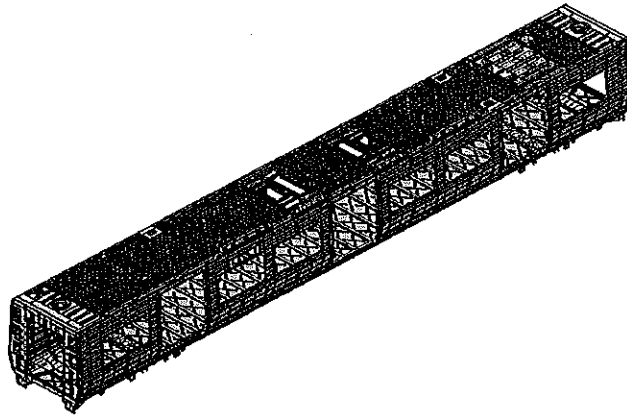
	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V30
		Date 07/11/2023	

Car: M3 & M4	NCR:	Work station: CB2210
--------------	------	----------------------




Safety Related









### I - Documentation and Instruments Control

#### 1.1 - Documentation Control

Document	Type of car						Revision	Observation	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
	D	S	M	S	M	D						
DTR30225487/3					X				✓			20/11/2024





#### 1.2 - Instruments Control

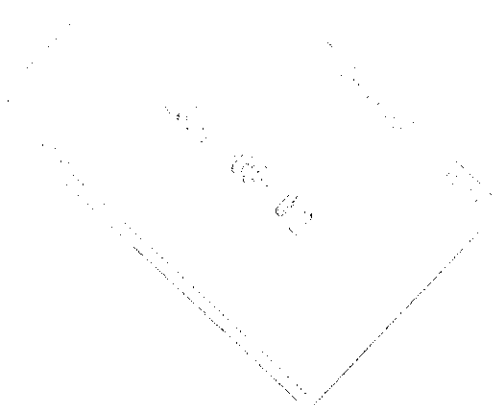
##### Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial number	Calibration or Verification Validation Date	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
TURKULAR	32823-2	15/03/24	✓		 17/05/24	 20/11/24
30 M TAPE	618TP0284	14/03/24	✓		 17/05/24	 20/11/24
LASER TAPE	125475924	08/01/24	✓		 17/05/24	 20/11/24


#### 1.3 Consumables

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

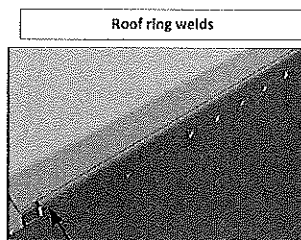
Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
AUTROD 308 CSI	K221880	MIG	✓		 17/05/24	 20/11/24
ERL 304 CSI	318394	MIG	✓		 17/05/24	 20/11/24



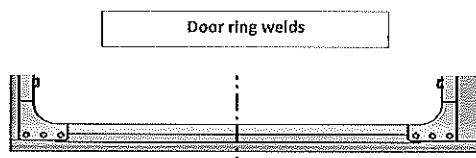


	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V30
		Date 07/11/2023	

**Welding Traceability**



<div style="text-align: right; margin-bottom: 10px;"><u>LHS</u></div> Boiler maker (Name & Sign): <u>INNOCENT [Signature]</u>	<div style="text-align: right; margin-bottom: 10px;"><u>LHS</u></div> Welder (Name & Sign): <u>Thabang [Signature]</u>
<div style="text-align: right; margin-bottom: 10px;"><u>RHS</u></div> Boiler maker (Name & Sign): <u>INNOCENT [Signature]</u>	<div style="text-align: right; margin-bottom: 10px;"><u>RHS</u></div> Welder (Name & Sign): <u>Kerru K [Signature]</u>

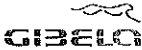


LHS

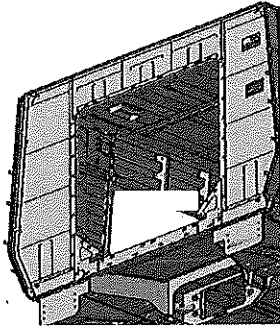
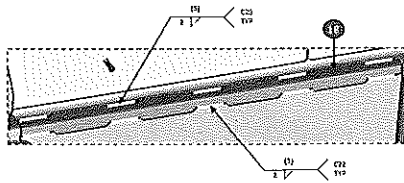
Boiler maker (Name & Sign): GERALD [Signature]
  
  
Welder (Name & Sign): MTIBOKOZISI [Signature]

RHS

Boiler maker (Name & Sign): GERALD [Signature]
  
  
Welder (Name & Sign): MTIBOKOZISI [Signature]

	CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3	Rev. 28	Project: PRASA SI,CB2210.254.V30
		Date 07/11/2023	

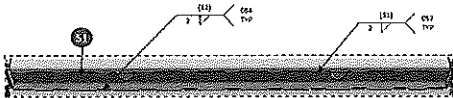
EUF Reinforcement Plates



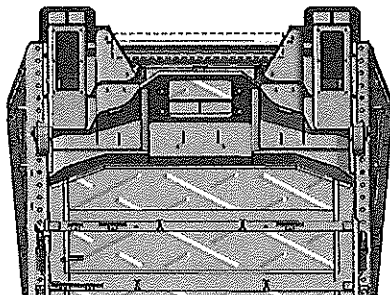
END 1

Boiler maker (Name & Sign): LAURENCE J. J. J.

Welder (Name & Sign): SIPHOKAZI R.



END 2

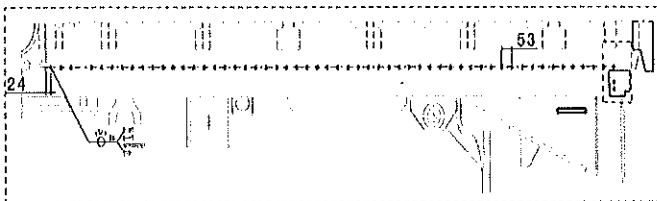


Underneath the CAR

END 2

Boiler maker (Name & Sign): GURAN R.

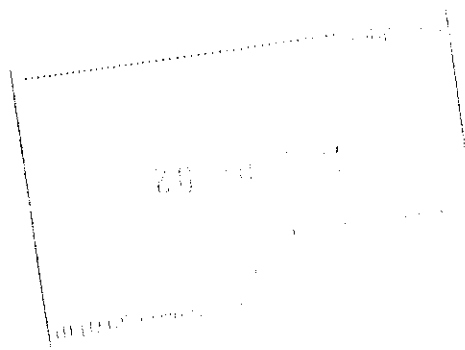
Welder (Name & Sign): SIPAT R.




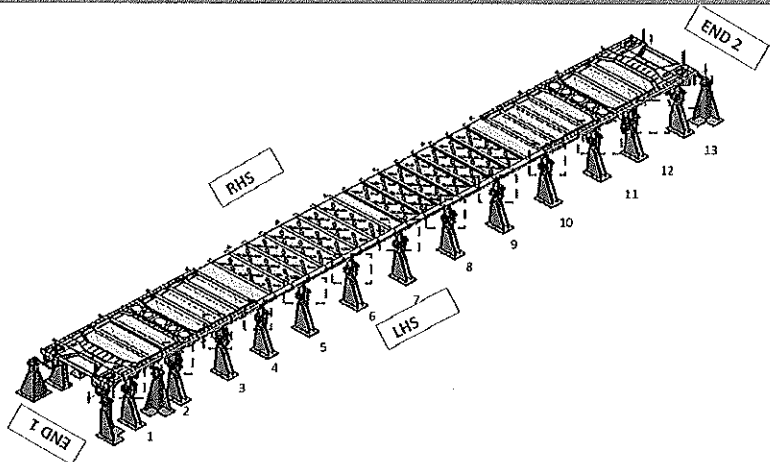
FEDOLI

Operator:

LAURENCE J. J. J.



	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V30
		Date 07/11/2023	
Specifications of Details for GBS measurement			



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

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	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: 11/05/24

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: 11/05/24



CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3

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28

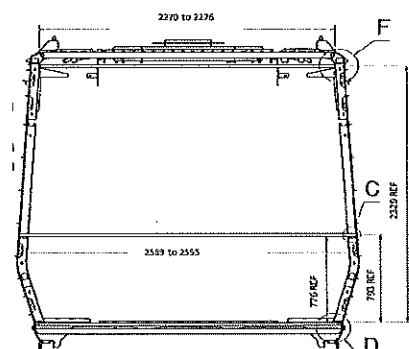
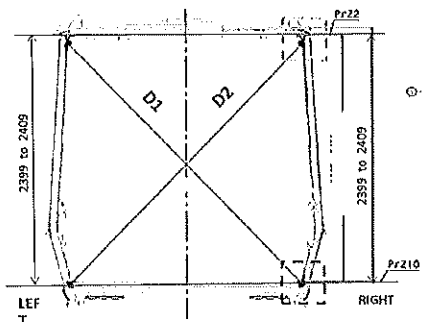
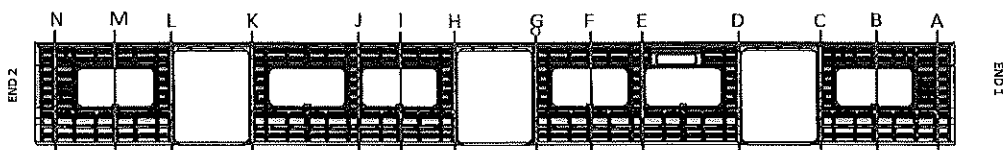
Date

07/11/2023

Project: PRASA

SI.CB2210.254.V30

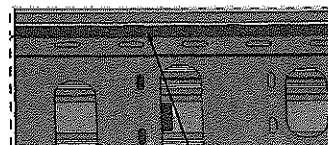
### Specifications of Details for CBS measurement



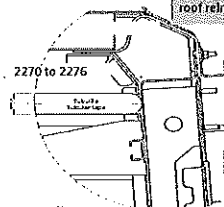
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.



Reinforcement area measurement positions on roof reinforcement area.



Detail f  
Don't consider the reinforcement

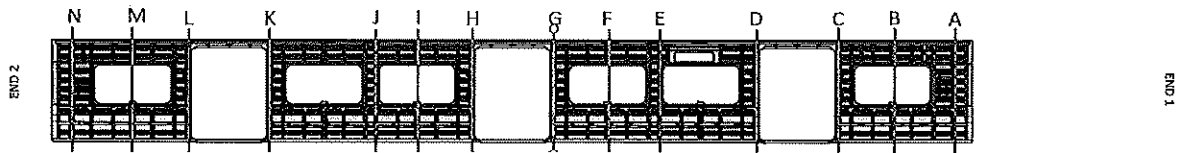


CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3

Rev.  
28  
Date  
07/11/2023

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SI.CB2210.254.V30

Specifications of Details for CBS measurement



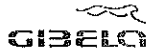
PME Column LHS - RHS should be  $\leq 2\text{MM}$  on each point.

BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS $\leq 2$
A	3269	3268	1	2406	2408	2
B	3269	3266	3	2405	2406	1
C	3268	3270	2	2405	2405	0
D	3269	3269	0	2406	2405	1
E	3265	3266	1	2405	2405	0
F	3266	3264	2	2406	2406	0
G	3269	3268	1	2405	2407	2
H	3268	3270	2	2406	2405	1
I	3264	3265	1	2405	2404	1
J	3266	3266	0	2406	2405	1
K	3267	3267	0	2405	2405	0
L	3267	3268	1	2406	2404	2
M	3269	3265	4	2406	2406	0
N	3268	3266	2	2407	2406	1

17/05/24





CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3

Rev.

28

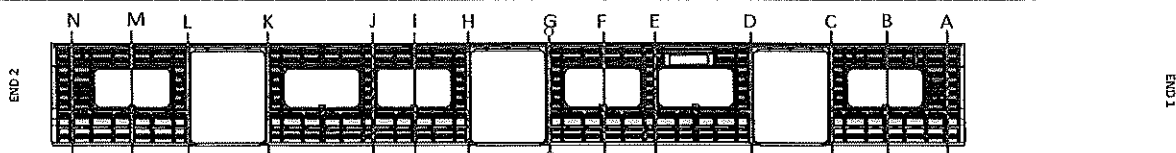
Date

07/11/2023

Project: PRASA

SI.CB2210.254.V30


## Specifications of Details for CBS measurement

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

## AFTER WELDING

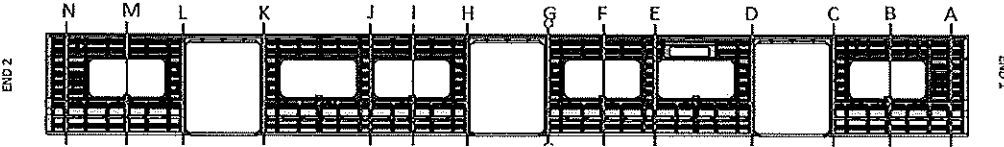
	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS $\leq 2$
A	3295	3294	1	2406	2407	1
B	3268	3266	2	2406	2405	1
C	3294	3294	0	2405	2405	0
D	3295	3295	0	2406	2404	2
E	3265	3265	0	2405	2406	1
F	3265	3266	1	2406	2406	0
G	3294	3294	0	2404	2405	1
H	3293	3295	2	2405	2406	1
I	3265	3264	1	2405	2405	0
J	3266	3266	0	2404	2406	2
K	3295	3295	0	2405	2406	1
L	3294	3295	1	2407	2406	1
M	3268	3265	3	2405	2405	0
N	3295	3296	1	2406	2406	0

17/05/24

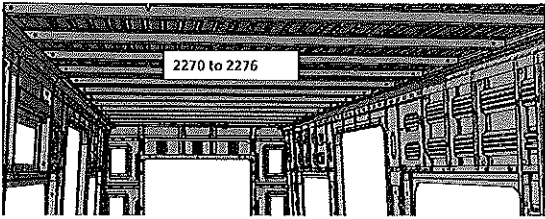
	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI,CB2210.254.V30
		Date 07/11/2023	

CBS measurement

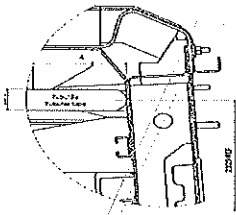
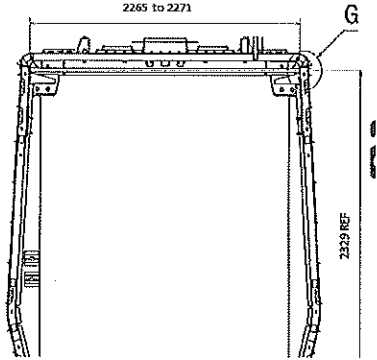
BEFORE WELDING



	2270 to 2276
A	2272
B	2274
C	2273
D	2270
E	2277
F	2275
G	2270
H	2273
I	2276
J	2277
K	2270
L	2272
M	2274
N	2271



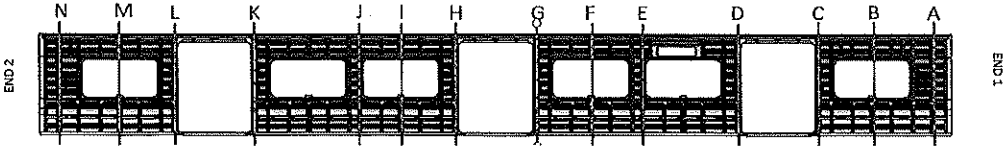
Do not consider reinforcement ( Take measurements top area of zee profile



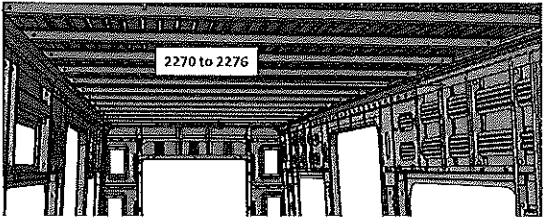
2265 to 2271

17/05/24

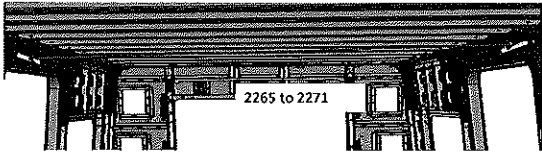
AFTER WELDING



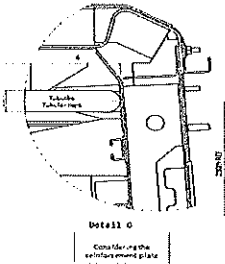
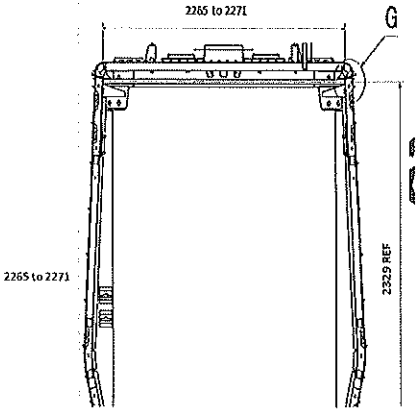
	2265 to 2271	2270 to 2276
A	2270	
B		2275
C	2268	
D	2265	
E		2276
F		2275
G	2265	
H	2268	
I		2276
J		2276
K	2268	
L	2266	
M		2274
N	2269	



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



Take measurement close to radius ( considering reinforcement)



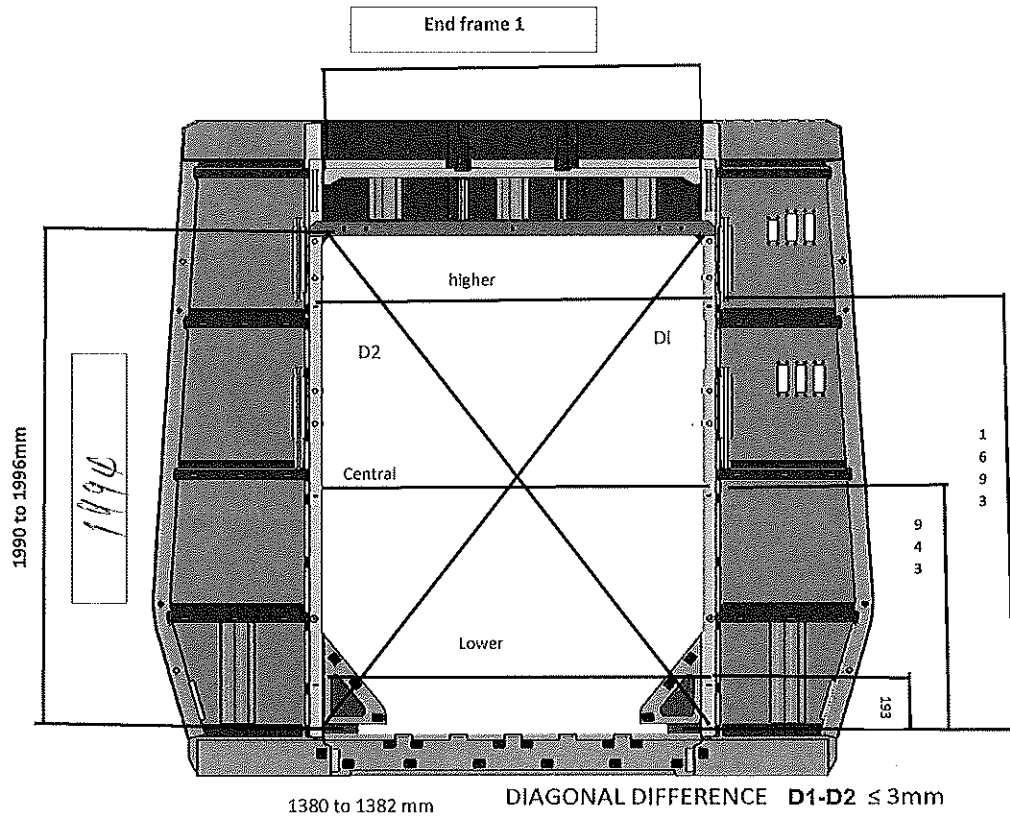


CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3

Rev.  
28  
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Specifications of Details for CBS measurement



Higher Dimonision

1381

D1

2413

Central Dimension

1381

D2

2414

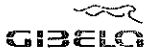
Lower Dimension

1380

D1-D2

1

17/05/24



CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3

Rev.

28

Date

07/11/2023

Project: PRASA

SI.CB2210.254.V30

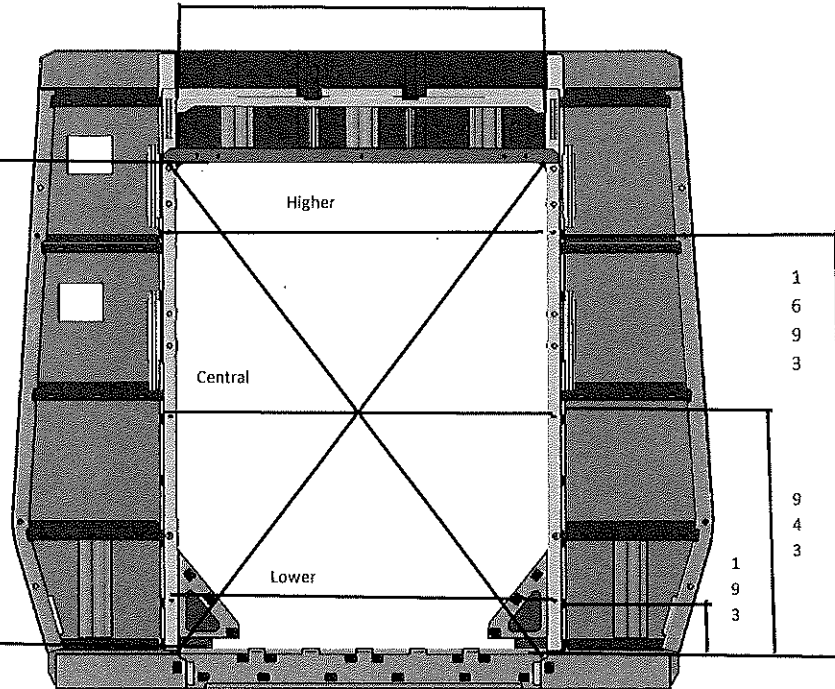
Specifications of Details for GBS measurement

Endframe 2

1380 to 1382 mm

1990 to 1996mm

1995



1380 to 1382 mm

DIAGONAL DIFFERENCE  $D1-D2 \leq 3mm$

Higher Dimension

1382

D1

2414

Central Dimension

1381

D2

2413

Lower Dimension

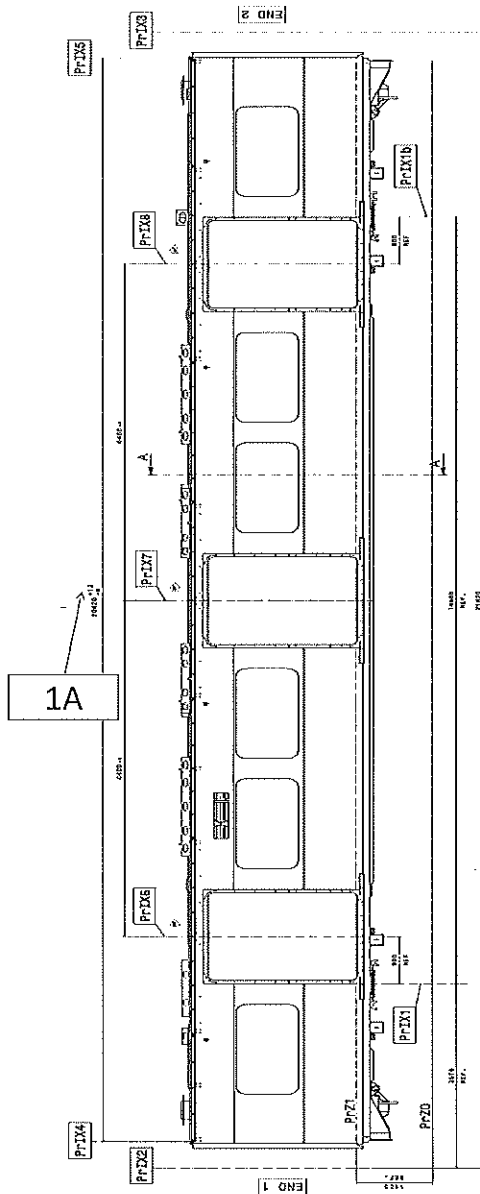
1381

D1-D2

1

17/05/24

### Specifications of Details for CBS measurement



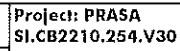
	LEFT SIDE	
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20615

	RIGHT SIDE	
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20644	20615

### Dye penetrant test




**Dye-penetration test to be performed by quality personnel**






### Check List Items

Item	Picture/Drawing	Description	Criteria/Record	OK	NG	Repair	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 Date 07/11/2023	Project: PRASA SI.CB2210.254.V30	
Self Inspection - Final Result						
				DATE	NAME	SIGNATURE
HOLD POINT		GO	(if activities are not complete, the missing activities must not impact the next stage)  Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	17/05/24	lunga Operations	
		GO	Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	17/05/24	Drekin Industrial Quality	
		NO GO	There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)			
		NO GO	There are non-conformities impact the quality of the product and there is no corrective action defined yet)			
In case of "NO GO", describe blocking problems						
In case of "NO GO", the operations manager must define below action plan to ensure "GO":						
Item	Description		Responsible	Due date	Status	
			Operations			
			Quality			






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.

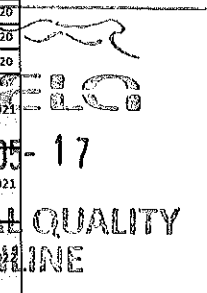
APPLICATION REFERENCE												
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 	
				YES	NA	NA	NA	NA	YES			
<input type="checkbox"/>	DTR0022548/72	AAD0001278566	CARBODYSHELL M3, M3, M4 ASSEMBLY	CB1220		X	X		X		PRA.CB2220.DTR3022548 7/2.V21	YES
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	01/02/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	01/02/2018
			CHECKER	Nosizo Pindela	01/02/2018
			COMPILER	Thanyani Mathegu	01/02/2018
1	18/05/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	18/05/2018
			CHECKER	Nosizo Pindela	18/05/2018
			REVISED BY	Ramokone Motama	18/05/2018
2	2018/07/05	Certain dimensional checks added and others moved to CB1210	APPROVER	Itumeleng Modiba	2018/07/05
			CHECKER	Nosizo Pindela	2018/07/05
			REVISED BY	Ramokone Motama	2018/07/05
3	2018/06/12	Width tolerance as per DT0000336600	APPROVER	Itumeleng Modiba	2018/06/12
			CHECKER	Nosizo Pindela	2018/06/12
			REVISED BY	Nosizo Pindela	2018/06/12
5	24/01/2019	As per Baseline 10.2	APPROVER	Itumeleng Modiba	24/01/2019
			CHECKER	Nosizo Pindela	24/01/2019
			REVISED BY	Vanessa Ntuli	24/01/2019
6	13/03/2019	Added D1 and D2 on Self - Inspection length measurements Remove	APPROVER	Itumeleng Modiba	13/03/2019
			CHECKER	Nosizo Pindela	13/03/2019
			REVISED BY	Nosizo Pindela	13/03/2019
10	22/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	22/08/2019
			CHECKER	Nosizo Pindela	22/08/2019
			REVISED BY	Nosizo Pindela	22/08/2019
15	06/08/2020	New Baseline 10.2.6	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	20/02/2022	New Baseline change 10.3.1	APPROVER	Collins Mbombi	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 Mbombi	14/06/2022
			CHECKER	Andani Muthelo	14/06/2022
			REVISED BY	Andani Muthelo	14/06/2022
27	19/10/2022	Addition of traceability for sealant application & welding	APPROVER	Collins Mbombi	19/10/2022
			CHECKER	Ntokozo Zwane	19/10/2022
			REVISED BY	Amogelang Mohlampe	19/10/2022
28	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntokozo Zwane	14/04/2023
			REVISED BY	Amogelang Mohlampe	14/04/2023
29	28/10/2023	Addition of bracket quantity	APPROVER	Ngebeni Tyson	28/10/2023
			CHECKER	Ntokozo Zwane	28/10/2023
			REVISED BY	Amogelang Mohlampe	28/10/2023

TRAINSET	CAR	OPERATOR NAME & ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES
228	M04	Tebele	17/05/24	SI.CB2220.250.V29	13



	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DTR30225487/2	Rev.	Project: PRASA  <b>SI.CB2220.250.V29</b>	
		29		
		Date		
		28/10/2023		
Car: M1,M3&M4	NCR:	Work station:	CB2220	

Safety Related

**I - Documentation and Instruments Control**

**I.1 - Documentation Control**

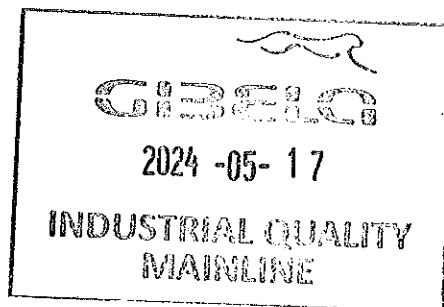
Document	Type of car						Revision	Observation	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
	M1	M3	M4	M2	M5	M6					
DTR30225487/2					✓		29	17/05/24	✓	N/A	<div style="display: flex; justify-content: space-between;"> <div>17/05/24</div> <div></div> </div>











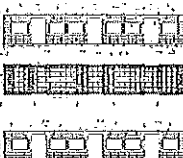


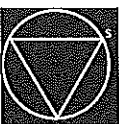









**I.2 - Instruments Control**

Monitoring and Measuring Instrument Control - Used for Special Process						
Instruments	Serial number	Calibration or Verification Validation Date		OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
Measure tape	GIB/A038	12/04/25		✓	<div style="display: flex; justify-content: space-between;"> <div>17/05/24</div> <div></div> </div>	<div style="display: flex; justify-content: space-between;"> <div>18/05/24</div> <div></div> </div>
Turbular	32823-2	15/03/25		✓		

**1.3 Consumables**

Welding Consumable Control - Used for Special Process						
Filler Material	Heat Number	Welding Process		OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
Welding Wire	E231067	MIG	Welding	✓	<div style="display: flex; justify-content: space-between;"> <div>17/05/24</div> <div></div> </div>	<div style="display: flex; justify-content: space-between;"> <div>18/05/24</div> <div></div> </div>


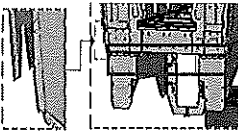
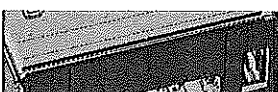




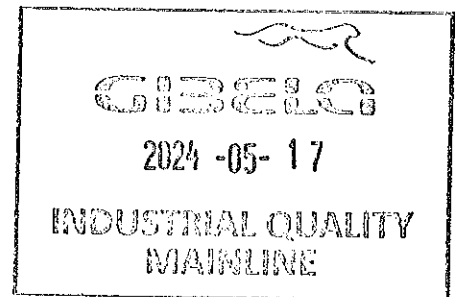
	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DTR30225487/2	Rev.	Project: PRASA					
		29						
		Date	SI.CB2220.250.V29					
		28/10/2023						
<b>II - Self Inspection - Items to Check</b>								
<b>II.1 - Items to check</b>								
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	NO	REMARKS	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	✓			 17/05/24	 18/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓			 17/05/24	 18/05/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓			 17/05/24	 18/05/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓			 17/05/24	 18/05/24
05		Functional dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓			 17/05/24	 18/05/24
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.	✓			 17/05/24	 18/05/24
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 (°) Min - Max 10°C - 35°C Relative humidity Min - Max (%) Min - Max 25% - 80%	Sealant Batch No: 83417 Exp Date: 07/06/24  Actuals Temperature: 13 Humidity: 49	✓			 17/05/24	 18/05/24
08	NA	Verification of sealant application in certain regions in the drawing.	AAD0001278566	✓			 17/05/24	 18/05/24
09		Verification of safety welds	Approved according to DTD000210658 reference and Self inspection	✓			 17/05/24	 18/05/24


**GIBELQ**

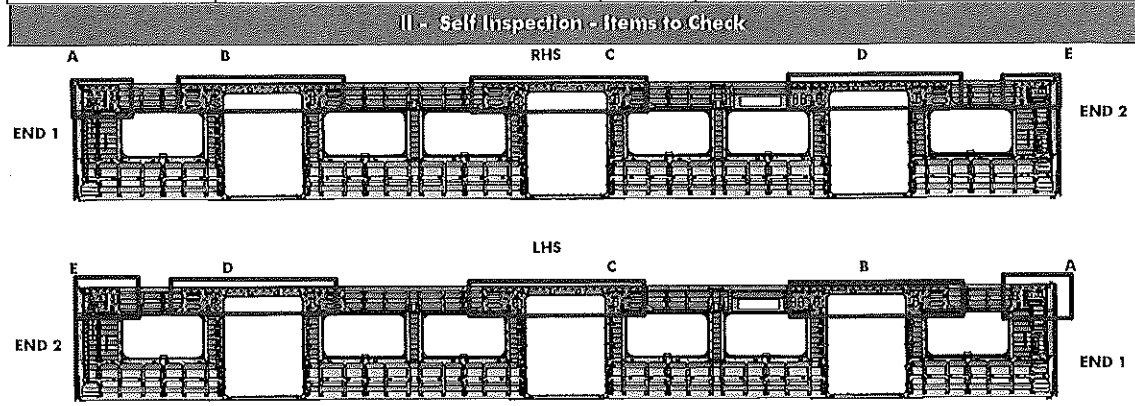
2024 -05- 17

**INDUSTRIAL QUALITY  
MAINLINE**

	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			
<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 &amp; 2 END 1</div> <div style="margin-top: 10px;"> Operator (Name &amp; sign):  M. H. Kozis:  </div> <div style="margin-top: 10px;"> Operator (Name &amp; sign):  M. H. Kozis:  </div> </div> </div>			




	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRA5A  SI.CB2220.250.V29
		29	
		Date	
		28/10/2023	

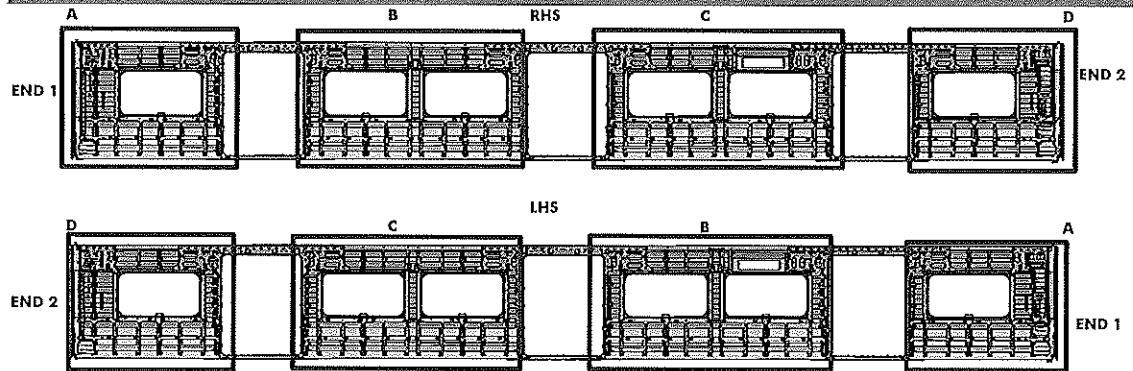


**REINFORCEMENT WELDING**

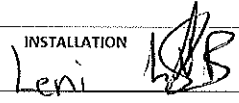
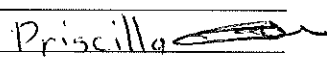
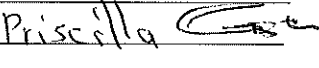
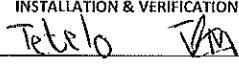
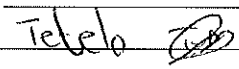
AREA	LHS	RHS
A	Operator (Name&sign): <i>S. Magina</i>	<i>S. Magina</i>
B	Operator (Name&sign): <i>S. Magina</i>	<i>S. Magina</i>
C	Operator (Name&sign): <i>V. K.</i>	<i>V. K.</i>
D	Operator (Name&sign): <i>S. Magina</i>	<i>S. Magina</i>
E	Operator (Name&sign): <i>S. Magina</i>	<i>S. Magina</i>

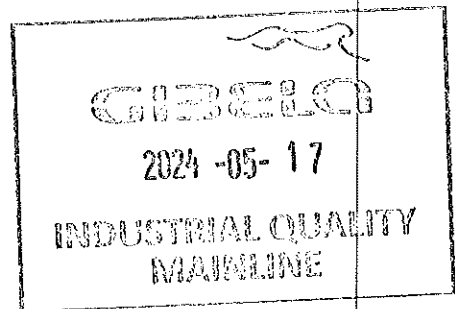


	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev. 29	Project: PRASA  SI.CB2220.250.V29
		Date 28/10/2023	
		II - Self Inspection - Items to Check	

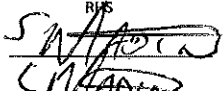




### BRACKETING

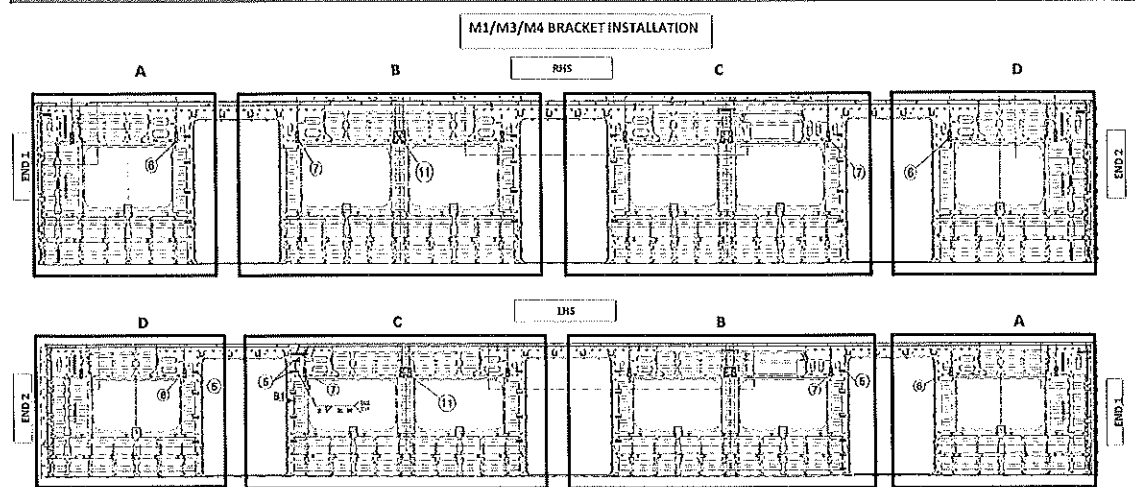
		INSTALLATION	
C-RAILS:	Operator:	Leni 	
	Operator:		
DOOR MECHANISMS:	Operator:	Priscilla 	
	Operator:		
TAPPING PADS	Operator:	Priscilla 	
	Operator:		
		INSTALLATION & VERIFICATION	
SEAT & LUGGAGE BRACKETS:	Operator:	Tebelo 	
	Operator:		
SEAT BRACKETS VERIFICATION:	Operator:	Tebelo 	
	Operator:		



### 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): 	
ENDS		
END 1 TAPPING PADS WELDING:	Operator (Name&sign): 	
END 2 TAPPING PADS WELDING:	Operator (Name&sign): 	

	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DTR30226487/2	Rev.	Project: PRA5A
		29	
		Date	SI.CB2220.250.V29
		28/10/2023	
<b>II - Self Inspection - Items to Check</b>			



**QUANTITIES (M3/M4)**

RHS				
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	7	✓	
	B	4	✓	
	C	6	✓	
	D	8	✓	
SEAT BRACKETS	A	13	✓	
	B	21	✓	
	C	21	✓	
	D	13	✓	
EARTH BUSH	A	3	✓	
	B	5	✓	
	C	4	✓	
	D	3	✓	

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

VERIFICATION BY: Teleb

**QUANTITIES (M1)**

LHS				
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	2	✓	
	B	8	✓	
	C	11	✓	
	D	6	✓	
SEAT BRACKETS	A	13	✓	
	B	21	✓	
	C	21	✓	
	D	13	✓	
EARTH BUSH	A	3	✓	
	B	5	✓	
	C	4	✓	
	D	2	✓	

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

VERIFICATION BY: Teleb

**QUANTITIES (M3/M4)**

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	6		
	D	3		

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

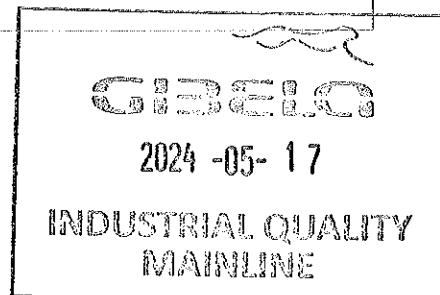
VERIFICATION BY: \_\_\_\_\_

**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: \_\_\_\_\_



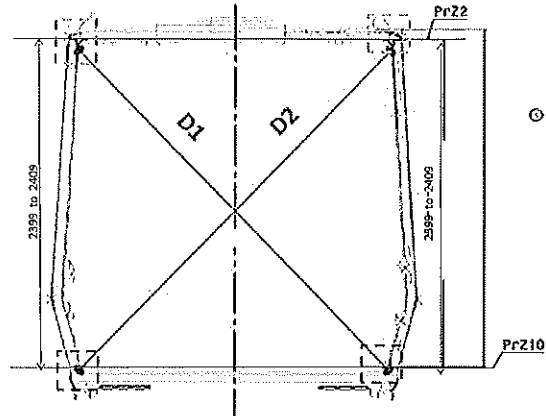


CARBODYSHELL M1,M3,M4 ASSEMBLY  
DTR30225487/2

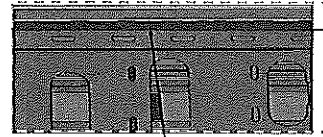
Rev.  
29  
Date  
28/10/2023

Project: PRA5A  
SI.CB2220.250.V29

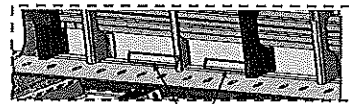
Specifications of Details for CBS measurement



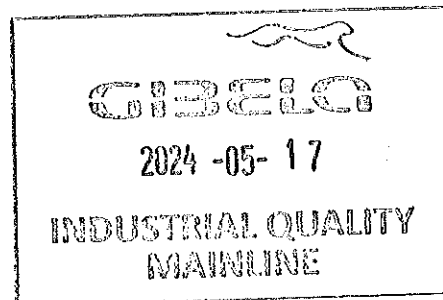
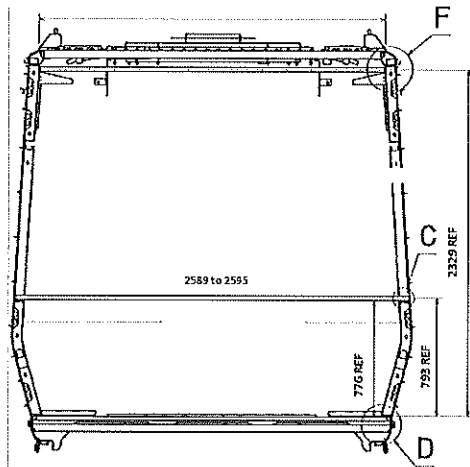
Measurement positions on roof rail and sidewall omega corner.



Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.





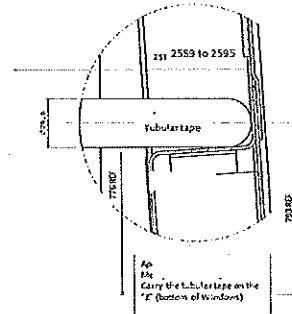
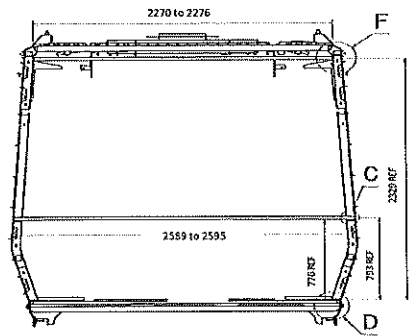


CARBODYSHELL M1,M3,M4 ASSEMBLY  
DTR30226487/2

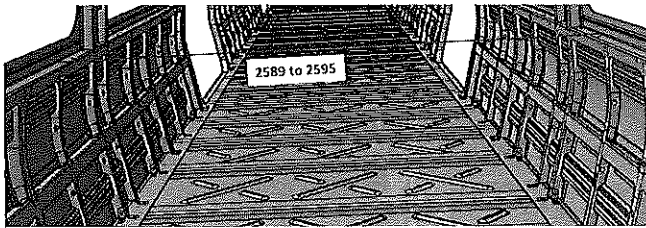
Rev.  
29  
Date  
28/10/2023

Project: PRASA  
SI.CB2220.250.V29

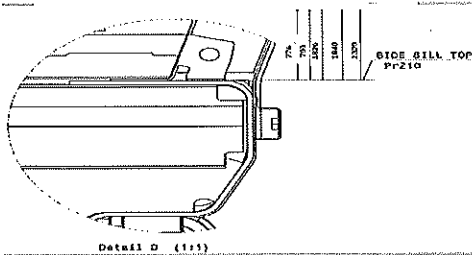
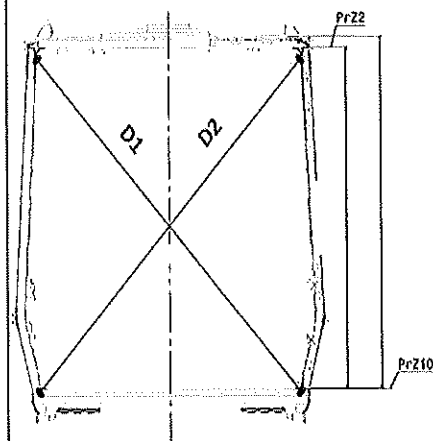
### CBS measurement



Detail C



Take measurement close to radius




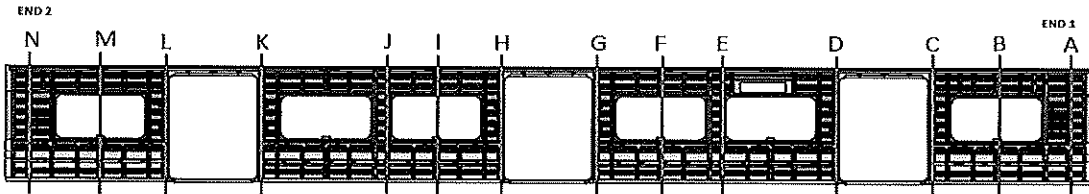
Detail D (1:1)

GIBELA

2024-05-17

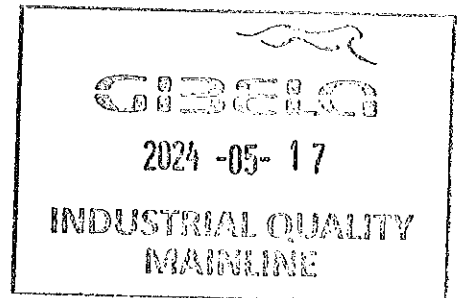
INDUSTRIAL QUALITY  
MAINLINE

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


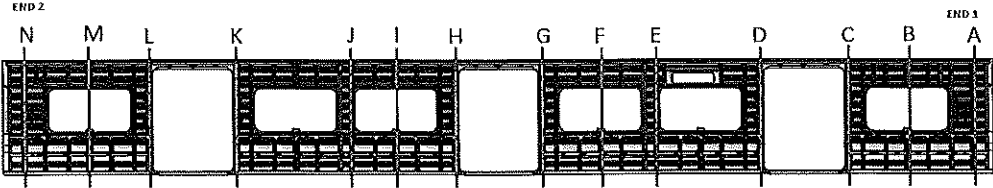


**BEFORE WELDING**

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3300	3297	3	2590
B	3268	3265	3	2591
C	3297	3298	1	2592
D	3299	3298	1	2590
E	3265	3267	2	2589
F	3267	3266	1	2591
G	3298	3297	1	2589
H	3300	3298	2	2594
I	3266	3268	2	2593
J	3265	3266	1	2592
K	3299	3297	2	2591
L	3298	3297	1	2590
M	3268	3267	1	2592
N	3298	3299	1	2591

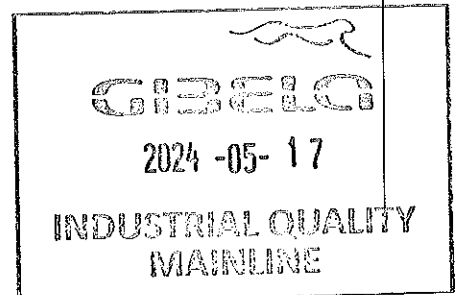


*[Signature]*

	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	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	3300	3298	2	2590
B	3268	3266	2	2591
C	3299	3298	1	2592
D	3298	3297	1	2590
E	3268	3267	1	2590
F	3265	3266	1	2591
G	3297	3298	1	2589
H	3298	3296	2	2591
I	3267	3264	3	2592
J	3268	3267	1	2591
K	3299	3297	2	2591
L	3298	3296	2	2590
M	3268	3267	1	2592
N	3299	3297	2	2591



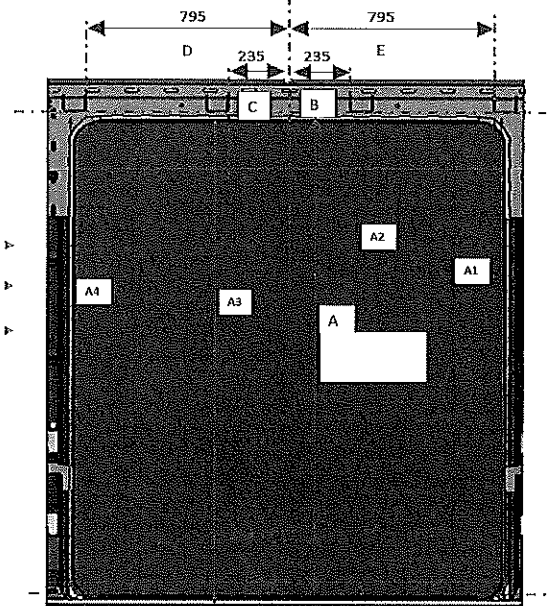


CARBODYSHELL M1,M3,M4 ASSEMBLY  
DTR30225487/2

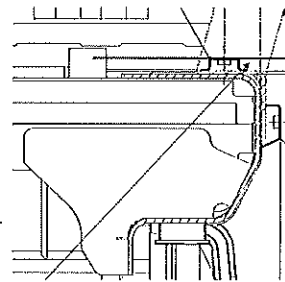
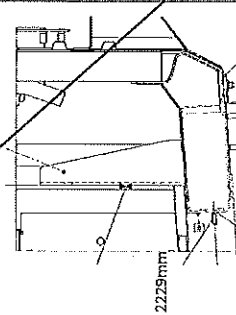
Rev.  
29  
Date  
28/10/2023

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SI.CB2220.250.V29

Specifications of Details for CBS measurement CB1220



Brackets Carbodyshell  
U Type Supports



Brackets Carbodyshell  
Channel Assy

DOOR 1 - LHS

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

DOOR 2 - LHS

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

DOOR 2 - RHS

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

DOOR 1 - RHS

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

DOOR 2 - RHS

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

DOOR 3 - RHS

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

GIBELQ

2024-05-17

INDUSTRIAL QUALITY  
MAINLINE



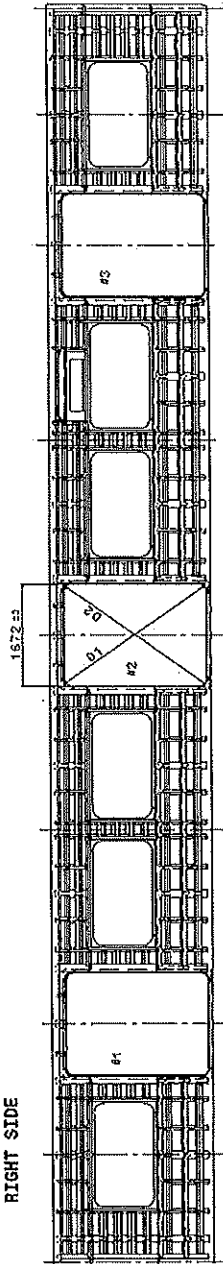
CARBODYSHELL M1,M3,M4 ASSEMBLY  
DTR30226487/2

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

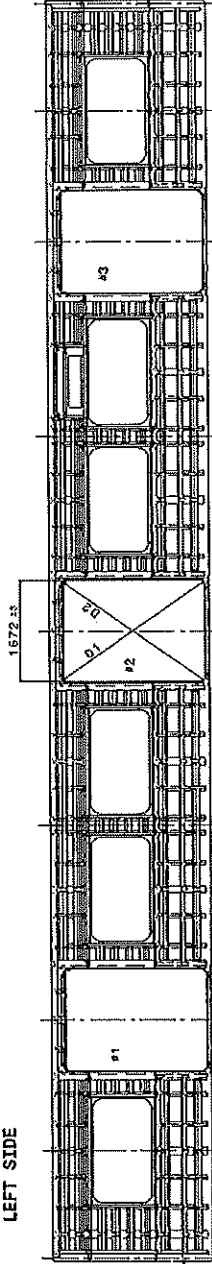
Doors diagonal D1-D2 maximum difference  $\leq 4\text{mm}$

	#1	#2	#3
D1	2751	2751	2750
D2	2756	2749	2751
D1-D2	5	7	1

Doors length - 1672 mm

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

End #1



LEFT SIDE

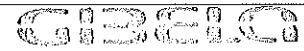
End #2

Doors diagonal D1-D2 maximum difference  $\leq 4\text{mm}$

	#1	#2	#3
D1	2750	2749	2751
D2	2748	2751	2750
D1-D2	2	2	1

Doors length - 1672 mm


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




2024-05-17

INDUSTRIAL QUALITY  
MAINLINE



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

Self Inspection - Final Result

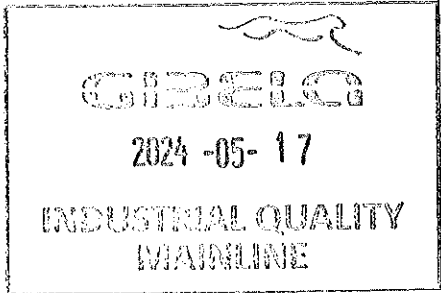
Is the car good to advance to the next workstation/process? (Approval of Operations Manager and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT		GO	(If activities are not complete, the missing activities must not impact the next stage)	17/05/24	Tetelo Operations	Tetelo
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	18/05/24	Ntoloro Industrial Quality	Ntoloro
	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	

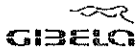
In case of "NO GO", describe blocking problems

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

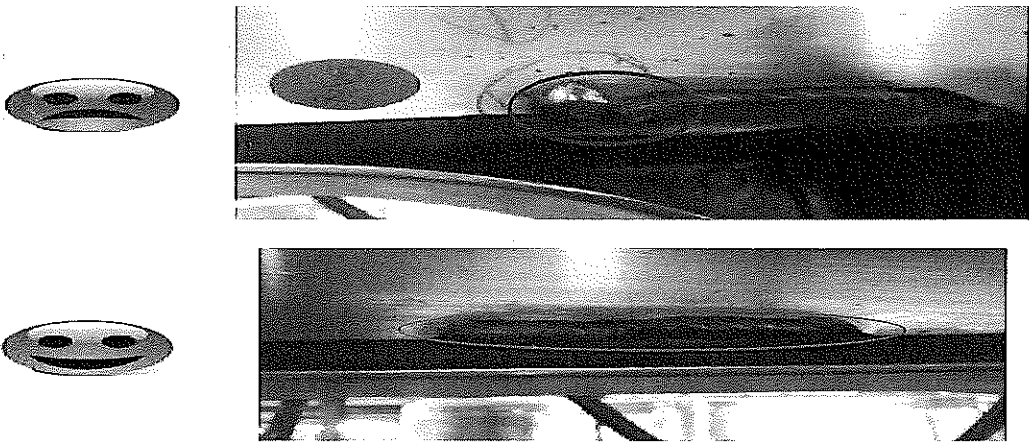
Operations

Quality



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

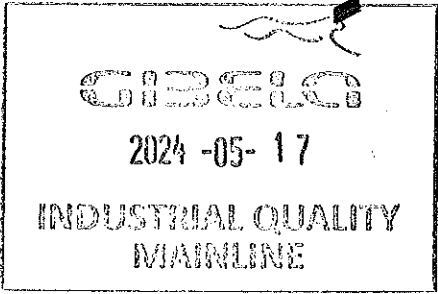
ANNEXURE A: Arc Welding Quality Acceptance Standard



Station: CB1220-004- U108 & U107



PART NO.	ITEM NO.	QTY	DESCRIPTION	MASS (KG)
DTR0020074203	5	6	EARTH STUD 6	0.035
AJ00001201843	4	6	ASSEMBLY SUPPORT	0.271
DTR0000343305	3	12	WELDING STUD ISO13918 PT - 1/2X20 - SST	0.007
AJ00001160424	2	12	ASSEMBLY SUPPORT	0.193
AJ00001164418	1	14	ASSEMBLY SUPPORT	0.522
AJ00001161003	101	6	CARBODYSHELL BRACKETS CARBODYSHELL M1/M3/M4 CAR(SIDE FRAME MODULE END - OFF)	12.132





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

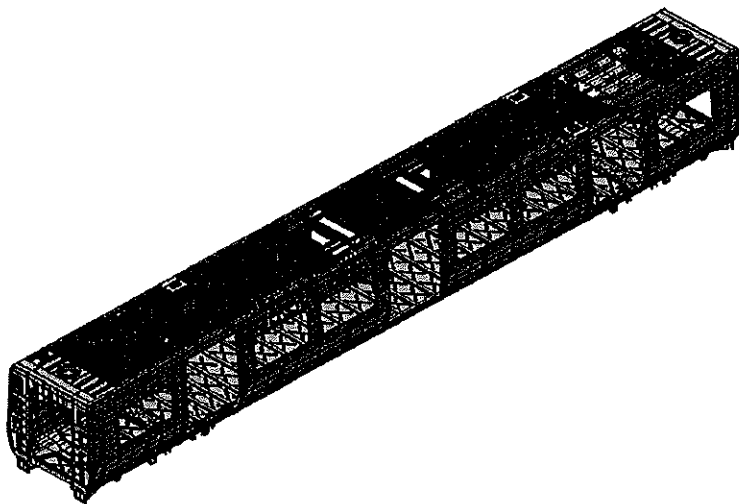
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE							WORK INSTRUCTION	SAFETY
				TC	M	M1	M2	M3	TC			
DTR3000152659	AAD0001278556	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB2230			X				PRA.CB2230.DT000002 25487.V20	YES	
DTR3000152673	AAD0001278566	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB2230		X				X	PRA.CB2230.DT000002 25487.V20	YES	
REV	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 Mbombhi	20/02/2022							
			CHECKER	Andani Muthelo								
			REVISED BY	Andani Muthelo								
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Collins Mbombhi	14/06/2022							
			CHECKER	Andani Muthelo								
			REVISED BY	Andani Muthelo								
27	26/07/2022	Threshold measurements addition	APPROVER	Collins Mbombhi	26/07/2022							
			CHECKER	Andani Muthelo								
			REVISED BY	Andani Muthelo								
28	17/10/2022	Added traceability of sealant application	APPROVER	Collins Mbombhi	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							
228	1704	mmlampe 483004	20/05/24	SI.CB2230.256.V29	12							



	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DT00000225487	Rev. 30	<b>Project: PRASA</b>  <b>SI.CB2230.256.V29</b>
		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					✓			✓		N/A 20/05/24	20/05/24

#### I.2 - Instruments Control


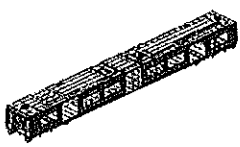
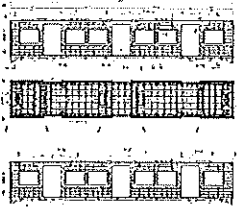
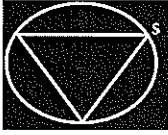
##### Monitoring and Measuring Instrument Control - Used for Special Process


Instruments	Serial number	Calibration or Verification Validation Date	OK		Signature/Date (Operations)	Signature/Date (Quality)
Tubular	32823-2	15/03/2025	✓		20/05/24	
measuring tape	4180194	25/04/24	✓		20/05/24	
combination square	4180072	25/04/25	✓		20/05/24	20/05/24

#### 1.3 Consumables

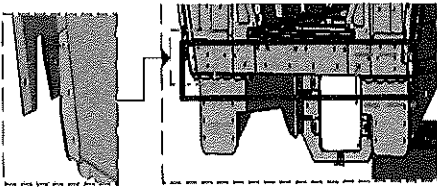
##### Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
308LSi	373779	MIG	✓		20/05/24	20/05/24

		<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DT00000225487		Rev. 30 Date 06/11/2023	Project: PRASA  <b>SI.CB2230.256.V29</b>		
<b>II - Self Inspection - Items to Check</b>							
<b>II.1 - Items to check</b>							
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	✓		MH dda 20/05/24	CH dda 20/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓		MH dda 20/05/24	
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		20/05/24 MH dda	20/05/2024
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		20/05/24 MH dda	CH dda 20/05/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		20/05/24 MH dda	CH dda 20/05/24
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.	✓		20/05/24 MH dda	20/05/2024
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:  <div style="display: flex; justify-content: space-between;"> <div> Temperature Min - Max (I)    Min-Max  Relative humidity Min - Max (I)    Min-Max </div> <div> 10°C - 35°C  25% - 80% </div> </div>	Sealant Batch No: <u>112440</u> Exp Date: <u>9 June 24</u> Actuals Temperature: <u>14°C</u> Humidity: <u>65%</u>	✓		20/05/24 MH dda	CH dda 20/05/24
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)  <b>Refer to Annexure B</b>	✓		20/05/24 MH dda	CH dda 20/05/24
09	N/A	Verification of sealant application in certain regions in the drawing.	AAD0001278566	✓		20/05/24 MH dda	CH dda 20/05/24

	CARBODYSHELL M1,M3,M4 ASSEMBLY DT00000225487	Rev. 30	Project: PRASA <b>SI.CB2230.256.V29</b>
		Date	
		06/11/2023	
<b>II - Self Inspection - Items to Check</b>			

AREA 1

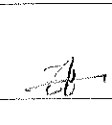


**END 2 SEALANT**

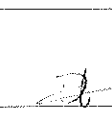
OPERATOR  
(Name & sign):

Monhlanhig 

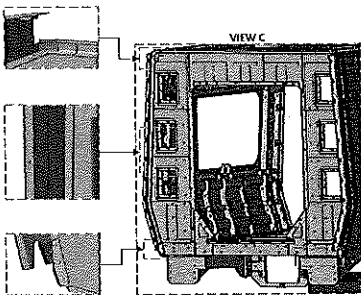
OPERATOR  
(Name & sign):

Leroy 

OPERATOR  
(Name & sign):

Leroy 

AREA 2 (VIEW C)



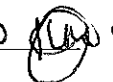
**Area D,E,F,G,H,I**


Operator (Name & sign):

LHS  
DEFGHI

RHS  
DEFGHI

Operator (Name & sign):

Lerato 


Lerato 


Operator (Name & sign):

DEFGHI

DEFGHI

Operator (Name & sign):

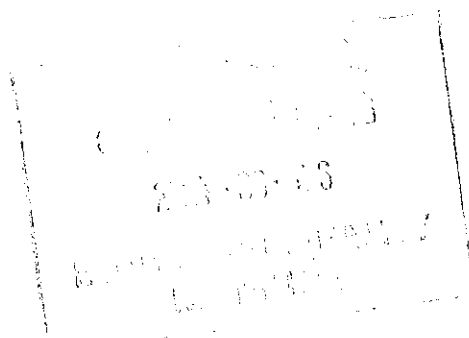
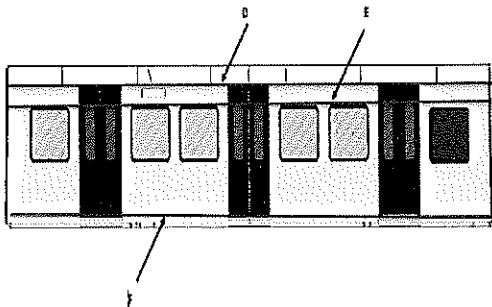
Buhle 

Buhle 

Operator (Name & sign):

Operator (Name & sign):

H





CARBODYSHELL M1,M3,M4 ASSEMBLY  
DT00000225487

Rev.  
30

Date

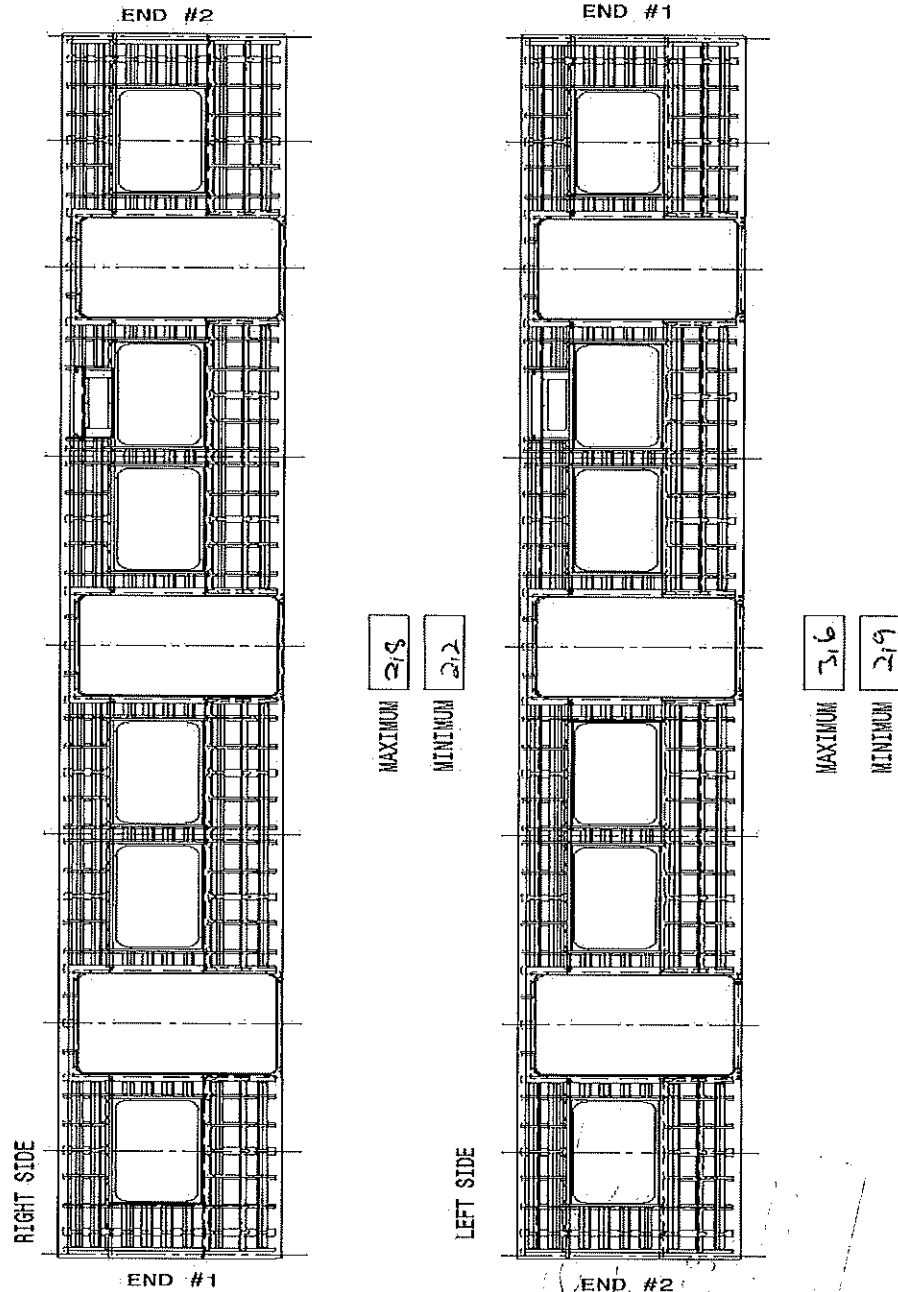
06/11/2023

Project: PRASA

SI.CB2230.256.V29

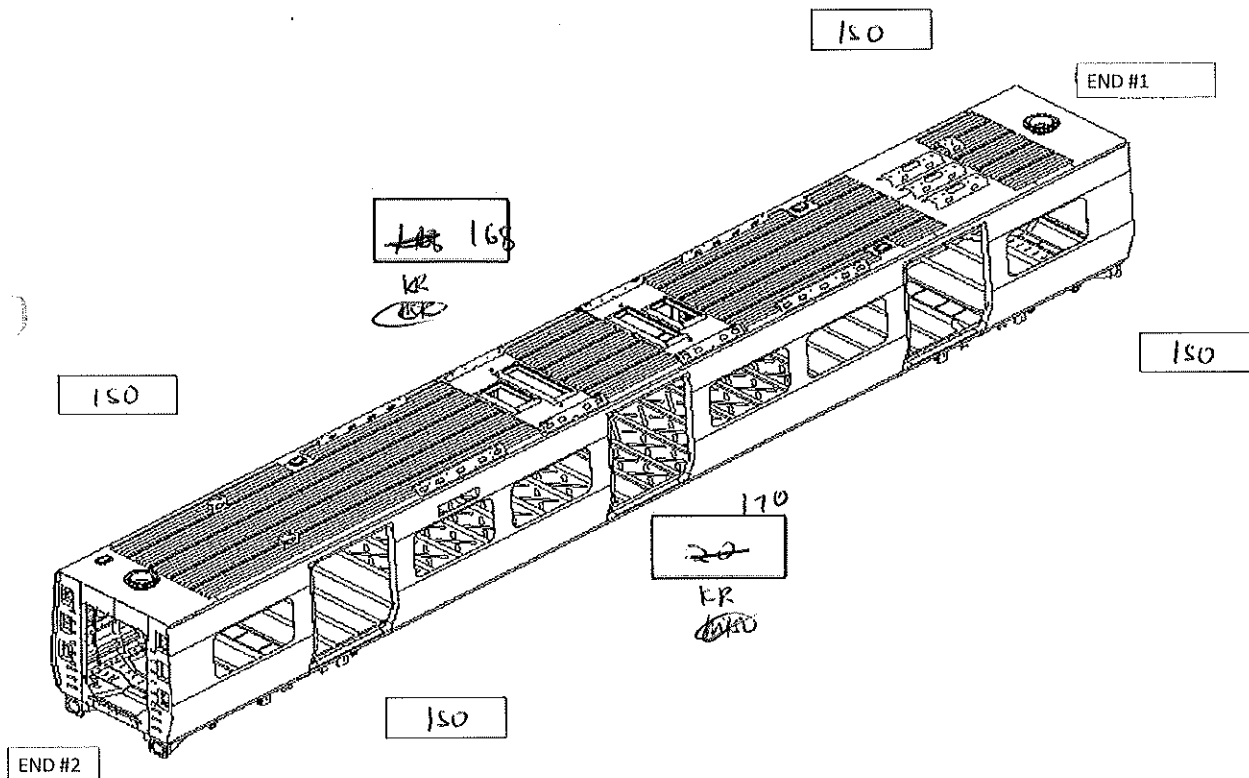
Specifications of Details for CBS measurement CB1230

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 Jlg Is 18mm(-0mm + 2mm)



MEASURED CAMBER VALUES

RIGHT	11	20
LEFT	1a1	18

2023-03-03  
QUALITY  
TIME



CARBODYSHELL M1,M3,M4 ASSEMBLY  
DT00000225487

Rev.  
30

Date

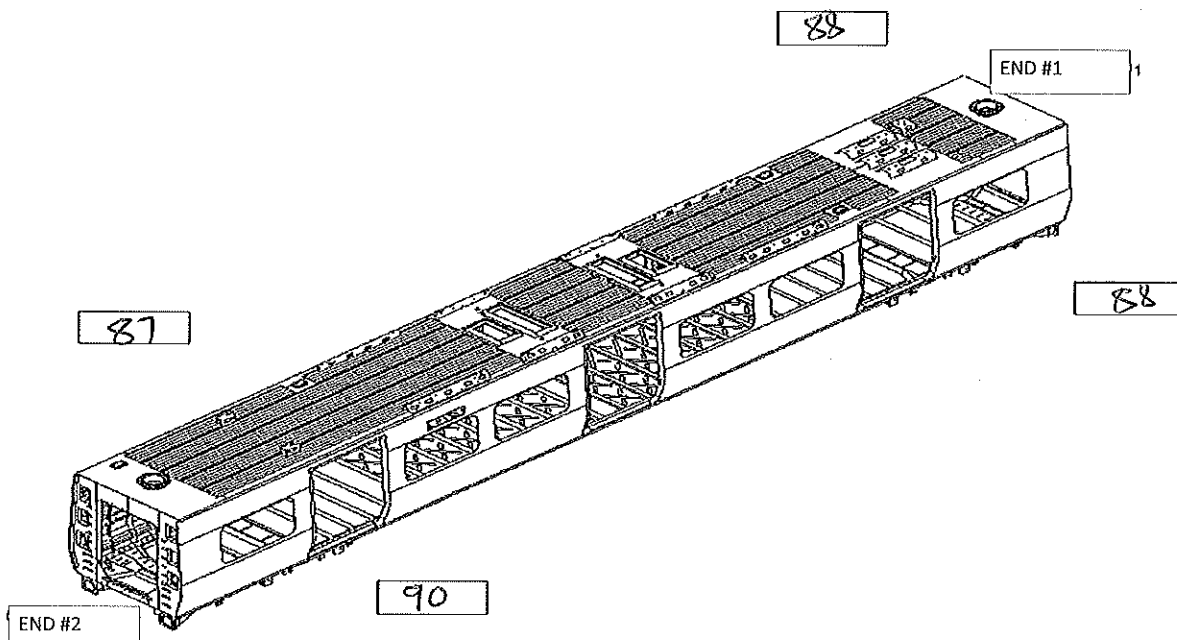
06/11/2023

Project: PRASA

SI.CB2230.256.V29

### Specifications of Details for CBS measurement CB1230

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

2

TWIST FOUND ON END 2

TRANVERSE

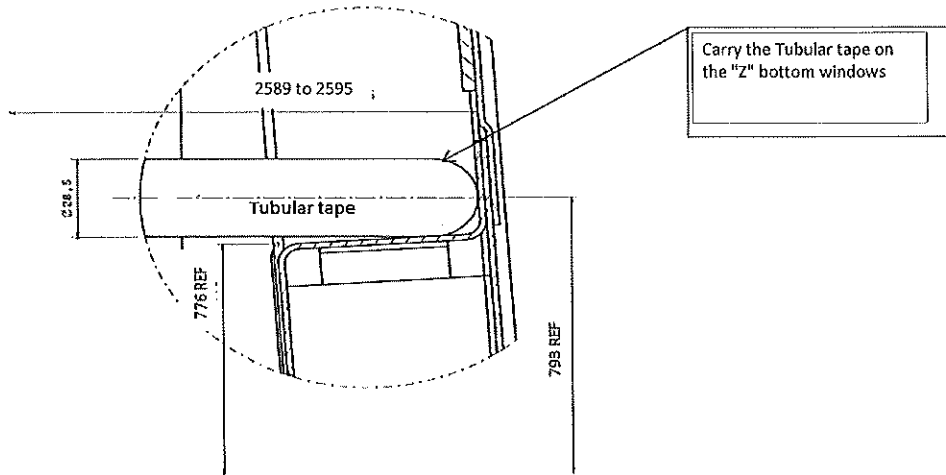
3

LONGITUDINAL

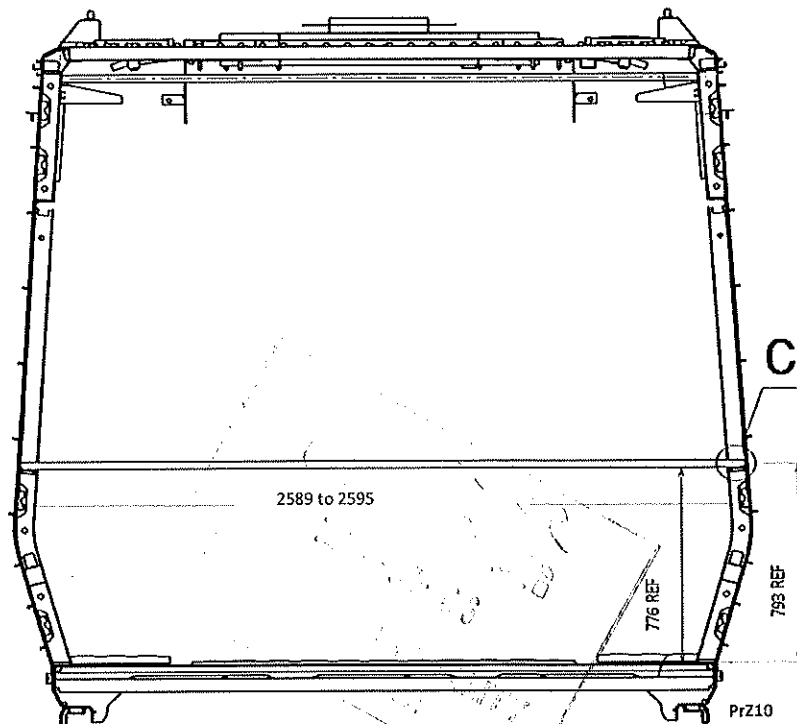
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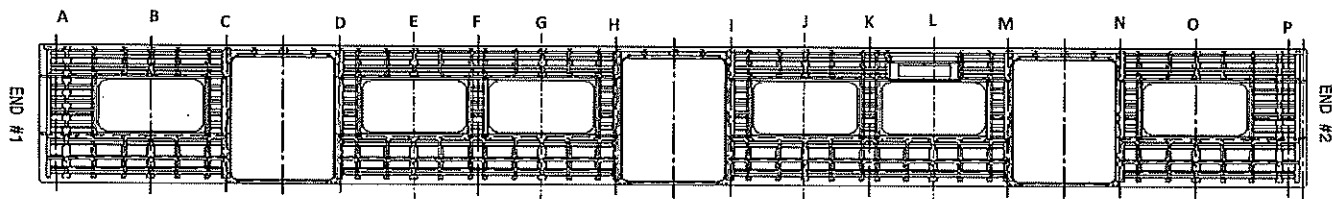
Specifications of Details for CBS measurement CB1230



Detail C

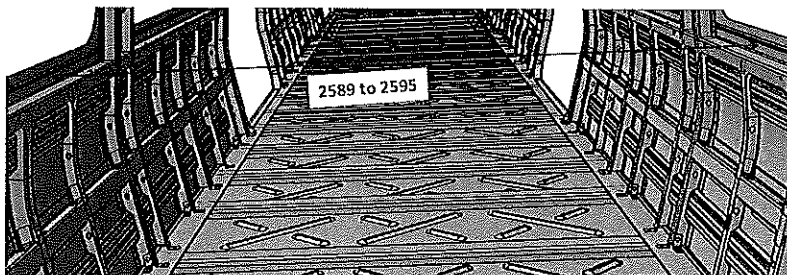


Specifications of Details for CBS measurement CB1230



2589 to 2595mm

A	2597
B	2593
C	2589
D	2589
E	2594
F	2592
G	2591
H	2589
I	2588
J	2594
K	2596
L	2594
M	2592
N	2595
O	2595
P	2596



Threshold verification

Nominal value :38

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

BOILER MAKER:

Butumeio


WELDER:

Emmanuel

Dye penetrant test

Dye-penetration test to be performed by quality personnel



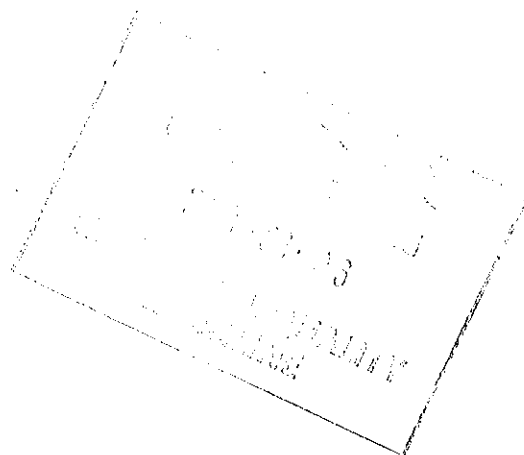
	CARBODYSHELL M1,M3,M4 ASSEMBLY DT00000225487	Rev. 30	Project: PRASA  <b>SI.CB2230.256.V29</b>
		Date 06/11/2023	


**Specifications of Details for CBS measurement**

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

**II.2 - Check List REX**

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



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

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT		GO	(If activities are not complete, the missing activities must not impact the next stage!)	20/05/2021	Mmatlapelo Operations	Mmatlapelo
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	20/05/2024	Richmond Industrial Quality	Richmond
			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

20/05/2024