

**GIBELA**

**PRASA PROJECT**



APPLICABLE FROM TRAINSET 100+ AS PER BASELINE 10.3.1

# SELF INSPECTION SHEET

**CONFIDENTIAL INFORMATION**

This document and the information contemplated therein have to be considered as Confidential Information pursuant to the provisions of Clause 25 of the MSA, and treated as such.


**APPLICATION REFERENCE**

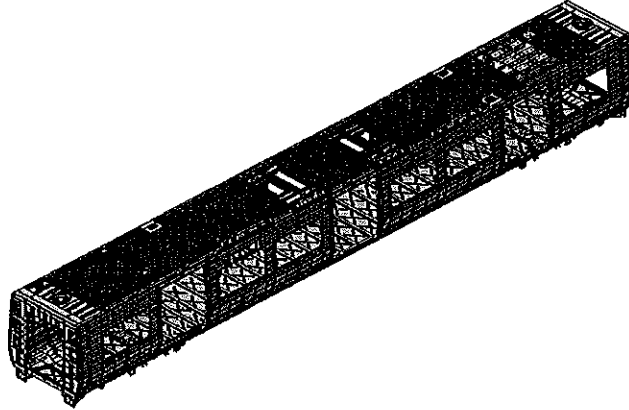
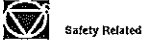
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ?		
				TCL	M1	M2	M3	M4	TCL2				
<input type="checkbox"/>	DTR30225487/3	AAD0003278566	CARBODYSHELL M1 ASSEMBLY	CB2210								PRA.CB2210.DTR30225487/3.V25	YES

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	10/01/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	10/01/2018
			CHECKER	Nosizo Pindela	10/01/2018
			COMPILER	Thanyani Mathegu	10/01/2018
1	2018/05/18	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	2018/05/18
			CHECKER	Nosizo Pindela	2018/05/18
			REVISED BY	Ramokone Motama	2018/05/18
2	2018/07/04	Certain dimensional checks moved to CB1220 and CB1230	APPROVER	Itumeleng Modiba	2018/07/04
			CHECKER	Nosizo Pindela	2018/07/04
			REVISED BY	Ramokone Motama	2018/07/04
3	2018/12/12	Added dimensional check points to CB2210	APPROVER	Itumeleng Modiba	2018/12/12
			CHECKER	Nosizo Pindela	2018/12/12
			REVISED BY	Ramokone Motama	2018/12/12
5	22/01/2019	As per Baseline 10.2	APPROVER	Itumeleng Modiba	22/01/2019
			CHECKER	Nosizo Pindela	22/01/2019
			REVISED BY	Vanessa Ntuli	22/01/2019
6	13/03/2019	Added D1 and D2 on Self - Inspection	APPROVER	Itumeleng Modiba	13/03/2019
			CHECKER	Nosizo Pindela	13/03/2019
			REVISED BY	Nosizo Pindela	13/03/2019
10	21/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	21/08/2019
			CHECKER	Nosizo Pindela	21/08/2019
			REVISED BY	Nosizo Pindela	21/08/2019
15	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela	06/08/2020
			CHECKER	Bongane Masina	
			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 Mufaudzi	
			REVISED BY	Mpho Mufaudzi	
25	19/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombi collins	19/02/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
26	14/04/2023	Addition of welding consumable traceability	APPROVER	Ntuli Vanessa	14/04/2023
			CHECKER	Mohlampe Amogelang	
			REVISED BY	Mohlampe Amogelang	
27	27/07/2023	Added verification of loaded parts	APPROVER	Ngobeni Tyson	27/07/2023
			CHECKER	Zwane Ntokozo	
			REVISED BY	Mohlampe Amogelang	
28	07/11/2023	Addition of welding traceability	APPROVER	Ngobeni Tyson	07/11/2023
			CHECKER	Andani Muthelo	
			REVISED BY	Ntokozo Zwane	

TRAINSET	CAR	OPERATOR NAME& ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES
15287	M1	P. MALATJI	03/07/23	SI.CB2210.254.V28	17

409964

	<b>CARBODYSHELL M1 ASSEMBLY DTR30225487/3</b>	<b>Rev. 28</b> <b>Date 07/11/2023</b>	<b>Project: PRASA</b> <b>SI.CB2210.254.V28</b>
		Car: M1      NCR:      Work station: <b>CB2210</b>	



**I - Documentation and Instruments Control**

**I.1 - Documentation Control**

Document	Type of car						Revision	Observation	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
	D	M	S	E	X	P					
DTR30225487/3		X					28		✓	[Signature]	[Signature]

**I.2 - Instruments Control**

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

Instruments	Serial number	Calibration or Verification Validation Date	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
TUBULAR	32823-2	15/08/25	✓	[Signature]	[Signature]
LASER TAPE	105485924	08/10/25	✓	[Signature]	[Signature]
EDM TAPE	618TP010	18/11/24	✓	[Signature]	[Signature]

**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	31468-74097	MIG	✓	[Signature]	[Signature]
ER 308 L	299687-70300	TIG	✓	[Signature]	[Signature]



CARBODYSHELL M1 ASSEMBLY DTR30226487/3


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SI.CB2210.254.V28

II - Self Inspection - Items to Check

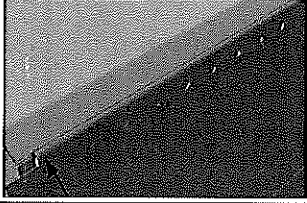
II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Signature/Date (Manufacturer)	Signature/Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls, Endframes, Roof and Underframe)	DT00000311225	✓	03/07/24	03/07/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓	03/07/24	03/07/24
03	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 e DTD0000210675	✓	03/07/24	03/07/24
04	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	03/07/24	03/07/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC.0002	✓	03/07/24	03/07/24
06		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓	03/07/24	03/07/24
07	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	✓	03/07/24	03/07/24

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		Date 07/11/2023	

**Welder Traceability**

Roof ring welds



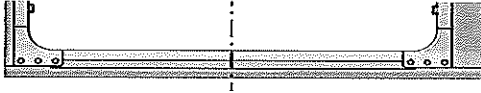
<u>LHS</u>	
Boiler maker (Name & Sign): <u>WINGA [Signature]</u>	Welder (Name & Sign): <u>MTHOKOZISI [Signature]</u>
<u>RHS</u>	
Boiler maker (Name & Sign): <u>WINGA [Signature]</u>	Welder (Name & Sign): <u>SIPHOKAZI [Signature]</u>

END 1

<u>LHS</u>	
Boiler maker (Name & Sign): <u>WINGA [Signature]</u>	Welder (Name & Sign): <u>MTHOKOZISI [Signature]</u>
<u>RHS</u>	
Boiler maker (Name & Sign): <u>WINGA [Signature]</u>	Welder (Name & Sign): <u>SIPHOKAZI [Signature]</u>

END 2

Door ring welds



<u>LHS</u>	
Boiler maker (Name & Sign): <u>WINGA [Signature]</u>	
Welder (Name & Sign): <u>Thabang [Signature]</u>	

<u>RHS</u>	
Boiler maker (Name & Sign): <u>WINGA [Signature]</u>	
Welder (Name & Sign): <u>Thabang [Signature]</u>	



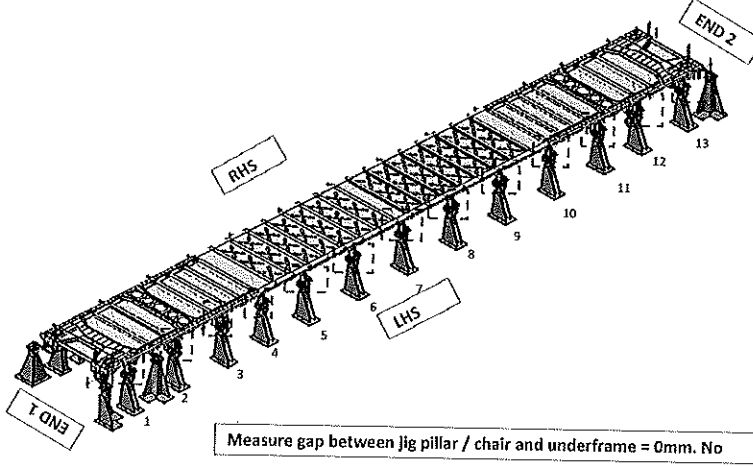


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Specifications of Details for CBS measurement



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	3	4	3	0	0	0	0

Signature Operator:

Date: 03/07/24

After Welding.

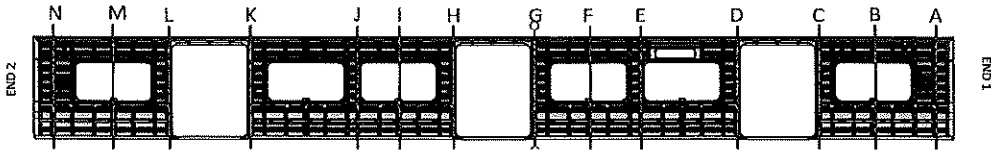
Fill in the gap found each jig pillars / chair and underframe should be 0mm.

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

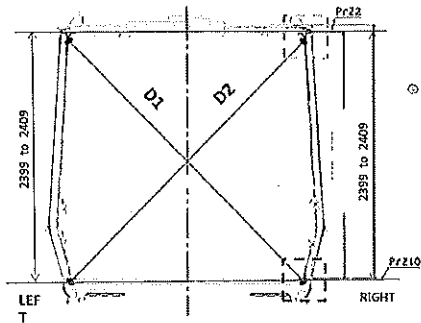
Signature Industrial Quality:

Date: 03/07/24

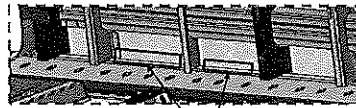
Specifications of Details for CBS measurement



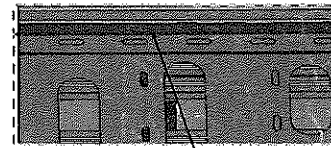
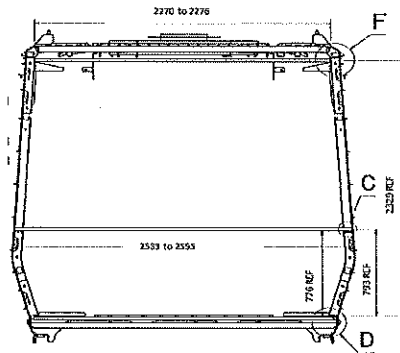
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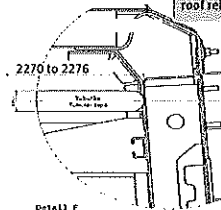
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.



Reinforcement area measurement positions on roof reinforcement area.



Detail F  
Don't consider the reinforcement

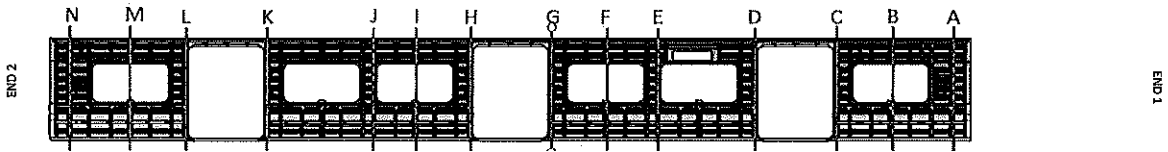


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28  
Date  
07/11/2023

Project: PRASA  
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Specifications of Details for GBS measurement



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

BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 $\leq 5$ mm	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS $\leq 2$
A	3269	3268	1	2404	2404	0
B	3270	3269	1	2405	2406	1
C	3268	3268	0	2404	2404	0
D	3269	3268	1	2406	2404	2
E	3271	3269	2	2405	2404	1
F	3269	3269	0	2404	2405	1
G	3270	3271	1	2404	2406	2
H	3269	3269	0	2404	2403	1
I	3266	3267	1	2404	2404	0
J	3270	3271	1	2406	2404	2
K	3268	3269	1	2404	2404	0
L	3268	3268	0	2404	2405	1
M	3269	3267	2	2406	2404	2
N	3266	3267	1	2406	2406	0

499964  
08/07/24



CARBODYSHELL M1 ASSEMBLY DTR30226487/3

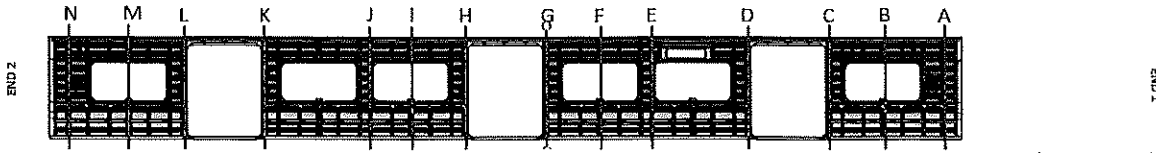
Rev. 28

Project: PRASA  
SI.CB2210.254.V28

Date

07/11/2023

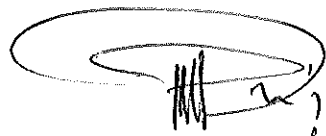
Specifications of Details for CBS measurement



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

AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 $\leq 5$ mm	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS $\leq 2$
A	3296	3298	2	2404	2405	1
B	3269	3269	0	2406	2404	0
C	3295	3296	1	2405	2406	1
D	3298	3298	0	2404	2404	0
E	3270	3269	1	2405	2404	1
F	3269	3268	1	2404	2406	2
G	3298	3197	1	2405	2404	1
H	3296	3298	2	2406	2406	0
I	3269	3268	1	2405	2404	1
J	3267	3269	2	2404	2405	1
K	3296	3296	0	2406	2405	1
L	3298	3297	1	2404	2404	0
M	3270	3269	1	2406	2404	2
N	3296	3298	2	2404	2404	0

  
 409960  
 08/07/24



CARBODYSHELL M1 ASSEMBLY DTR30225487/3

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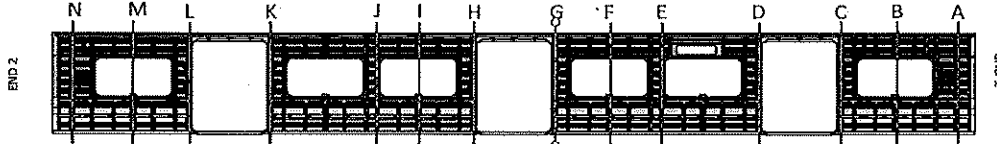
Date

07/11/2023

Project: PRASA  
SI.CB2210.254.V28

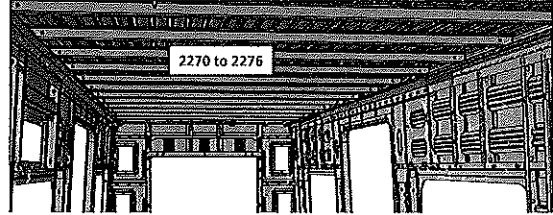
CBS measurement

BEFORE WELDING

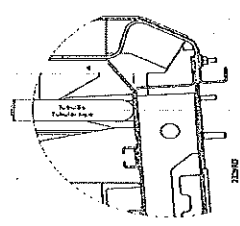
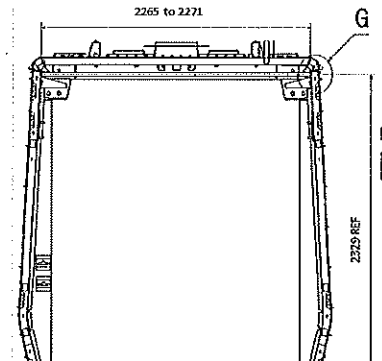


	2270 to 2276
A	2270
B	2274
C	2276
D	2274
E	2278
F	2274
G	2274
H	2273
I	2272
J	2276
K	2274
L	2272
M	2274
N	2274

1990 to



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

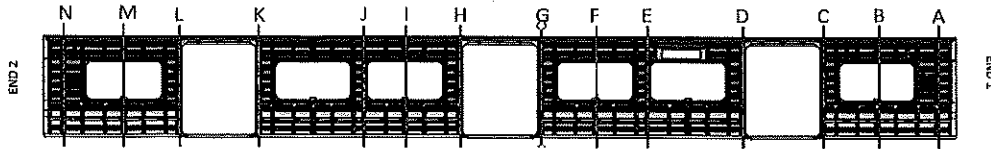


Detail G  
Consider as the reinforcement plate

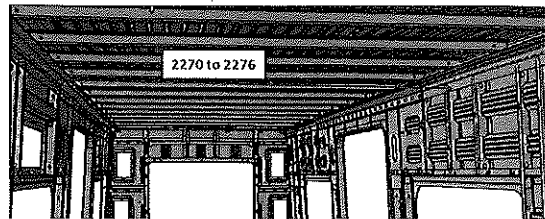
Handwritten signature and date: 4099/60 03/07/20

CBS measurement

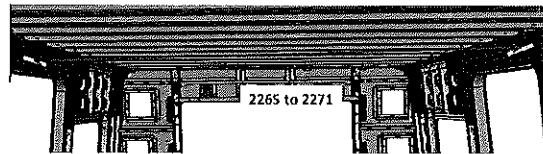
AFTER WELDING



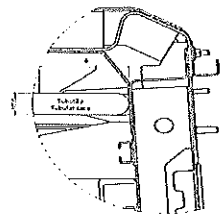
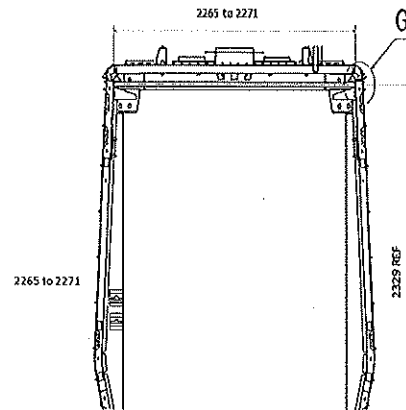
	2265 to 2271	2270 to 2276
A	2269	/
B	/	2274
C	2266	/
D	2268	/
E	/	2276
F	/	2274
G	2270	/
H	2269	/
I	/	2273
J	/	2276
K	2269	/
L	2269	/
M	/	2272
N	2268	/



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



Take measurement close to radius ( considering reinforcement)



2265 to 2271

Detail G  
 Give during the reinforcement phase

Handwritten signature and date: 409964, 03/07/24

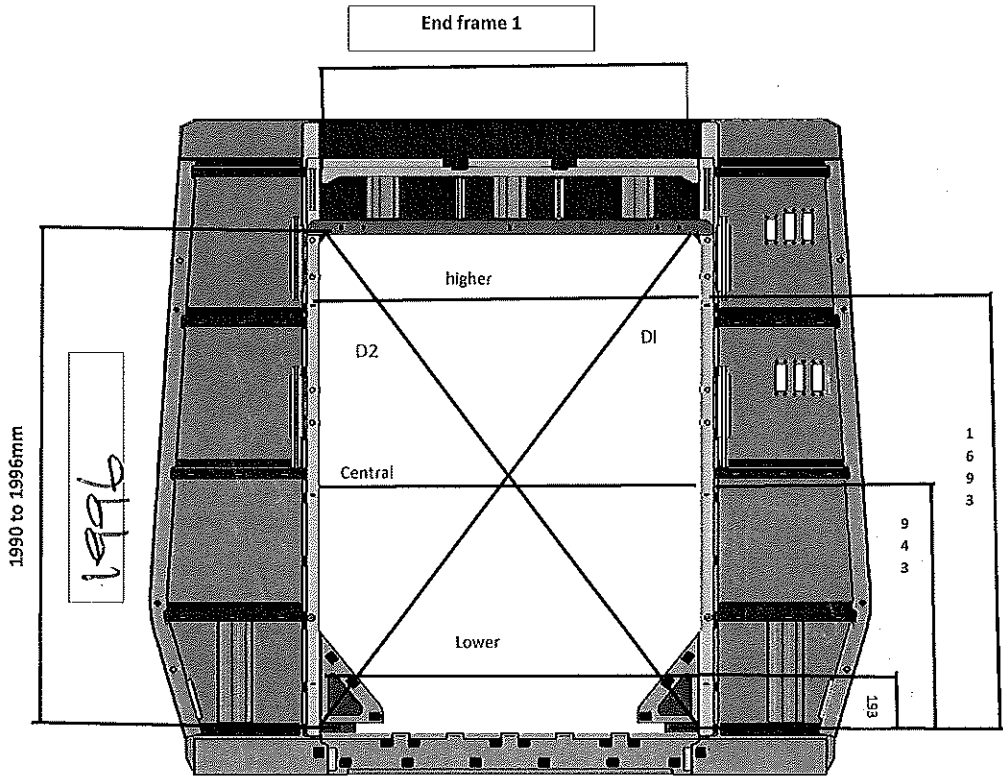


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Date 07/11/2023

Project: PRASA  
SI.CB2210.254.V28

Specifications of Details for CBS measurement



1380 to 1382 mm

DIAGONAL DIFFERENCE  $D1-D2 \leq 3mm$

Higher Dimension

1380

D1

2416

Central Dimension

1381

D2

2415

Lower Dimension

1381

D1-D2

1

4009960  
03/07/20

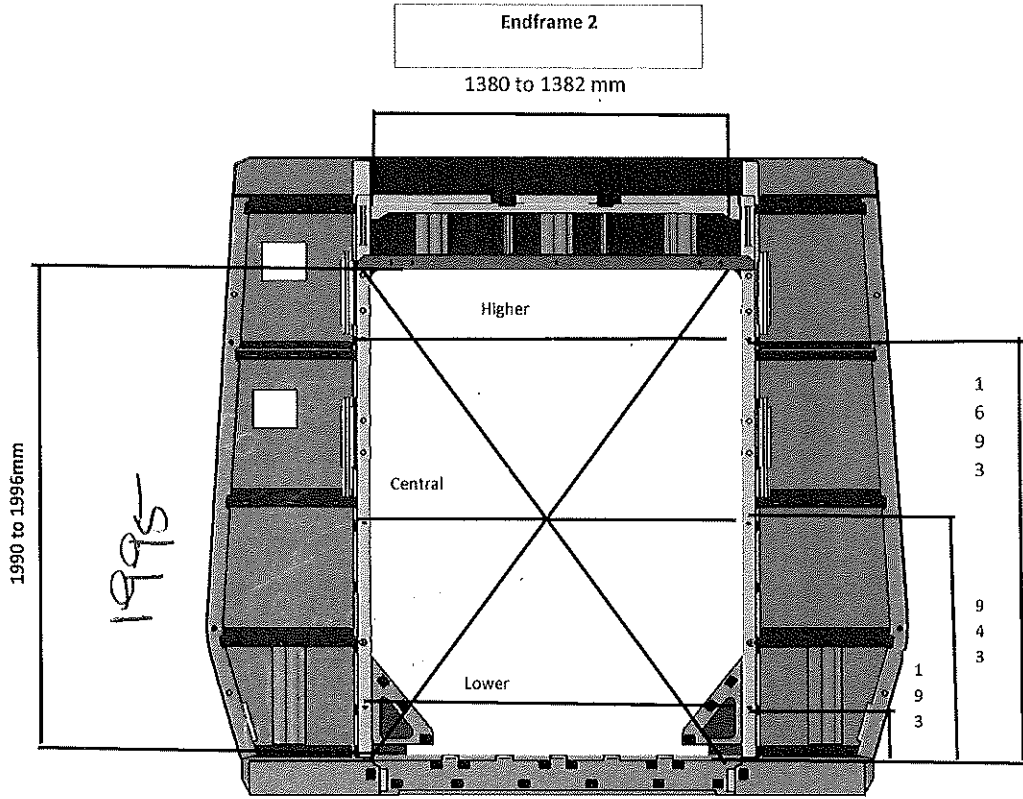


CARBODYSHELL M1 ASSEMBLY DTR30225487/3

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Date 07/11/2023

Project: PRASA  
SI.CB2210.254.V28

Specifications of Details for CBS measurement



1380 to 1382 mm

DIAGONAL DIFFERENCE  $D1-D2 \leq 3mm$

Higher Dimension	1380	D1	2416
Central Dimension	1380	D2	2416
Lower Dimension	1380	D1-D2	0

*(Handwritten signature)*  
 407964  
 23/07/24

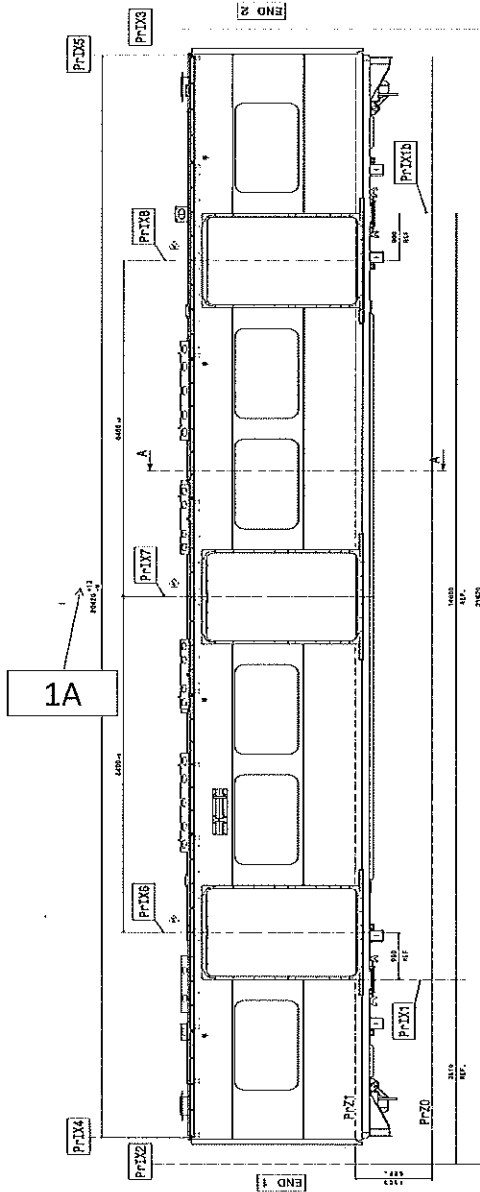


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Date 07/11/2023

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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 signature and date: 409960, 09/07/24

Dye penetrant test

Dye-penetration test to be performed by quality personnel







CARBODYSHELL M1 ASSEMBLY DTR30226487/3

Rev. 28

Project: PRASA  
SI.CB2210.254.V28

Date

07/11/2023

**Self Inspection - Final Result**

				DATE	NAME	SIGNATURE
HOLD POINT	GO	(If activities are not complete, the missing activities must not impact the next stage)		08/07/2023	Fontbo	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)		13/07/24	Ntkcora	
	NO GO	There are activities pending 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 plan to ensure "GO":

Item	Description	Responsible	Due date	Status

Operations

Quality

9



APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

# SELF INSPECTION SHEET

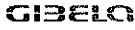
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				Tc1	M1	M2	M3	M4	Tc2			
<input type="checkbox"/>	DTR0225487/2	ADD000178565	CARDOD/SHELL HL,HL,M4 ASSEMBLY	CB1220		X	X		X		PRA.CB1220.DTR0225487/2.V21	YES
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												
<input type="checkbox"/>												

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
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			CHECKER	Nosizo Pindela	01/02/2018
			COMPLIER	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
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			REVISED BY	Ramokone Motama	18/05/2018
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10	22/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	22/08/2019
			CHECKER	Nosizo Pindela	22/08/2019
			REVISED BY	Nosizo Pindela	22/08/2019
15	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela	06/08/2020
			CHECKER	Bongane Masina	06/08/2020
			REVISED BY	Bongane Masina	06/08/2020
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	
			REVISED BY	Bongane Masina	
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING	APPROVER	Mbhambi Collins	17/08/2021
			CHECKER	Mpho Mulaudzi	
			REVISED BY	Mpho Mulaudzi	
25	20/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombhi Collins	19/02/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Mbhombhi Collins	14/06/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
27	17/10/2022	Addition of traceability for sealant application and welding	APPROVER	Mbhombhi Collins	17/10/2022
			CHECKER	Ntokozi Zwane	
			REVISED BY	Amogelang Mohlampe	
28	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntokozi Zwane	
			REVISED BY	Amogelang Mohlampe	
29	28/10/2023	Addition of bracket quantity	APPROVER	Ngobeni Tyson	28/10/2023
			CHECKER	Ntokozi Zwane	
			REVISED BY	Amogelang Mohlampe	

TRAINSET	CAR	OPERATOR NAME & ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES
237	M1	Mthobeni 426954	04/07/24	SI.CB1220.250.V29	14



CARBODYSHELL M1,M3,M4 ASSEMBLY  
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29  
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28/10/2023

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SI.CB1220.250.V29

Car: M1,M3&M4

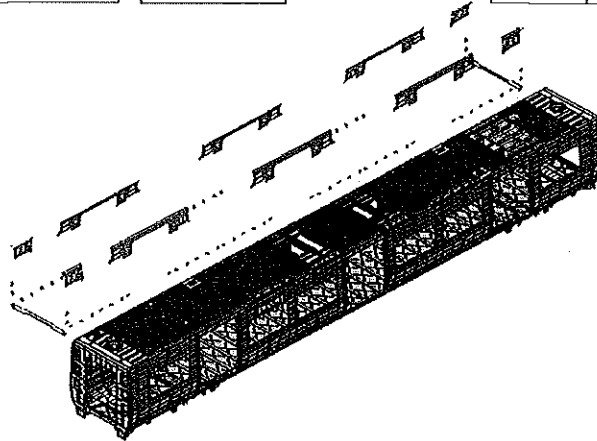
NCR:

Work station:

CB1220



Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car					Revision	Observation	OK	N/A	Signature/Date (Manufacturing)	Signature/Date (Quality)
	T01	M1	M2	M3	M4						
DTR30225487/2	X					29	4/10/2024	✓		N/A	<i>[Signature]</i> 04/10/24

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 (Manufacturing)	Signature/Date (Quality)
Tubular	32823-2	15/03/2025	✓		<i>[Signature]</i> 04/10/24	<i>[Signature]</i> 04/10/24
Tape measure	GIBBELQ	2025/04/17	✓		<i>[Signature]</i> 04/10/24	<i>[Signature]</i> 04/10/24

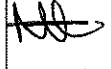

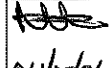
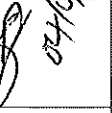
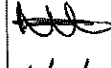

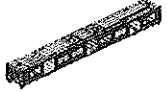
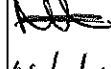
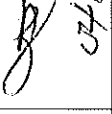
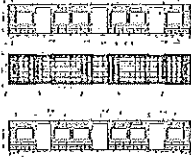
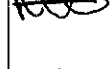


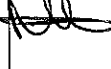

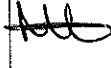

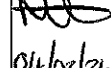


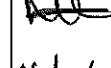

I.3 Consumables

Welding Consumable Control - Used for Special Process

Fiber Material	Heat Number	Welding Process	OK	N/A	Signature/Date (Manufacturing)	Signature/Date (Quality)
308 LSI	37373	30% MIG	✓		<i>[Signature]</i> 04/10/24	<i>[Signature]</i> 04/10/24

**II - Self Inspection - Items to Check**

**II.1 - Items to check**

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB1220.DTR30225487/2 Verification of fitment for all reinforcement brackets.	PRA.CB1220.DTR30225487/2	✓		 04/07/24	 04/07/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓		 04/07/24	 04/07/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 04/07/24	 04/07/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 04/07/24	 04/07/24
05		Functionals dimensions approved according drawing or complementary document approved by Astom engineering and registered in this document.	Approved according specified on pages below.	✓		 04/07/24	 04/07/24
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.	✓		 04/07/24	 04/07/24
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 (t) Min - Max 10°C - 35°C Relative humidity Min - Max (t) Min - Max 25% - 80%	Sealant Batch No: <u>01337</u> Exp Date: <u>10/02/25</u>  Actuals Temperature: <u>18</u> Humidity: <u>30</u>	✓		 04/07/24	 04/07/24
08	NA	Verification of sealant application in certain regions in the drawing.	AAD0001278566	✓		 04/07/24	 04/07/24
09		Verification of safety welds	Approved according to DTD000210658 reference and Self inspection	✓		 04/07/24	 04/07/24



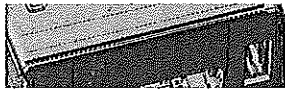
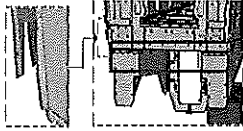
CARBODYSHELL M1,M3,M4 ASSEMBLY  
DTR30225487/2

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29  
Date  
28/10/2023

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SI.CB1220.250.V29

III - Self Inspection - Items to Check

SEALANT APPLICATION



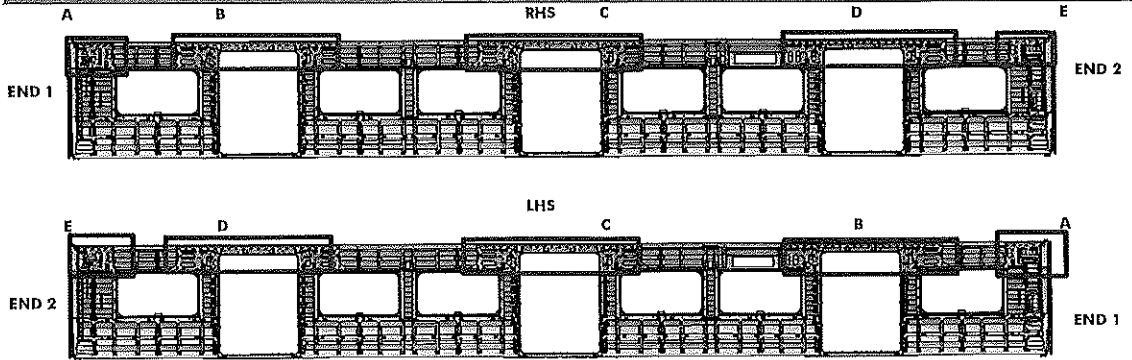
AREA 1 & 2 END 1

Operator (Name & sign):

Mthekozisi *[Signature]*

Operator (Name & sign):

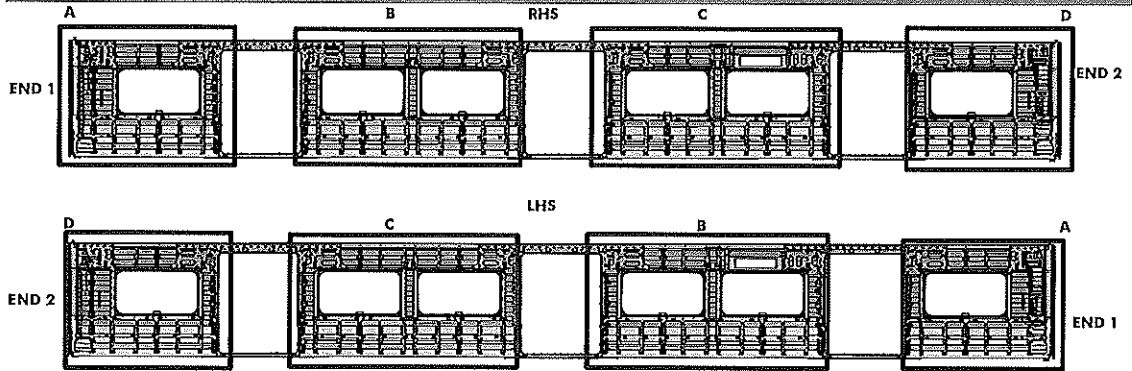
Mthekozisi *[Signature]*



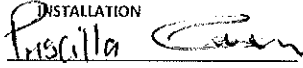
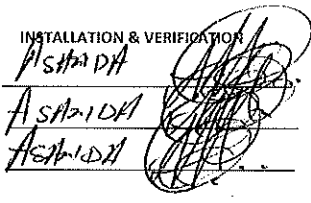
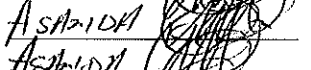
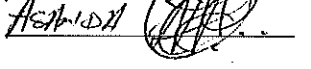
**REINFORCEMENT WELDING**

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

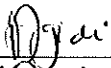


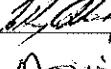

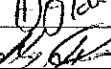
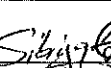

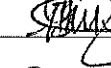
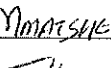
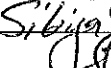
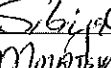
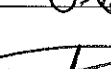
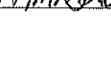
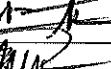



**II - Self Inspection - Items to Check**



**BRACKETING**

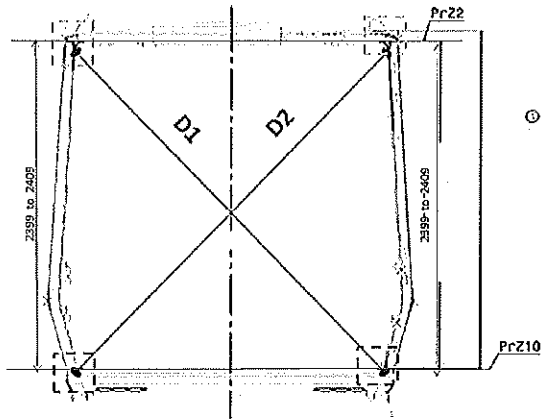
	<b>INSTALLATION</b>
C-RAILS:	Operator: <u>Piscilla </u>
	Operator: _____
DOOR MECHANISMS:	Operator: <u>Teklo</u>
	Operator: _____
TAPPING PADS	Operator: <u>Mubelrossi Eni-HH</u>
	Operator: _____
	<b>INSTALLATION &amp; VERIFICATION</b>
SEAT & LUGGAGE BRACKETS:	Operator: <u>ASMAIDA </u>
	Operator: <u>ASMAIDA </u>
SEAT BRACKETS VERIFICATION:	Operator: <u>ASMAIDA </u>
	Operator: _____

**WELDING**

AREA	LHS	RHS
A (Seat brackets)	Operator (Name&sign): <u>Djoni </u>	<u>Djoni </u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign): <u>LINDO </u>	<u>LINDO </u>
B (Seat brackets)	Operator (Name&sign): <u>Djoni </u>	<u>Djoni </u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign): <u>LINDO </u>	<u>LINDO </u>
C (Seat brackets)	Operator (Name&sign): <u>Sibij </u>	<u>Sibij </u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign): <u>MMARSHENO MECH </u>	<u>MMARSHENO MECH </u>
D (Seat brackets)	Operator (Name&sign): <u>Sibij </u>	<u>Sibij </u>
(C-rails, Luggage and earth bushes)	Operator (Name&sign): <u>MMARSHENO MECH </u>	<u>MMARSHENO MECH </u>
<b>ENDS</b>		
END 1 TAPPING PADS WELDING:	Operator (Name&sign): <u></u>	
END 2 TAPPING PADS WELDING:	Operator (Name&sign): <u></u>	



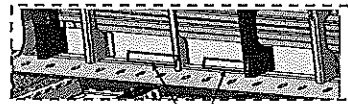
**Specifications of Details for CBS measurement**



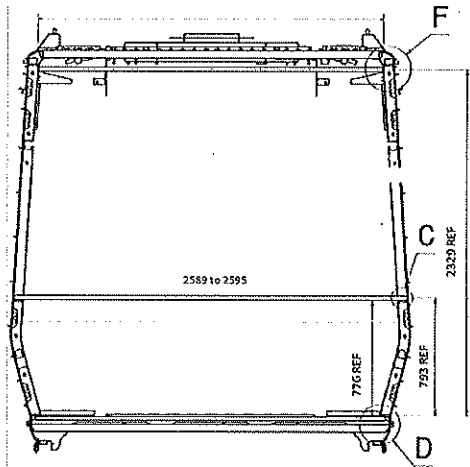
Measurement positions on roof rail and sidewall omega corner.



Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.



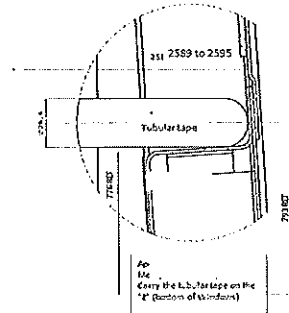
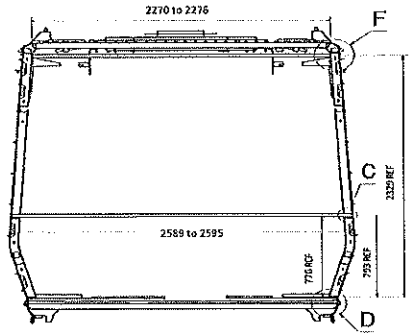


CARBODYSHELL M1,M3,M4 ASSEMBLY  
DTR30225487/2

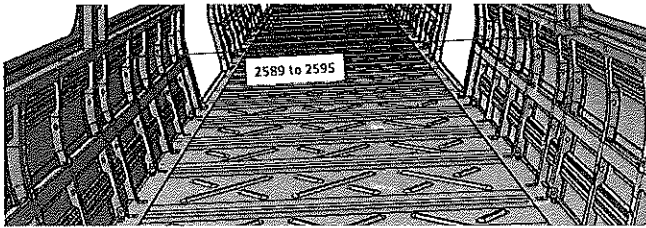
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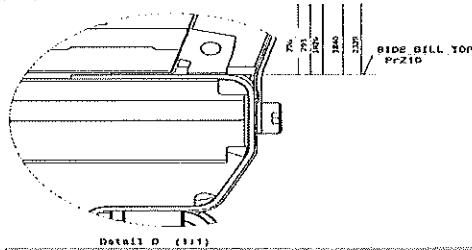
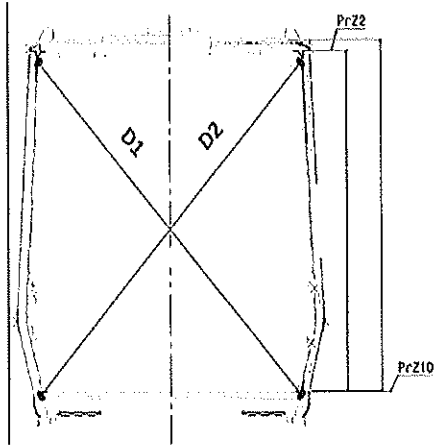
CBS measurement



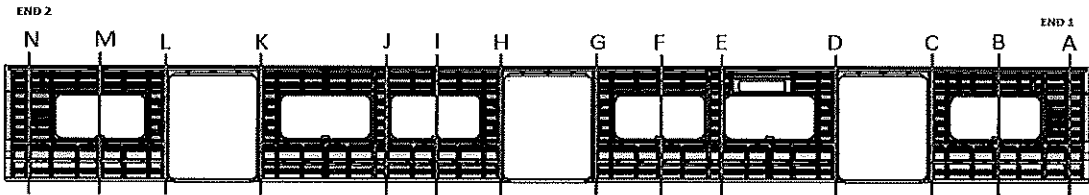
Detail C



Take measurement close to radius



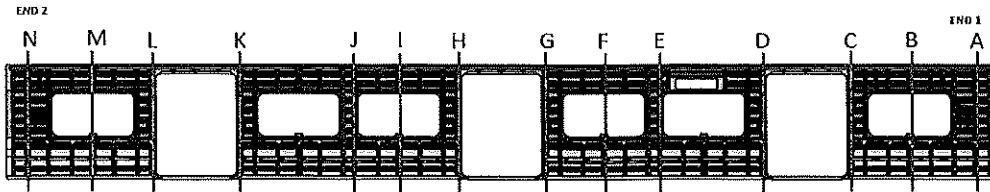
DETAIL D (1:1)



BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3296	3295	1	-
B	3267	3266	1	-
C	3295	3296	1	-
D	3294	3292	2	-
E	3264	3265	1	-
F	3262	3265	3	-
G	3297	3296	1	-
H	3293	3294	1	-
I	3263	3265	2	-
J	3264	3264	0	-
K	3294	3294	0	-
L	3297	3295	2	-
M	3262	3264	1	-
N	3296	3298	2	-

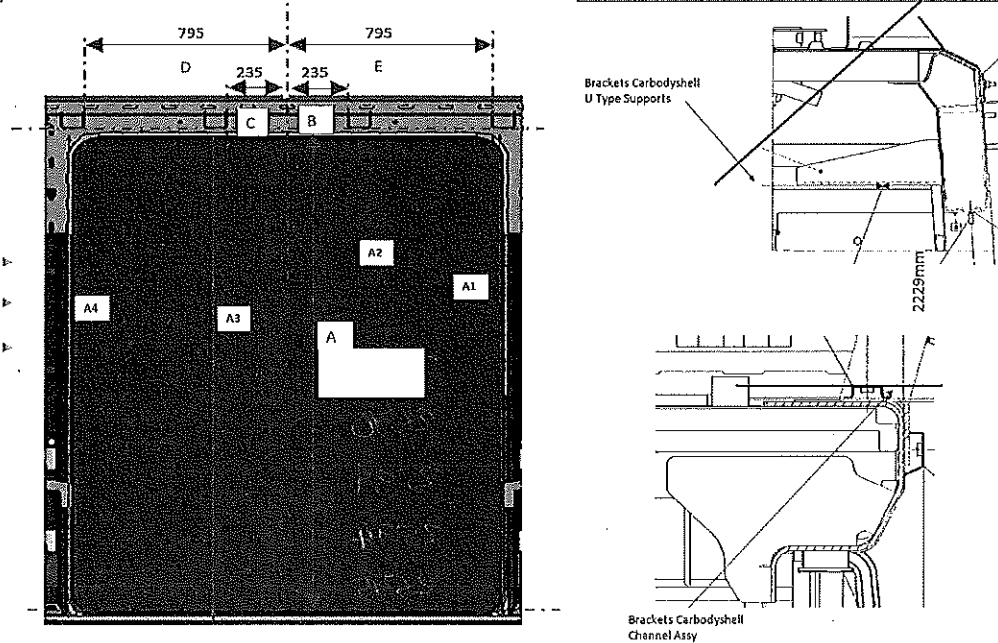
CBS measurement



AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3297	3202	5	2595
B	3264	3265	1	2590
C	3295	3297	2	2589
D	3293	3294	1	2594
E	3261	3263	2	2595
F	3265	3262	3	2595
G	3295	3292	3	2595
H	3296	3297	1	2594
I	3263	3262	1	2595
J	3265	3265	0	2595
K	3290	3294	4	2591
L	3294	3297	3	2589
M	3263	3271	8	2590
N	3296	3295	1	2595

**Specifications of Details for GBS measurement GB1220**

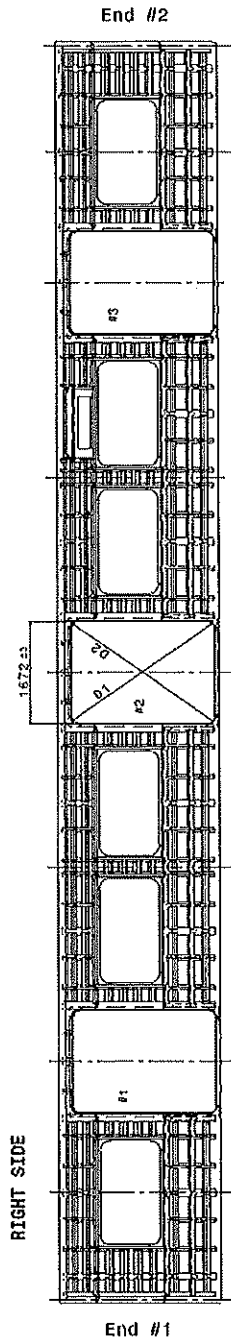


DOOR 1 - LHS			DOOR 2 - LHS			DOOR 2 - RHS		
	VALUE	ACTUAL		VALUE	ACTUAL		VALUE	ACTUAL
A1	2230 to 2232	2232	A1	2230 to 2232	2231	A1	2230 to 2232	2232
A2	2230 to 2232	2232	A2	2230 to 2232	2231	A2	2230 to 2232	2233
A3	2230 to 2232	2232	A3	2230 to 2232	2231	A3	2230 to 2232	2233
A4	2230 to 2232	2232	A4	2230 to 2232	2231	A4	2230 to 2232	2233
B	234 to 236	235	B	234 to 236	235	B	234 to 236	235
C	234 to 236	235	C	234 to 236	235	C	234 to 236	235
D	794 to 796	795	D	794 to 796	795	D	794 to 796	795
E	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		VALUE	ACTUAL
A1	2230 to 2232	2232	A1	2230 to 2232	2232	A1	2230 to 2232	2232
A2	2230 to 2232	2232	A2	2230 to 2232	2232	A2	2230 to 2232	2232
A3	2230 to 2232	2232	A3	2230 to 2232	2232	A3	2230 to 2232	2232
A4	2230 to 2232	2232	A4	2230 to 2232	2232	A4	2230 to 2232	2232
B	234 to 236	235	B	234 to 236	235	B	234 to 236	235
C	234 to 236	235	C	234 to 236	235	C	234 to 236	235
D	794 to 796	795	D	794 to 796	795	D	794 to 796	795
E	794 to 796	795	E	794 to 796	795	E	794 to 796	795

Specifications of Details for CBS measurement CB1220

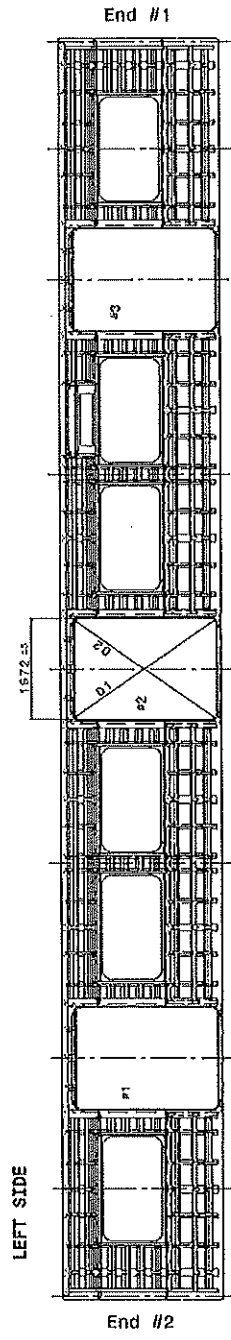


Doors diagonal D1-D2 maximum difference  $\leq 4\text{mm}$

#1	#2	#3
D1	2749	2749
D2	2749	2750
DI-D2	1	1

Doors Length - 1672  $\pm 3\text{mm}$

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



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

#1	#2	#3
D1	2749	2749
D2	2750	2750
DI-D2	1	2

Doors Length - 1672  $\pm 3\text{mm}$

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



CARBODYSHELL M1,M3,M4 ASSEMBLY  
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29  
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28/10/2023

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**GBS measurement (Manufacturing)**

**Dye penetrant test**

Dye-penetration test to be performed by quality personnel

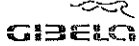


Item	Description of the Issue	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)



**II.2 - Check List REX**

**Check List Items**

Item	Picture/Drawing	Description	Criteria/Record	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. No new defects must be added on the REX			

	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DTR30225487/2	Rev.	Project: PRASA
		29	
		Date	SI.CB1220.250.V29
		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)	04/07/24	Mtichovari	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	04/07/24	Mtichovari	
		There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)			
		There are non-conformities that impact the quality of the product and there is no corrective action defined yet)			

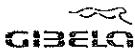
In case of "NO GO", describe blocking problems

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

Item	Description	Responsible	Due date	Status

Operations

Quality

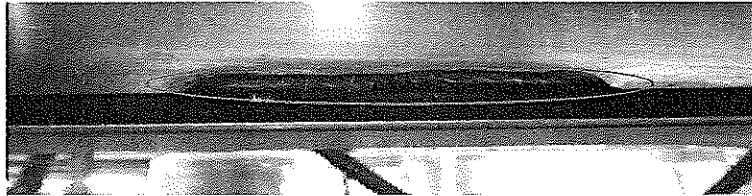
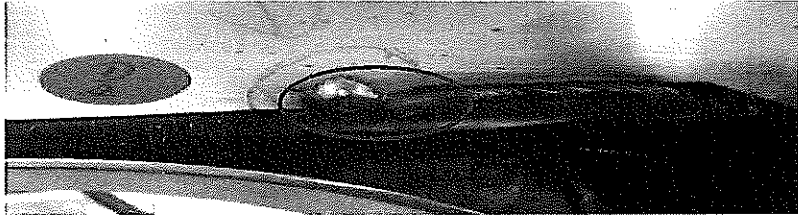


CARBODYSHELL M1,M3,M4 ASSEMBLY  
DTR30226487/2

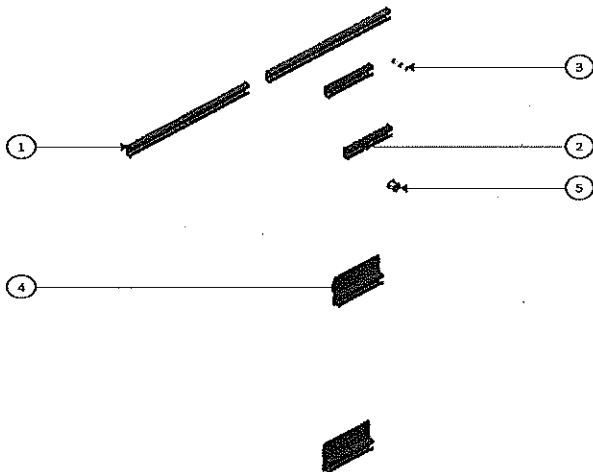
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28/10/2023

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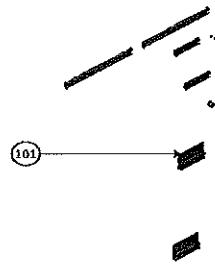
**ANNEXURE A: Arc Welding Quality Acceptance Standard**



Station: CB1220-004- U108 & U107



PART NO.	ITEM NO.	QTY	DESCRIPTION	TAKE (KG)
DTR0020974023	5	6	EARTH STUD 6	0.095
AA00001201513	4	6	ASSEMBLY SUPPORT	0.221
DTR000343305	3	12	WELD/AS STUD ISO13318 PT - F/G/GO-SSY	0.007
AA00001150424	2	12	ASSEMBLY SUPPORT	0.133
AA00001184418	1	14	ASSEMBLY SUPPORT	0.522
AA00001163000	101	6	CARBODYSHELL BRACKETS CARBODYSHELL M1/M3/M4 CAR/SIDE FRAME MODULE E10 - 057	12.132




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**

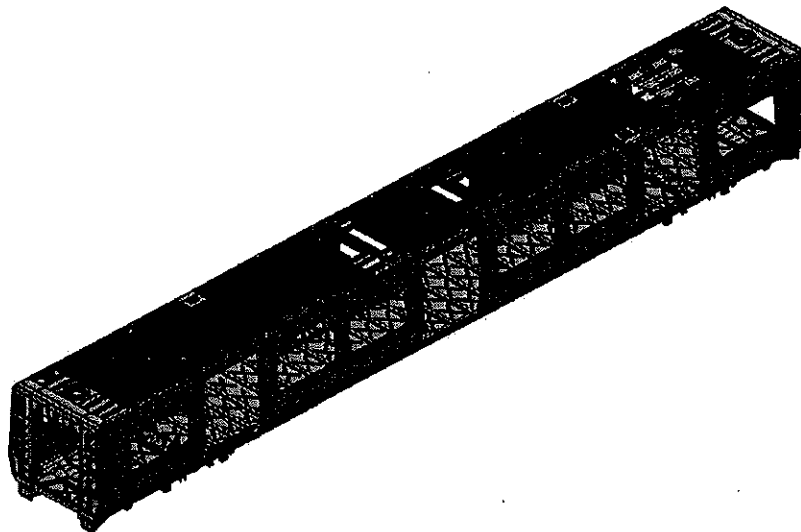
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 	
				TCL	M1	M2	M3	TCL	TCL			
<input type="checkbox"/>	DTR3000152669	AAD0001278566	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB1230			X				PRA.CB1230.DT000002 25487.V20	YES
<input type="checkbox"/>	DTR3000152673	AAD0001278566	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB1230		X			X		PHA.CB1230.DT000002 25487.V20	YES

NO	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	2018/08/02	GIBELA NEW CREATION	APPROVER	Phillipe Marques	2018/08/02
			CHECKER	Nosizo Pindela	2018/08/02
			COMPILER	Nosizo Pindela	2018/08/02
1	30/5/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	30/5/2018
			CHECKER	Nosizo Pindela	30/5/2018
			REVISED BY	Nosizo Pindela	30/5/2018
2	2018/05/07	Certain dimensional checks moved to CB1220	APPROVER	Itumeleng Modiba	2018/05/07
			CHECKER	Nosizo Pindela	2018/05/07
			REVISED BY	Ramokone Motama	2018/05/07
5	24/01/2019	As per Baseline 10.2	APPROVER	Itumeleng Modiba	24/01/2019
			CHECKER	Nosizo Pindela	24/01/2019
			REVISED BY	Vanessa Ntuli	24/01/2019
6	13/03/2019	Added Twist and Door Bracket Measurements Remove Door Measurements	APPROVER	Itumeleng Modiba	13/03/2019
			CHECKER	Nosizo Pindela	13/03/2019
			REVISED BY	Nosizo Pindela	13/03/2019
10	23/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	23/08/2019
			CHECKER	Nosizo Pindela	23/08/2019
			REVISED BY	Nosizo Pindela	23/08/2019
15	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela	06/08/2020
			CHECKER	Bongane Masina	
			REVISED BY	Bongane Masina	
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	
			REVISED BY	Bongane Masina	
25	20/02/2022	New Baseline change 10.3.1	APPROVER	Collins 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	19/10/2022	Addition of traceability for sealant application	APPROVER	Collins Mbhombhi	19/10/2022
			CHECKER	Ntokoza Zwane	
			REVISED BY	Amogelang Mohlampe	
28	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntokoza Zwane	
			REVISED BY	Amogelang Mohlampe	
29	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
237	MO1	Buhle 126968	05/07/24	SI.CB1230.256.V28	11

	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DT00000225487	Rev. 29	<b>Project: PRASA</b>  <b>SI.CB1230.256.V28</b>
		Date 06/11/2023	

Car:	NCR:	Work station: <b>CB1230</b>
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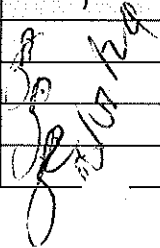
**I - Documentation and Instruments Control**

**I.1 - Documentation Control**

Document	Type of car					Revision	Observation	OK	Signature/Date (Operations)	Signature/Date (Quality)
	M1	M2	M3	M4	TCS					
PRA.CB1230.DT00000225487	X					28		✓	N/A	05/07/24 05/07/24

**I.2 - Instruments Control**


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

Instruments	Serial number	Calibration or Verification Validation Date	OK	Signature/Date (Operations)	Signature/Date (Quality)
Tubular AAD0001278566	32823-3	15/03/2025	✓	05/07/24	
Measuring Tape	GIBTAP01	22/04/2025	✓	05/07/24	
Combination Square	GIBCS0K0	26/06/2025	✓	05/07/24	
Steel Ruler	GIBRST340	14/09/2024	✓	05/07/24	

**1.3 Consumables**

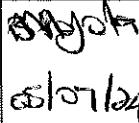

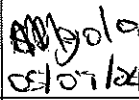

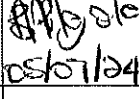

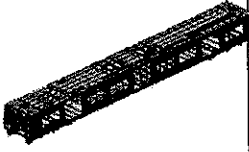


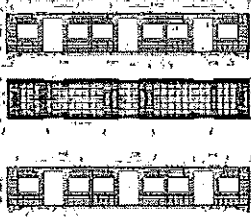
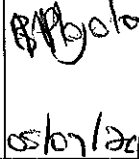

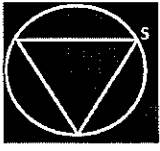
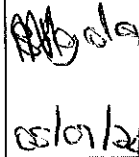

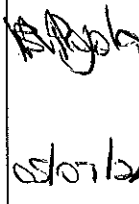
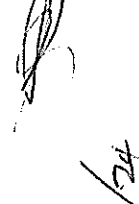
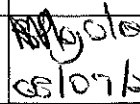

**Welding Consumable Control - Used for Special Process**

Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
308 LSI	313779	Mig Welding	✓	05/07/24	05/07/24

	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DT00000225487	Rev. 29	<b>Project: PRASA</b>  <b>SI.CB1230.256.V28</b>
		Date	
		06/11/2023	

**II - Self Inspection - Items to Check**

**II.1 - Items to check**

Item	Picture/Drawing	Description	Acceptance criteria / Record	QW	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	✓	 05/07/24	 05/07/24						
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓	 05/07/24	 05/07/24						
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 05/07/24	 05/07/24						
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 05/07/24	 05/07/24						
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓	 05/07/24	 05/07/24						
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.	✓	 05/07/24	 05/07/24						
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" style="font-size: small;"> <tr> <td>Temperature Min - Max (1)</td> <td>Min-Max</td> <td>10°C - 35°C</td> </tr> <tr> <td>Relative humidity Min - Max (1)</td> <td>Min-Max</td> <td>25% - 80%</td> </tr> </table>	Temperature Min - Max (1)	Min-Max	10°C - 35°C	Relative humidity Min - Max (1)	Min-Max	25% - 80%	Sealant Batch No: <u>B932160</u> Exp Date: <u>01 / 01 / 24</u>  Actuals Temperature: <u>15°C</u> Humidity: <u>49%</u>	✓	 05/07/24	 05/07/24
Temperature Min - Max (1)	Min-Max	10°C - 35°C										
Relative humidity Min - Max (1)	Min-Max	25% - 80%										
08	N/A	Verification of sealant application in regions of roof and sideframe.	Sealant applied in regions of roof and sideframe.	✓	 05/07/24	 05/07/24						



CARBODYSHELL M1,M3,M4 ASSEMBLY  
DT00000226487

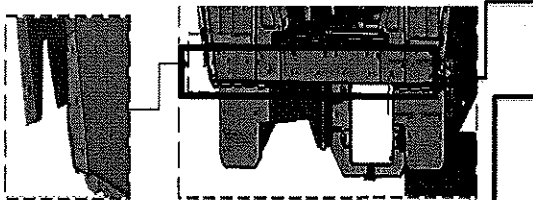
Rev.  
29  
Date  
08/11/2023

Project: PRASA

SI.CB1230.256.V28

**END 2 SEALANT**

AREA 1



OPERATOR  
(Name & sign):

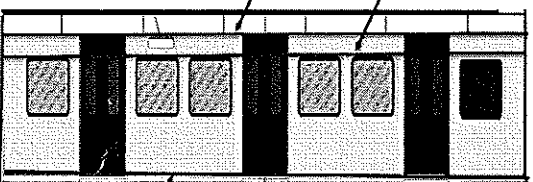
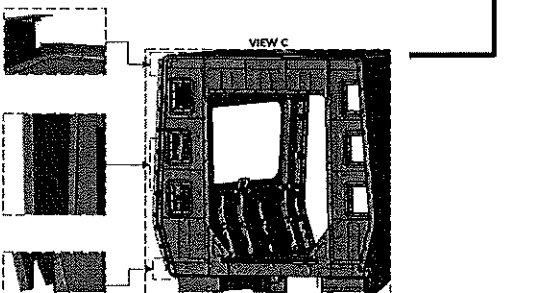
LERoy

OPERATOR  
(Name & sign):

LERoy

OPERATOR  
(Name & sign):

LERoy



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):

LERoy

LERoy

Operator (Name & sign):

(LM)...

(LM)...

Operator (Name & sign):

Nonhlantla

Nonhlantla

Operator (Name & sign):

Cuy

Cuy

Operator (Name & sign):

\_\_\_\_\_

\_\_\_\_\_



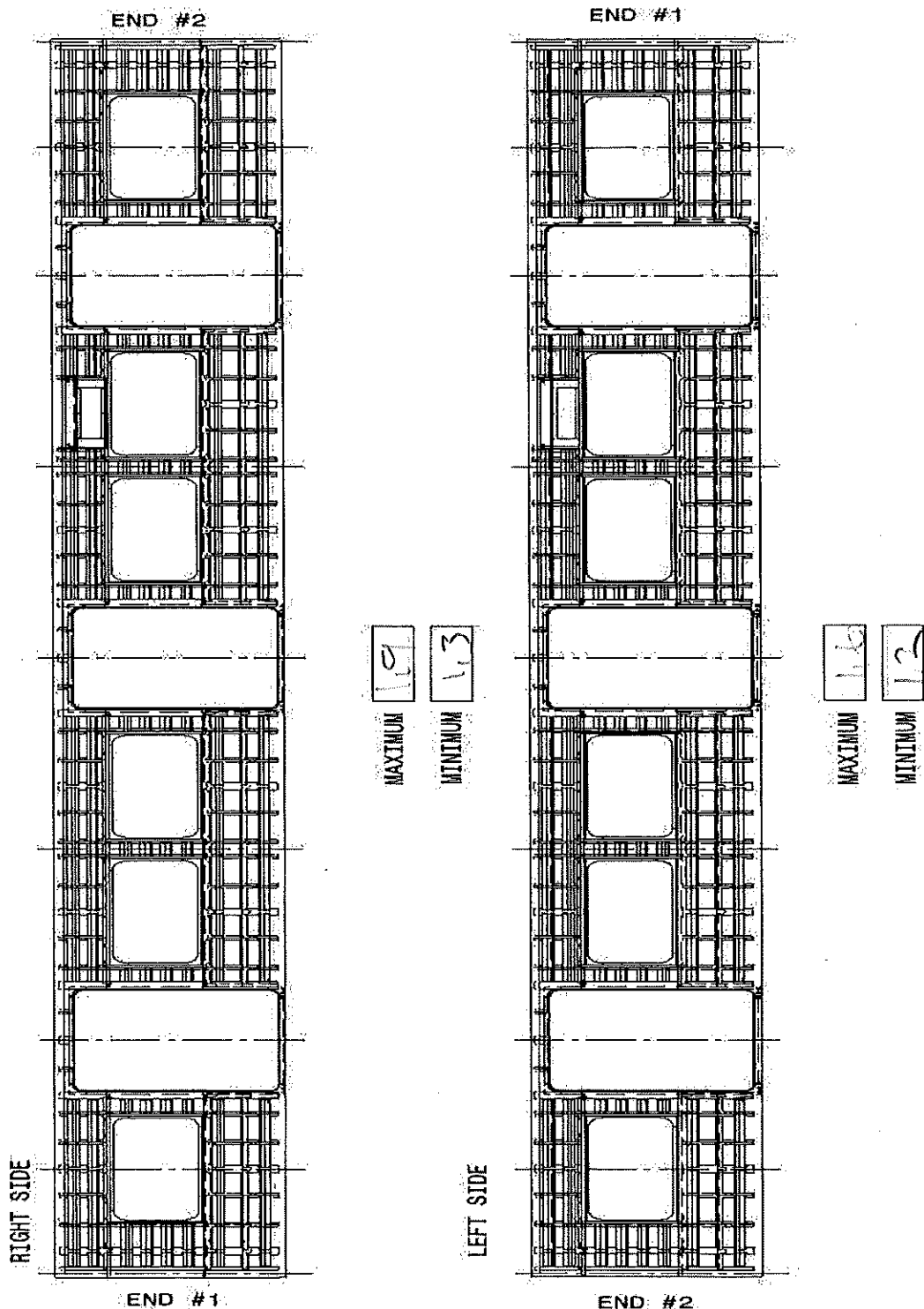
CARBODYSHELL M1,M3,M4 ASSEMBLY  
DT00000225487

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06/11/2023

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SI.CB1230.256.V28

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.





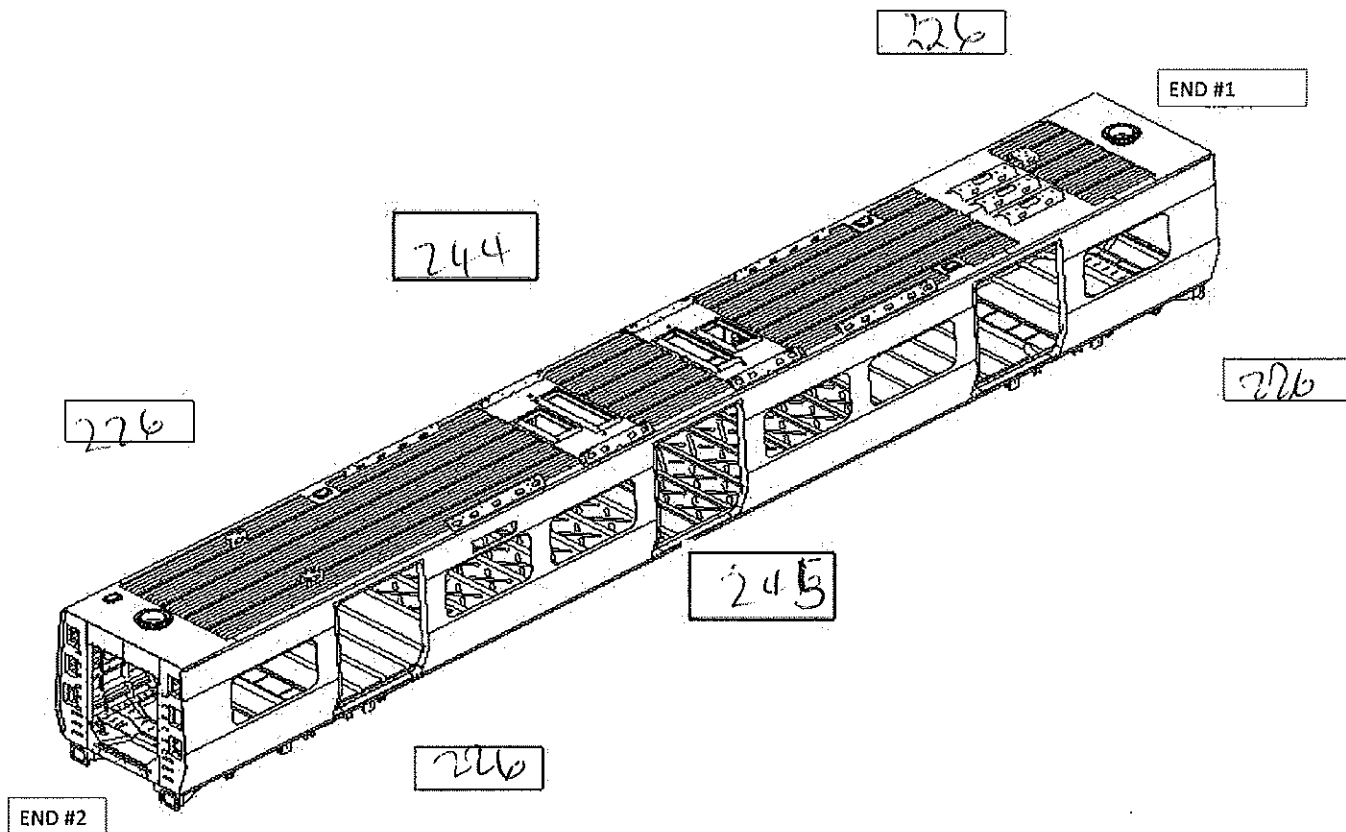
CARBODYSHELL M1,M3,M4 ASSEMBLY  
DT00000225487

Rev.  
29  
Date  
06/11/2023

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SI.CB1230.256.V28

Specifications of Details for CBS measurement CB1230

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



MEASURED CAMBER VALUES

RIGHT	$\alpha$	19
LEFT	$\alpha$	18



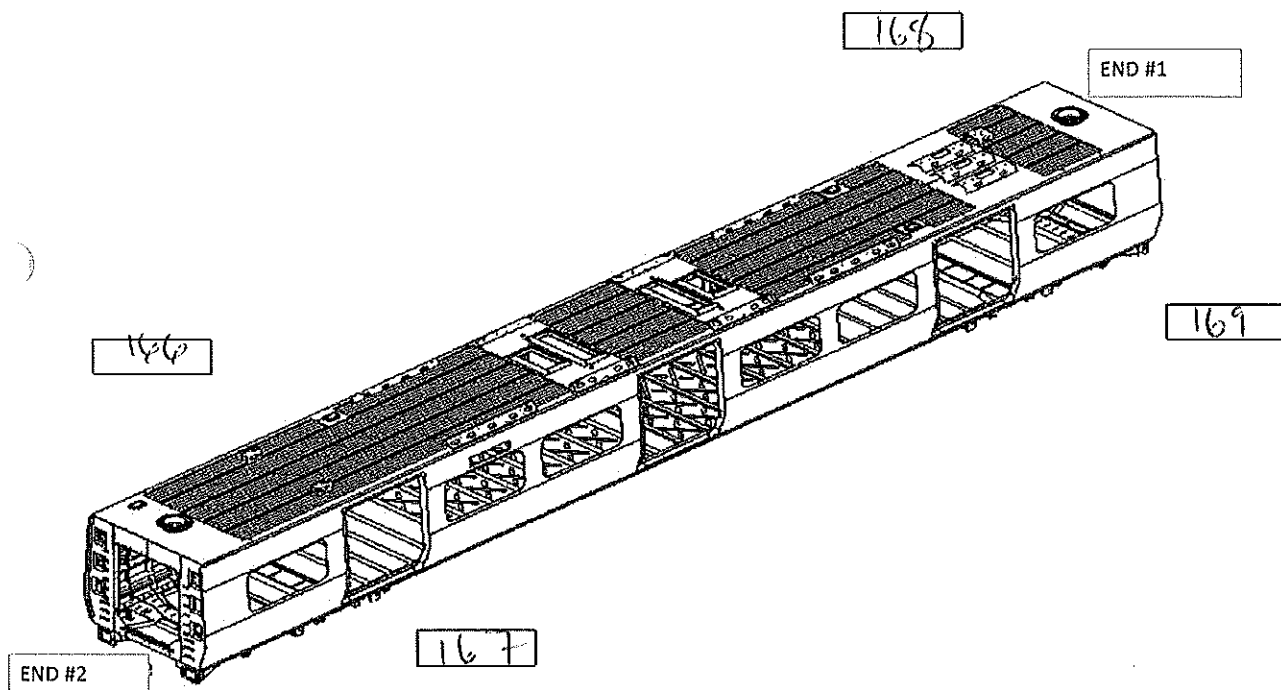
CARBODYSHELL M1,M3,M4 ASSEMBLY  
DT00000225487

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Date  
06/11/2023

Project: PRASA  
SI.CB1230.256.V28

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

TRANVERS   
LONGITUDIN

TWIST FOUND ON END 2

TRANVERSE   
LONGITUDINAL

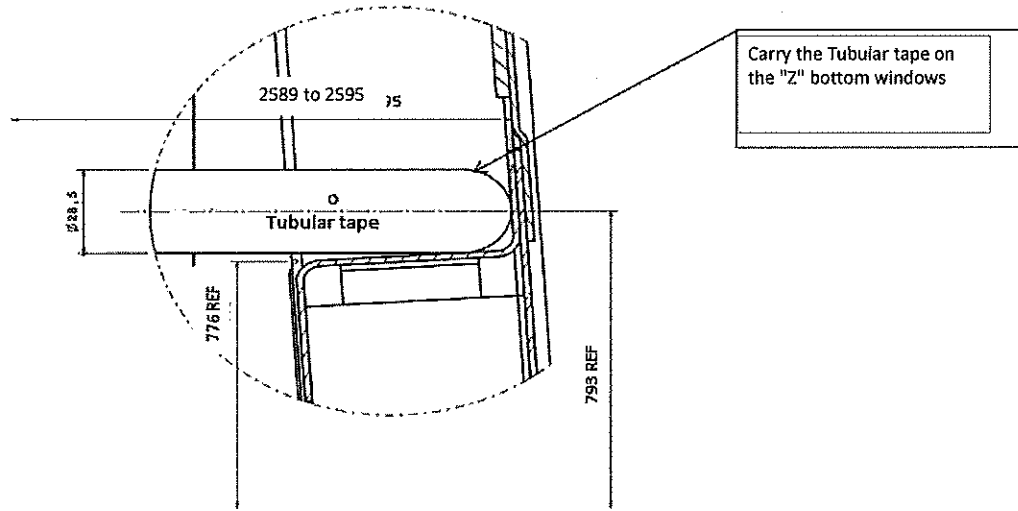


CARBODYSHELL M1,M3,M4 ASSEMBLY  
DT00000225487

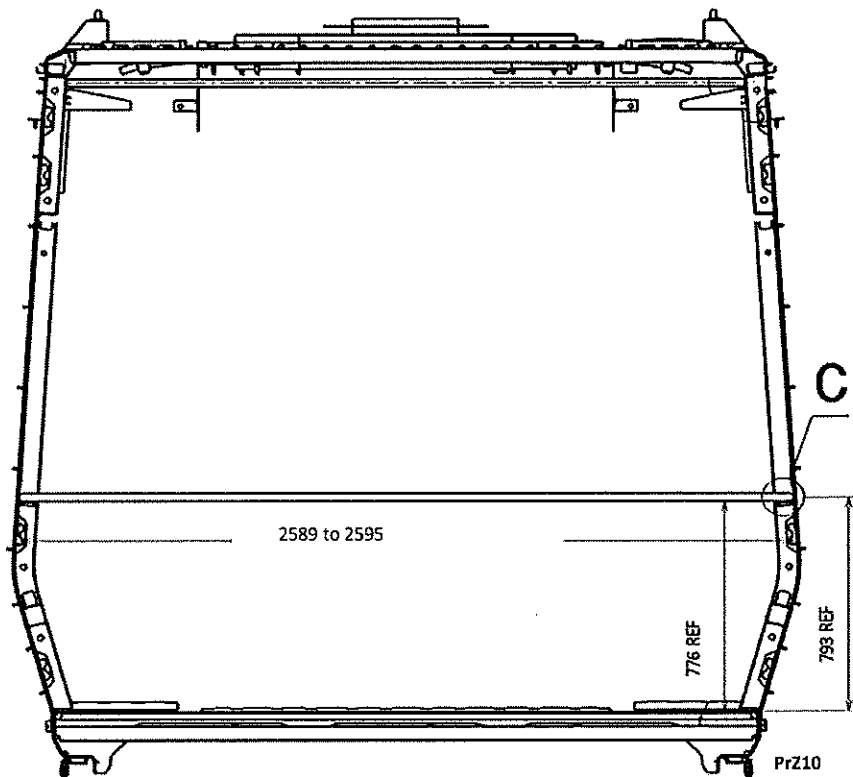
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Date  
06/11/2023

Project: PRASA  
SI.CB1230.256.V28

Specifications of Details for CBS measurement CB1230



Detail C



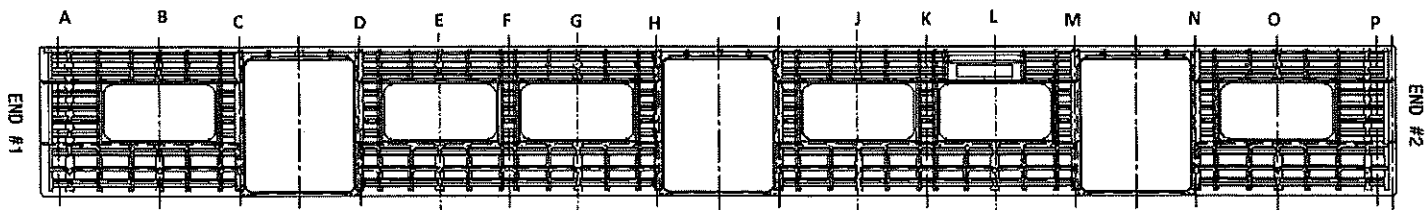


CARBODYSHELL M1,M3,M4 ASSEMBLY  
DT00000225487

Rev.  
29  
Date  
06/11/2023

Project: PRASA  
SI.CB1230.256.V28

Specifications of Details for CBS measurement CB1230



2589 to 2595mm


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



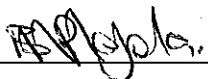

Threshold verification						Nominal value :38
Door 1		Door 2		Door 3		
L	R	L	R	L	R	
38	38	38	38	39	38	
Door 4		Door 5		Door 6		
L	R	L	R	L	R	
38	39	38	38	38	38	

BOILER MAKER: Zanele *Zanele*  
Welder: Zanele *Zanele*



	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DT00000225487	Rev. 29	Project: PRASA  <b>SI.CB1230.256.V28</b>
		Date 06/11/2023	

**Self Inspection - Final Result**

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)		DATE	NAME	SIGNATURE
<b>HOLD POINT</b>	(If activities are not complete, the missing activities must not impact the next stage)	05/07/24	Buhle Operations	
	Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	05/07/24	Ntokeze Industrial Quality	
	There are activities pending 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 plan to ensure "GO":

Item	Description	Responsible	Due date	Status

Operations

Quality



CARBODYSHELL M1,M3,M4 ASSEMBLY  
DT00000225487

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**ANNEXURE A: Arc Welding Quality Acceptance Standard**

