



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?
				TCA	Ma	M1	M2	M3	Tcz		
<input type="checkbox"/> DTR31374497/3	AAD0001413329	CARBODYSHELL M2 ASSEMBLY	CB1210				<input checked="" type="checkbox"/>			PRA.CB1210.DTR313744 97/3.V25	YES
<input type="checkbox"/>											

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	10/01/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	10/01/2018
			CHECKER	Nosizo Pindela	10/01/2018
			COMPILER	Thanyani Mathegu	10/01/2018
1	2018/05/18	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	2018/05/18
			CHECKER	Nosizo Pindela	2018/05/18
			REVISED BY	Ramokone Motama	2018/05/18
2	2018/07/04	Certain dimensional checks moved to CB1220 and CB1230	APPROVER	Itumeleng Modiba	2018/07/04
			CHECKER	Nosizo Pindela	2018/07/04
			REVISED BY	Ramokone Motama	2018/07/04
3	2018/12/12	Added dimensional check points to CB1210	APPROVER	Itumeleng Modiba	12/12/2018
			CHECKER	Nosizo Pindela	12/12/2018
			REVISED BY	Ramokone Motama	12/12/2018
5	22/01/2019	As per Baseline 10.2	APPROVER	Itumeleng Modiba	22/01/2019
			CHECKER	Nosizo Pindela	22/01/2019
			REVISED BY	Vanessa Ntuli	22/01/2019
6	13/03/2019	Added D1 and D2 on Self - Inspection	APPROVER	Itumeleng Modiba	13/03/2019
			CHECKER	Nosizo Pindela	13/03/2019
			REVISED BY	Nosizo Pindela	13/03/2019
10	21/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	21/08/2019
			CHECKER	Nosizo Pindela	21/08/2019
			REVISED BY	Nosizo Pindela	21/08/2019
15	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela	06/08/2020
			CHECKER	Bongane Masina	
			REVISED BY	Bongane Masina	
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	
			REVISED BY	Bongane Masina	
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING	APPROVER	Mbhombi collins	17/08/2021
			CHECKER	Mpho Mulaudzi	
			REVISED BY	Mpho Mulaudzi	
25	21/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombi collins	21/02/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
26	14/04/2023	Addition of welding consumable traceability	APPROVER	Ntuli Vanessa	14/04/2023
			CHECKER	Mohlampe Amogelang	
			REVISED BY	Mohlampe Amogelang	
27	27/07/2023	Added verification of loaded parts	APPROVER	Ngobeni Tyson	27/07/2023
			CHECKER	Zwane Ntokozo	
			REVISED BY	Mohlampe Amogelang	
28	07/11/2023	Addition of welder traceability	APPROVER	Ngobeni Tyson	07/11/2023
			CHECKER	Andani Muthelo	
			REVISED BY	Ntokozo Zwane	



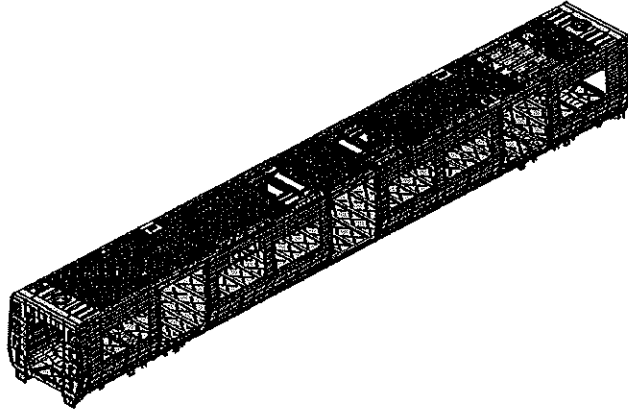
TRAINSET	CAR	OPERATOR NAME & AIPS NO	DATE	SELF INSPECTION NUMBER	PAGES
73029	M2	F. MACATSI 409964	12/04/2024	SI.CB1210.247.V28	17

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB1210.247.V28
		Date 07/11/2023	

Car: M2	NCR:	Work station: CB1210
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Safety Related



I - Documentation and Instruments Control

1.1 - Documentation Control

Document	Type of car						Revision	Observation	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
	D	M	S	2	3	4					
DTR31374497/3			✓				V28		✓	N/A	<i>[Signature]</i> 15/04/24

1.2 - Instruments Control

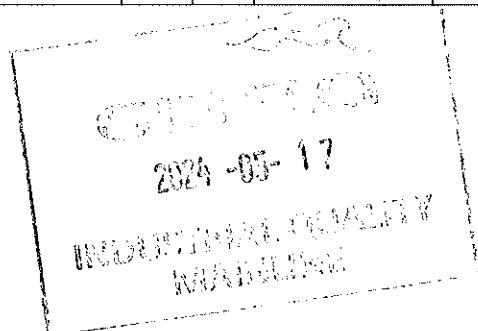
Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial number	Calibration or Verification / Validation Date	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
TUBULAR	33828-2	15/03/25	✓	<i>[Signature]</i> 15/04/24	<i>[Signature]</i> 15/04/24
LASER GAUGE	105425924	08/09/25	✓	<i>[Signature]</i> 15/04/24	<i>[Signature]</i> 15/04/24
SUN GAUGE	6187P0102	18/11/24	✓	<i>[Signature]</i> 15/04/24	<i>[Signature]</i> 15/04/24


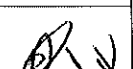


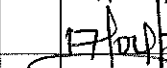



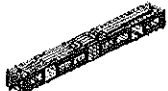


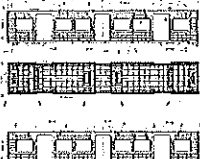
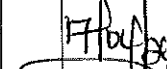



1.3 - Consumables


Welding Consumable Control - Used for Special Process


Filler Material	Batch Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 LSi	3140R-7409A	MIG	✓	<i>[Signature]</i> 15/04/24	<i>[Signature]</i> 15/04/24
ER 308 L	097687-7082	TIG	✓	<i>[Signature]</i> 15/04/24	<i>[Signature]</i> 15/04/24



II - Self Inspection - Items to Check

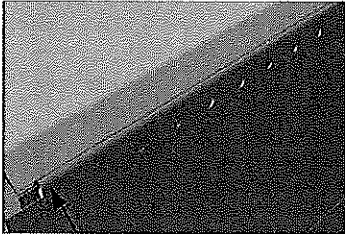
II.1 - Items to check							
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls, Endframes, Roof and Underframe)	AA00001375051	✓		 17/04/24	 18/04/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓		 17/04/24	 18/04/24
03	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 17/04/24	 18/04/24
04	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 17/04/24	 18/04/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 17/04/24	 18/04/24
06		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓		 17/04/24	 18/04/24
07	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	✓		 17/04/24	 18/04/24


 2024-05-17
 ESSENTIAL QUALITY
 MANAGEMENT

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB1210.247.V28
		Date 07/11/2023	

Welder traceability

Roof ring welds



Boiler maker (Name & Sign): [Signature] ^{LHS} Welder (Name & Sign): [Signature]

END 1

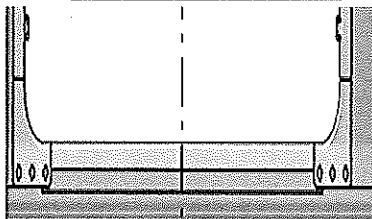
Boiler maker (Name & Sign): [Signature] ^{RHS} Welder (Name & Sign): [Signature]

Boiler maker (Name & Sign): [Signature] ^{LHS} Welder (Name & Sign): [Signature]

END 2

Boiler maker (Name & Sign): [Signature] ^{RHS} Welder (Name & Sign): [Signature]

Door ring welds



Boiler maker (Name & Sign): [Signature] ^{LHS}

Welder (Name & Sign): [Signature]

Boiler maker (Name & Sign): [Signature] ^{RHS}

Welder (Name & Sign): [Signature]

2021-05-17
 INDUSTRIAL QUALITY
 MAINLINE

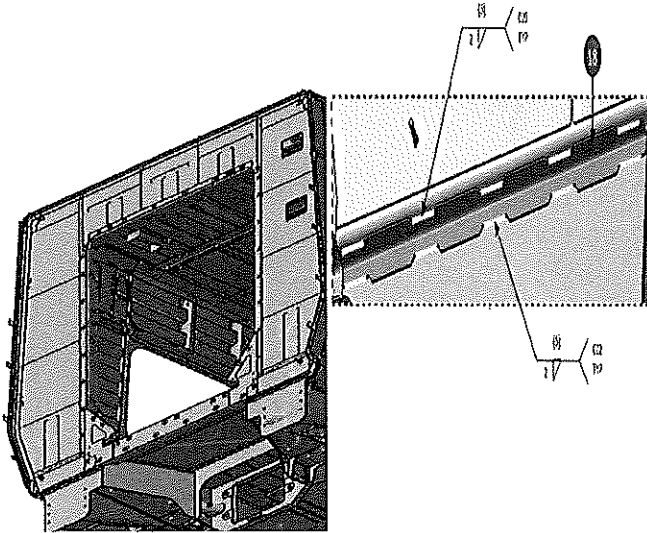


CARBODYSHELL M2 ASSEMBLY DTR31374497/3

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EUF Reinforcement Plates



END 1

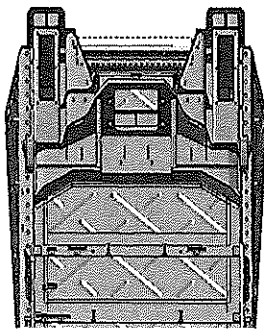
Boiler maker (Name & Sign):

POWROTTA

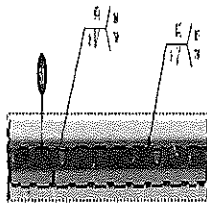
Welder (Name & Sign):

MTHACOZISI

END 2



Underneath the CAR



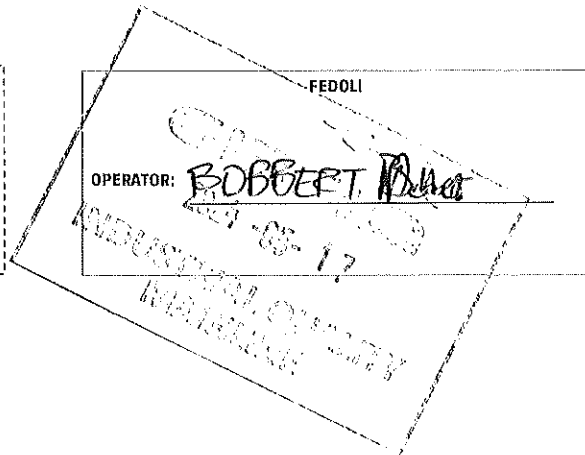
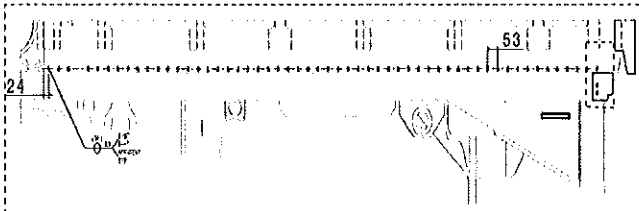
END 2

Boiler maker (Name & Sign):

TIM

Welder (Name & Sign):

KEITUMETSI





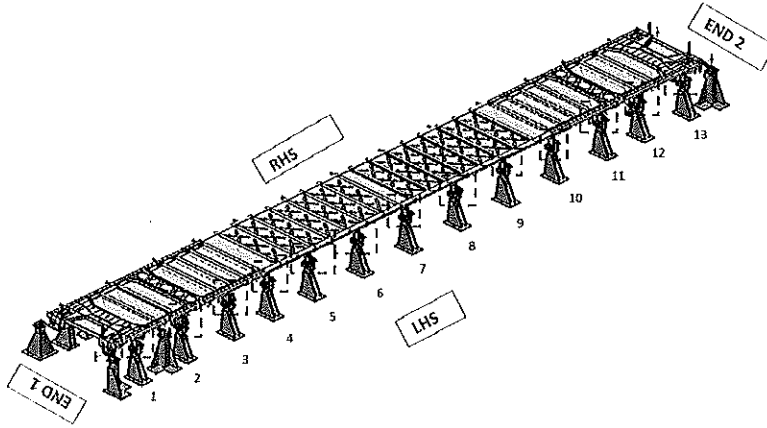
CARBODYSHELL M2 ASSEMBLY DTR31374497/3

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Project: PRASA
SI.CB1210.247.V28

Date
07/11/2023

Specifications of Details for CBS measurement



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

After loading and clamping

Fill in the gap 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	1	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: *[Signature]* Date: *[Signature]*

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: *[Signature]* Date: 17/04/24

GIBELG
2024-05-17
INDUSTRIAL QUALITY
MANAGER

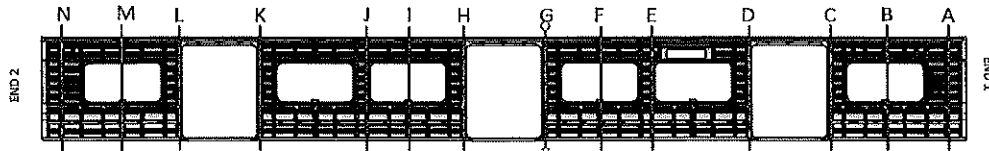


CARBODYSHELL M2 ASSEMBLY DTR31374497/3

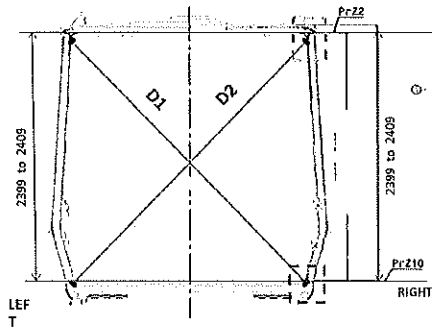
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07/11/2023

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SI.CB1210.247.V28

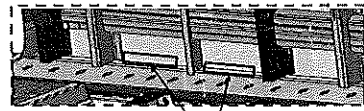
Specifications of Details for CBS measurement



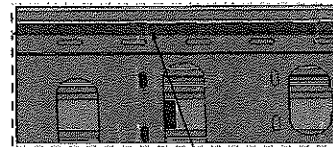
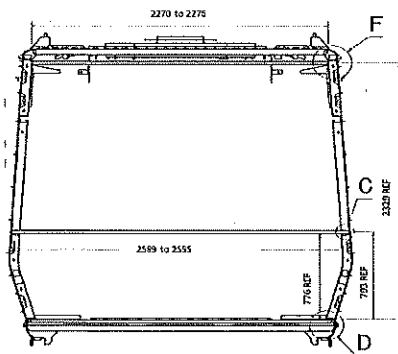
9



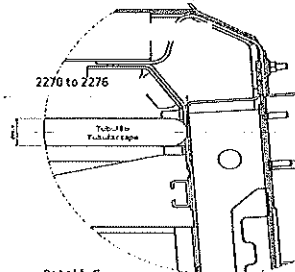
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.

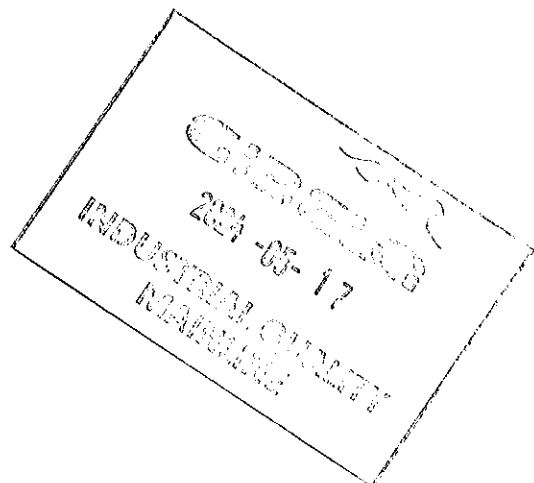


Reinforcement area measurement positions on roof reinforcement area.



Detail F

Don't considering the reinforcement.





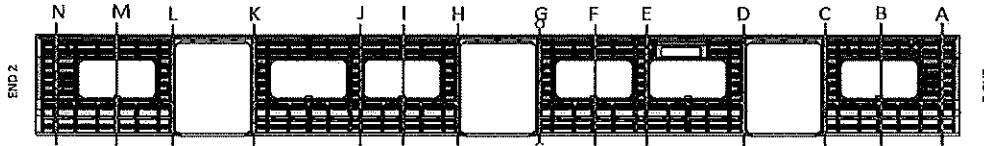
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Specifications of Details for CBS measurement

BEFORE WELDING



Note: The difference in Height values measured on the LHS and RHS should be ≤ 2 MM on each point.

	Record D1 values	Record D2 values	D1-D2 ≤ 5 mm	2399 to 2409 (LHS)	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3069	3068	1	2004	2005	-
B	3071	3069	2	2006	2004	-
C	3070	3071	1	2005	2004	-
D	3069	3069	0	2006	2005	-
E	3068	3066	2	2004	2004	-
F	3069	3070	1	2006	2004	-
G	3070	3071	1	2005	2004	-
H	3071	3071	0	2004	2004	-
I	3068	3066	2	2004	2003	-
J	3066	3068	2	2005	2005	-
K	3068	3069	1	2006	2004	-
L	3066	3068	2	2006	2004	-
M	3070	3071	1	2005	2004	-
N	3069	3064	5	2004	2004	-

409964
17/04/2024

2024-05-17

INSPECTION



CARBODYSHELL M2 ASSEMBLY DTR31374497/3

Rev. 28

Date

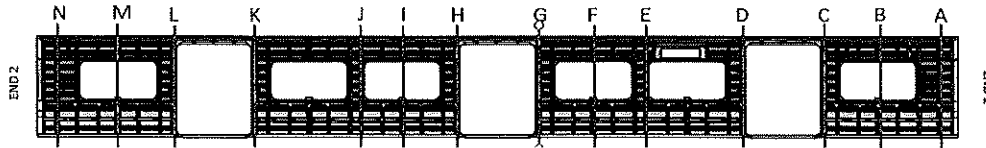
07/11/2023

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SI.CB1210.247.V28


Specifications of Details for GBS measurement

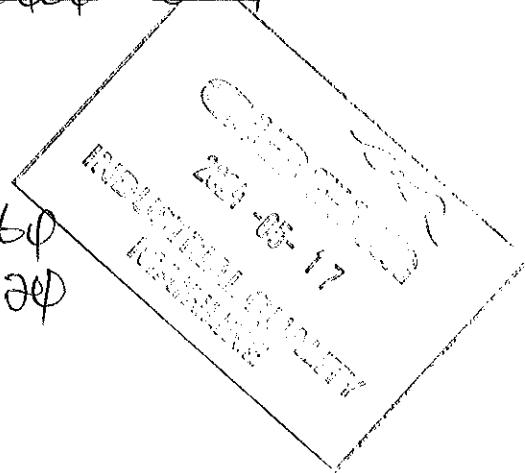
AFTER WELDING



Note: The difference in Height values measured on the LHS and RHS should be ≤ 2MM on each point.

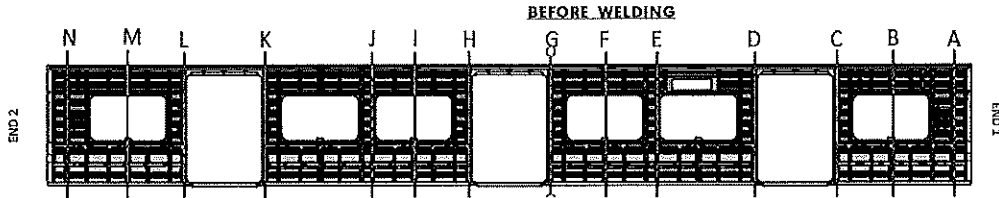
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2399 to 2409 (LHS)	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3296	3298	2	2404	2405	1
B	3268	3268	0	2406	2406	0
C	3296	3296	0	2406	2406	0
D	3295	2299	2	2406	2406	0
E	3269	3268	1	2406	2405	1
F	3269	3269	0	2406	2406	0
G	3298	3299	1	2403	2406	3
H	3296	3296	0	2406	2406	0
I	3271	3270	1	2405	2406	1
J	3270	3271	1	2406	2406	0
K	3296	3298	2	2406	2405	1
L	3299	3297	2	2406	2403	3
M	3271	3270	1	2406	2406	0
N	3296	3296	0	2406	2406	0


 409960
 17/04/23

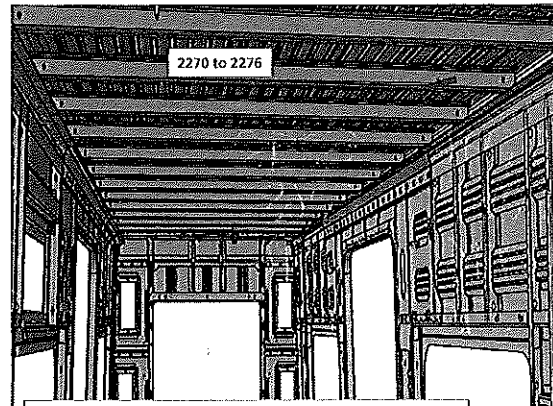


	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB1210.247.V28
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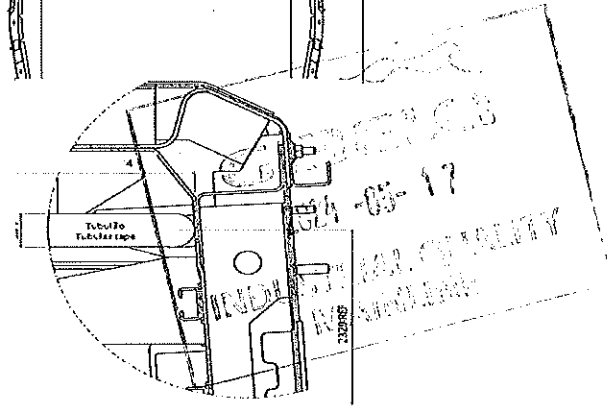
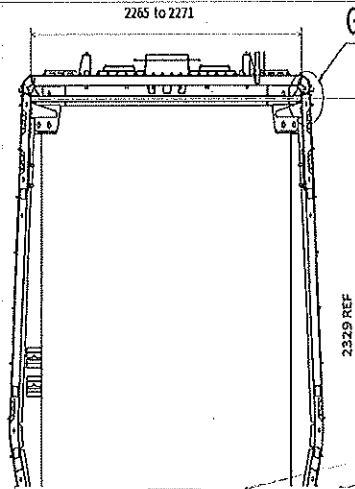
CBS measurement



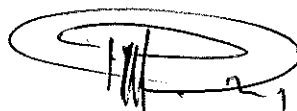
- 2270 to 2276
- A. 2274
 - B. 2271
 - C. 2275
 - D. 2275
 - E. 2276
 - F. 2274
 - G. 2274
 - H. 2293
 - I. 2274
 - J. 2276
 - K. 2275
 - L. 2273
 - M. 2272
 - N. 2271



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



Detail G
Considering the reinforcement plate


 209964
 1710420



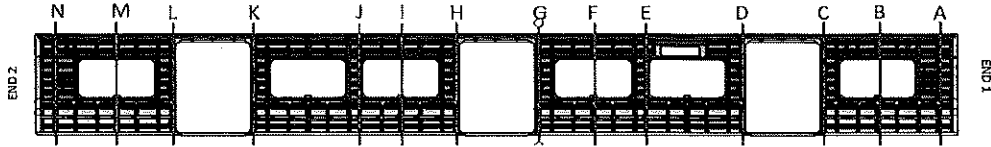
CARBODYSHELL M2 ASSEMBLY DTR31374497/3

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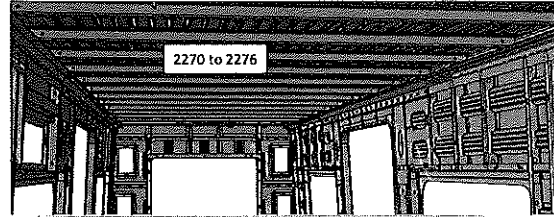
Project: PRASA
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CBS measurement

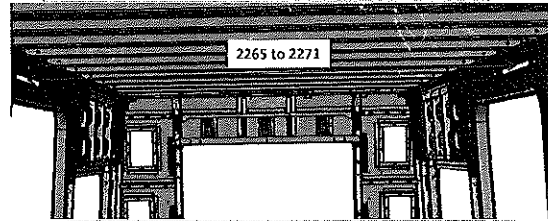
AFTER WELDING



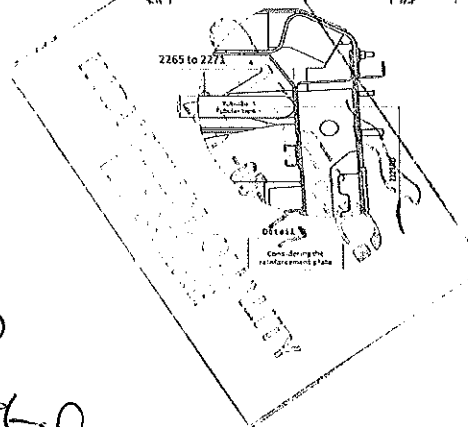
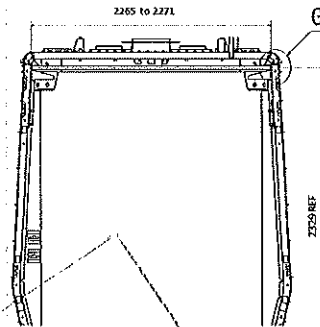
	2265 to 2271	2270 to 2276
A	2269	/
B	/	2274
C	2265	/
D	2266	/
E	/	2275
F	/	2275
G	2268	/
H	2269	/
I	/	2274
J	/	2276
K	2265	/
L	2268	/
M	/	2275
N	2269	/



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



Take measurement close to radius (considering reinforcement)



Handwritten notes and a diagram of a circular reinforcement detail.



CARBODYSHELL M2 ASSEMBLY DTR31374497/3

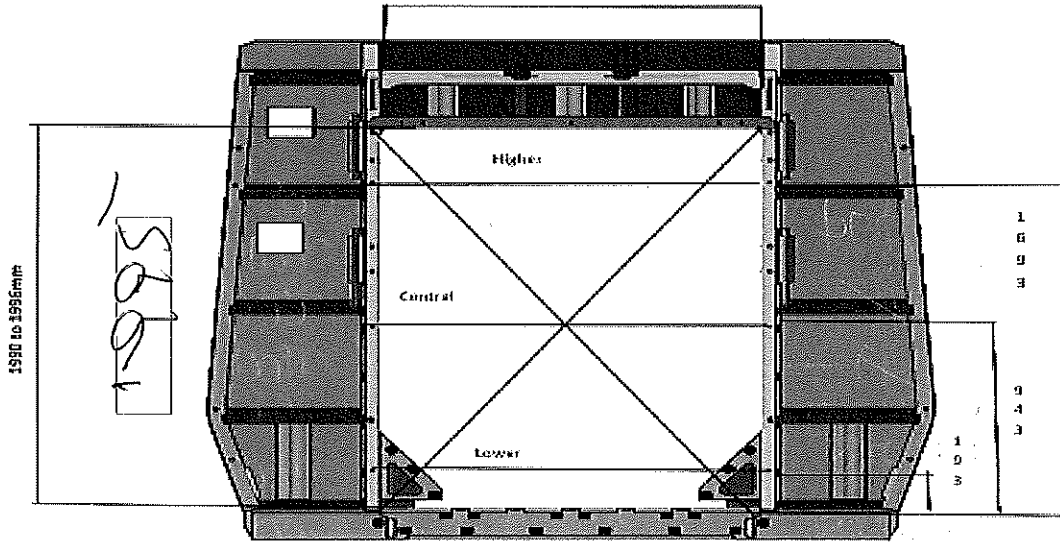
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CBS measurement

End frame 1

1380 to 1382 mm



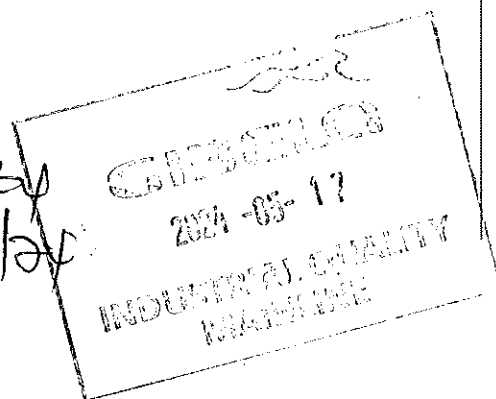
1380 to 1382 mm

DIAGONAL DIFFERENCE D1-D2 ≤ 3mm

Higher Dimension	1381
Central Dimension	1382
Lower Dimension	1381

D1	2416
D2	2416
D1-D2	0

Handwritten signature and date: 24/09/2023, 17/10/2023





CARBODYSHELL M2 ASSEMBLY DTR31374497/3

Rev.

28

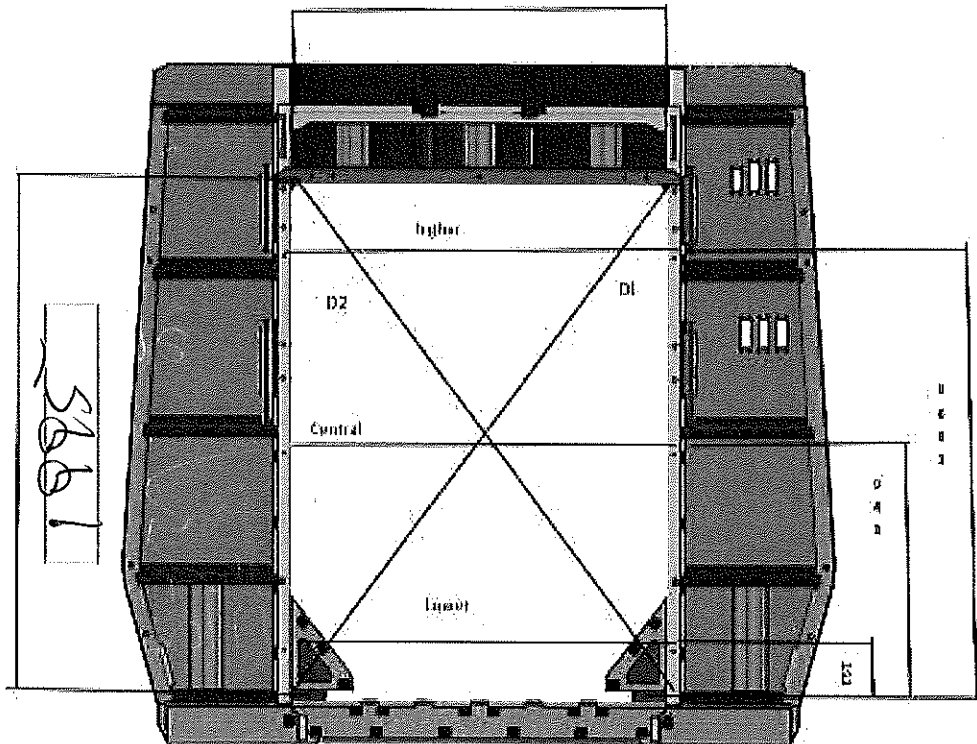
Date

07/11/2023

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End frame 2



1380 to 1382 mm

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

Higher Dimension

1381

D1

2405

Central Dimension

1382

D2

2415

Lower Dimension

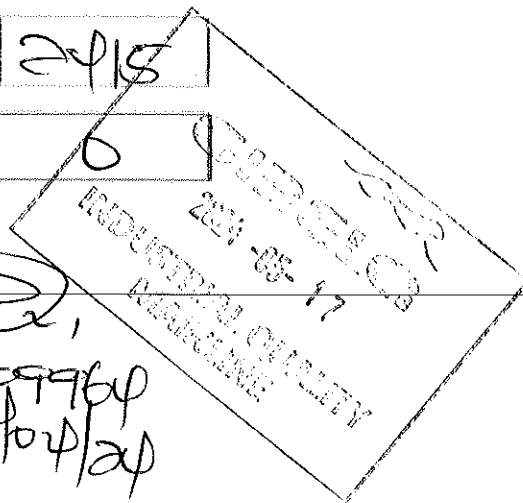
1382

D1-D2

0



609964
7/10/23



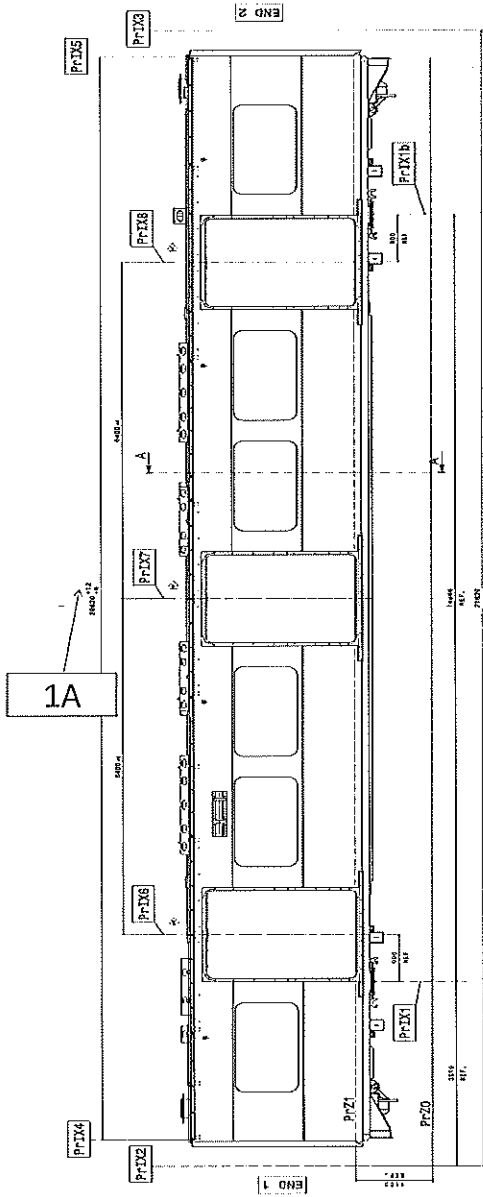


CARBODYSHELL M2 ASSEMBLY DTR31374497/3

Rev. 28
Date 07/11/2023


Project: PRASA
SI.CB1210.247.V28

Specifications of Details for CBS measurement



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

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

Handwritten note:

 20615
 17/04/23

Dye penetrant test

Dye-penetration test to be performed by quality personnel



Handwritten/Stamped note:
 2024-05-17
 INDUSTRIAL

	CARBODYSHELL M2 ASSEMBLY DTR31374497/3	Rev. 28	Project: PRASA SI.CB1210.247.V28
		Date 07/11/2023	

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!)		
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	17/07/23	Operations <i>[Signature]</i>
		There are activities pending that impact/stop the activities of the next process Obs: (To describe problems below)	18/07/23	Industrial Quality <i>[Signature]</i>
		There are non-conformities impact the quality of the product and there is no corrective action defined yet)		Operations 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



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

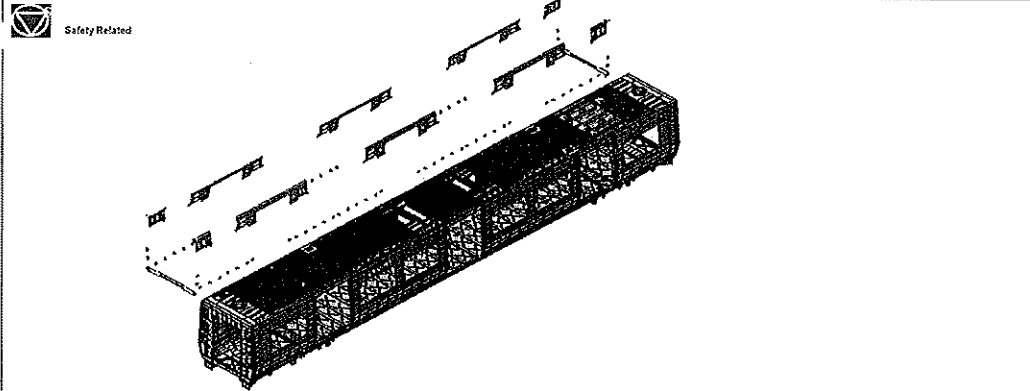
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY		
				TL	PL	MS	ML	MS	TL				
<input type="checkbox"/>	DTR31374497z	AAD0001413319	CARBODYSHELL P12 ASSEMBLY	CB1210					X			PRA.CB1220.DTR31374497 / 2.V21	YES
<input type="checkbox"/>													
<input type="checkbox"/>													
<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 Remove length measurements	APPROVER	Itumeleng Modiba	13/03/2019
			CHECKER	Nosizo Pindela	13/03/2019
			REVISED BY	Nosizo Pindela	13/03/2019
7	27/05/2019	Removed measurement positions on the display windows	APPROVER	Itumeleng Modiba	27/05/2019
			CHECKER	Nosizo Pindela	27/05/2019
			REVISED BY	Nosizo Pindela	27/05/2019
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	
			REVISED BY	Bongane Masina	
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	
			REVISED BY	Bongane Masina	
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING	APPROVER	Mbhombhi colins	17/08/2021
			CHECKER	Mpho Mulaudzi	
			REVISED BY	Mpho Mulaudzi	
25	20/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombhi colins	20/02/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
26	14/06/2022	Update Minimum temperature adjustment for sealant application	APPROVER	Mbhombhi colins	14/06/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
27	19/10/2022	Addition of traceability for sealant application and welding	APPROVER	Mbhombhi colins	19/10/2022
			CHECKER	Ntokozo Zwane	
			REVISED BY	Amogelang Mohlampe	
28	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntokozo Zwane	
			REVISED BY	Amogelang Mohlampe	
29	28/10/2023	Addition of bracket quantity	APPROVER	Tyson Ngobeni	28/10/2023
			CHECKER	Kelebone Mathapo	
			REVISED BY	Amogelang Mohlampe	

TRAINSET	CAR	OPERATOR NAME/ALPS NO.	DATE	SELF INSPECTION NUMBER	PAGES
223	Moz	Tetelo	18/04/24	SI.CB1220.276.V29	15

	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project: PRASA
		28	
		Date	SI.CB1220.276.V29
		28/10/2023	

Car: M2	NCR:	Work station:	CB1220
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1- Documentation and Instruments Control

1.1 - Documentation Control

Document	Type of car					Revision	Observation	OK	N/A	Signature/Date (Manufacturing)	Signature/Date (Quality)
	121	122	123	124	125						
DTR31374497/2			✓			20	18/04/24	✓	N/A	[Signature] 18/04/24	[Signature] 18/04/24

1.2 - Instruments Control

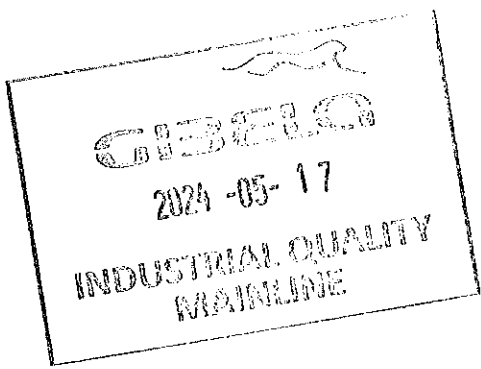
Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial number	Calibration or Verification Validation Date	OK	N/A	Signature/Date (Manufacturing)	Signature/Date (Quality)
Turbidimeter	22713	03/08/24	✓		[Signature] 18/04/24	[Signature] 18/04/24
Measuring tape	6187A0511	05/05/24	✓		[Signature] 18/04/24	[Signature] 18/04/24







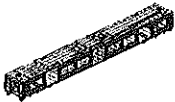


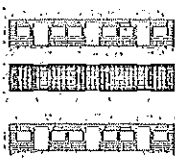


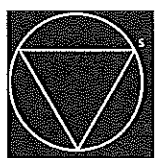






1.3 Consumables

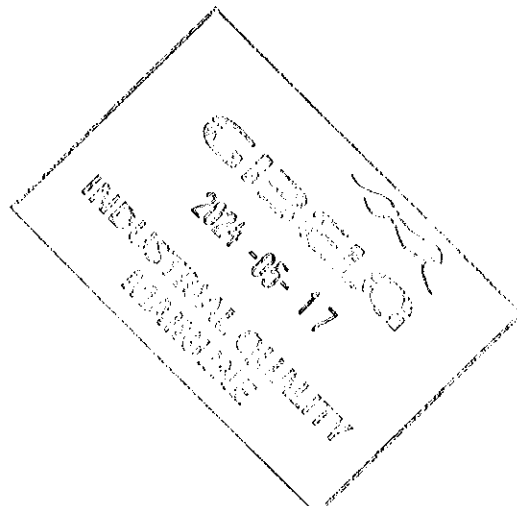
Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	N/A	Signature/Date (Manufacturing)	Signature/Date (Quality)
welding wire	E231067	MIG welding	✓		[Signature] 18/04/24	[Signature] 18/04/24



II - Self Inspection - Items to Check

II.1 - Items to check							
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB1220. DTR31374497/2 Verification of fitment for all reinforcement brackets.	PRA.CB1220. DTR31374497/2	✓		 18/04/24	 18/04/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓		 18/04/24	 18/04/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 18/04/24	 18/04/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 18/04/24	 18/04/24
05		Function's dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓		 18/04/24	 18/04/24
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.	✓		 18/04/24	 18/04/24
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 23°C - 35°C Relative humidity 25% - 80% Max 45%	Sealant Batch No: <u>157-1003</u> Exp Date: <u>04/06/24</u> Actuals Temperature: <u>15°C</u> Humidity: <u>20%</u>	✓		 18/04/24	 18/04/24
08	NA	Verification of sealant application in certain regions in the drawing	AAD0001413329	✓		 18/04/24	 18/04/24





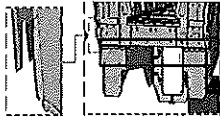
CARBODYSHELL M2 ASSEMBLY DTR31374497/2

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29
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SEALANT APPLICATION



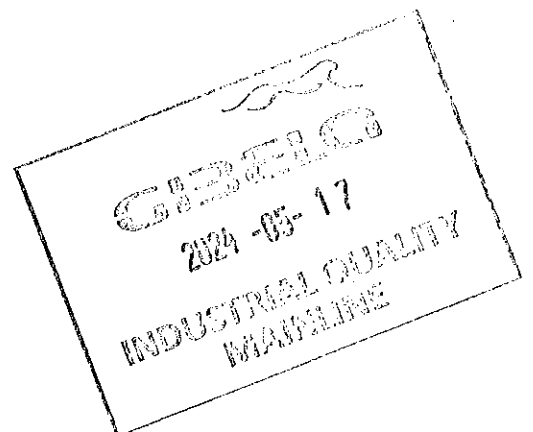
AREA 1 & 2 END 1


Operator (Name & sign):

Piscilay

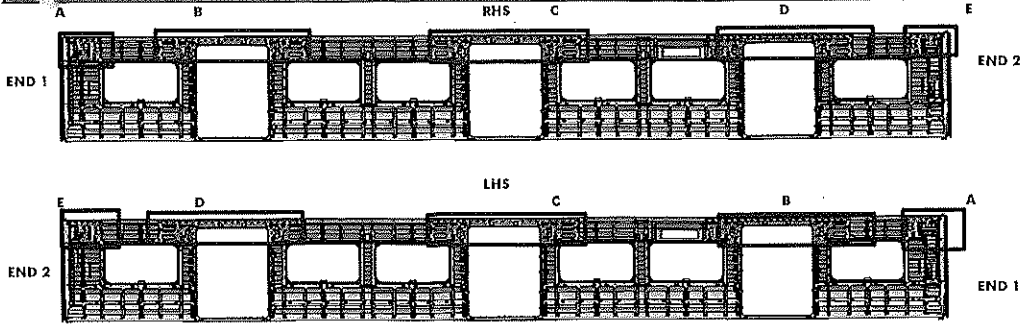
Operator (Name & sign):

Piscilay



	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project: PRASA
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		Date	SI.CB1220.276.V29
		28/10/2023	

II - Self Inspection - Items to Check

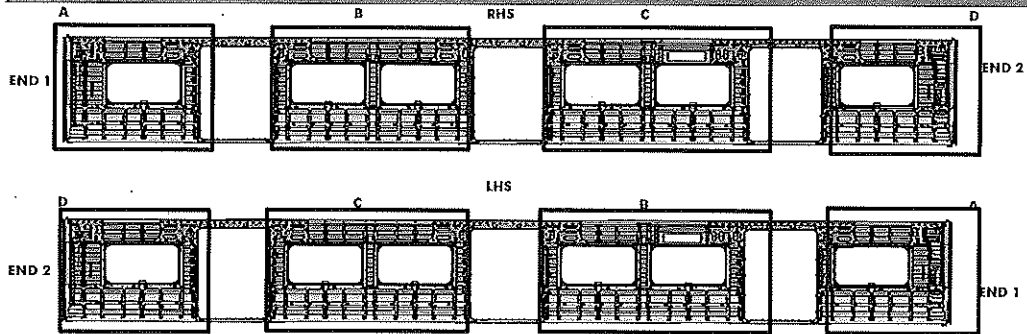


REINFORCEMENT WELDING

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



II - Self Inspection - Items to Check



BRACKETING

INSTALLATION

C-RAILS: Operator: Priscilla Caban
 Operator: _____
 DOOR MECHANISMS: Operator: Tebeo
 Operator: _____
 TAPPING PADS Operator: ASAMINA
 Operator: _____

INSTALLATION & VERIFICATION

SEAT & LUGGAGE BRACKETS: Operator: Leni
 Operator: _____
 SEAT BRACKETS VERIFICATION: Operator: Leni
 Operator: _____

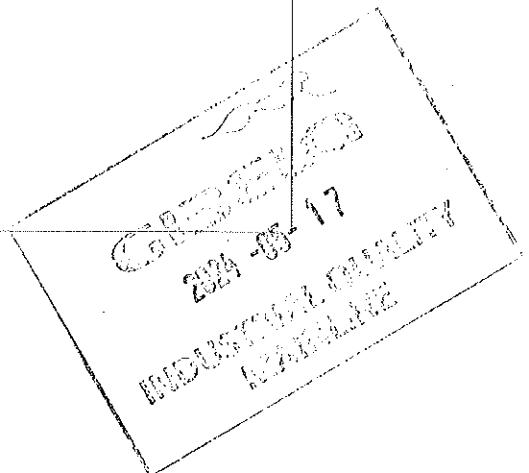
WELDING

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

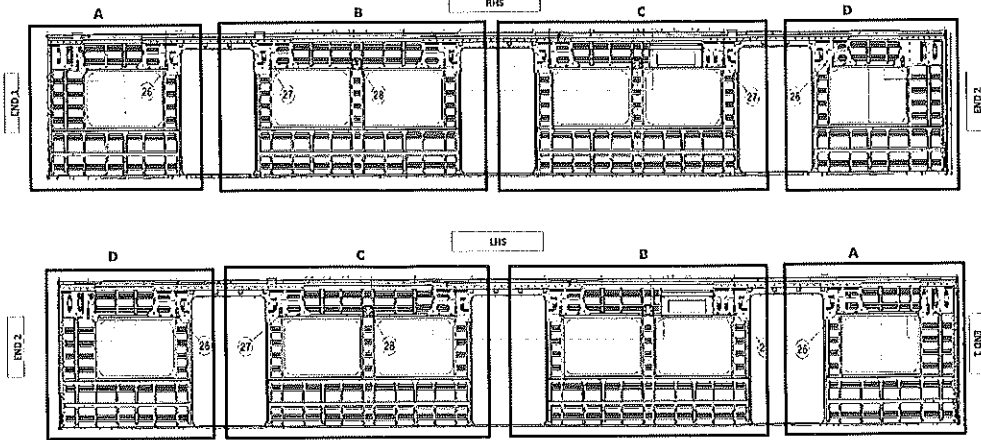
ENDS

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

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



M2 BRACKET INSTALLATION



QUANTITIES (M2)

RHS

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

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

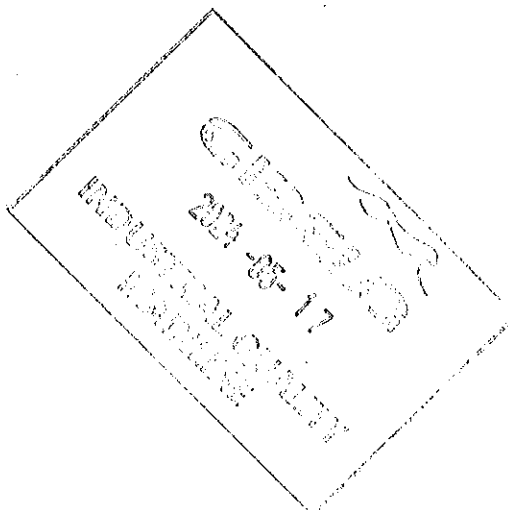
VERIFICATION BY: *Tetelo*

LHS

	SECTION	QUANTITY	OK	NOK
C-RAILS	A	8	✓	
	B	11		
	C	11		
	D	12		
SEAT BRACKETS	A	12	✓	
	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: *Tetelo*

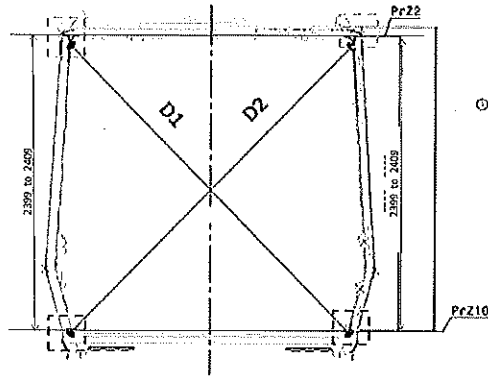




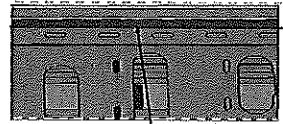
CARBODYSHELL M2 ASSEMBLY DTR31374497/2

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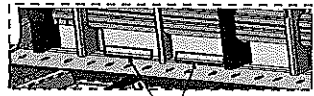
Project: PRASA
SI.CB1220.276.V29



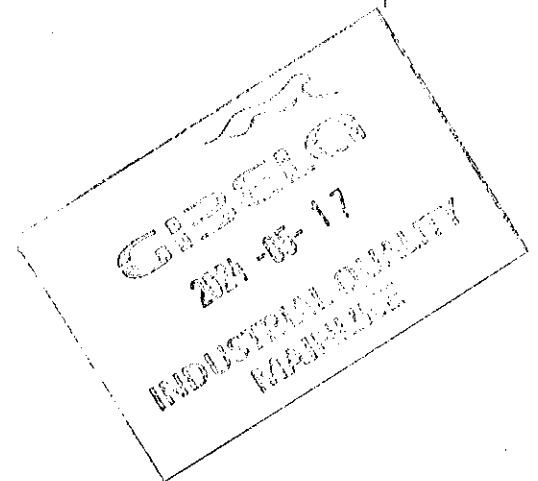
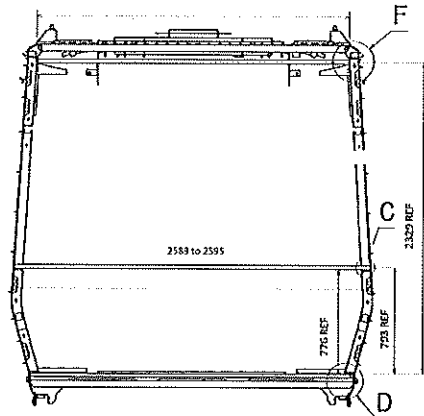
Measurement positions on roof rail and sidewall omega cornice.



Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill cornice.



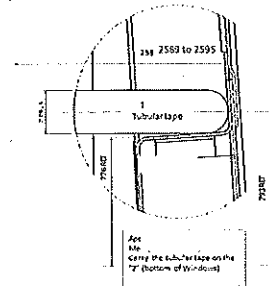
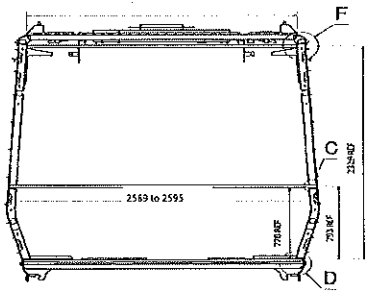


CARBODYSHELL M2 ASSEMBLY DTR31374497/2

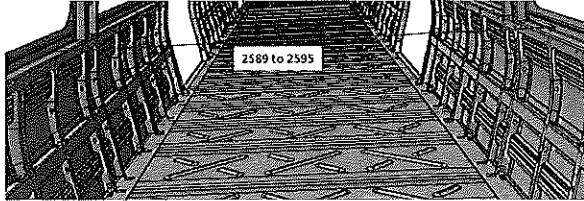
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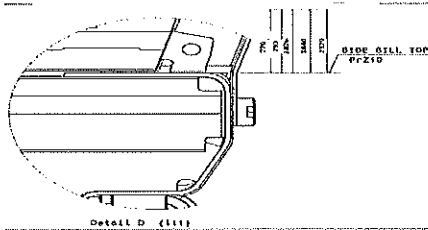
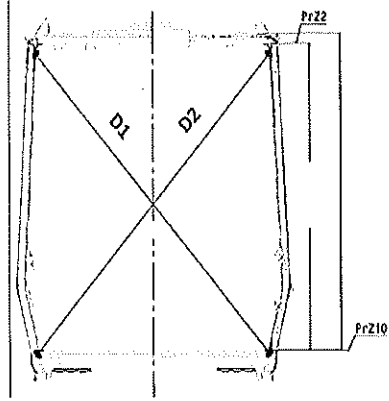
SI.CB1220.276.V29



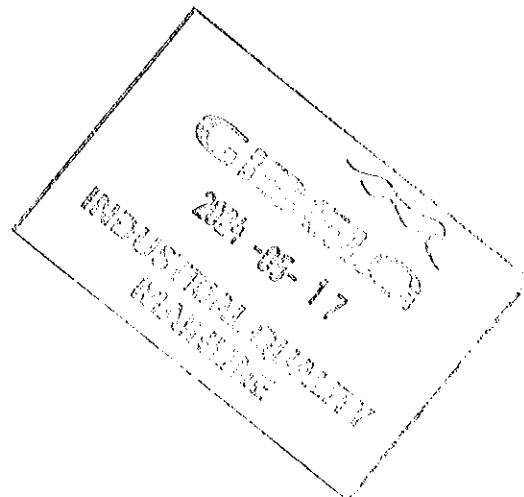
Detail C



Take measurement close to radius



Detail D (1:1)





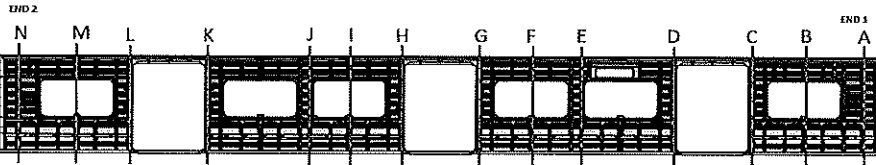
CARBODYSHELL M2 ASSEMBLY DTR31374497/2

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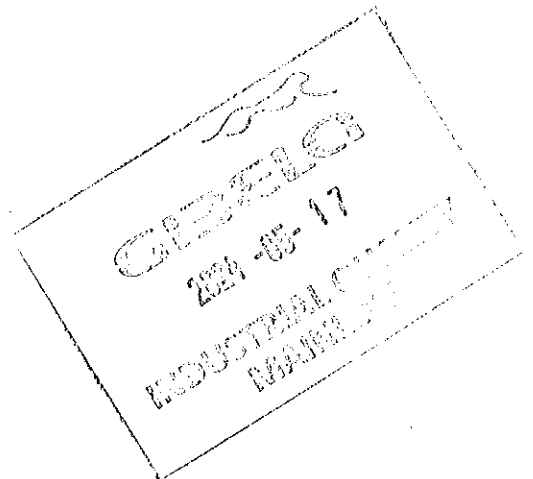
SI.CB1220.276.V29

GBS measurement



BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3300	3297	3	-
B	3261	3265	2	-
C	3300	3300	0	-
D	3299	3297	2	-
E	3267	3265	2	-
F	3265	3268	3	-
G	3300	3297	3	-
H	3298	3297	1	-
I	3265	3267	2	-
J	3266	3266	2	-
K	3298	3297	1	-
L	3298	3296	1	-
M	3267	3265	2	-
N	3300	3290	1	-



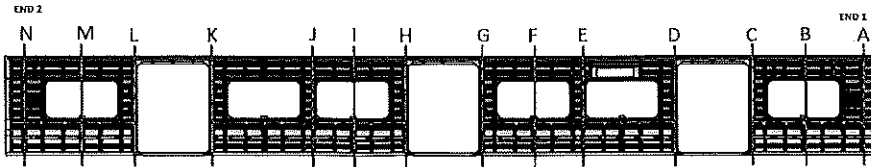


CARBODYSHELL M2 ASSEMBLY DTR31374497/2

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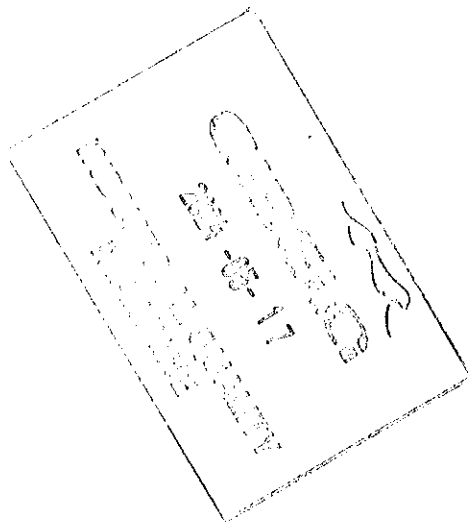
Project: PRASA
SI.CB1220.276.V29

CBS measurement

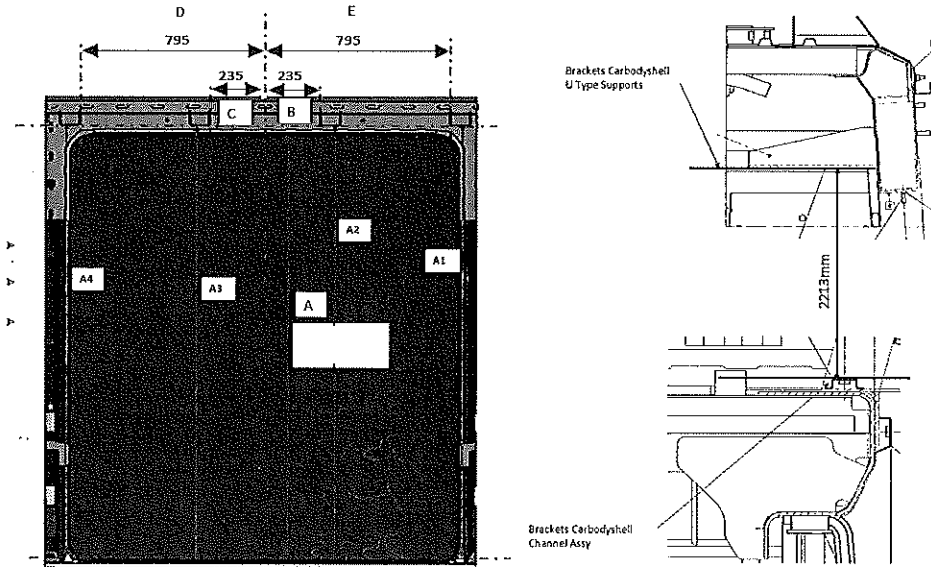


AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3299	3296	3	2589
B	3267	3264	3	2590
C	3299	3296	3	2590
D	3295	3297	2	2592
E	3266	3269	3	2592
F	3269	3266	3	2593
G	3299	3300	1	2591
H	3300	3300	0	2591
I	3269	3267	2	2590
J	3268	3265	3	2591
K	3299	3300	1	2591
L	3300	3299	3	2592
M	3269	3266	3	2593
N	3300	3299	1	2592



Specifications of Details for CBS measurement CB1220

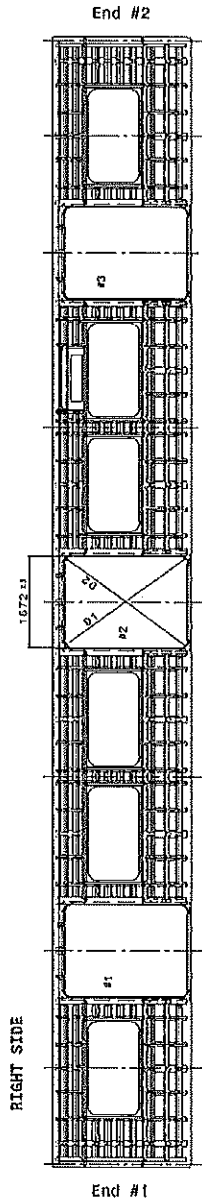


DOOR 1 - LHS		DOOR 2 - LHS		DOOR 3 - LHS	
	VALUE	ACTUAL		VALUE	ACTUAL
A1	2230 to 2232	2231	A1	2230 to 2232	2230
A2	2230 to 2232	2230	A2	2230 to 2232	2231
A3	2230 to 2232	2230	A3	2230 to 2232	2231
A4	2230 to 2232	2230	A4	2230 to 2232	2230
B	234 to 236	235	B	234 to 236	235
C	234 to 236	235	C	234 to 236	235
D	794 to 796	795	D	794 to 796	795
E	794 to 796	795	E	794 to 796	795

DOOR 1 - RHS		DOOR 2 - RHS		DOOR 3 - RHS	
	VALUE	ACTUAL		VALUE	ACTUAL
A1	2230 to 2232	2230	A1	2230 to 2232	2230
A2	2230 to 2232	2231	A2	2230 to 2232	2231
A3	2230 to 2232	2230	A3	2230 to 2232	2231
A4	2230 to 2232	2231	A4	2230 to 2232	2230
B	234 to 236	235	B	234 to 236	235
C	234 to 236	235	C	234 to 236	235
D	794 to 796	795	D	794 to 796	795
E	794 to 796	795	E	794 to 796	795

CONTROLLED
 20-05-17
 TOTAL QUALITY
 MANLINE

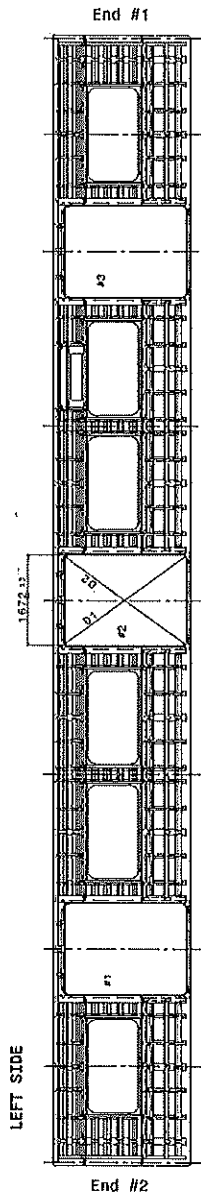
Specifications of Details for CBS measurement CB1220



Doors diagonal D1-D2 maximum difference ≤4mm

	#1	#2	#3
D1	2150	2151	2152
D2	2148	2149	2151
D1-D2	2	2	1

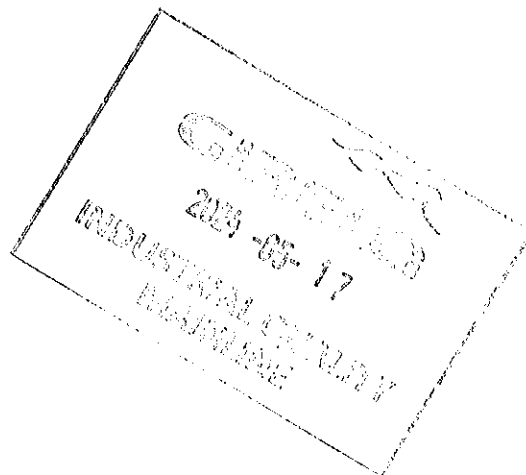
Doors Length - 1672 ±3mm			
#1	#2	#3	
1672	1673	1672	HIGHER DIMENSION
1673	1674	1673	CENTRAL DIMENSION
1673	1675	1674	LOWER DIMENSION




4mm

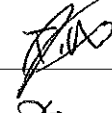
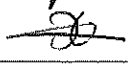
	#1	#2	#3
D1	2150	2149	2150
D2	2152	2151	2153
D1-D2	2	2	1


Vão de Portas - 1672 ±3mm			
#1	#2	#3	
1671	1672	1673	DIENSÃO SUPERIOR
1672	1671	1676	HIGHER DIMENSION
1673	1670	1670	CENTRAL DIMENSION
			LOWER DIMENSION



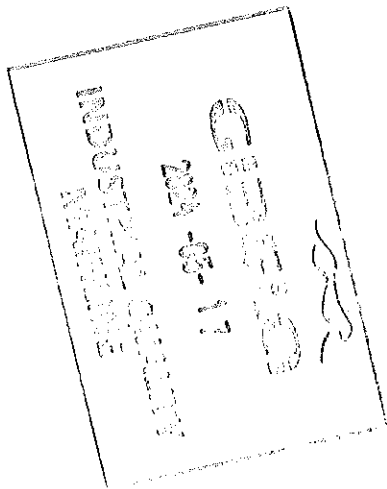
	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev. 29	Project: PRASA SI.CB1220.276.V29
		Date 28/10/2023	

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 facilities are not complete, the missing activities must not impact the next stage)	18/10/24	Tebedo <small>Operations</small>		
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party)	18/10/24	Andini <small>Industrial Quality</small>		
			There are activities pending that impact/stop the activities of the hold process Obs: (To describe problems below)				<small>Operations</small>
			There are non-conformities impact the quality of the product and there is no corrective action defined yet)				<small>Industrial Quality</small>
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		


 Tebedo
Operations

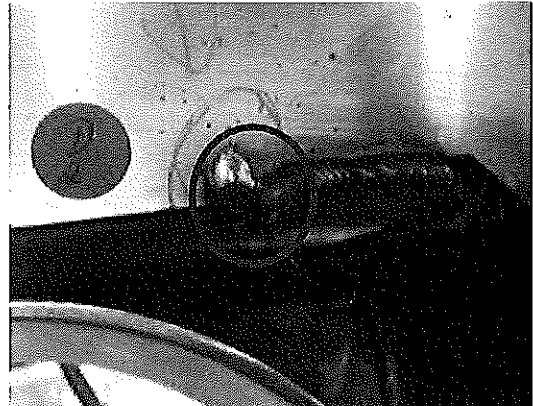
 Quality

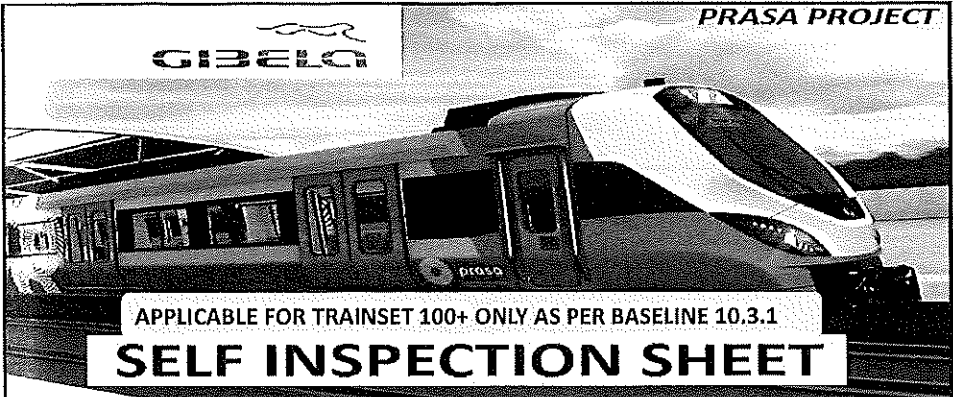
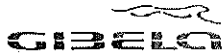


Trial PMR

	CARBODYSHELL M2 ASSEMBLY DTR31374497/2	Rev.	Project: PRASA
		29	
		Date	SI.CB1220.276.V29
		28/10/2023	

ANNEXURE A: Arc Welding Quality Acceptance Standard





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 ?	
				TCA	M4	M1	M2	M3	TCA			
<input type="checkbox"/>	AA0000374497	AA00001413329	CARBODYSHELL M2 ASSEMBLY	CB2230				X			PRA.CB2230.AA00001374497.V20	YES
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												

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	Vanessa Ntuli	13/03/2019
10	23/03/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	23/03/2019
			CHECKER	Nosizo Pindela	23/03/2019
			REVISED BY	Nosizo Pindela	23/03/2019
17	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela	06/08/2020
			CHECKER	Bongane Masina	
			REVISED BY	Bongane Masina	
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	
			REVISED BY	Bongane Masina	
25	20/02/2022	New Baseline change 10.3.1	APPROVER	Collins Mbhombhi	20/02/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Collins Mbhombhi	14/06/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
27	26/07/2022	Threshold measurement addition	APPROVER	Collins Mbhombhi	27/07/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
28	17/10/2022	Addition of traceability for sealant application	APPROVER	Collins Mbhombhi	17/10/2022
			CHECKER	Ntokoza Zwane	
			REVISED BY	Amogelang Mohlampe	
29	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntokoza Zwane	
			REVISED BY	Amogelang Mohlampe	
30	06/11/2023	Added thresholds traceability for boiler makers and welders	APPROVER	Tyson Ngobeni	06/11/2023
			CHECKER	Andani Muthelo	
			REVISED BY	Ntokoza Zwane	



TRAINSET	CAR	OPERATOR NAME & ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES
223	M2	472808 LERATO	22/04/24	SI.CB2230.277.V29	11



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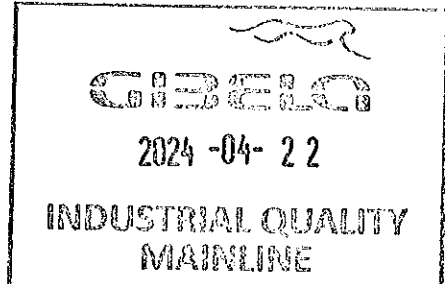
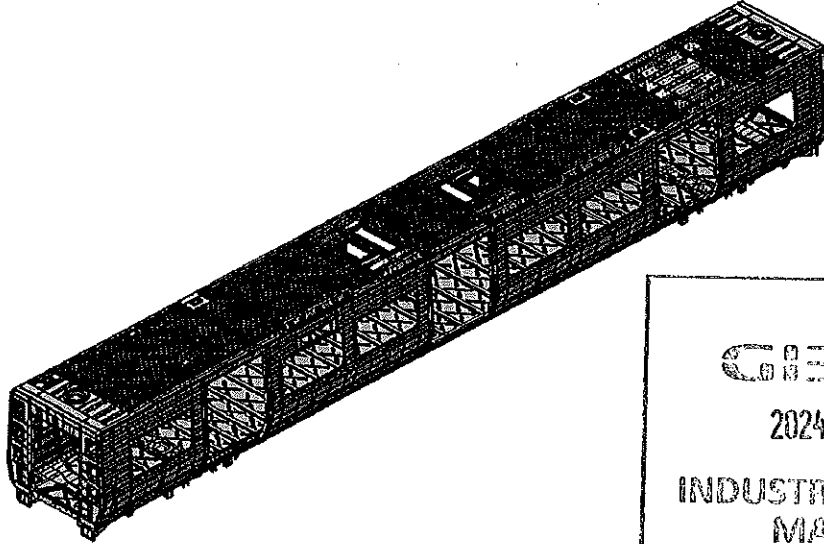
Car:

NCR:

Work station: CB2230



Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK	N/A	Signature/Date (Operations)	Signature/Date (Quality)	
	T0	M1	M2	M3	M4	T05							
PRA.CB2230.AA00001374497			X				30		✓		N/A	22/04/24	22/04/24

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial number	Calibration or Verification Validation Date	OK	N/A	Signature/Date (Operations)	Signature/Date (Quality)
Ruler	G1BLS3309	2025/02/20	✓		22/04/24	22/04/24
Combination Square	G1BLS0121	2024/04/22	✓		22/04/24	22/04/24
measuring tape	G1BTA0306	2024/04/20	✓		22/04/24	22/04/24
Tubula	22713	2024/05/21	✓		22/04/24	22/04/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	N/A	Signature/Date (Manufacturing)	Signature/Date (Quality)
N 308 LSi	E231067	MIG welding	✓		22/04/24	22/04/24



CARBODYSHELL M2 ASSEMBLY AA00001374497

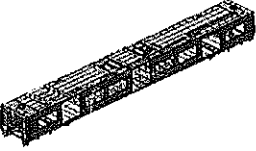
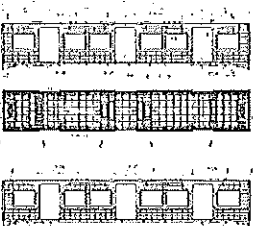
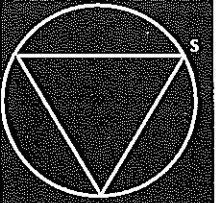
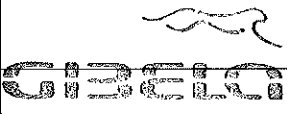
Rev. 30
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III - Self Inspection - Items to Check

III.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB1230.AA00001374497 Verification of fitment for all brackets.	PRA.CB1230.AA00001374497	✓	LERAKO 22/04/24	22/04/2024
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓	LERAKO 22/04/24	22/04/2024
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	LERAKO 22/04/24	22/04/2024
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	LERAKO 22/04/24	22/04/2024
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓	LERAKO 22/04/24	22/04/2024
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.	 2024-04-22 INDUSTRIAL QUALITY MAINTENANCE	✓	LERAKO 22/04/24	22/04/2024
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: Temperature Min - Max (I) Min-Max 10°C - 35°C Relative humidity Min - Max (I) Min-Max 25% - 80%	lot FA Sealant Batch No: 22612235 Exp Date: ___/05/24 Actuals Temperature: 18°C Humidity: 72%	✓	LERAKO 22/04/24	22/04/2024
08	N/A	Verification of sealant application in regions of roof and sideframe.	Sealant applied in regions of roof and sideframe.	✓	LERAKO 22/04/24	22/04/2024



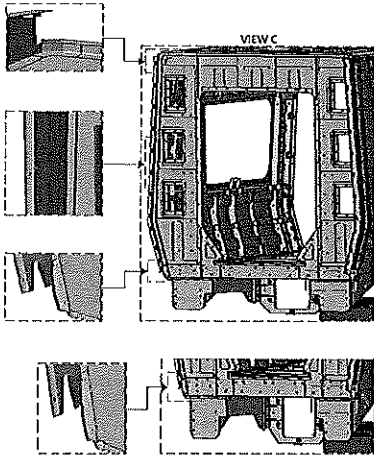
CARBODYSHELL M2 ASSEMBLY AA00001374497

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II - Self Inspection - Items to Check

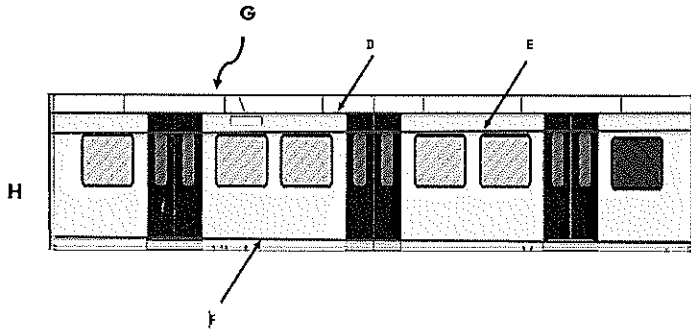
SEALANT APPLICATION



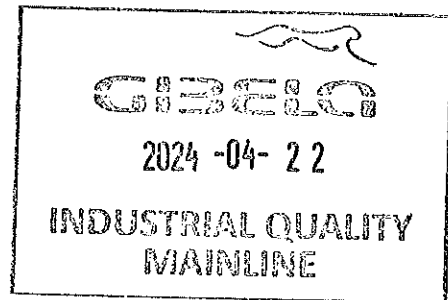
VIEW C END 2

Operator: Leroy [Signature]
Operator: Leroy [Signature]

Operator: Leroy [Signature]



Area D,E,F,G,H,I	LHS	RHS
Operator (Name & sign) :	<u>DIE, F, G, H, I</u>	<u>DIE, F, G, H, I</u>
Operator (Name & sign) :	<u>Shle</u>	<u>Shle</u>
Operator (Name & sign) :	<u>[Signature]</u>	<u>[Signature]</u>
Operator (Name & sign) :	<u>Tshendo</u>	<u>Tshendo</u>
Operator (Name & sign) :	<u>[Signature]</u>	<u>[Signature]</u>
Operator (Name & sign) :	<u>[Signature]</u>	<u>[Signature]</u>





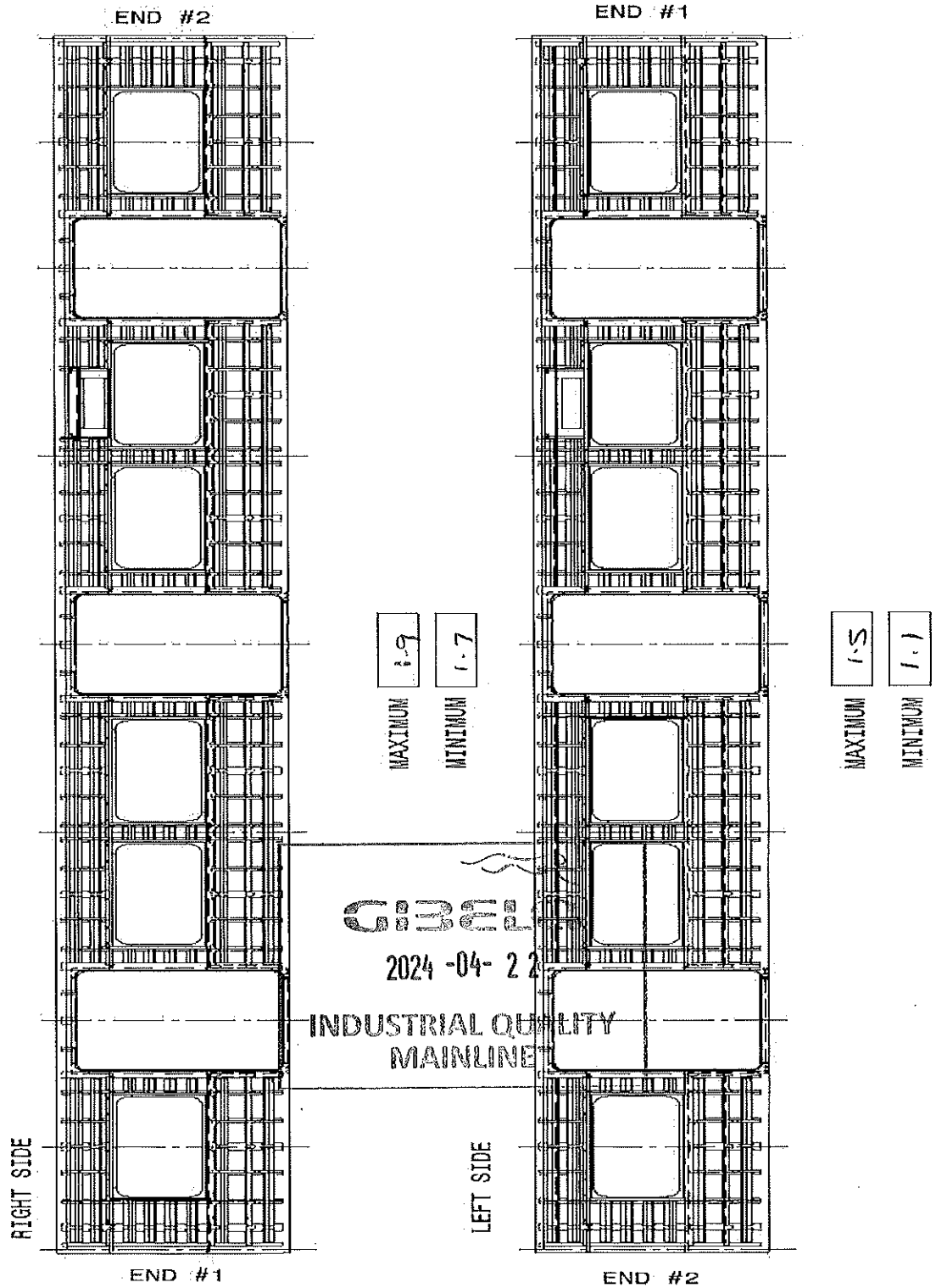
CARBODYSHELL M2 ASSEMBLY AA00001374497

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Specifications of Details for CBS measurement CB1230

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





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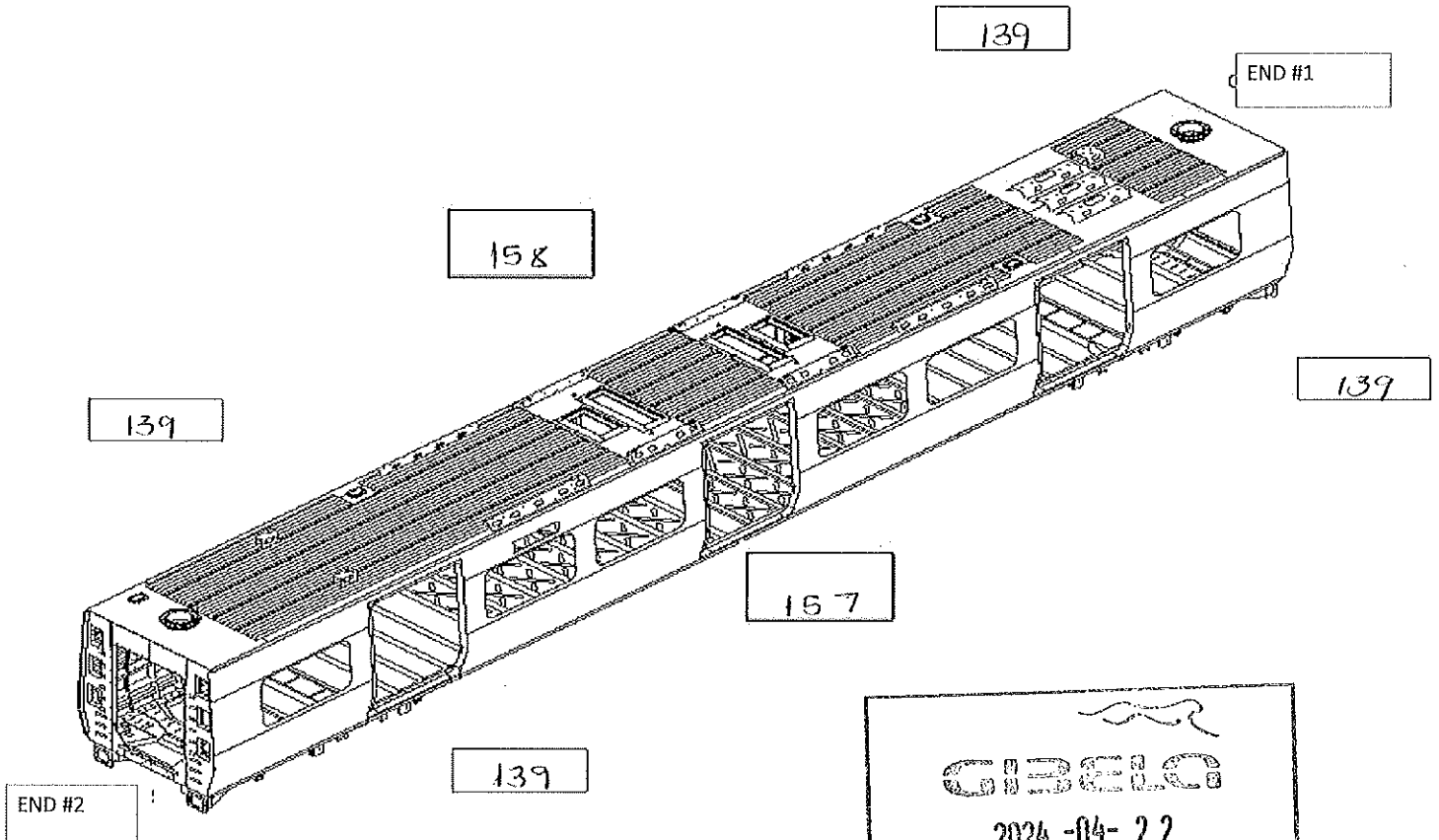
Project: PRASA

Date
06/11/2023

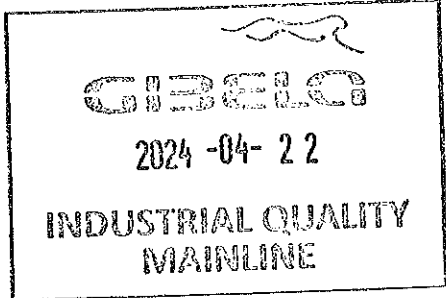
SI.CB2230.277.V29

Specifications of Details for CBS measurement CB1230

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



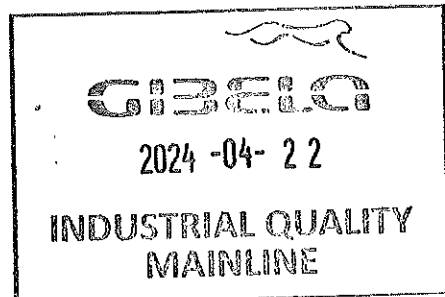
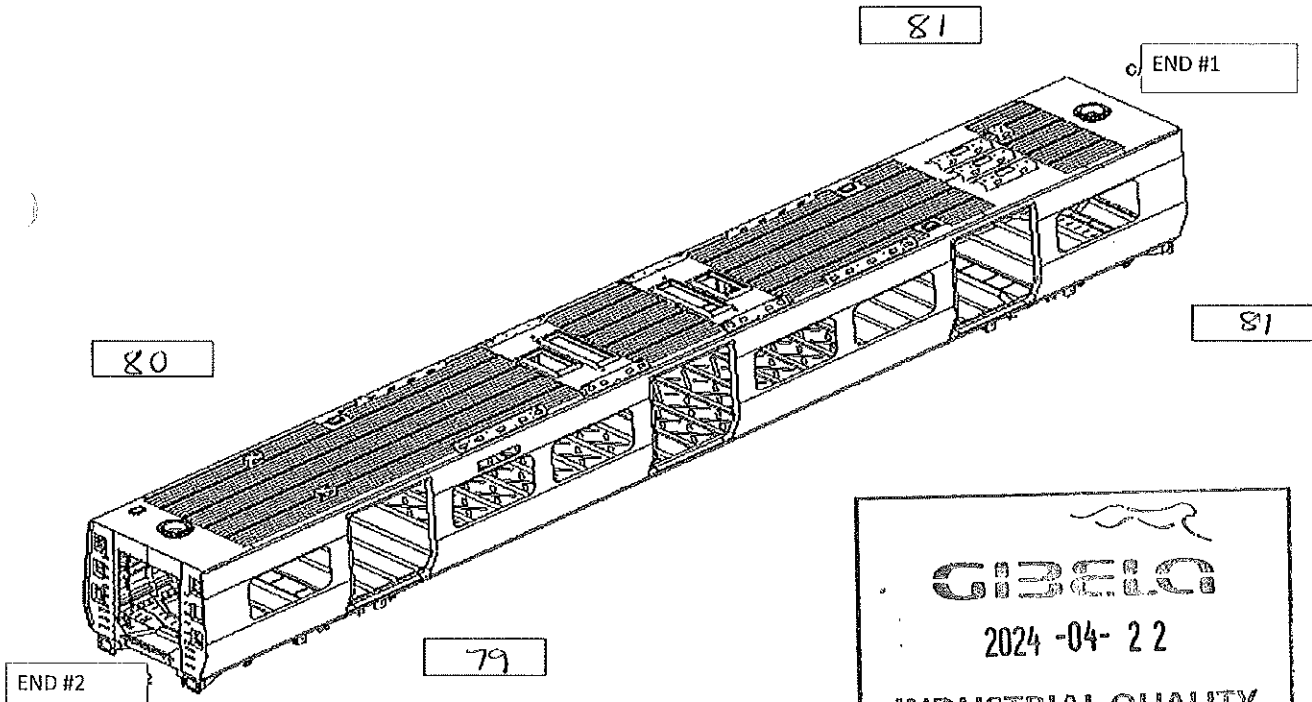
CAMBER	
RIGHT	18
LEFT	19



E

Specifications of Details for CBS measurement CB1/230

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	1
LONGITUDINAL	1



CARBODYSHELL M2 ASSEMBLY AA00001374497

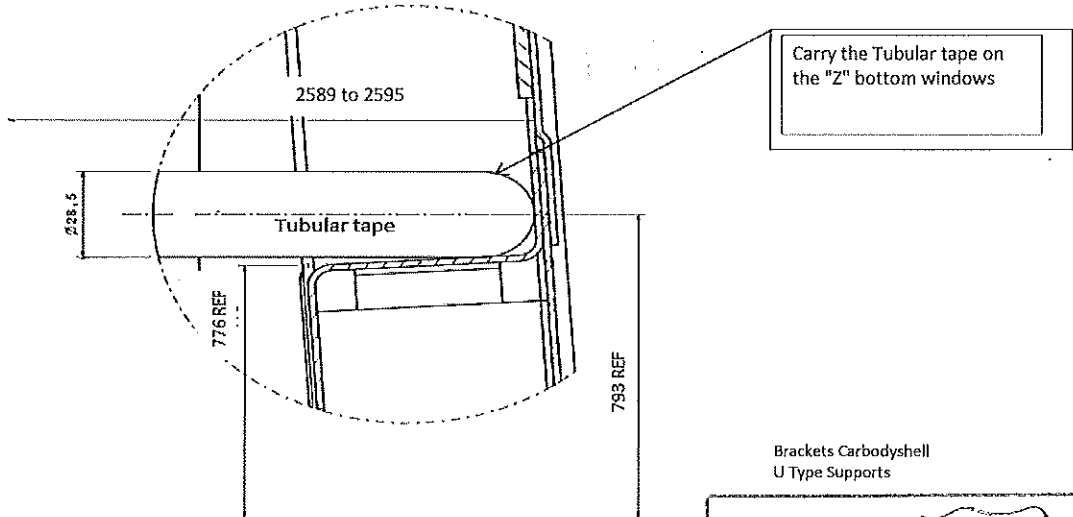
Rev.
30

Date
06/11/2023

Project: PRASA

SI.CB2230.277.V29

Specifications of Details for CBS measurement GB1230

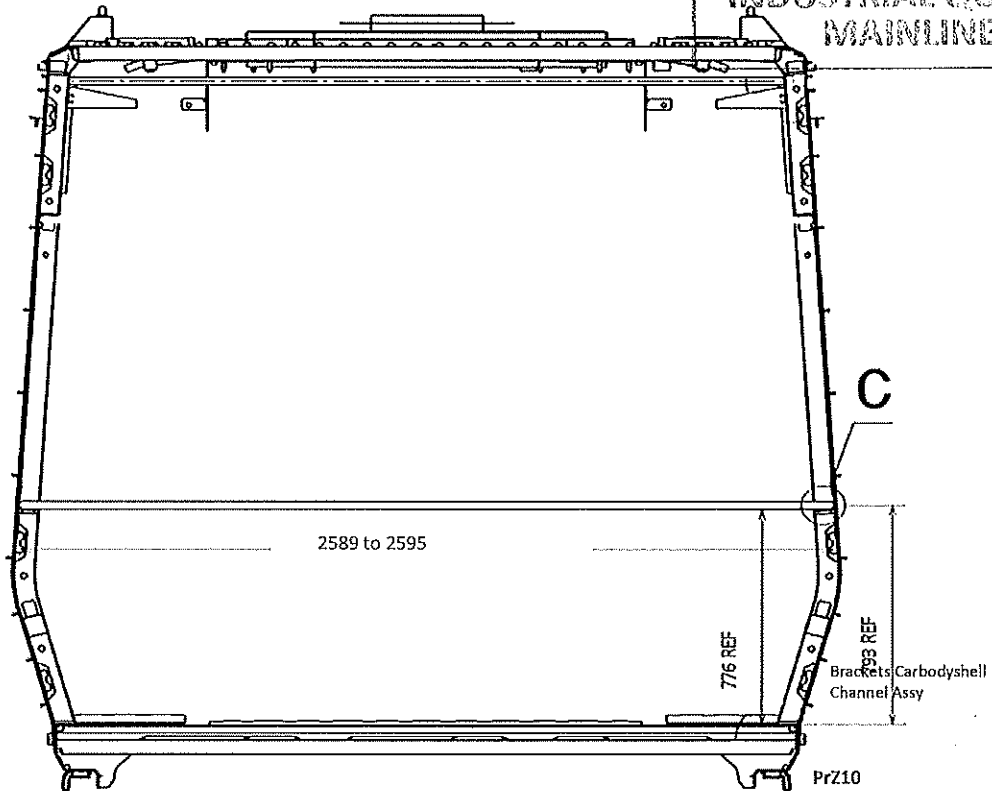


Detail C

2024-04-22

INDUSTRIAL QUALITY
MAINLINE

Detailed description: A rectangular stamp containing the GIBELO logo, the date '2024-04-22', and the text 'INDUSTRIAL QUALITY MAINLINE'.





CARBODYSHELL M2 ASSEMBLY AA00001374497

Rev. 30

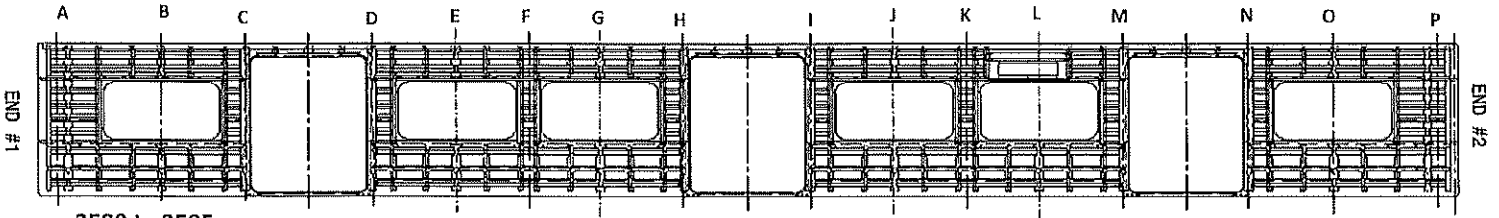
Project: PRASA

Date

SI.CB2230.277.V29

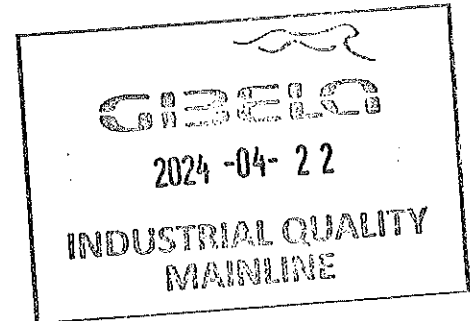
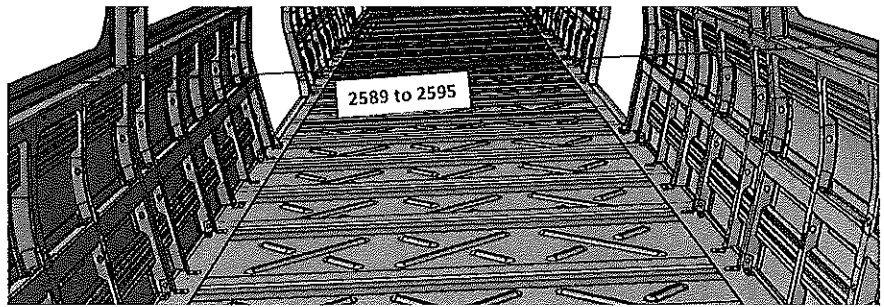
06/11/2023

Specifications of Details for CBS measurement CB1230



2589 to 2595mm

A	2589
B	2590
C	2591
D	2591
E	2592
F	2589
G	2589
H	2591
I	2594
J	2594
K	2595
L	2591
M	2591
N	2593
O	2595
P	2591



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	37	38	38	37	38

BOILER MAKER:

Leni Bargo

Welder: Zanele



CARBODYSHELL M2 ASSEMBLY AA00001374497

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Date

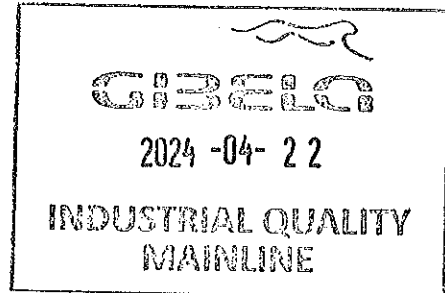
06/11/2023

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WELDER: _____

Dye penetrant test

Dye-penetration test to be performed by quality personnel





CARBODYSHELL M2 ASSEMBLY AA00001374497

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Date

06/11/2023

Project: PRASA

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Self Inspection - Final Result

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)		DATE	NAME	SIGNATURE		
HOLD POINT	 GO	(If activities are not complete, the missing activities must not impact the next stage)	22/04/24	LERATO Operations Manager		
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	22/04/2024	Amogelang Industrial Quality		
	NO GO	There are activities pending that impact/stop the activities of the next process Obs: (To describe problems below)			Operations Manager	
		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

