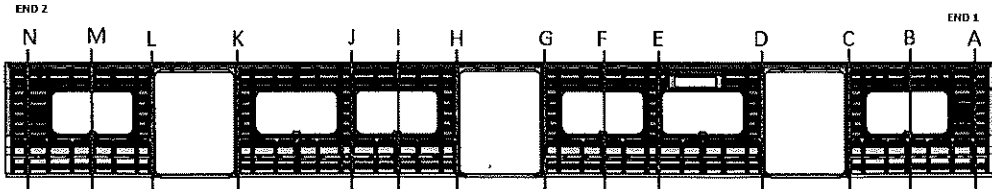


BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3298	3300	2	—
B	3268	3266	2	—
C	3299	3300	1	—
D	3299	3299	0	—
E	3269	3268	1	—
F	3268	3265	3	—
G	3296	3295	1	—
H	3297	3295	2	—
I	3267	3265	2	—
J	3266	3265	1	—
K	3294	3295	1	—
L	3297	3295	2	—
M	3265	3267	2	—
N	3300	3299	1	—


22-05-24

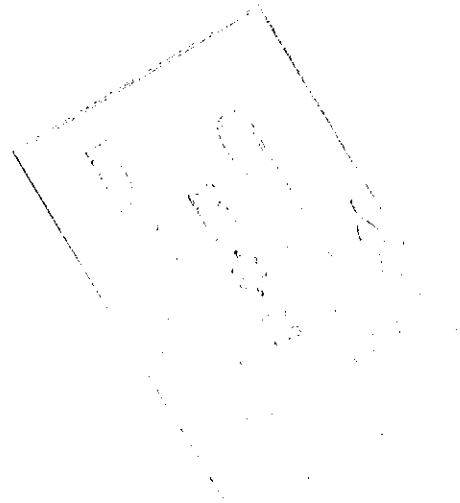


	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA SI.CB2220.250.V29
		29	
		Date	
		28/10/2023	
CBS measurement			
			

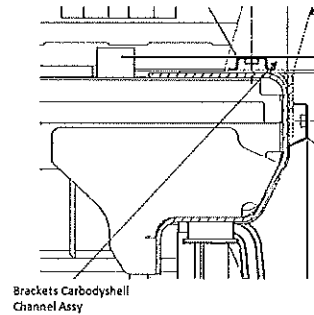
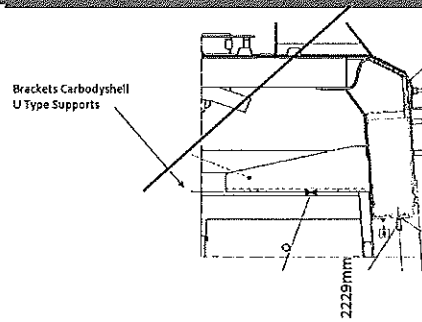
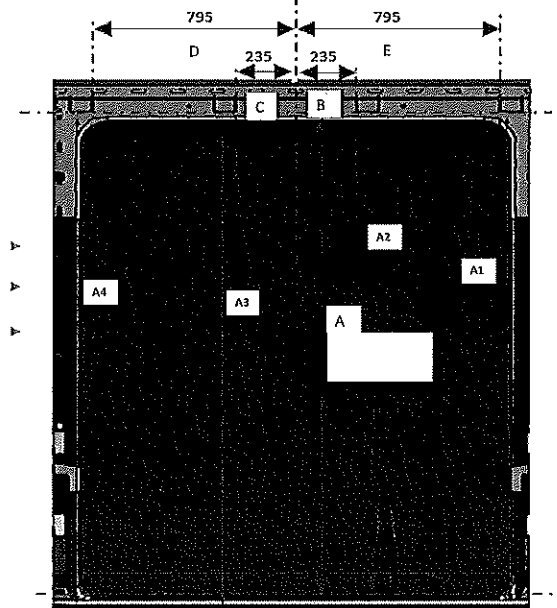
AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3294	3300	6	2695
B	3265	3269	4	2589
C	3299	3297	2	2589
D	3296	3300	4	2694
E	3265	3265	0	2593
F	3265	3263	2	2590
G	3295	3295	0	2691
H	3293	3295	2	2591
I	3265	3263	2	2690
J	3299	3264	5	2691
K	3295	3300	5	2592
L	3295	3299	4	2592
M	3268	3263	5	2589
N	3293	3297	4	2593


22-05-24



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	2231
B	234 to 236	235
C	234 to 236	235
D	794 to 796	794
E	794 to 796	796

DOOR 2 - 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	796

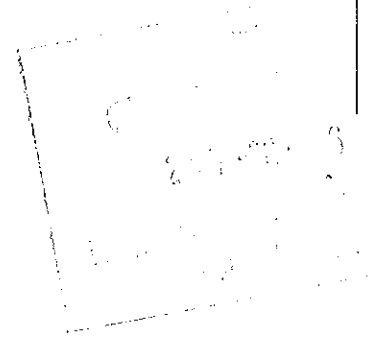
DOOR 2 - RHS		
	VALUE	ACTUAL
A1	2230 to 2232	2232
A2	2230 to 2232	2231
A3	2230 to 2232	2232
A4	2230 to 2232	2231
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	795

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

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

22-05-24





CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30225487/2

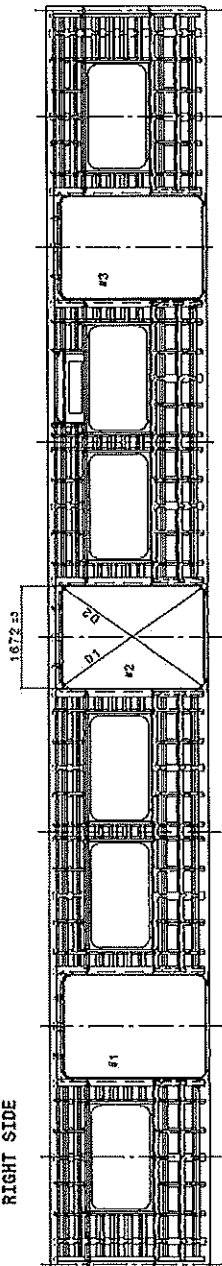
Rev.
29
Date
28/10/2023

Project: PRASA

SI.CB2220.250.V29

Specifications of Details (for CBS measurement) CB1220

End #2



RIGHT SIDE

End #1

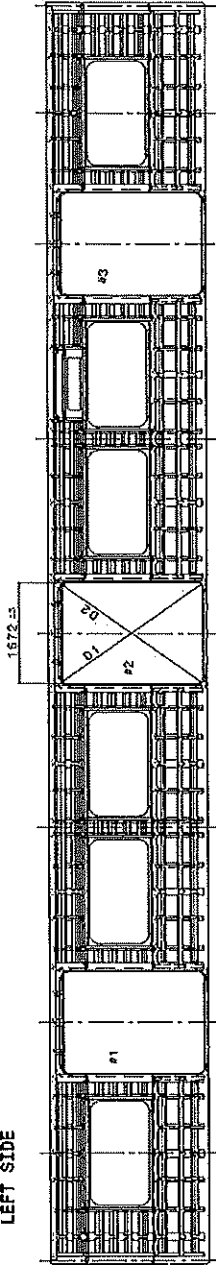
Doors diagonal D1-D2 maximum difference ≤4mm

	#1	#2	#3
D1	2746	2746	2744
D2	2744	2747	2747
D1-D2	2	1	3

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

Doors Length - 1672 ±3mm

End #1



LEFT SIDE

End #2

Doors diagonal D1-D2 maximum difference ≤4mm


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

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

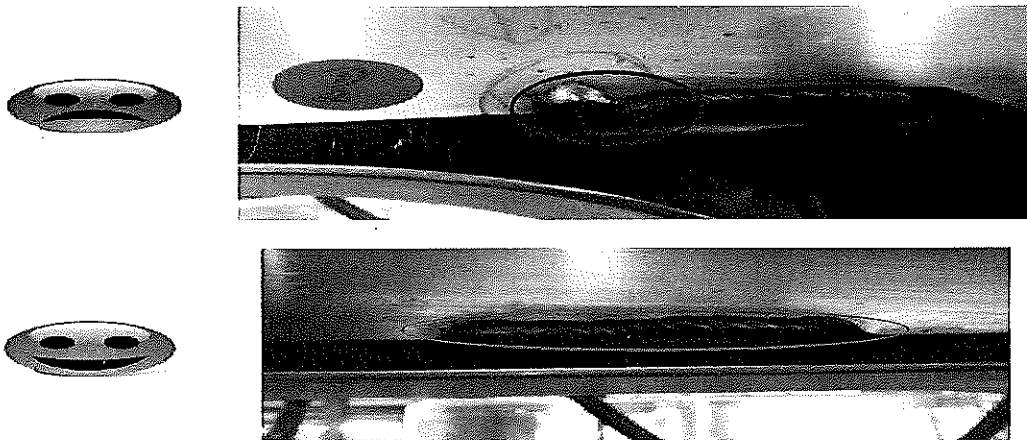
Doors Length - 1672 ±3mm

22-04-24

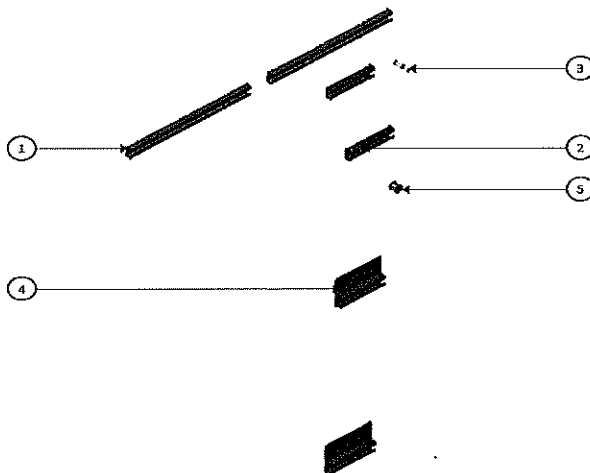
1234567890

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

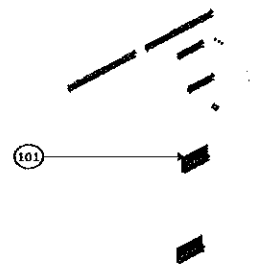
ANNEXURE A: Arc Welding Quality Acceptance Standard



Station: CB1220-004- U108 & U107



PART NO.	ITEM NO.	QTY	DESCRIPTION	MASS (KG)
DTF002007402A	5	6	EARTH STUD 6	0.055
AA00001101943	4	6	ASSEMBLY SUPPORT	0.221
DTF0000343305	3	12	WELDING STUD ISO13918 PT - 1/8X20 - SST	0.027
AA00001160424	2	12	ASSEMBLY SUPPORT	0.193
AA00001184418	1	14	ASSEMBLY SUPPORT	0.522
AA00001161000	101	6	CARBODYSHELL BRACKETS CARBODYSHELL M1/M3/M4 CARBIDE FRAME MODULE END - OPF	12.132





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.

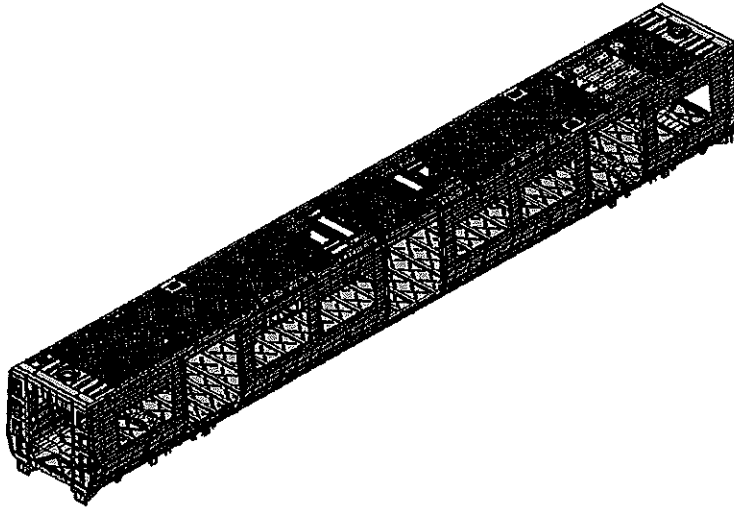
APPLICATION REFERENCE

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE							WORK INSTRUCTION	SAFETY ?
				TC1	M1	M1	M2	M3	TC2			
<input type="checkbox"/>	DTR3000152669	AAD0001278556	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB2230			X				PRA.CB2230.DT000002 25487.V20	YES
<input type="checkbox"/>	DTR3000152673	AAD0001278556	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB2230		X			X		PRA.CB2230.DT000002 25487.V20	YES
<input type="checkbox"/>												
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		
									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 Mhombhi	20/02/2022	
									CHECKER	Andani Muthelo		
									REVISED BY	Andani Muthelo		
26	14/06/2022	Update minimum temperature requirement for sealant application							APPROVER	Collins Mhombhi	14/06/2022	
									CHECKER	Andani Muthelo		
									REVISED BY	Andani Muthelo		
27	26/07/2022	Threshold measurements addition							APPROVER	Collins Mhombhi	26/07/2022	
									CHECKER	Andani Muthelo		
									REVISED BY	Andani Muthelo		
28	17/10/2022	Added traceability of sealant application							APPROVER	Collins Mhombhi	17/10/2022	
									CHECKER	Ntokozo Zwane		
									REVISED BY	Amogelang Mohlampe		
29	14/04/2023	Added sealant batch number & welding consumables traceability							APPROVER	Vanessa Ntuli	14/04/2023	
									CHECKER	Ntokozo Zwane		
									REVISED BY	Amogelang Mohlampe		
30	06/11/2023	Added threshold traceability for boiler makers and welders							APPROVER	Ngobeni Tyson	06/11/2023	
									CHECKER	Andani Muthelo		
									REVISED BY	Ntokozo Zwane		
TRAINSET	CAR	OPERATOR NAME& ALPS NO		DATE		SELF INSPECTION NUMBER			PAGES			
029	M04	Sinte 426955		23/05/24		SI.CB2230.256.V29			12			

	CARBODYSHELL M1,M3,M4 ASSEMBLY DT00000225487	Rev. 30	Project: PRASA SI.CB2230.256.V29
		Date 08/11/2023	
Car:	NCR:	Work station: CB2230	



Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car					Revision	Observation	OK	NOK	N/A	Signature/Date (Operations)	Signature/Date (Quality)
	M1	M2	M3	M4	TC2							
PRA.CB2230.DT00000225487				X		30		OK		N/A	23/05/24	23/05/24

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	OK		23/05/24	23/05/24
Measuring tape	GIB 0794	24/04/25	OK		23/05/24	23/05/24
Combination Square	GIB 0072	27/07/24	OK		23/05/24	23/05/24

1.3 Consumables

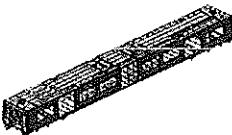
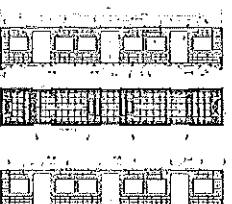

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 L SI	221860	MIG welding	OK		23/05/24	23/05/24

23-05-24

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 filmet for all brackets.	PRA.CB1230.DT00000225487	OK	23/05/24	23/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	OK	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	OK	23/05/24	23/05/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	OK	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.	OK	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.	OK	23/05/24	23/05/24
07	N/A	Before appplication of sealant record the expiry date and make sure that the room temperature and humidity are withion specified values as per Works instructions Specified: Temperature Min - Max (1) Min-Max 10°C - 35°C Relative humidity Min - Max (1) 25% - 80%	Sealant Batch No: 1SR 10-30 Exp Date: 27/06/24 Actuals Temperature: 18°C Humidity: 43%	OK	23/05/24	23/05/24
08	N/A	Verification of sealant application on the roof and sidewall finishers.	Sealant must be: -Applied stroight and even -Free of gaps,cracks,damage and debris (flashes, dirt, dust) Refer to Annexure B	OK	23/05/24	23/05/24
09	N/A	Verification of sealant application in certain regions in the drawing.	AAD0001278566	OK	23/05/24	23/05/24



CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000225487

Rev.

30

Date

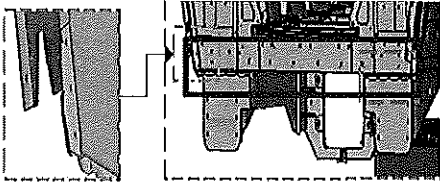
06/11/2023

Project: PRASA

SI.CB2230.256.V29

II - Self Inspection - Items to Check

AREA 1



END 2 SEALANT

OPERATOR
(Name & sign):

LERDY

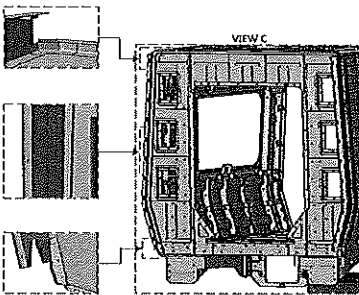
OPERATOR
(Name & sign):

LERDY

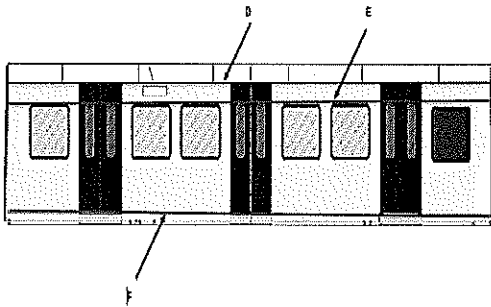
OPERATOR
(Name & sign):

LERDY

AREA 2 (VIEW C)



H



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):

Sihle

Sihle

Operator (Name & sign):

Operator (Name & sign):

Ishenolo

Ishenolo

Operator (Name & sign):

Operator (Name & sign):



CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000225487

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30

Date

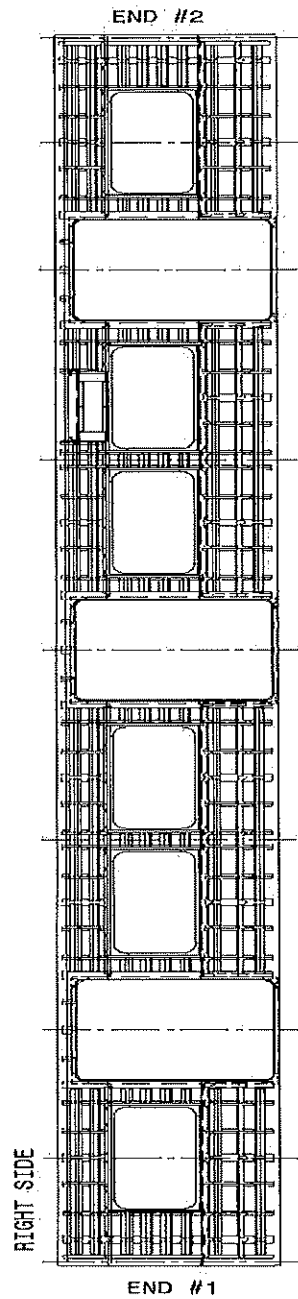
06/11/2023

Project: PRASA

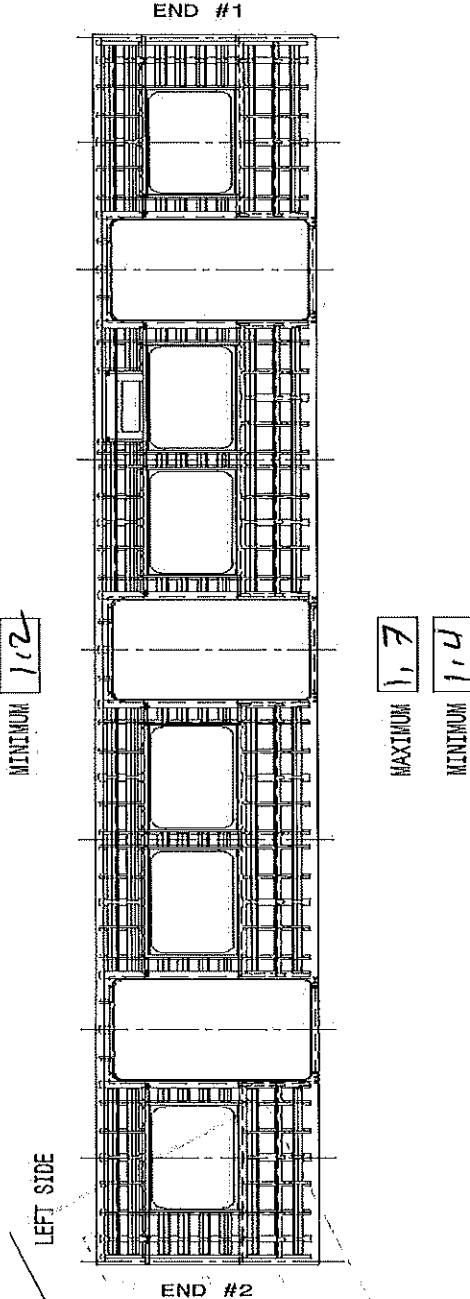
SI.CB2230.256.V29

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.



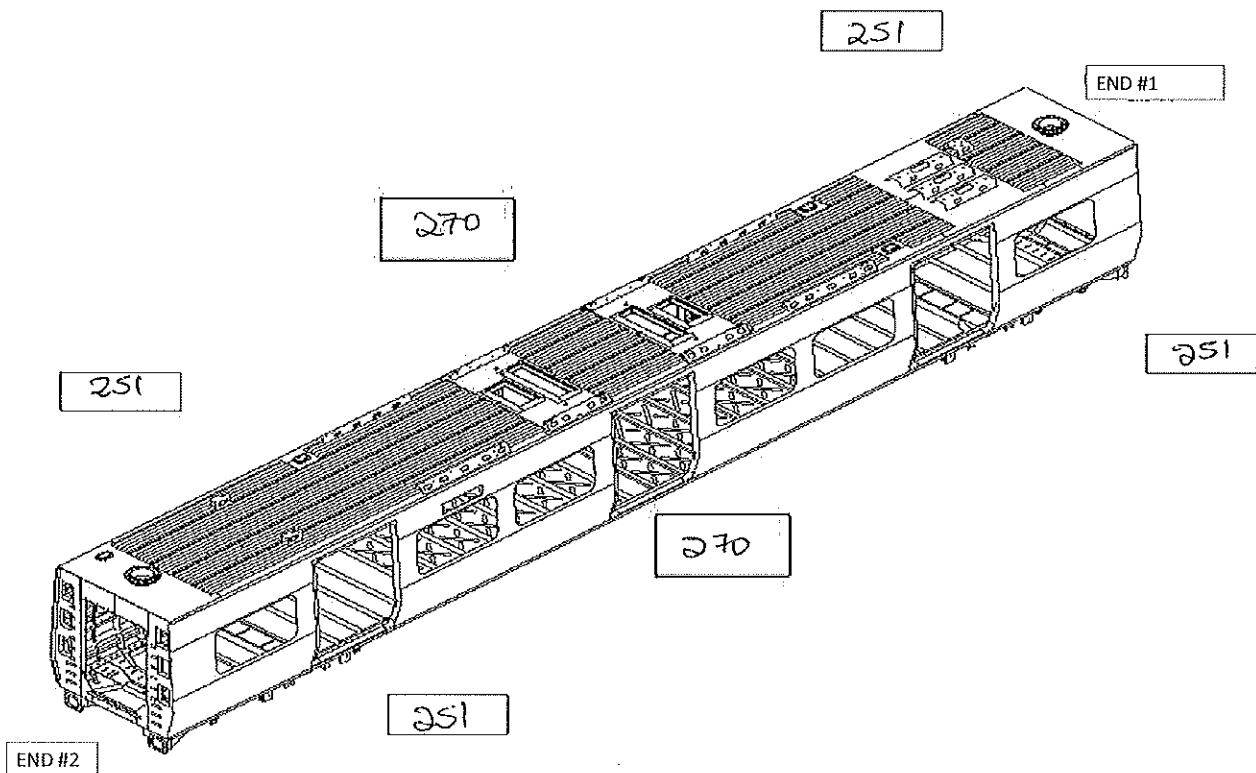
MAXIMUM 1.6
MINIMUM 1.2



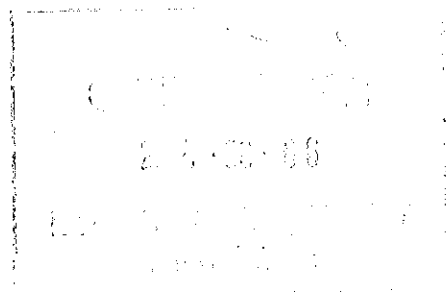
MAXIMUM 1.7
MINIMUM 1.4

Specifications of Details for CBS measurement CB1230

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



MEASURED CAMBER VALUES		
RIGHT	11	19
LEFT	11	19





CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000226487

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30

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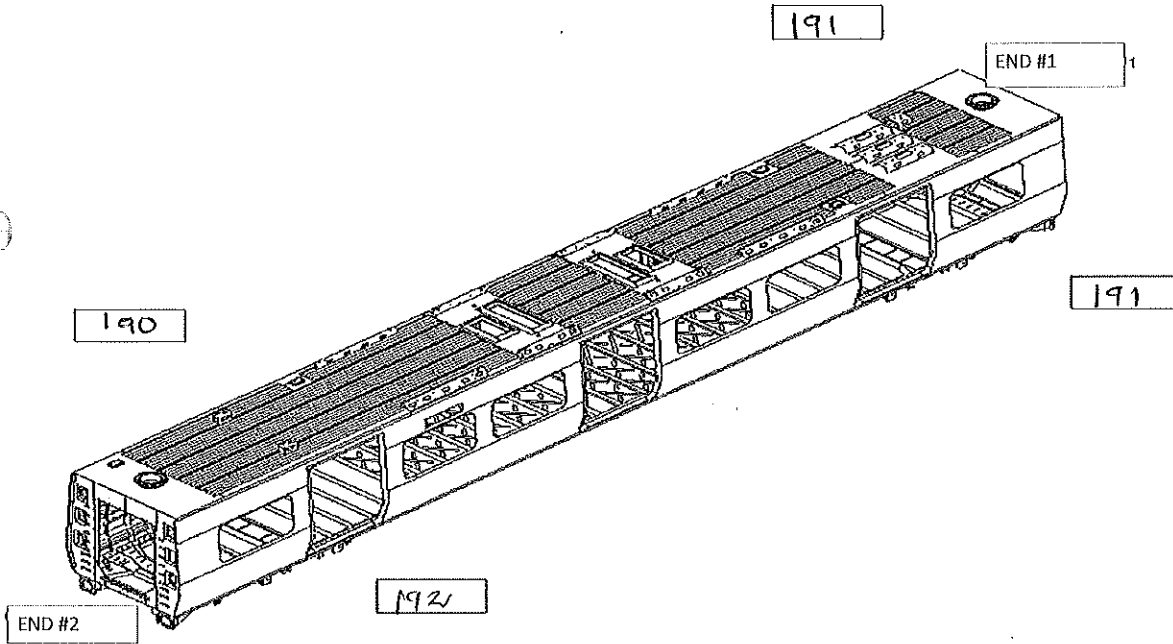
06/11/2023

Project: PRASA

SI.CB2230.256.V29

Specifications of Details for CBS measurement CB1230

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



TWIST FOUND ON END 1

TRANVERSE

2

LONGITUDINAL

1

TWIST FOUND ON END 2

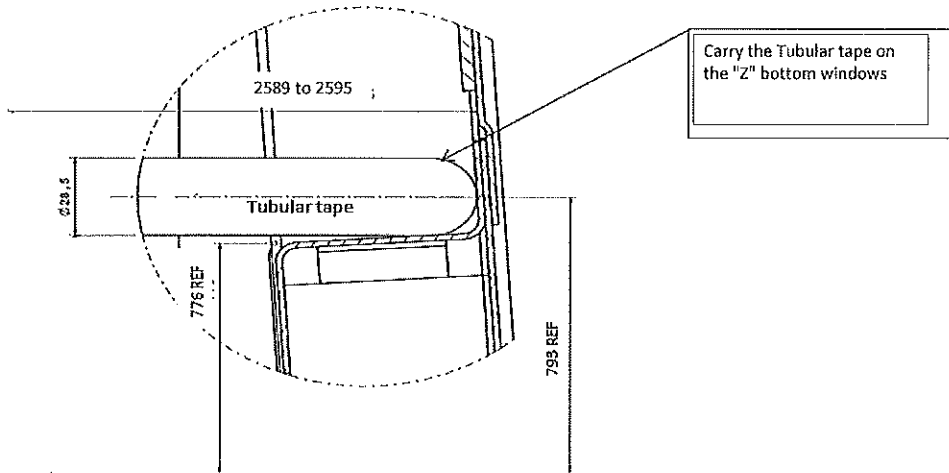
TRANVERSE

0

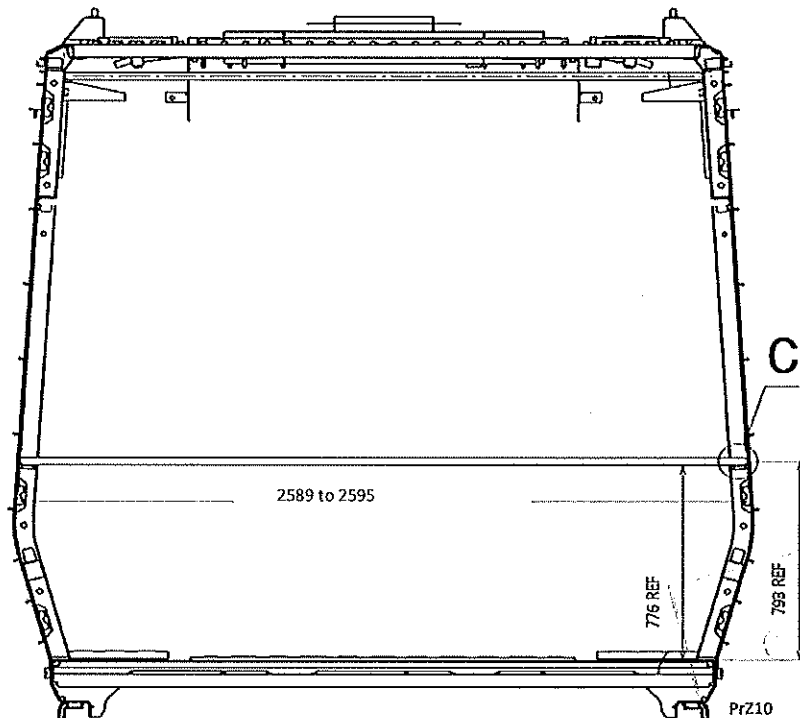
LONGITUDINAL

1

Specifications of Details for CBS measurement CB1230



Detail C





CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000225487

Rev.
30

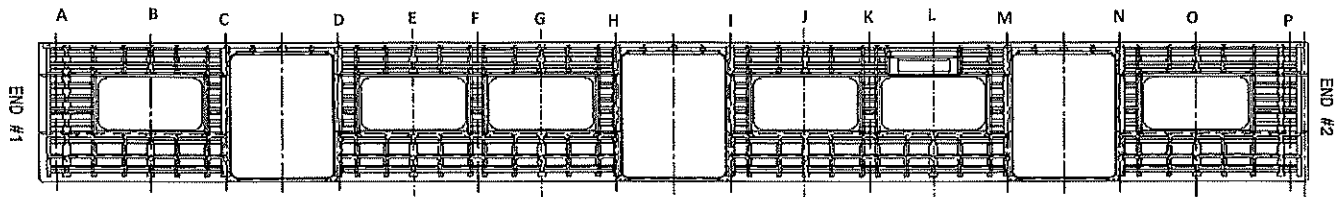
Date

06/11/2023

Project: PRASA

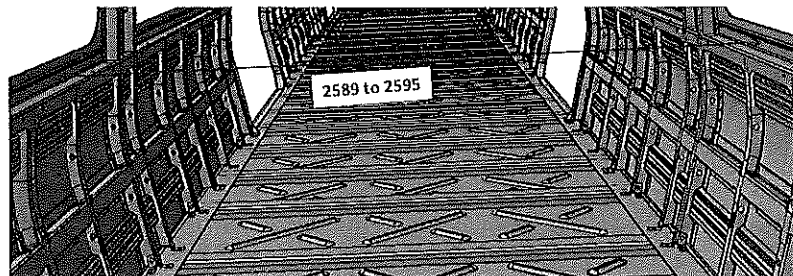
SI.CB2230.256.V29

Specifications of Details for CBS measurement CB1230



2589 to 2595mm

A	2589
B	2590
C	2591
D	2592
E	2592
F	2590
G	2593
H	2593
I	2592
J	2591
K	2591
L	2592
M	2593
N	2590
O	2592
P	2593



Threshold verification

Nominal value :38

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

BOILER MAKER:

EMMANUEL EMMANUEL

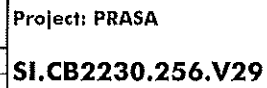
WELDER:

Zawela

Dye penetrant test


Dye-penetration test to be performed by quality personnel



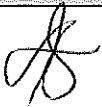

[illegible]

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

10

	CARBODYSHELL M1,M3,M4 ASSEMBLY DT00000226487	Rev. 30	Project: PRASA SI.CB2230.256.V29
		Date	
		06/11/2023	

Self Inspection - Findl Result

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE	
HOLD POINT		GO	(If activities are not complete, the missing activities must not impact the next stage!)	23/05/24	Sinit Operations		
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	23/05/24	NHollow 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	

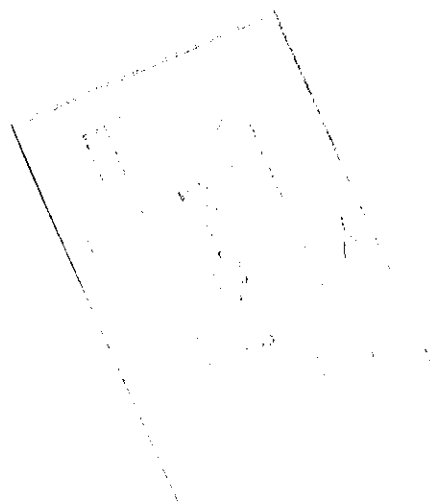
In case of "NO GO", describe blocking problems

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

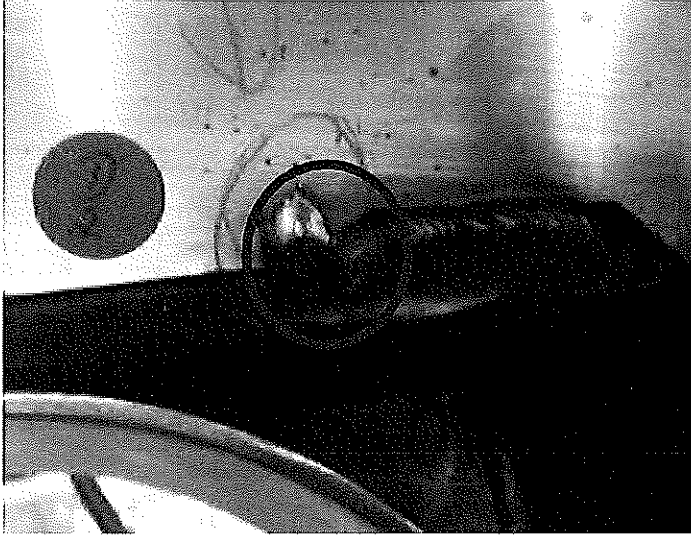
Item	Description	Responsible	Due date	Status

Operations

Quality



ANNEXURE A: Arc Welding Quality Acceptance Standard



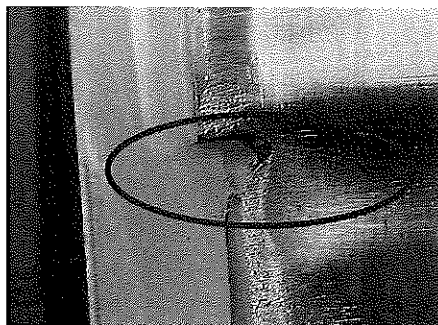


CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000225487

Rev.
30
Date
06/11/2023

Project: PRASA
SI.CB2230.256.V29

ANNEXURE B: Sealant



2006