

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		
<input type="checkbox"/>	DTR30225487/3	AAD0003278566	CARBODYSHELL M3,M4 ASSEMBLY	CB2210		X			<input checked="" type="checkbox"/>	PRA.CB2210.DTR30225487/3.V30	YES
<input type="checkbox"/>											

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	10/01/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	10/01/2018
			CHECKER	Nosizo Pindela	10/01/2018
			COMPILER	Thanyani Mathegu	10/01/2018
1	2018/05/18	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	2018/05/18
			CHECKER	Nosizo Pindela	2018/05/18
			REVISED BY	Ramokone Motama	2018/05/18
2	2018/07/04	Certain dimensional checks moved to CB1220 and CB1230	APPROVER	Itumeleng Modiba	2018/07/04
			CHECKER	Nosizo Pindela	2018/07/04
			REVISED BY	Ramokone Motama	2018/07/04
3	2018/12/12	Added dimensional check points to CB2210	APPROVER	Itumeleng Modiba	2018/12/12
			CHECKER	Nosizo Pindela	2018/12/12
			REVISED BY	Ramokone Motama	2018/12/12
5	22/01/2019	As per Baseline 10.2	APPROVER	Itumeleng Modiba	22/01/2019
			CHECKER	Nosizo Pindela	22/01/2019
			REVISED BY	Vanessa Ntuli	22/01/2019
6	13/03/2019	Added D1 and D2 on Self - Inspection	APPROVER	Itumeleng Modiba	13/03/2019
			CHECKER	Nosizo Pindela	13/03/2019
			REVISED BY	Nosizo Pindela	13/03/2019
10	21/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	21/08/2019
			CHECKER	Nosizo Pindela	21/08/2019
			REVISED BY	Nosizo Pindela	21/08/2019
15	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Mafela	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 Mafela	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	Mohlampe Amogelang	14/04/2023
			REVISED BY	Mohlampe Amogelang	14/04/2023
30	20/07/2023	New Baseline change 10.4	APPROVER	Ngobeni Tyson	28/07/2023
			CHECKER	Mohlampe Amogelang	28/07/2023
			REVISED BY	Mohlampe Amogelang	28/07/2023
31	07/11/2023	Added traceability for welding sections	APPROVER	Ngobeni Tyson	07/11/2023
			CHECKER	Mohlampe Amogelang	07/11/2023
			REVISED BY	Ntokozo Zwane	07/11/2023
TRAINSET	CAR	OPERATOR NAME& ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES
224	MO3	LAWRENCE 48269	24/04/24	SI.CB2210.254.V30	17

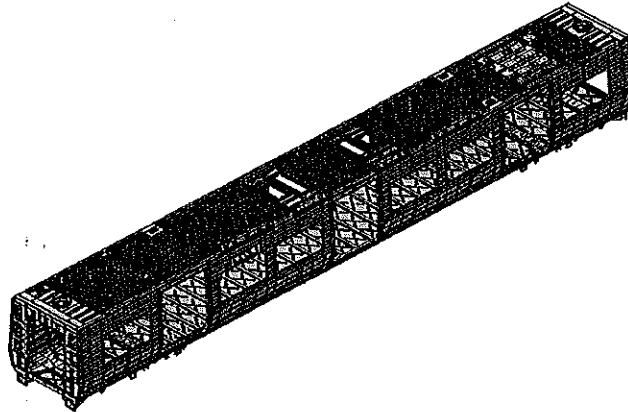
GIBELA  
2024-04-24  
INDUSTRIAL QUALITY  
MAINLINE

	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 31	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)
	D	E	M	S	L	P					
DTR30225487/3				✓			V30		✓	<i>[Signature]</i>	<i>[Signature]</i> 24/04/2024

### I.2 - Instruments Control

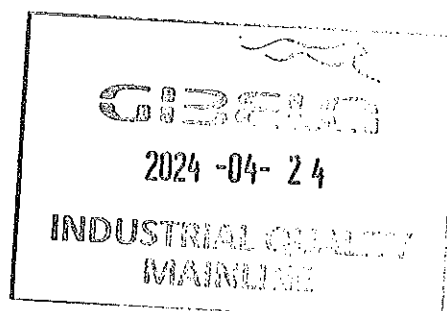
#### Monitoring and Measuring Instrument Control - Used for Special Process


Instruments	Serial number	Calibration or Verification Validation Date	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
LAZER TAPE	125425921	01/04/2024	✓	<i>[Signature]</i> 24/04/24	<i>[Signature]</i> 24/04/24
30 M TAPE	G11BTP0049	24/11/2023	✓	<i>[Signature]</i> 24/04/24	<i>[Signature]</i> 24/04/24
TUBULAR	32		✓	<i>[Signature]</i> 24/04/24	<i>[Signature]</i> 24/04/24

### 1.3 Consumables

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

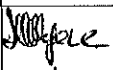



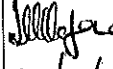


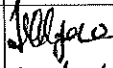

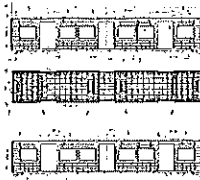
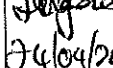


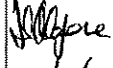

Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 LSI	314018-74097	MIG	✓	<i>[Signature]</i> 24/04/24	<i>[Signature]</i> 24/04/24
ER 308 L	299687-70322	TIG	✓	<i>[Signature]</i> 24/04/24	<i>[Signature]</i> 24/04/24
ER 309 LSI	316283-73957	MIG	✓	<i>[Signature]</i> 24/04/24	<i>[Signature]</i> 24/04/24

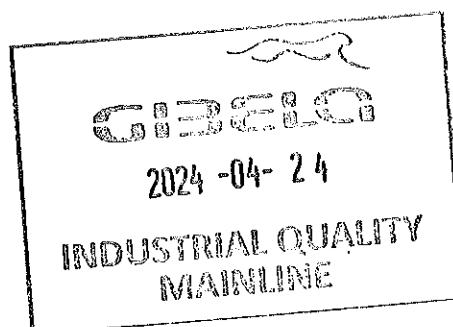



	CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3	Rev. 31	Project: PRASA SI.CB2210.254.V30
		Date 07/11/2023	

## II - Self Inspection - Items to Check

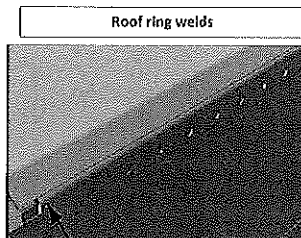
### II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Not OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓		 24/04/24	 24/04/2024
02	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 24/04/24	 24/04/2024
03	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 24/04/24	 24/04/2024
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 24/04/24	 24/04/2024
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓		 24/04/24	 24/04/2024
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.	✓		 24/04/24	 24/04/2024



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**Welding Traceability**

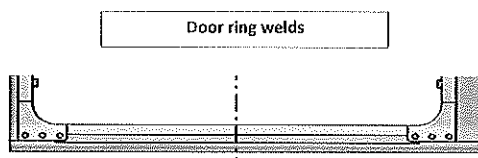


<div style="text-align: right; margin-bottom: 5px;">LHS</div> Boiler maker (Name & Sign): <u>Tebago [Signature]</u>	<div style="text-align: left; margin-bottom: 5px;">RHS</div> Boiler maker (Name & Sign): <u>Tim [Signature]</u>
<div style="text-align: right; margin-bottom: 5px;">LHS</div> Welder (Name & Sign): <u>Bob [Signature]</u>	<div style="text-align: left; margin-bottom: 5px;">RHS</div> Welder (Name & Sign): <u>Kerou K. [Signature]</u>

END 1

<div style="text-align: right; margin-bottom: 5px;">LHS</div> Boiler maker (Name & Sign): <u>Tebago [Signature]</u>	<div style="text-align: left; margin-bottom: 5px;">RHS</div> Boiler maker (Name & Sign): <u>Tim [Signature]</u>
<div style="text-align: right; margin-bottom: 5px;">LHS</div> Welder (Name & Sign): <u>Bob [Signature]</u>	<div style="text-align: left; margin-bottom: 5px;">RHS</div> Welder (Name & Sign): <u>Kerou K. [Signature]</u>

END 2



LHS

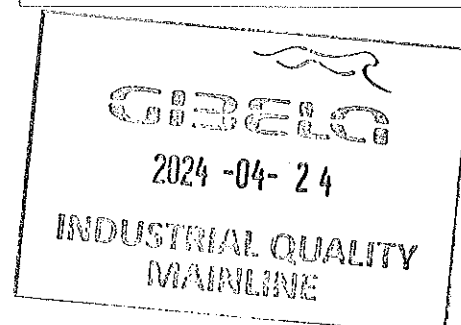
Boiler maker (Name & Sign): Timero [Signature]


Welder (Name & Sign): Giff [Signature]

RHS

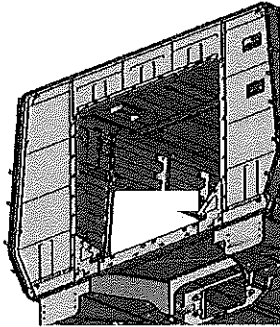
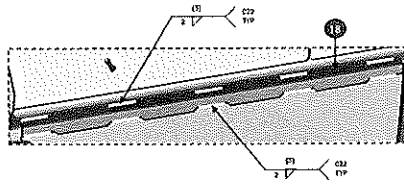
Boiler maker (Name & Sign): Winga [Signature]

Welder (Name & Sign): Giff [Signature]

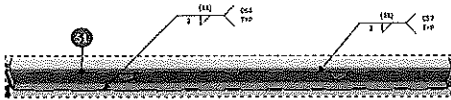


	CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3	Rev. 31	Project: PRA5A SI.CB2210.254.V30
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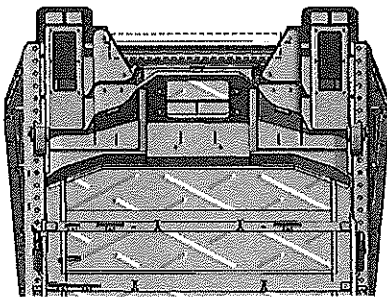
EUR Reinforcement Plates



END 1  
Boiler maker (Name & Sign): SEAN B  
Welder (Name & Sign): ROBBIE BASS

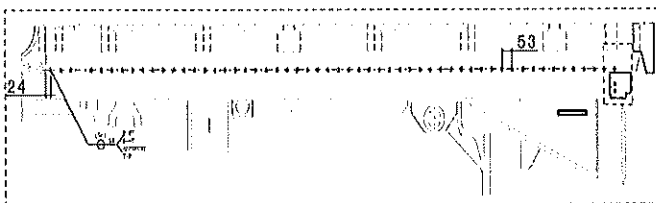


END 2



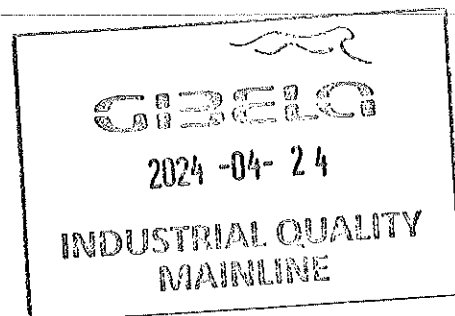
Underneath the CAR

END 2  
Boiler maker (Name & Sign): JUSICE  
Welder (Name & Sign): KEITH K. MCD



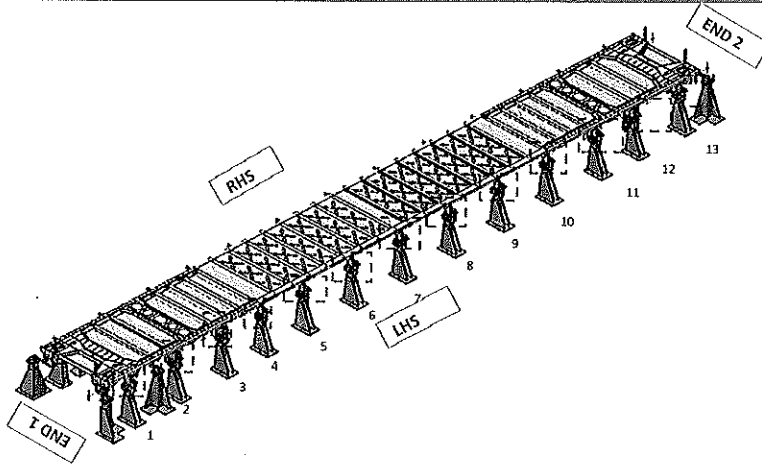
FEDOLI

Operator: SIPHOKAZI



	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 31	Project: PRASA SI.CB2210.254.V30
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Specifications of Details for CBS measurement

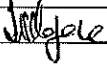


Measure gap between jig pillar / chair and underframe = 0mm. No gap.

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

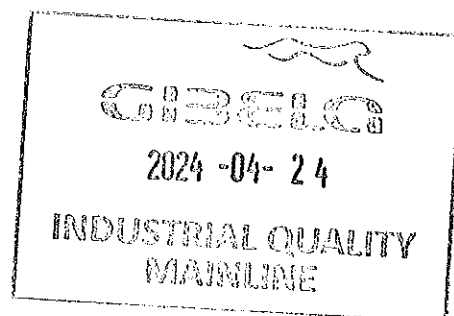
Signature Operations:  Date: 24/04/24

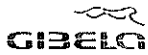
After Welding.

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

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

Signature Industrial Quality:  Date: 24/04/24





CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3

Rev.

31

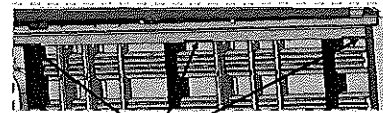
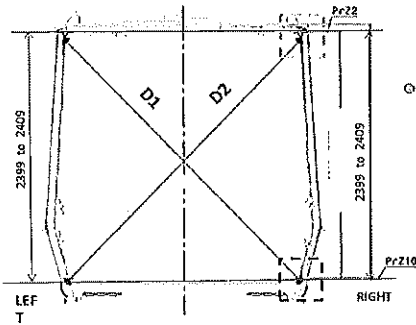
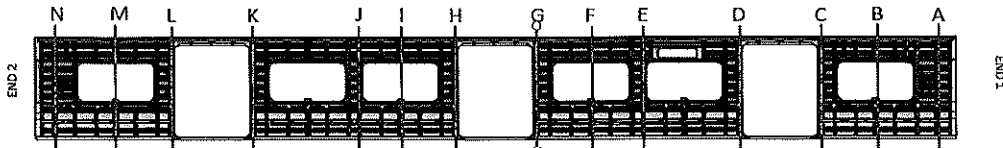
Project: PRASA

SI.CB2210.254.V30

Date

07/11/2023

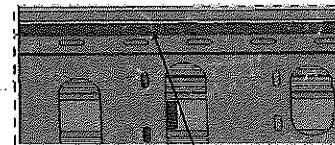
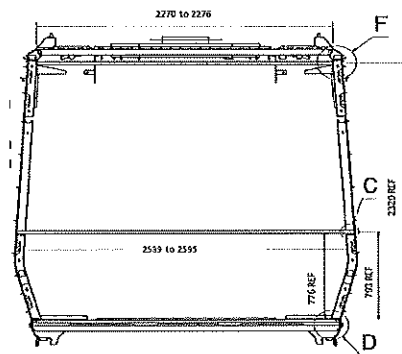
### Specifications of Details for CBS measurement



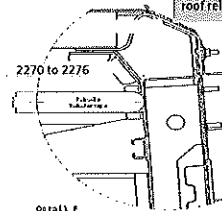
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.



Reinforcement area measurement positions on roof reinforcement area.




Detail F

Don't consider the reinforcement

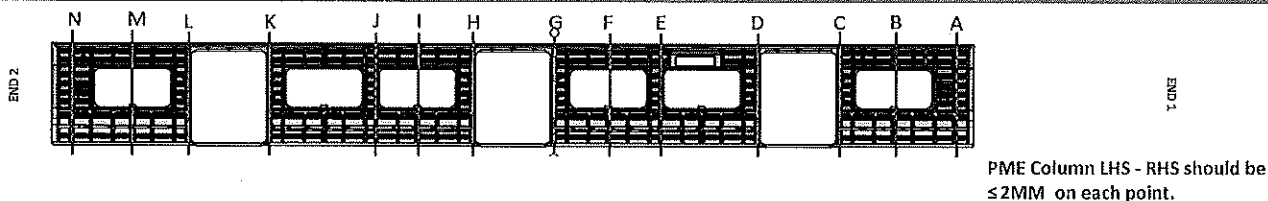


2024 -04- 24

INDUSTRIAL QUALITY  
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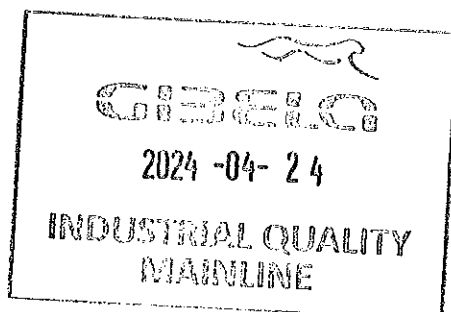
	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 31	Project: PRASA SI.CB2210.254.V30
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Specifications of Details for CBS measurement



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	3267	3267	0	2405	2406	1
B	3267	3267	0	2404	2404	0
C	3270	3263	1	2405	2403	2
D	3266	3264	2	2404	2404	0
E	3268	3267	1	2405	2405	0
F	3267	3267	0	2404	2406	2
G	3263	3264	1	2406	2404	2
H	3264	3264	0	2405	2406	1
I	3266	3265	1	2406	2404	2
J	3267	3267	0	2404	2404	0
K	3264	3264	0	2405	2404	1
L	3261	3266	1	2404	2404	0
M	3268	3267	1	2405	2406	1
N	3266	3266	0	2407	2406	1







CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3

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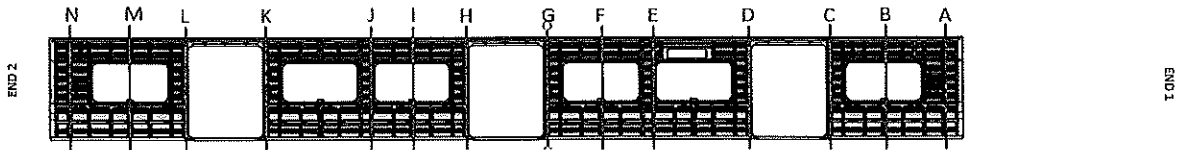
Date

07/11/2023

Project: PRA5A

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	3297	3297	2485	2406	2405	1
B	3267	3267	0	2404	2404	0
C	3294	3293	1	2405	2403	2
D	3296	3294	2	2404	2404	0
E	3268	3267	1	2405	2405	0
F	3267	3267	0	2404	2406	2
G	3293	3294	1	2406	2404	2
H	3294	3294	0	2405	2406	1
I	3266	3265	1	2406	2404	2
J	3267	3267	0	2404	2404	0
K	3294	3294	0	2405	2404	1
L	3291	3290	1	2404	2404	0
M	3268	3267	1	2405	2406	1
N	3296	3296	0	2407	2406	1

GIBELQ

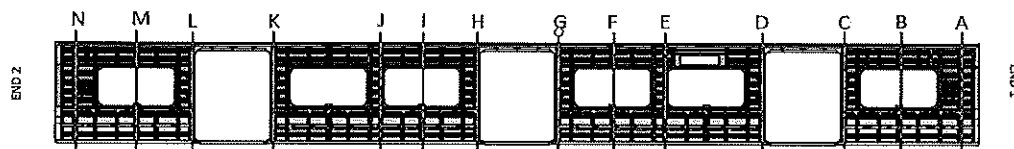
2024-04-24

INDUSTRIAL QUALITY  
MAINLINE

	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 31	Project: PRASA SI.CB2210.254.V30
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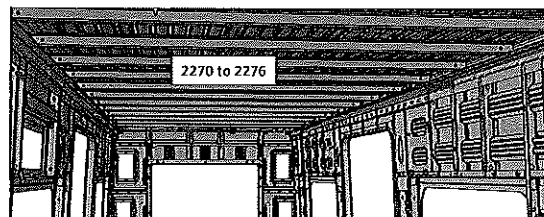
### CBS measurement

#### BEFORE WELDING

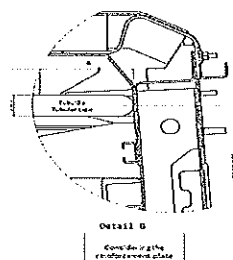
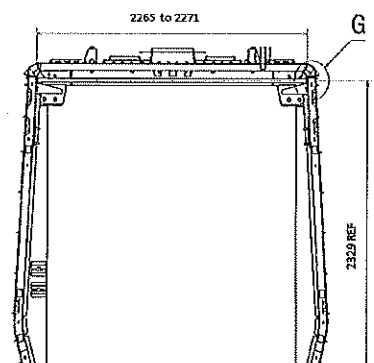


2270 to 2276

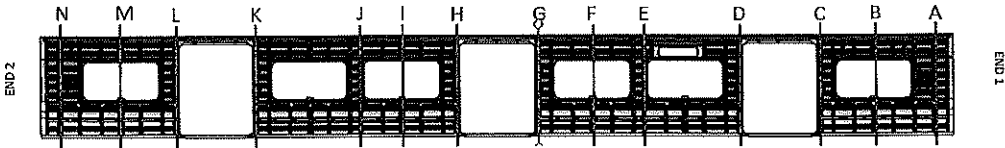
A	2213
B	2271
C	2272
D	2274
E	2290
F	2274
G	2273
H	2273
I	2274
J	2271
K	2272
L	2273
M	2270
N	2275



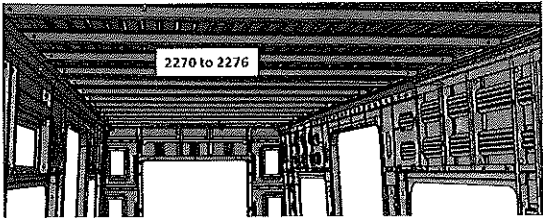
Do not consider reinforcement ( Take measurements top area of zee profile



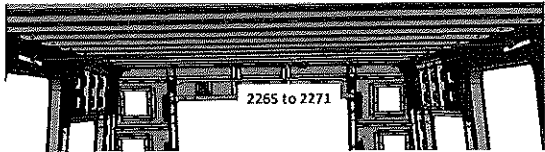
AFTER WELDING



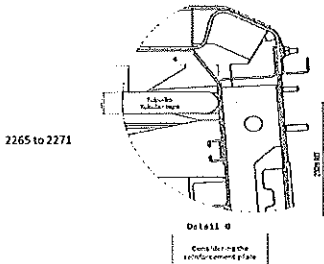
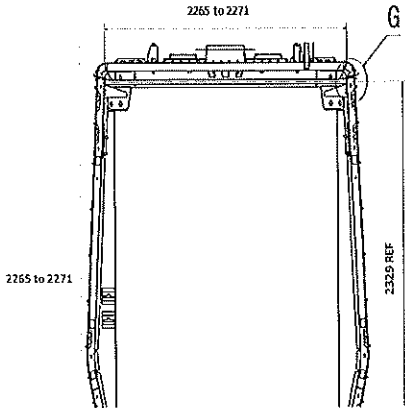
	2265 to 2271	2270 to 2276
A	2269	
B		2271
C	2268	
D	2270	
E		2270
F		2274
G	2269	
H	2269	
I		2274
J		2271
K	2268	
L	2266	
M		2270
N	2271	



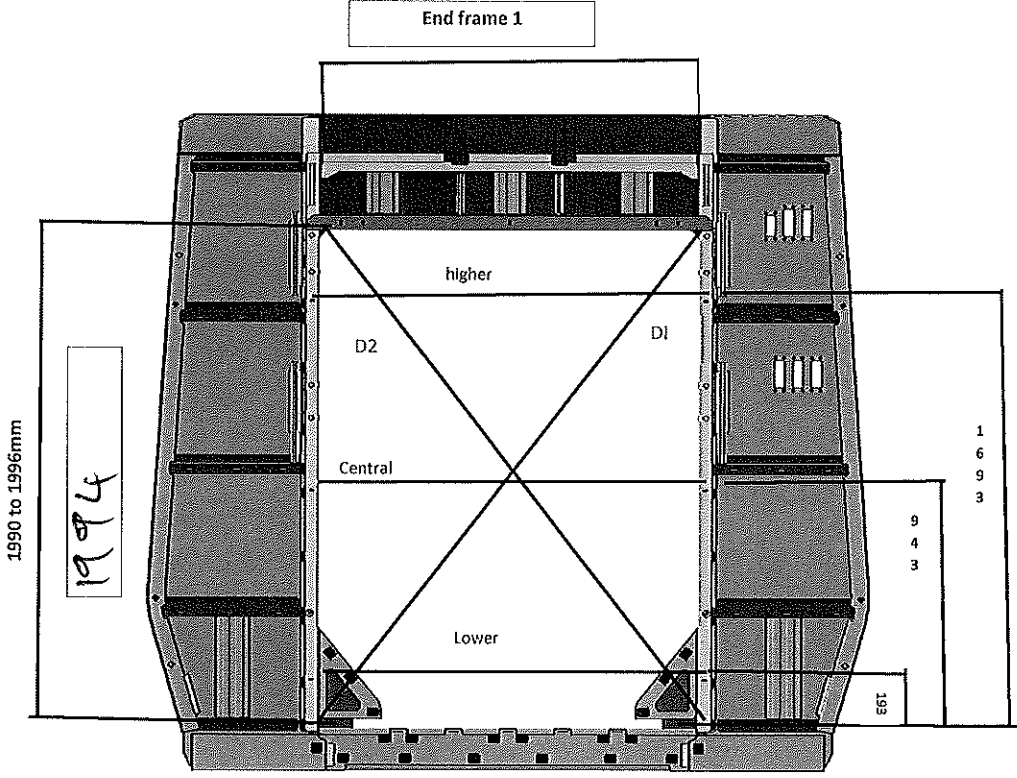
Do not consider reinforcement ( Take measurements top area of zee profile



Take measurement close to radius ( considering reinforcement)



Specifications of Details for CBS measurement



1380 to 1382 mm

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

Higher Dimension

1380

D1

2414

Central Dimension

1381

D2

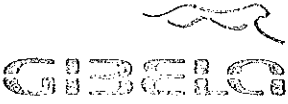
2415

Lower Dimension

1380

D1-D2

1

  
2024-04-24  
INDUSTRIAL QUALITY  
MAINLINE



CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3

Rev.

31

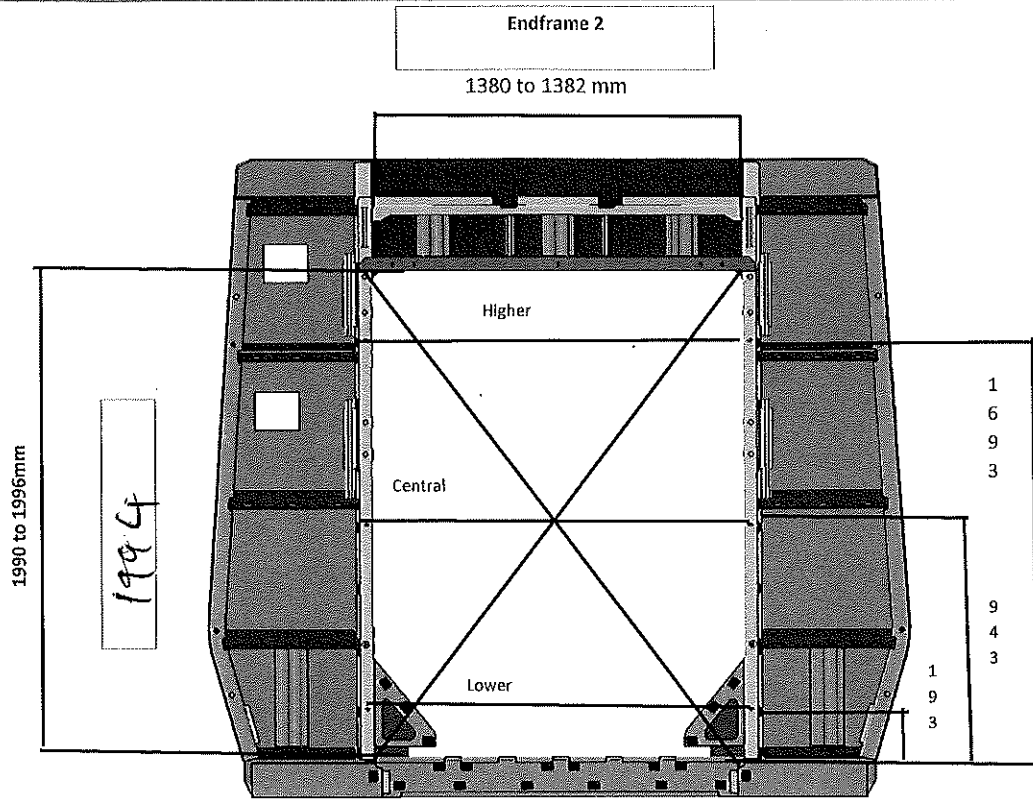
Date

07/11/2023

Project: PRASA

SI.CB2210.254.V30

Specifications of Details for CBS measurement



1380 to 1382 mm

DIAGONAL DIFFERENCE  $D1-D2 \leq 3mm$

Higher Dimension

1380

D1

24.5

Central Dimension

1381

D2

24.5

Lower Dimension

1380


D1-D2

0

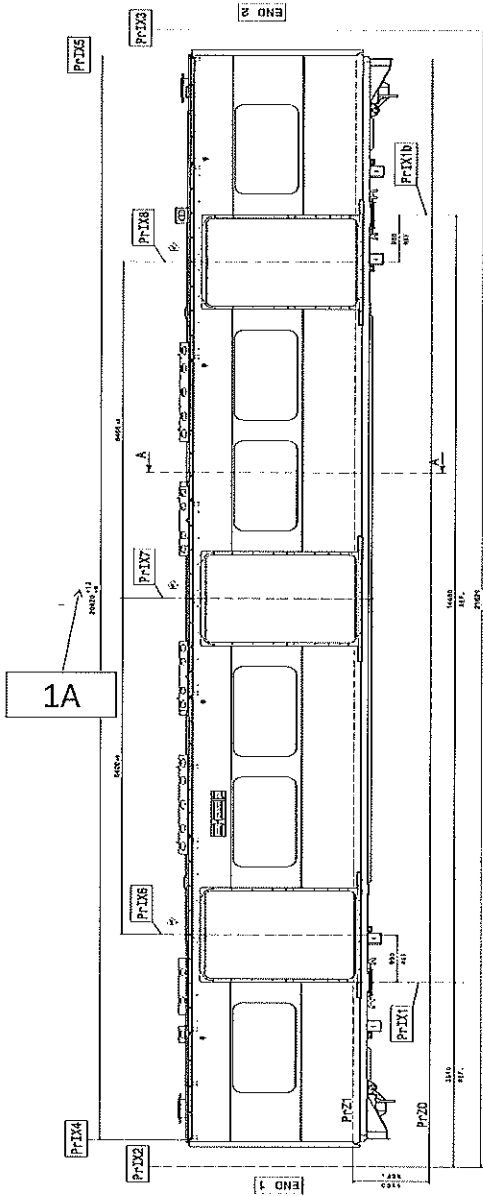
GIBELQ

2024-04-24

INDUSTRIAL QUALITY  
MAINLINE

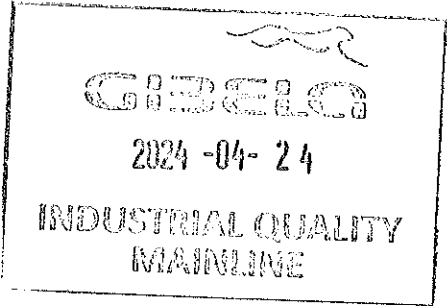
	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 31	Project: PRASA
		Date 07/11/2023	SI.CB2210.254.V30

Specifications of Details for GBS measurement



LEFT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20627

RIGHT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20627

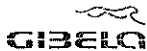
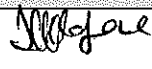



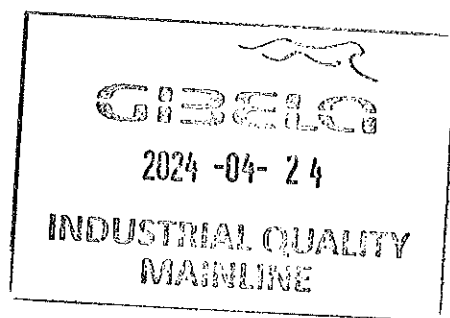
Dye penetrant test

Dye-penetration test to be performed by quality personnel

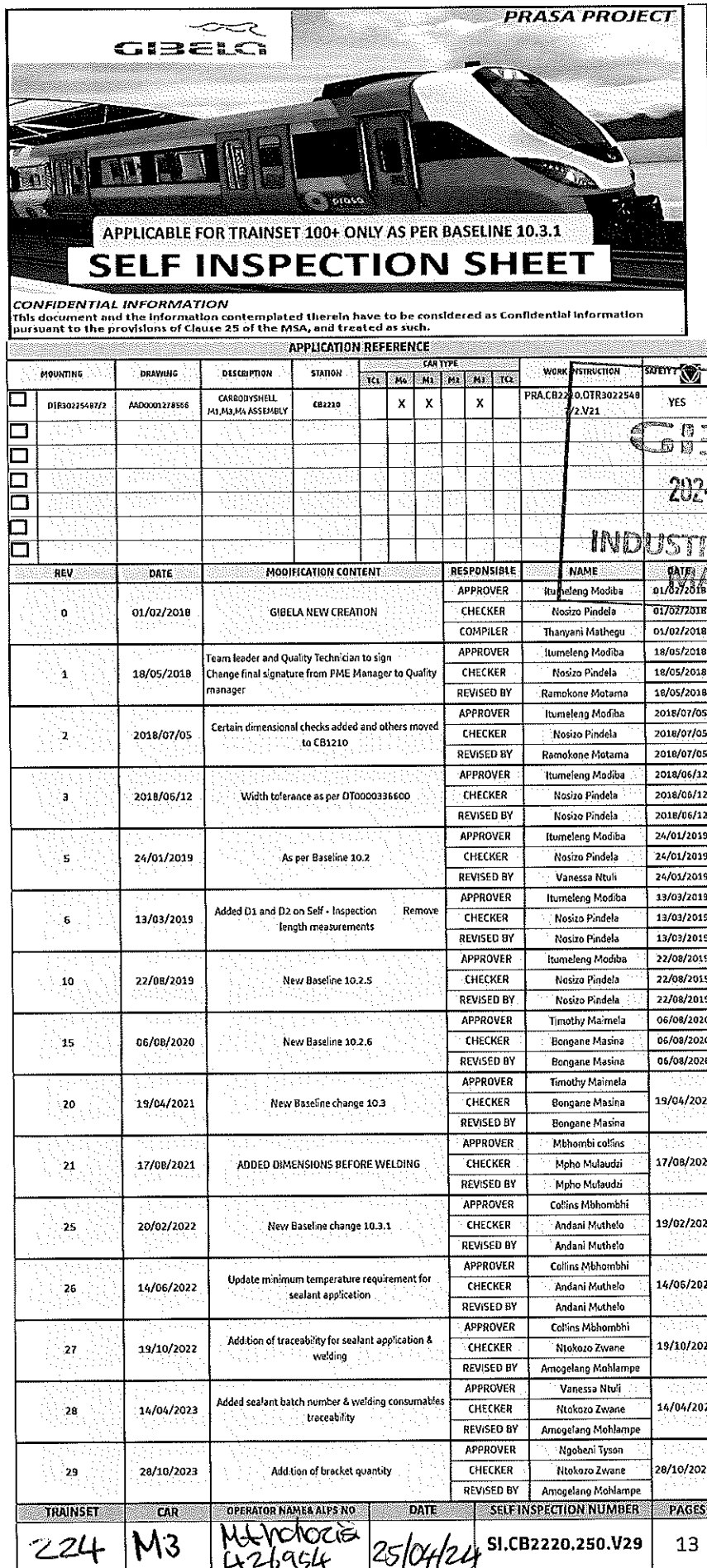




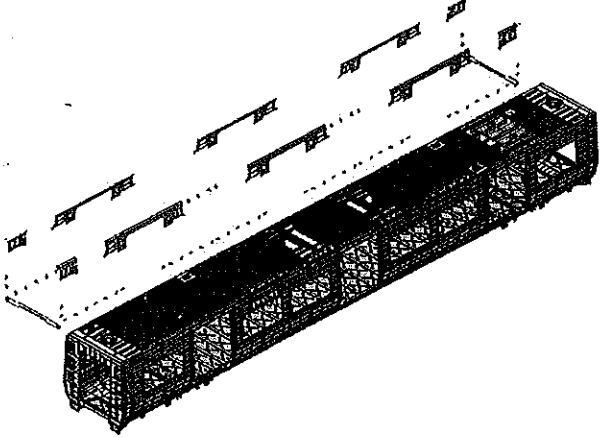


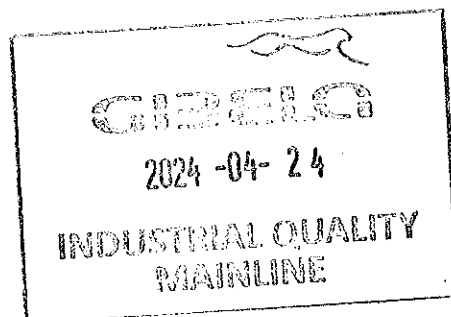
		CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3		Rev. 31	Project: PRASA	
				Date 07/11/2023	SI.CB2210.254.V30	
<b>Self Inspection - Final Result</b>						
				DATE	NAME	SIGNATURE
HOLD POINT		GO	(if activities are not complete, the missing activities must not impact the next stage)	24/04/2024	Lawrence	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	24/04/2024	Amo	
		NO GO	There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)			
			There are non-conformities impact the quality of the product and there is no corrective action defined yet)			
In case of "NO GO", describe blocking problems						
In case of "NO GO", the operations manager must define below action pian to ensure "GO":						
Item	Description		Responsible	Due date	Status	
<div style="display: flex; justify-content: space-between;"> <span>Operations</span> <span>Quality</span> </div>						

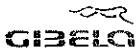






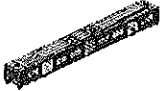


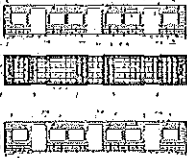














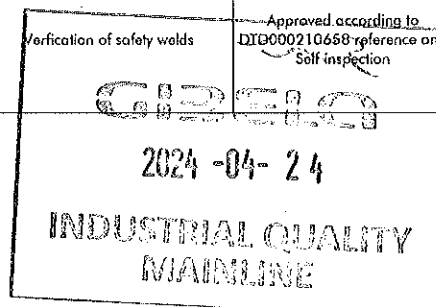



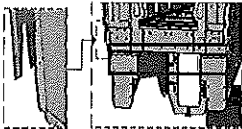


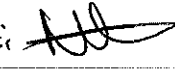


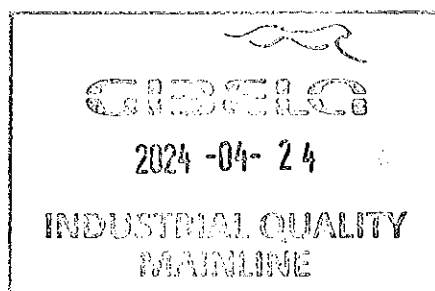
	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DTR30225487/2	Rev.	Project: PRASA															
		29																
		Date	SI.CB2220.250.V29															
28/10/2023																		
Car: M1,M3&M4	NCR:	Work station:	CB2220															
 Safety Related																		
																		
<b>I - Documentation and Instruments Control</b>																		
<b>I.1 - Documentation Control</b>																		
	<table border="1"> <tr> <th>Type of car</th> <th>121</th> <th>122</th> <th>123</th> <th>124</th> <th>125</th> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Type of car	121	122	123	124	125							Revision	Observation	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
Type of car	121	122	123	124	125													
DTR30225487/2		29	25/04/24	✓	N/A	25/04/24	25/04/24											
<b>I.2 - Instruments Control</b>																		
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	328222	15/03/2024	✓	25/04/24	25/04/24													
Tape measure	GTB10361	2025/04/22	✓	25/04/24	25/04/24													
<b>1.3 Consumables</b>																		
Welding Consumable Control - Used for Special Process																		
Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)													
308	373779	308	✓	25/04/24	25/04/24													




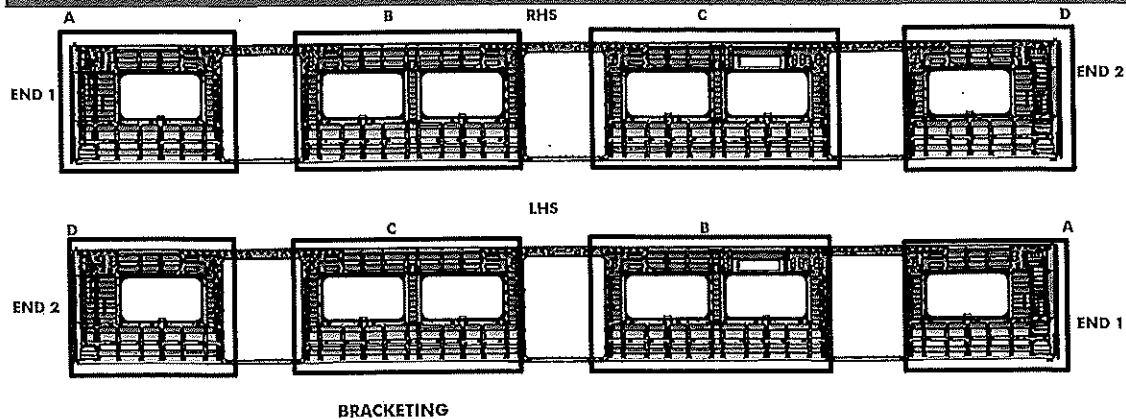
	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DTR30226487/2	Rev.	Project: PRASA <b>SI.CB2220.250.V29</b>			
		29				
		Date				
		28/10/2023				
<b>II - Self Inspection - Items to Check</b>						
<b>II.1 - Items to check</b>						
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Signature/Date (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	✓	 25/04/24	 25/04/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210575	✓	 25/04/24	 25/04/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 25/04/24	 25/04/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 25/04/24	 25/04/24
05		Functional dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓	 25/04/24	 25/04/24
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.	✓	 25/04/24	 25/04/24
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) Min - Max 10°C - 35°C Relative humidity Min - Max (%) 25% - 80%	Sealant Batch No: 2008934P Exp Date: 05/05/24 Actuals Temperature: 18°C Humidity: 40%	✓	 25/04/24	 25/04/24
08	NA	Verification of sealant application in certain regions in the drawing.	AAD0001278566	✓	 25/04/24	 25/04/24
09		Verification of safety welds	Approved according to DTD000210658 reference and Self inspection	✓	 25/04/24	 25/04/24



	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			
SEALANT APPLICATION			
		AREA 1 & 2 END 1 Operator (Name & sign): Mthokozi: 	
		Operator (Name & sign): Mthokozi: 	




	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			

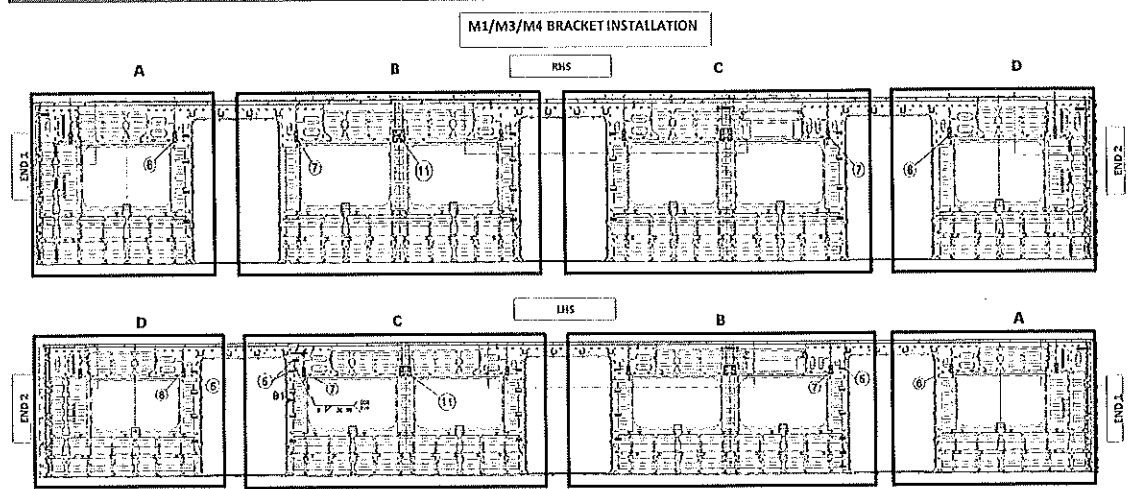


C-RAILS:		Operator: <u>Prasalla</u> <u>[Signature]</u>	
		Operator: _____	
DOOR MECHANISMS:		Operator: <u>Mashukey</u> <u>[Signature]</u>	
		Operator: _____	
TAPPING PADS		Operator: <u>Prasalla</u> <u>[Signature]</u>	
		Operator: _____	
INSTALLATION & VERIFICATION			
SEAT & LUGGAGE BRACKETS:		Operator: <u>mthoko</u> <u>[Signature]</u>	
		Operator: _____	
SEAT BRACKETS VERIFICATION:		Operator: <u>mtho</u> <u>[Signature]</u>	
		Operator: _____	
WELDING			
AREA	LHS	RHS	
A (Seat brackets)	: Operator (Name&sign): <u>[Signature]</u>	<u>[Signature]</u>	
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>[Signature]</u>		
B (Seat brackets)	: Operator (Name&sign): _____	<u>[Signature]</u>	
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): _____	<u>[Signature]</u>	
C (Seat brackets)	: Operator (Name&sign): <u>Mmatsheko</u> <u>[Signature]</u>	<u>THULANI</u> <u>[Signature]</u>	
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>Mmatsheko</u> <u>[Signature]</u>	<u>[Signature]</u>	
D (Seat brackets)	Operator (Name&sign): <u>Sibiyi</u> <u>[Signature]</u>	<u>Sibiyi</u> <u>[Signature]</u>	
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>Sibiyi</u> <u>[Signature]</u>	<u>THULANI</u> <u>[Signature]</u>	
ENDS			
END 1 TAPPING PADS WELDING: Operator (Name&sign): _____			
END 2 TAPPING PADS WELDING: Operator (Name&sign): <u>Sibiyi</u> <u>[Signature]</u>			





	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DTR30226487/2	Rev.	Project: PRASA
		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	8		
	D	6		
SEAT BRACKETS	A	13		
	B	21		
	C	21		
	D	13		
EARTH BUSH	A	3		
	B	5		
	C	4		
	D	3		


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

VERIFICATION BY: 

**LHS**

	SECTION	QUANTITY	OK	NOK
C-RAILS	A	2		
	B	6		
	C	11		
	D	8		
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: 

**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

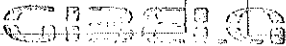
VERIFICATION BY: \_\_\_\_\_

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

  
**2024-04-24**  
**INDUSTRIAL QUALITY**  
**MAINLINE**

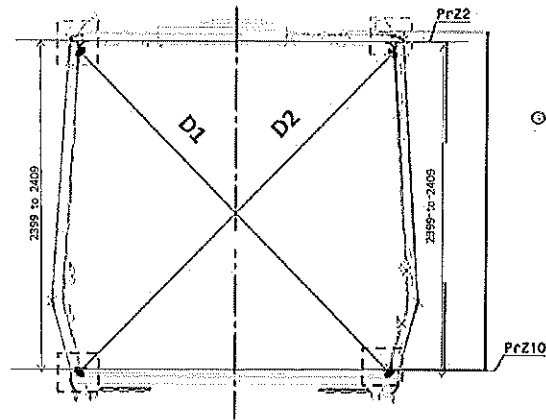


CARBODYSHELL M1,M3,M4 ASSEMBLY  
DTR30226487/2

Rev.  
29  
Date  
28/10/2023

Project: PRASA  
SI.CB2220.250.V29

Specifications of Details for CBS measurement



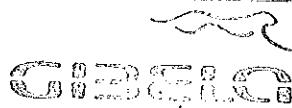
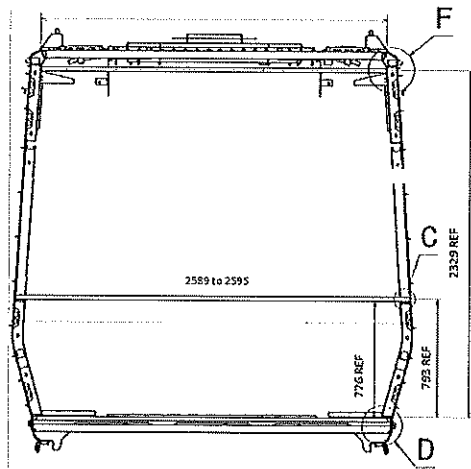
Measurement positions on roof rail and sidewall omega corner.



Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.




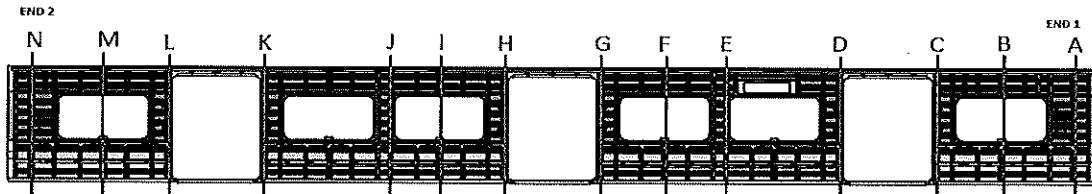
2024-04-24

INDUSTRIAL QUALITY  
MAINLINE



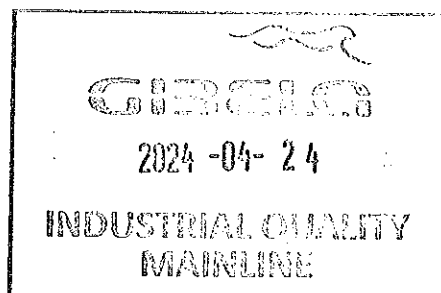



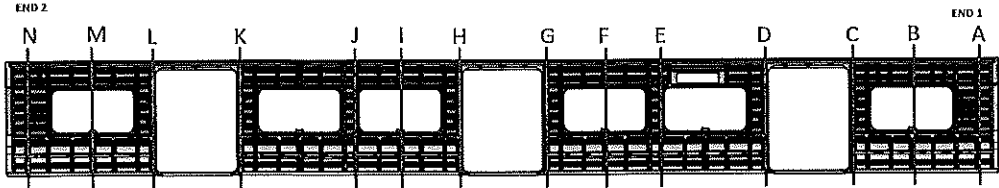
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA  SI.CB2220.250.V29
		29	
		Date	
		28/10/2023	
CBS measurement			



BEFORE WELDING

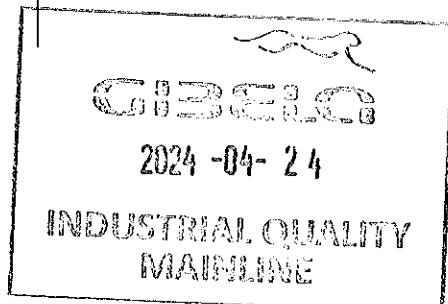
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3296	3295	1	-
B	3263	3263	0	-
C	3294	3294	0	-
D	3293	3296	3	-
E	3263	3266	3	-
F	3264	3267	3	-
G	3295	3293	2	-
H	3293	3296	3	-
I	3264	3264	0	-
J	3264	3267	3	-
K	3298	3297	1	-
L	3299	3295	4	-
M	3264	3265	1	-
N	3295	3299	4	-



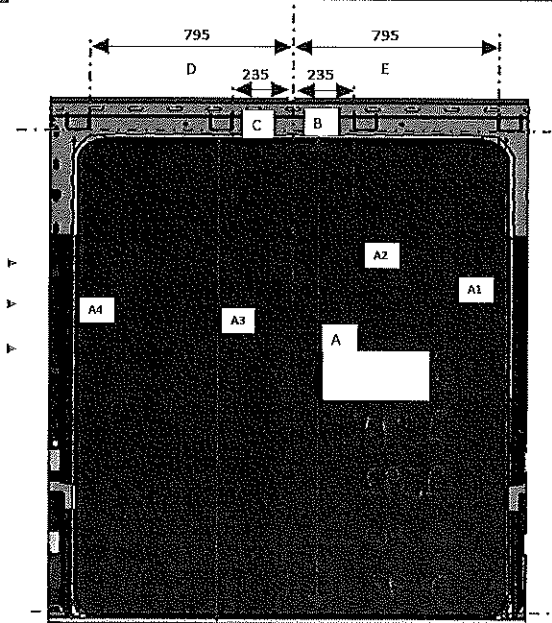
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA  SI.CB2220.250.V29
		29	
		Date	
		28/10/2023	
CBS measurement			
			

AFTER WELDING

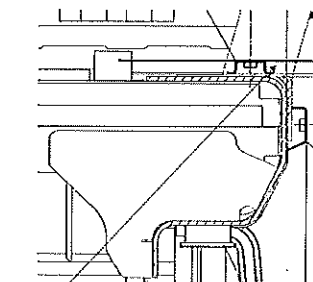
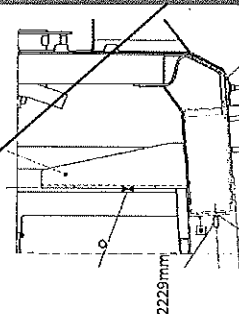
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3295	3297	2	2593
B	3265	3261	4	2590
C	3295	3294	1	2592
D	3296	3294	2	2590
E	3265	3264	1	2593
F	3268	3265	3	2590
G	3294	3293	1	2590
H	3297	3294	3	2591
I	3265	3265	0	2590
J	3266	3264	2	2594
K	3299	3297	2	2590
L	3295	3296	3	2590
M	3266	3265	1	2590
N	3296	3299	3	2594



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	2234
A2	2230 to 2232	2232
A3	2230 to 2232	2232
A4	2230 to 2232	2233
B	234 to 236	235
C	234 to 236	234
D	794 to 796	796
E	794 to 796	795

DOOR 2 - LHS

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

DOOR 1 - RHS

	VALUE	ACTUAL
A1	2230 to 2232	2233
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	2231
A4	2230 to 2232	2232
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	795

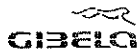
DOOR 3 - RHS

	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	234
D	794 to 796	795
E	794 to 796	796

**GIBEL**

2024-04-24

INDUSTRIAL QUALITY  
MAINLINE

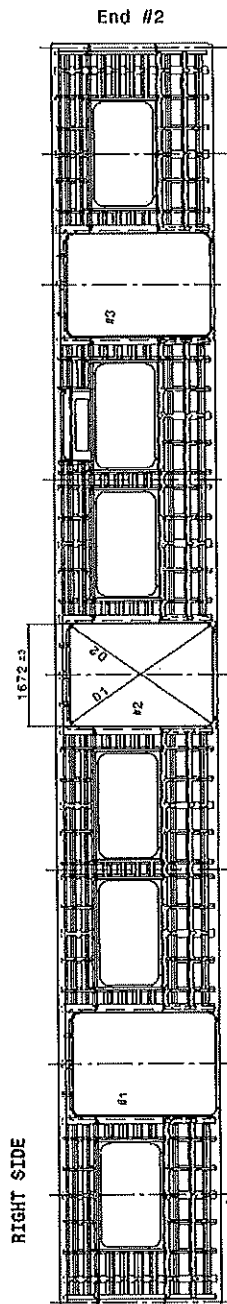


CARBODYSHELL M1,M3,M4 ASSEMBLY  
DTR30225487/2

Rev.  
29  
Date  
28/10/2023

Project: PRA5A  
SI.CB2220.250.V29

Specifications of Details for CBS measurement CB1220



RIGHT SIDE

End #1

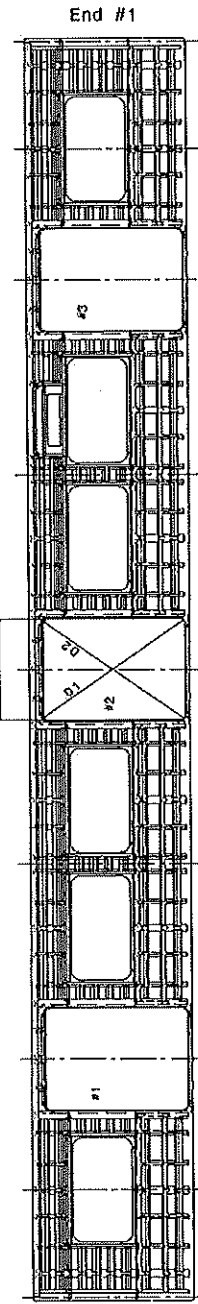
Doors diagonal D1-D2 maximum difference  $\leq 4\text{mm}$

	#1	#2	#3
D1	2148	2150	2149
D2	2149	2147	2148
D1-D2	1	3	1

Doors length - 1672.53mm

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

LEFT SIDE



End #2

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

	#1	#2	#3
D1	2149	2150	2151
D2	2148	2146	2149
D1-D2	1	2	2

Doors length - 1672.53mm

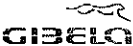


	#1	#2	#3
HIGHER DIMENSION	1673	1671	1672
CENTRAL DIMENSION	1672	1671	1672
LOWER DIMENSION	1672	1670	1672

GIBELCO

2024-04-24

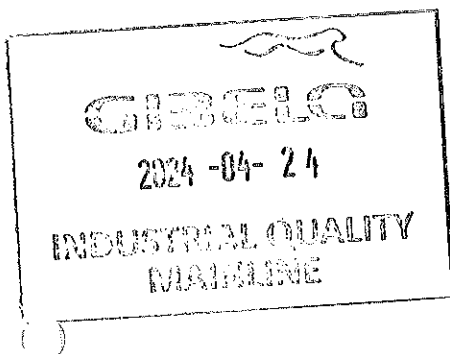
INDUSTRIAL QUALITY  
MAINLINE




	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA SI.CB2220.250.V29		
		29			
		Date 28/10/2023			
Self Inspection - Final Result					
Is the car good to advance to the next workstation/process? (Approval of Operations Manager and Industrial Quality)		DATE	NAME	SIGNATURE	
HOLD POINT	GO	(If activities are not complete, the missing activities must not impact the next stage!)	25/04/24	M. tholozet	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	25/04/24	Andani	
		There are activities pendings that impact/step the activities of the next process Obs: (To describe problems below)			
		There are non-conformities impact the quality of the product and there is no corrective action defined yet)			
In case of "NO GO", describe blocking problems					
In case of "NO GO", the operations manager must define below action plan to ensure "GO":					
Item	Description		Responsible	Due date	Status

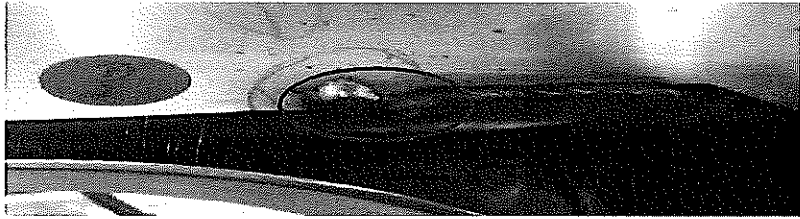
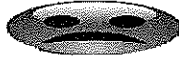
Operations

Quality

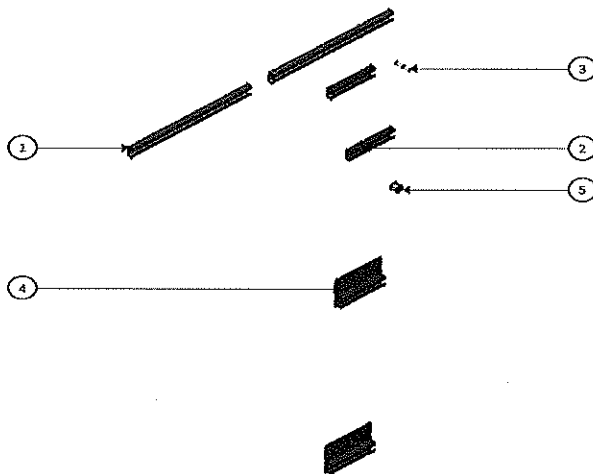


	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA  SI.CB2220.250.V29
		29	
		Date 28/10/2023	

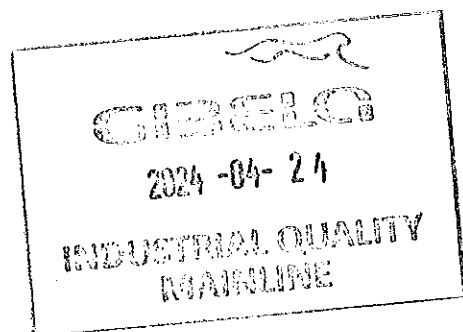
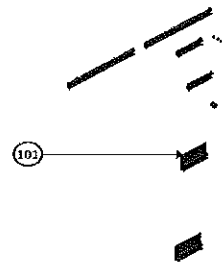
### ANNEXURE A: Arc Welding Quality Acceptance Standard




Station: CB1220-004- U108 & U107



PART NO.	ITEM NO.	QTY	DESCRIPTION	MASS (KG)
DTR002007402A	5	6	EARTH STUD 6	0.016
AA00001201843	4	6	ASSEMBLY SUPPORT	0.271
DTR0000343305	3	12	WELDING STUD ISO13318 PT - R38420 - SST	0.007
AA00001160434	2	12	ASSEMBLY SUPPORT	0.193
AA00001164418	1	14	ASSEMBLY SUPPORT	0.522
AA00001161000	101	6	CARBODYSHELL BRACKETS CARBODYSHELL M1/M3/M4 CAP (DOE FRAME/MODULE END - DPP)	12.132

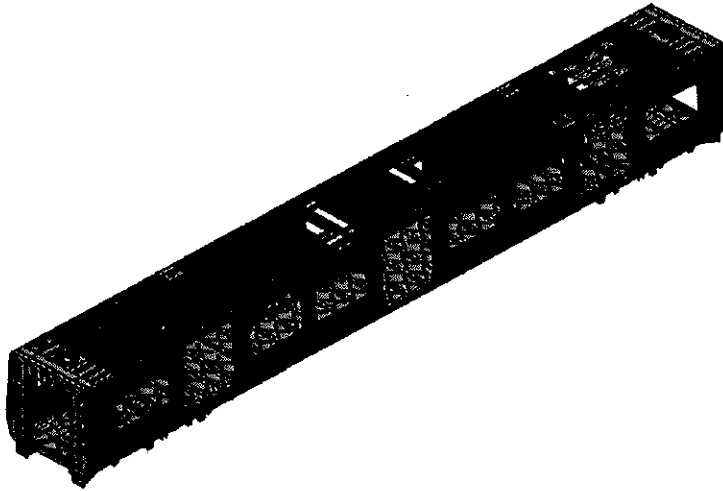




	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DT00000225487	Rev. 30	Project: PRASA  <b>SI.CB2230.256.V29</b>
		Date 06/11/2023	
Car:	NCR:	Work station: CB2230	



Safety Related



I - Documentation and Instruments Control

I.1 Documentation Control

Document	Type of car					Revision	Observation	OK		Signature/Date (Operations)	Signature/Date (Quality)
	1	2	3	4	5						
PRA.CB2230.DT00000225487								OK		N/A	Blore 26/04/24 BCB 26/04/24

I.2 - Instruments Control


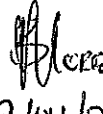

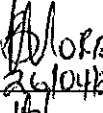

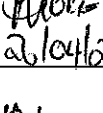
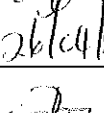
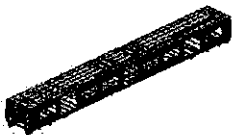
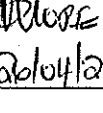
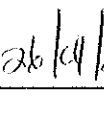
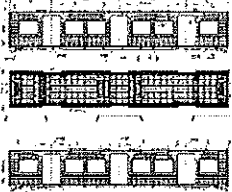
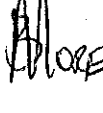

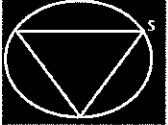

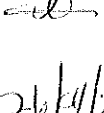




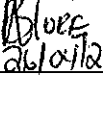

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial number	Calibration or Verification Validation Date	OK		Signature/Date (Operations)	Signature/Date (Quality)
Combination Square	GIBSU0100	27/07/24	OK		Blore 26/04/24	B 26/04/24
Measuring tape	GIBTA 0396	05/04/25	OK		Blore 26/04/24	B 26/04/24
Tubular	22713	19/02/25	OK		Blore 26/04/24	B 26/04/24

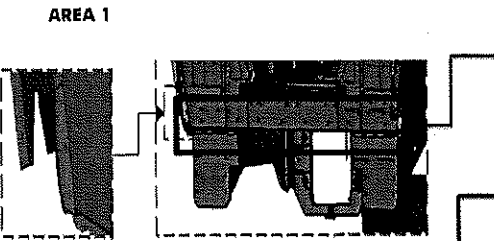
1.3 Consumables

Welding Consumable Control - Used for Special Process


Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
308 LSi	231067	Mig welding	OK		Blore 26/04/24	B 26/04/24

		<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	OK		 26/04/24	 26/04/24						
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	OK		 26/04/24	 26/04/24						
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	OK		 26/04/24	 26/04/24						
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	OK		 26/04/24	 26/04/24						
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		 26/04/24	 26/04/24						
06		Perform visual inspection or 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		 26/04/24	 26/04/24						
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: <table border="1" data-bbox="391 1500 678 1590"> <tr> <td>Temperature Min - Max (I)</td> <td>Min-Max</td> <td>10°C - 35°C</td> </tr> <tr> <td>Relative humidity Min - Max (I)</td> <td>Min-Max</td> <td>25% - 80%</td> </tr> </table>	Temperature Min - Max (I)	Min-Max	10°C - 35°C	Relative humidity Min - Max (I)	Min-Max	25% - 80%	Sealant Batch No: <u>FA23328</u> Exp Date: <u>15 / 06 / 24</u> Actuals Temperature: <u>19°C</u> Humidity: <u>61%</u>	OK		 26/04/24	 26/04/24
Temperature Min - Max (I)	Min-Max	10°C - 35°C											
Relative humidity Min - Max (I)	Min-Max	25% - 80%											
08	N/A	Verification of sealant application on the roof and sidewall finishers.	Sealant must be: -Applied straight and even -Free of gaps, cracks, damage and debris (flashes, dirt, dust) Refer to Annexure B	OK		 26/04/24	 26/04/24						
09	N/A	Verification of sealant application in certain regions in the drawing.	AAD0001278566	OK		 26/04/24	 26/04/24						


**END 2 SEALANT**



OPERATOR  
(Name & sign):

LEROY 

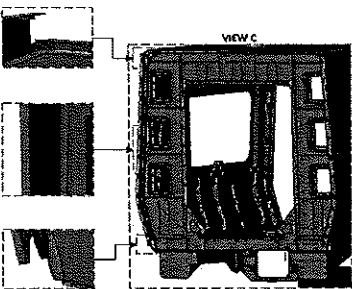
OPERATOR  
(Name & sign):

LEROY 

OPERATOR  
(Name & sign):

LEROY 

**AREA 2 (VIEW C)**



**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):

ISHENOLO

ISHENOLO

Operator (Name & sign):

MLH

MLH

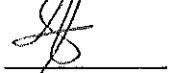
Operator (Name & sign):

Sihle

Sihle

Operator (Name & sign):

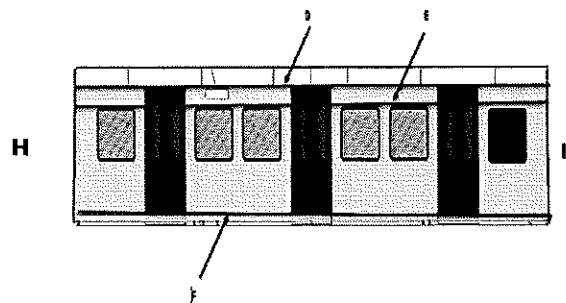




Operator (Name & sign):

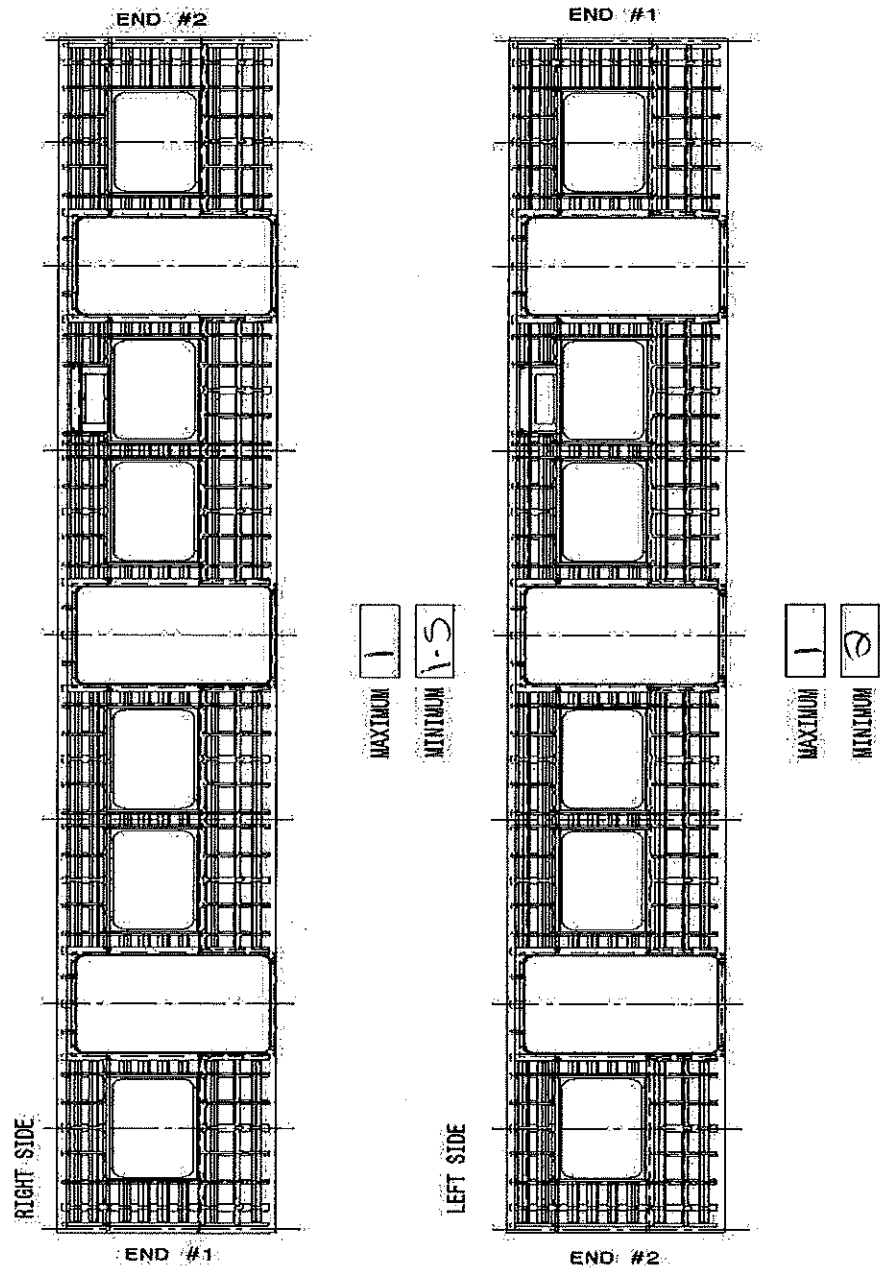
\_\_\_\_\_

\_\_\_\_\_



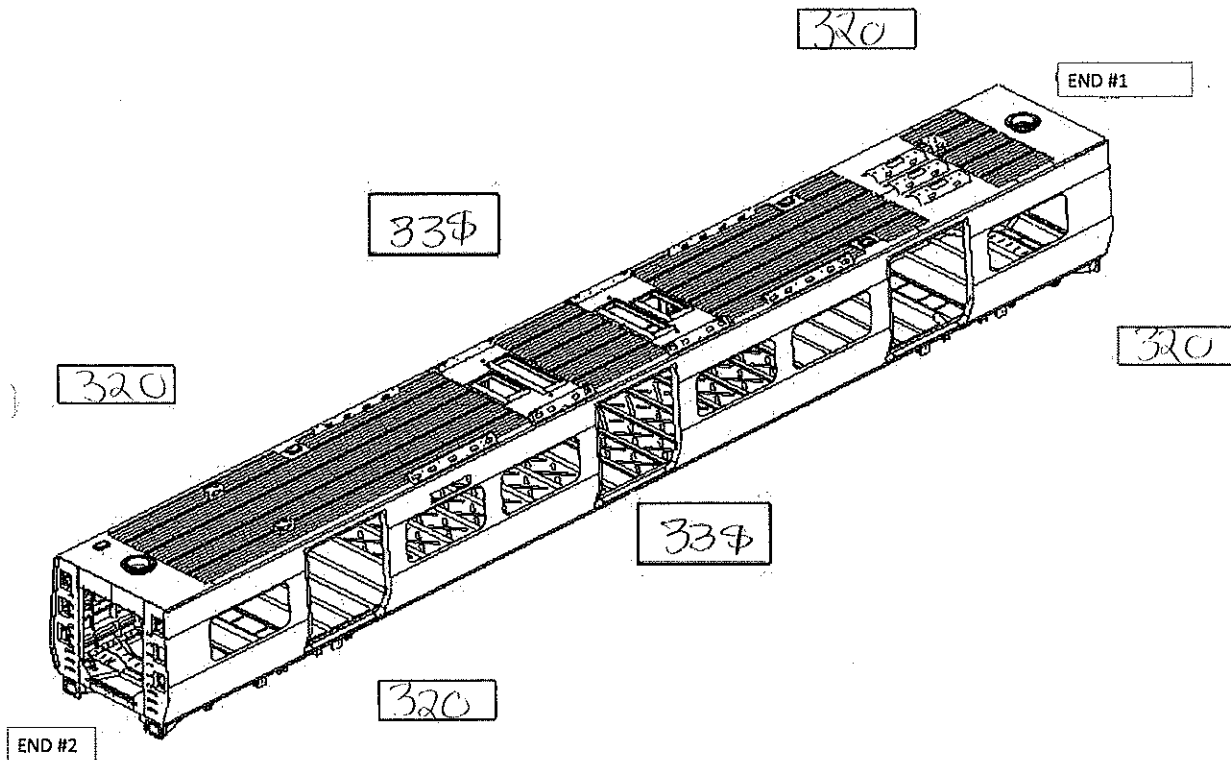
Specifications of Details for CBS measurement CB1230

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



Specifications of Details for CBS measurement CB1230

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

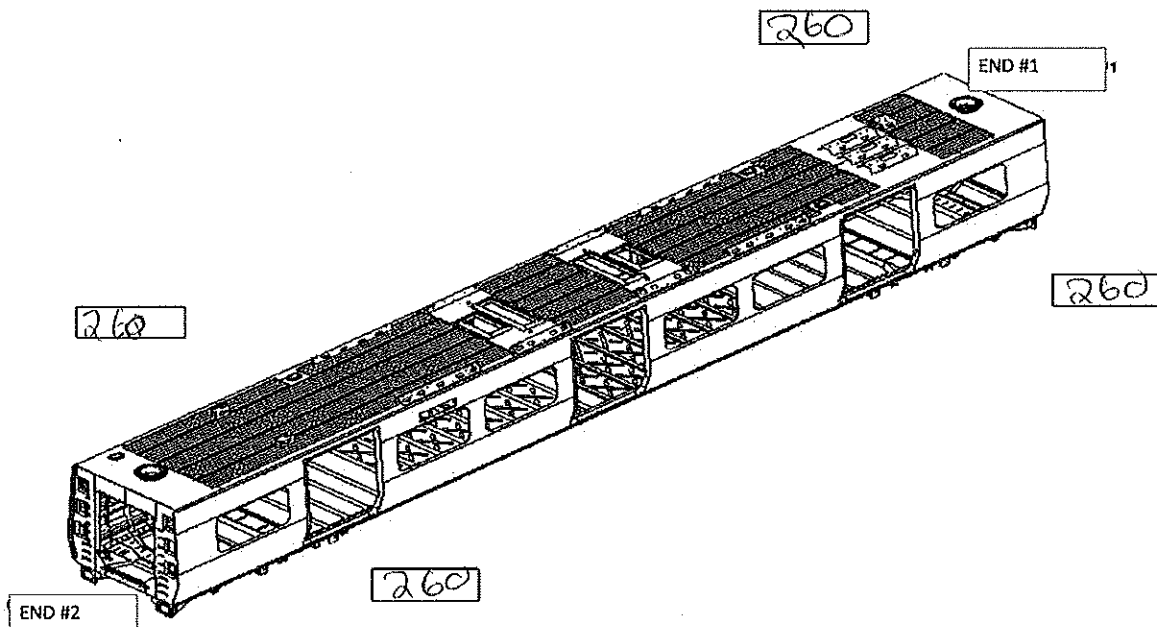


MEASURED CAMBER VALUES

RIGHT	11	1φ
LEFT	11	1φ

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

0

TWIST FOUND ON END 2

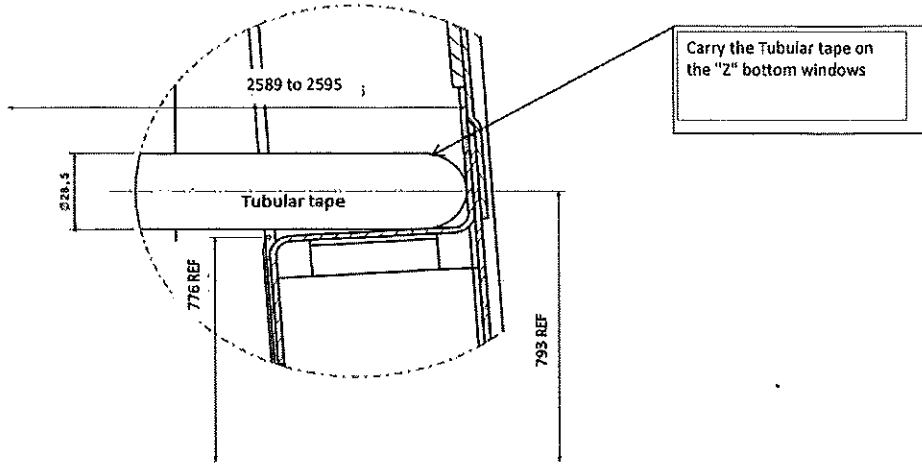
TRANVERSE

0

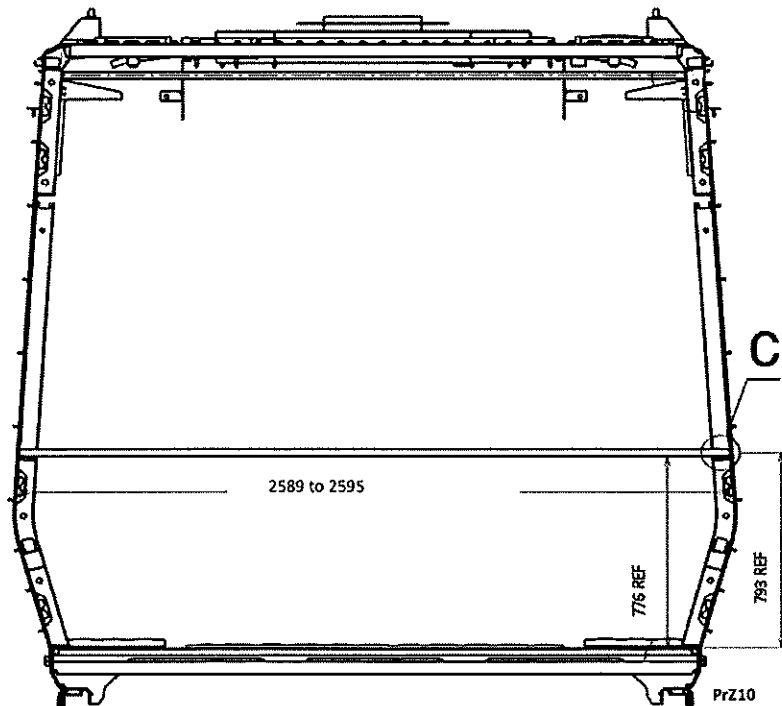
LONGITUDINAL

0

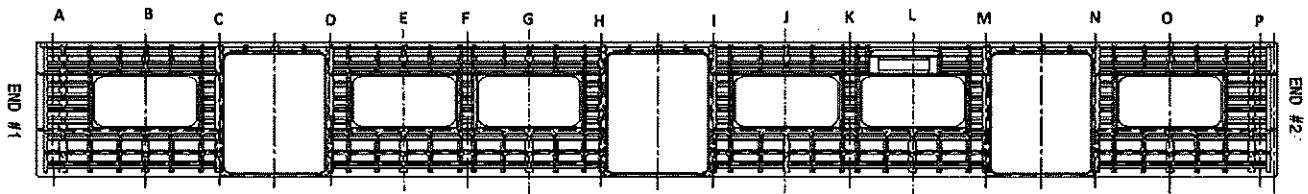
**Specifications of Details for CBS measurement CB1230**



**Detail C**

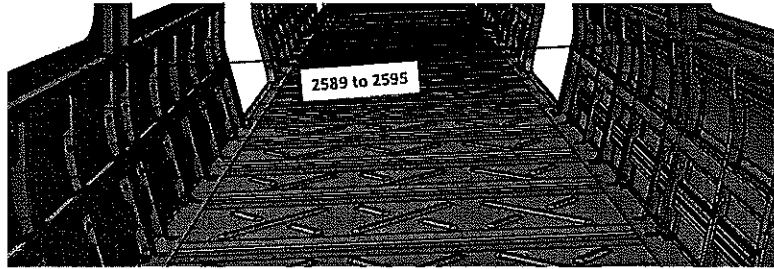


Specifications of Details for CBS measurement CB1230



2589 to 2595mm

A	2595
B	2591
C	2589
D	2592
E	2592
F	2590
G	2589
H	2589
I	2589
J	2590
K	2594
L	2590
M	2595
N	2591
O	2590
P	2595

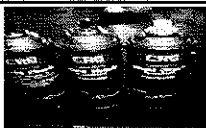


Threshold verification				Nominal value :38	
Door 1		Door 2		Door 3	
L	R	L	R	L	R
38	38	38	38	38	38
Door 4		Door 5		Door 6	
L	R	L	R	L	R
38	38	39	38	38	38

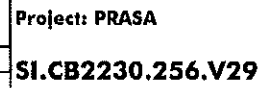
BOILER MAKER: Ishimoto 1.1.1.1  
WELDER: NonAtlanta (Signature)

Dye penetrant test


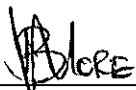

Dye-penetration test to be performed by quality personnel








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					

	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DT00000225487	Rev. 30	Project: PRASA  <b>SI.CB2230.256.V29</b>		
		Date 06/11/2023			
<b>Self Inspection - Final Result</b>					
<b>Is the car good to advance to the next workstation/process?</b> (Approval of Operations and Industrial Quality)		DATE	NAME	SIGNATURE	
<b>HOLD POINT</b>	(If activities are not complete, the missing activities must not impact the next stage!)	26/04/24	Boitumelo Operations		
		26/04/24	Andani Industrial Quality		
	There are activities pending that impact/stop the activities of the next process Obs: (To describe problems below)		Operations		
	There are non-conformities impact the quality of the product and there is no corrective action defined yet)		Industrial Quality		
In case of "NO GO", describe blocking problems					
In case of "NO GO", the operations manager must define below action plan to ensure "GO":					
Item	Description		Responsible	Due date	Status

  
Operations

\_\_\_\_\_  
Quality