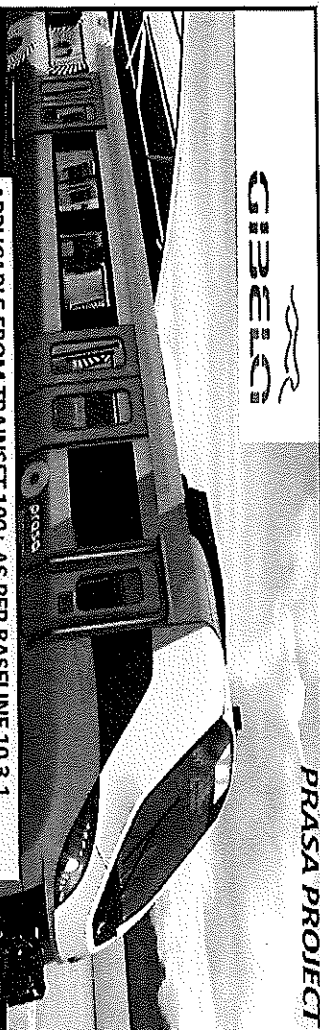


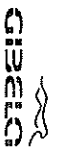


SELF INSPECTION SHEET

APPLICABLE FROM TRAINSET 100+ AS PER BASELINE 10.3.1

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	MA	ME	MS	TC					
☐	DTR30225-AB/2	AAD001278566	CARBODYSHELL, M1 ASSEMBLY	CB1220					PRC, CB1210, DTR30225	YES			
									487/3, V25				
REV	DATE	MODIFICATION CONTENT							RESPONSIBLE	NAME	DATE		
0	10/01/2018	GIBELA NEW CREATION							APPROVER	Ibumeleng Modiba	10/01/2018		
									CHECKER	Nosizo Pindela	10/01/2018		
									COMPLIER	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	Ibumeleng Modiba	2018/05/18		
									CHECKER	Nosizo Pindela	2018/05/18		
									REVISOR BY	Ramokone Motama	2018/05/18		
2	2018/07/04	Certain dimensional checks moved to CB1220 and CB1230							APPROVER	Ibumeleng Modiba	2018/07/04		
									CHECKER	Nosizo Pindela	2018/07/04		
									REVISOR BY	Ramokone Motama	2018/07/04		
3	2018/12/12	Added dimensional check points to CB1220							CHECKER	Nosizo Pindela	2018/12/12		
									REVISOR BY	Ramokone Motama	2018/12/12		
5	22/01/2019	As per Baseline 10.2							APPROVER	Ibumeleng Modiba	22/01/2019		
									CHECKER	Nosizo Pindela	22/01/2019		
									REVISOR BY	Vanessa Ntuli	22/01/2019		
6	13/03/2019	Added D1 and D2 on Self - Inspection							APPROVER	Ibumeleng Modiba	13/03/2019		
									CHECKER	Nosizo Pindela	13/03/2019		
									REVISOR BY	Ibumeleng Modiba	13/03/2019		
10	21/08/2019	New Baseline 10.2.5							CHECKER	Nosizo Pindela	21/08/2019		
									REVISOR BY	Nosizo Pindela	21/08/2019		
15	06/08/2020	New Baseline 10.2.6							APPROVER	Timothy Maimela	06/08/2020		
									CHECKER	Bongane Masina	06/08/2020		
									REVISOR BY	Bongane Masina	06/08/2020		
20	19/04/2021	New Baseline change 10.3							APPROVER	Timothy Maimela	19/04/2021		
									CHECKER	Bongane Masina	19/04/2021		
									REVISOR BY	Bongane Masina	19/04/2021		
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING							APPROVER	Mkhombi collins	17/08/2021		
									CHECKER	Mpho Mulaudzi	17/08/2021		
									REVISOR BY	Mpho Mulaudzi	17/08/2021		
25	19/02/2022	New Baseline change 10.3.1							APPROVER	Andani Muthlela	19/02/2022		
									CHECKER	Andani Muthlela	19/02/2022		
									REVISOR BY	Andani Muthlela	19/02/2022		
26	14/04/2023	Addition of welding consumable traceability							APPROVER	Ntuli Vanessa	14/04/2023		
									CHECKER	Mohlampe Amogelang	14/04/2023		
									REVISOR BY	Mohlampe Amogelang	14/04/2023		
27	27/07/2023	Added verification of loaded parts							APPROVER	Ngobeni Tyson	27/07/2023		
									CHECKER	Zwane Ntokoza	27/07/2023		
									REVISOR BY	Mohlampe Amogelang	27/07/2023		
28	07/11/2023	Addition of welding traceability							APPROVER	Ngobeni Tyson	07/11/2023		
									CHECKER	Andani Muthlela	07/11/2023		
									REVISOR BY	Ntokoza Zwane	07/11/2023		
TRAINSET	CAR	OPERATOR NAMES, ALPS NO		DATE	SELF INSPECTION NUMBER		PAGES						
15210	TYT	P. MATHAGI		18/02/2021	SI, CB1210, 254, V28		17						



CARBODYSHELL M1 ASSEMBLY DTR30225487/3

Rev. Project: PRA5A

28

SI.CB1210.254.V28

Date

07/11/2023

Cdr: M1

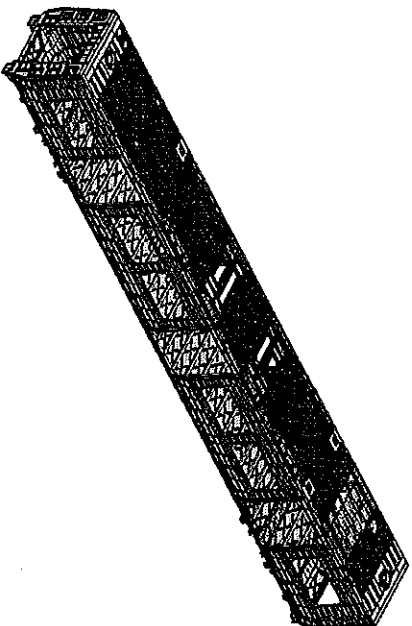
RCR:

Work station:

CB1210



Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car					Revision	Operation	OK	Signature/Date	Signature/Date (Quality)
	TC1	W	W	W	TC2					
DTR30225487/3	X						V28			08/02/24

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial number	Calibration or Verification Validation Date	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
TRUBULAR	22316	02/08/24	☒		
LASEE WPE	135435924	03/01/24	☒		
SON WPE	0107P0054	31/03/24	☒		04/02/24

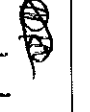
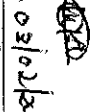
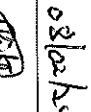
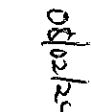
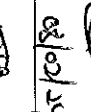
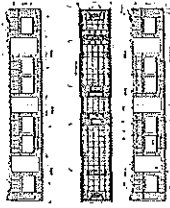
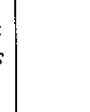
1.3 Consumables

Welding Consumable Control - Used for Special Process

Weld Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 CSI	314018-740594	MIG	☒		
ER 308 C	299682-70533	TIG	☒		04/02/24

	CARBODYSHELL M1 ASSEMBLY DTR302254873		Rev. 28	Project: PRASA SI.CB1210.254.V28
			Date 07/11/2023	

II - Self Inspection - Items to Check

II.3 - Items to check						
Item	Picture/Drawing	Description	Acceptance criteria / Report	OK	Inspector Date (Manufacturing)	Inspector Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls, Endframes, Roof and Underframe)	DT00000311225	✓	 08/02/24	 08/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD00000210675	✓	 08/02/24	 03/02/24
03	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 e DTD00000210675	✓	 08/02/24	 08/02/24
04	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TPDEF - ARC - 0000	✓	 08/02/24	 08/02/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL- PROC-0002	✓	 08/02/24	 08/02/24
06		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓	 08/02/24	 08/02/24
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 DTD00000210658.	As the welding procedure IND-SAL-WMS-018 and DTD00000210658.	✓	 08/02/24	 08/02/24

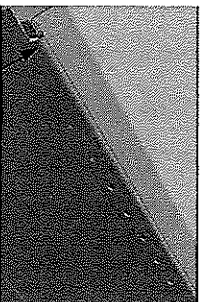


CARBODYSHELL M1 ASSEMBLY DTR30225487/3

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Welder Traceability

Roof ring welds



Boiler maker (Name & Sign): Laurance Mgw Mgw LHS Welder (Name & Sign): Mukoko 21

END 1

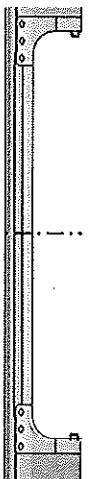
Boiler maker (Name & Sign): Carold RHS Welder (Name & Sign): Mukhelethi

Boiler maker (Name & Sign): Laurance Mgw Mgw LHS Welder (Name & Sign): Mukoko 21

END 2

Boiler maker (Name & Sign): Carold RHS Welder (Name & Sign): Mukhelethi

Door ring welds



Boiler maker (Name & Sign): Judice LHS

Welder (Name & Sign): Siphuka 21

Boiler maker (Name & Sign): Judice RHS

Welder (Name & Sign): Siphuka 21

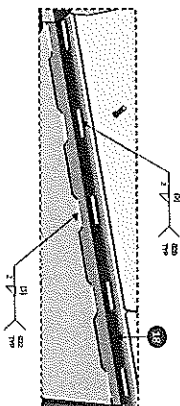
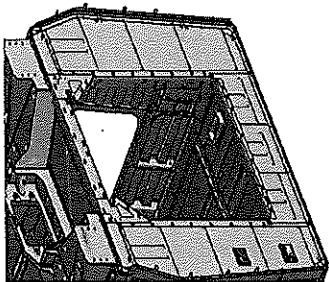


CARBODYSHELL M1 ASSEMBLY DTR30225487/3

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EUF Reinforcement Plates



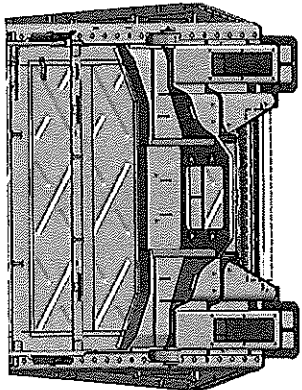
END 1

Boiler maker (Name & Sign):

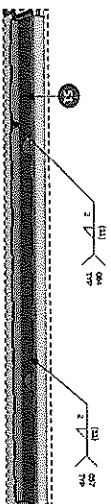
Welder (Name & Sign):

Signature
Keira L. Med

END 2



Underneath the CAR

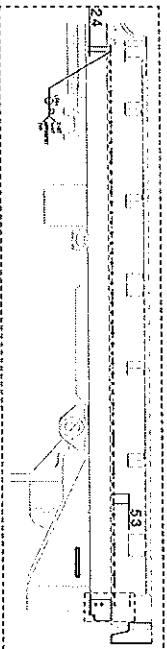


END 2

Boiler maker (Name & Sign):

Welder (Name & Sign):

Tunelo
Noihlahl



FEDOLI

OPERATOR:

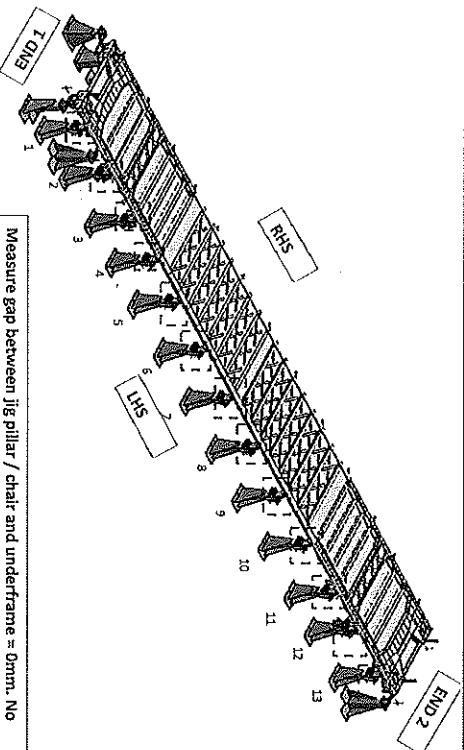
Tunelo



CARBODYSHELL M1 ASSEMBLY DTR30225487/3

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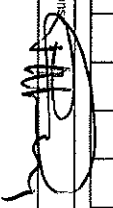
Specifications of Details for CBS measurement



After loading and clamping

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

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

Signature Operator: 

Date: 08/08/24

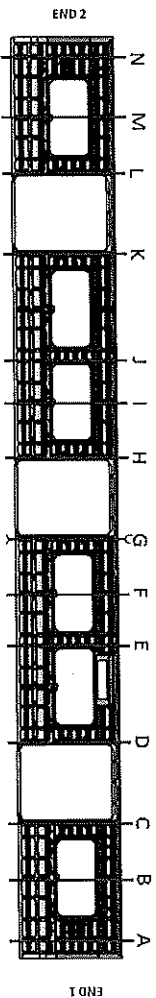
After Welding.

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

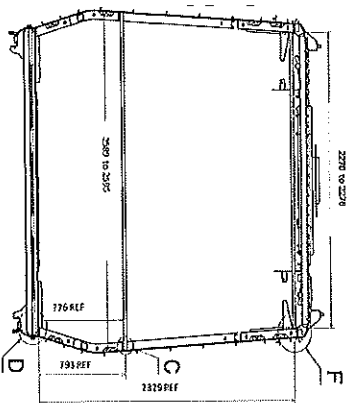
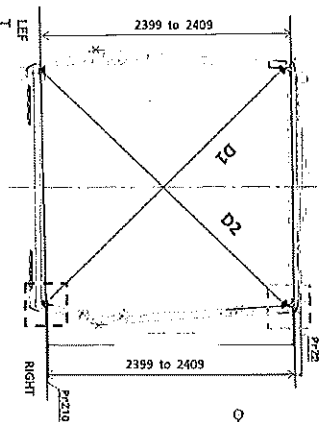
	1	2	3	4	5	6	7	8	9	10	11	12	13
Left Hand Side													
Right Hand Side													

Signature Industrial Quality:  Date: 08/02/24

Specifications of Details for CBS measurement



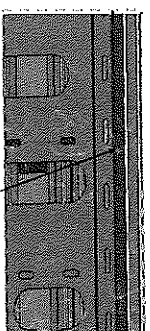
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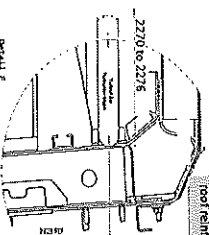
Measurement positions on roof rail and sidewall
surface corner



Measurement positions on sidewall and side sill
corner



Reinforcement area measurement positions on
roof reinforcement area



Detail 9
Roof reinforcement area

Figure 1 is a schematic diagram of a multi-segmented structure, likely a cable or rope, oriented vertically. The structure consists of several rectangular segments connected in series. Labels A through N are positioned along the top and bottom edges, indicating specific points or sections. The diagram is oriented vertically, with 'END 1' at the top and 'END 2' at the bottom.

BEFORE WELDING

Record D1 values		Record D2 values		2399 to 2409		2399 to 2409 (RHS)		LHS-RHS ≤ 2	
A	3069	3068	1	equal	equal	0			
B	3066	3062	0	equal	equal	1			
C	3068	3066	0	equal	equal	0			
D	3069	3067	2	equal	equal	0			
E	3069	3069	0	equal	equal	1			
F	3065	3066	1	equal	equal	1			
G	3066	3068	2	equal	equal	0			
H	3069	3068	1	equal	equal	1			
I	3065	3068	0	equal	equal	1			
J	3069	3069	0	equal	equal	0			
K	3068	3067	1	equal	equal	1			
L	3069	3068	1	equal	equal	0			
M	3069	3069	0	equal	equal	0			
N	3068	3069	1	equal	equal	0			

for fear of
being

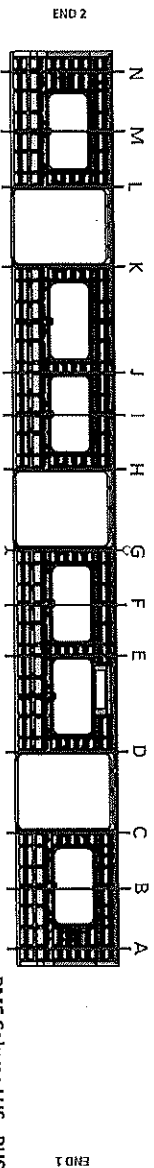


GIBELG

CARBODYSHELL M1 ASSEMBLY DTR30225487/3

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Specifications of Details for CBS measurement



PME Column LHS - RHS should be
≤ 2MM on each point.

AFTER WELDING

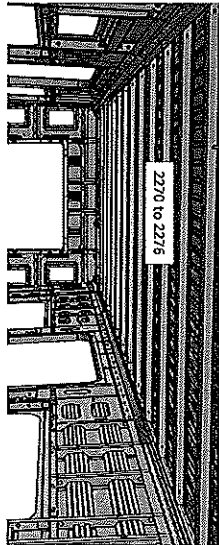
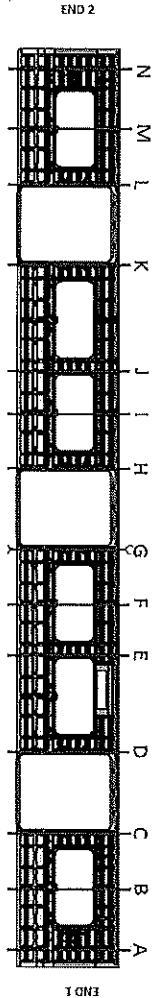
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3296	3296	0	2404	2405	1
B	3269	3268	1	2406	2405	1
C	3299	3298	1	2406	2404	2
D	3296	3296	0	2404	2404	0
E	3285	3286	1	2405	2406	1
F	3269	3269	0	2404	2406	2
G	3296	3298	2	2405	2404	1
H	3295	3299	2	2406	2405	1
I	3268	3269	1	2404	2406	2
J	3269	3268	1	2404	2404	0
K	3296	3299	1	2406	2405	1
L	3295	3295	0	2404	2406	2
M	3269	3268	1	2404	2405	1
N	3294	3299	1	2404	2406	2

409964
28102249

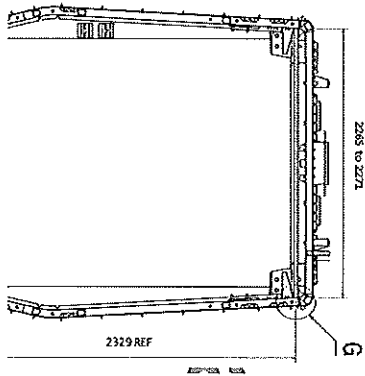
	CARBODYSHELL M1 ASSEMBLY DTR302254873	Rev. 28 Date 07/11/2023	Project: PRASA SI.CB1210.254.V28

GBS measurement

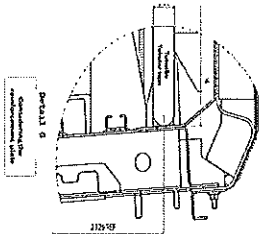
BEFORE WELDING



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



2270 to 2276	A	2274
1990 to	B	2276
	C	2274
	D	2275
	E	2276
	F	2276
	G	2273
	H	2271
	I	2275
	J	2276
	K	2274
	L	2270
	M	2275
	N	2273



2270 to 2276
2270 to 2276
2270 to 2276

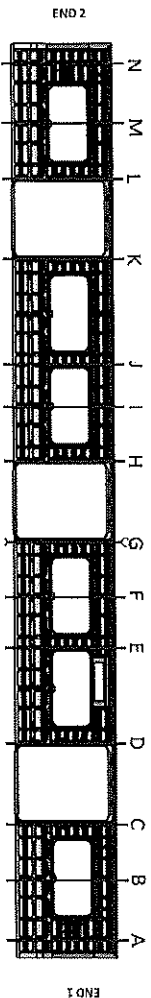
GIBELQ

CARBODYSHELL M1 ASSEMBLY DTR30225487/3

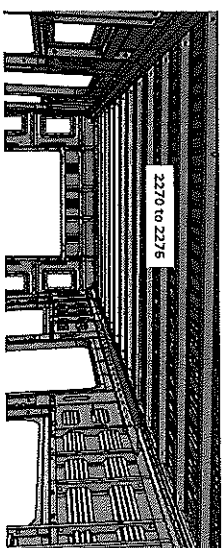
Rev. 28
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Project: PRASA
SI.CB1210.254.V28

GBS measurement

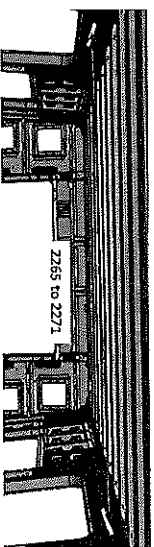
AFTER WELDING



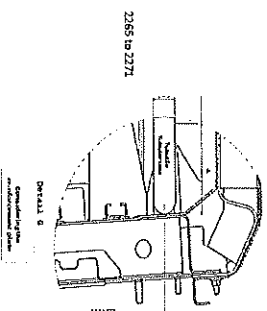
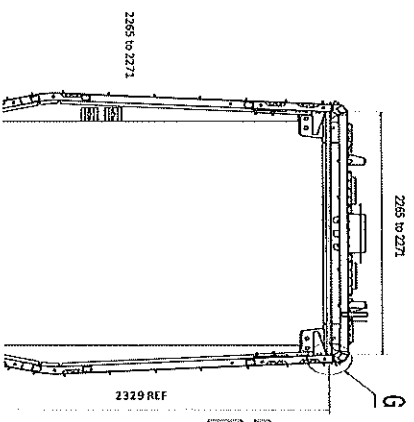
	2265 to 2271	2270 to 2276
A	2269	✓
B	✓	2274
C	2265	✓
D	2269	✓
E	✓	2275
F	✓	2276
G	2269	✓
H	2270	✓
I	✓	2274
J	✓	2275
K	2269	✓
L	2265	✓
M	✓	2274
N	2265	✓



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



Take measurement close to radius (considering reinforcement)



4009764
08/02/24



CARBODYSHELL M1 ASSEMBLY DTR30225487/3

Rev. 28

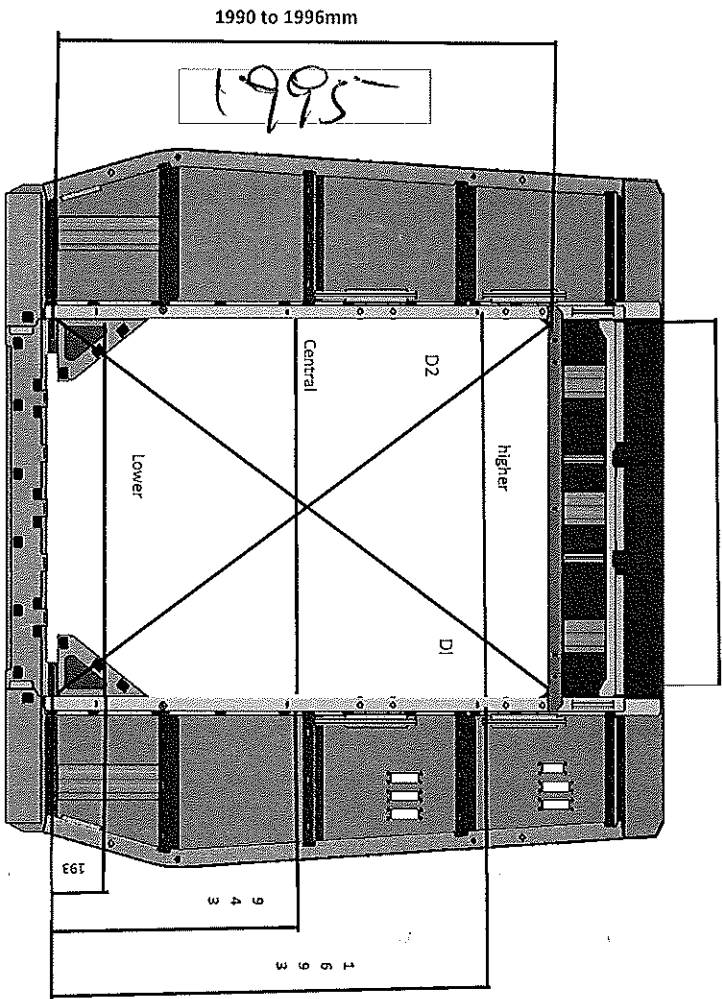
Project: PRASA
SI.CB1210.254.V28

Date

07/11/2023

Specifications of Details for CBS measurement

End frame 1



1380 to 1382 mm

DIAGONAL DIFFERENCE D1-D2 ≤ 3mm

Higher Dimension

1387

D1

2416

Central Dimension

1382

D2

2415

Lower Dimension

1381

D1-D2

1

Handwritten notes:
1. 1387, 1382, 1381
2. 2416, 2415
3. 1
4. 1990 to 1996mm
5. 1995
6. 1380 to 1382 mm
7. DIAGONAL DIFFERENCE D1-D2 ≤ 3mm



CARBODYSHELL M1 ASSEMBLY DTR302254873

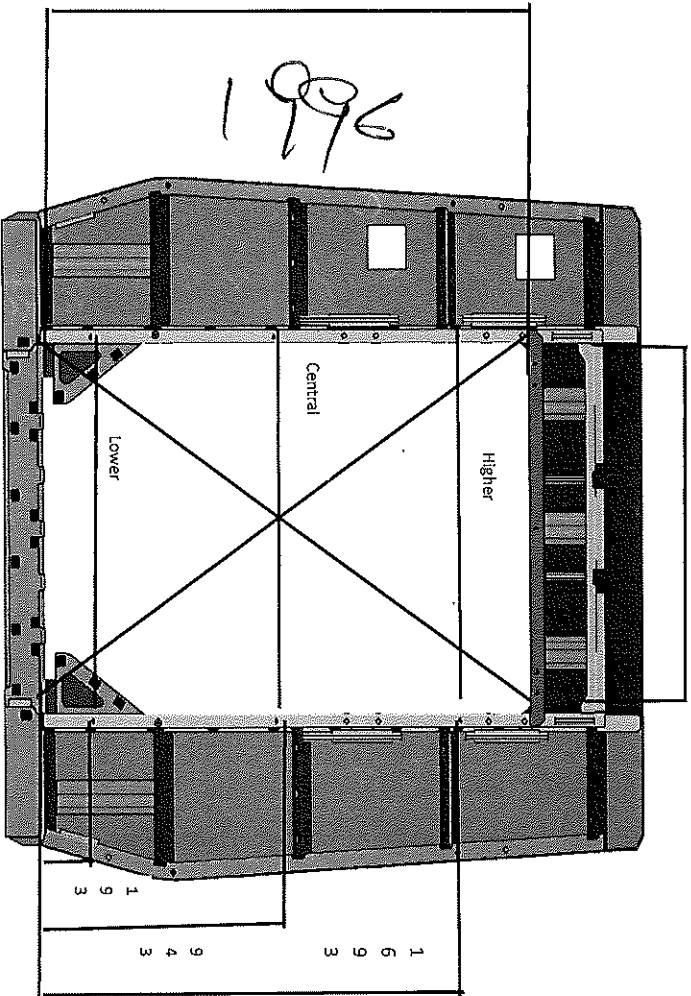
Rev.	28	Project: PRA5A SI.CB1210.254.V28
Date	07/11/2023	

Specifications of Details for CBS measurement

Endframe 2

1380 to 1382 mm

1990 to 1996mm



1380 to 1382 mm

DIAGONAL DIFFERENCE D1-D2 ≤ 3mm

HIGHER DIMENSION

1380

D1 2414

CENTRAL DIMENSION

1380

D2 2414

LOWER DIMENSION

1381

D1-D2

0

Handwritten signature

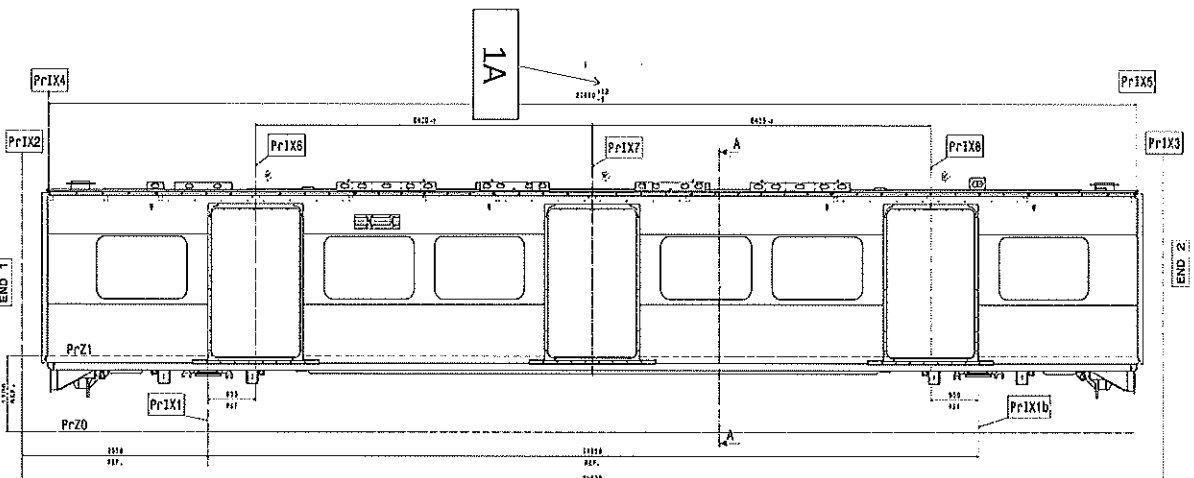
4599 by
28/09/24



CARBODYSHELL M1 ASSEMBLY DTR30225487/3

Rev.	28	Project: PRASA
Date	07/11/2023	SI.CB1210.254.V28

Specifications of Details for CBS measurement



LEFT SIDE	
SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614

20617

RIGHT SIDE	
SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614

20617

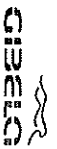
Handwritten signature and date: 4099/24 28/02/24

Dye penetrant test

Dye-penetration test to be performed by quality personnel



[illegible]



CARBODYSHELL M1 ASSEMBLY DTR302264873

Rev. 28
Date 07/11/2023
Project: PRASA
SI.CB1210.254.V28

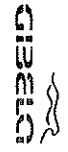
Self Inspection - Final Result

		DATE	NAME	SIGNATURE
HOLD POINT	GO	08/10/20	Portero Operations	
		08/02/24	Redmond Industrial Quality	
			Operations	
			Industrial Quality	
In case of "NO GO", describe blocking problems				

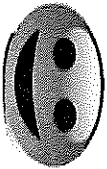
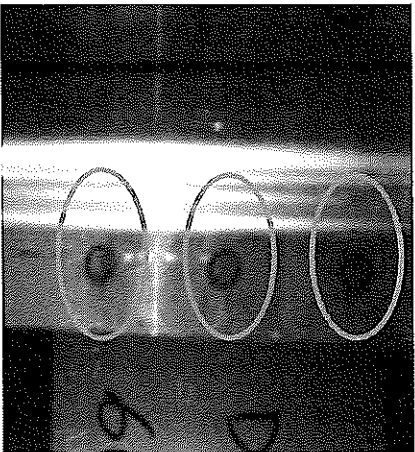
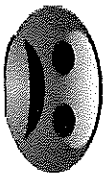
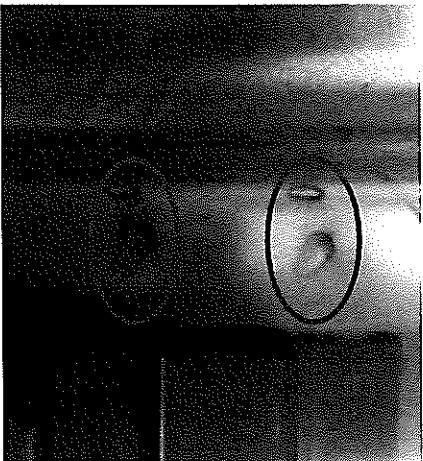
In case of "NO GO", the operations manager must define below action plan to ensure "GO".				
Item	Description	Responsible	Due date	Status

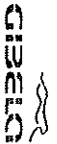
Operations

Quality

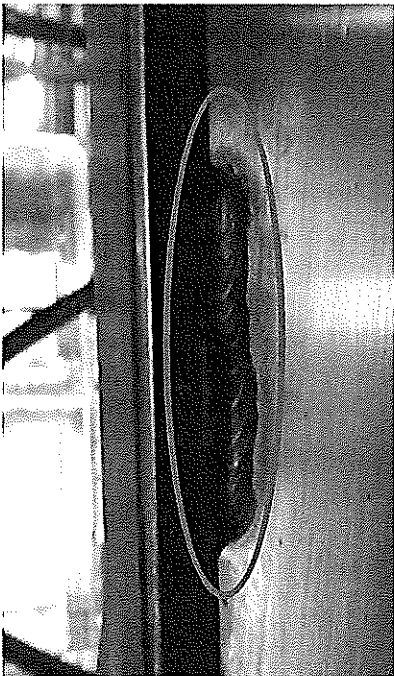
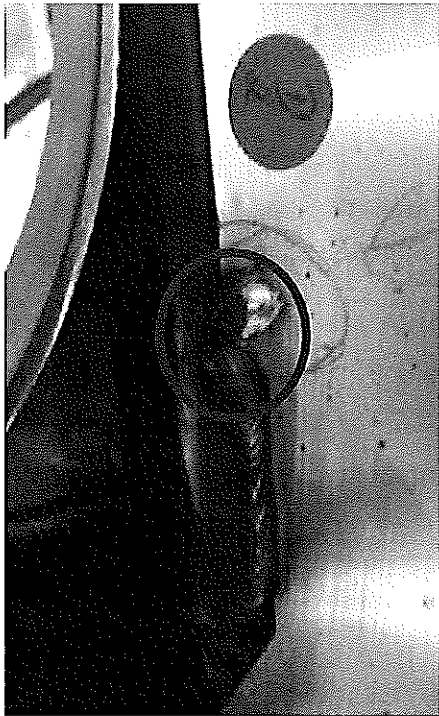
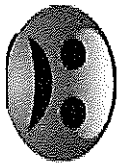
	CARBODYSHELL M1 ASSEMBLY DTR30225487/3		Rev. 28 Date 07/11/2023	Project: PRASA SI.CB1210.254.V28
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ANNEXURE A: Spot Welding Quality Acceptance Standard



	CARBODYSHELL M1 ASSEMBLY DTR30225487/3		Rev. 28 Date 07/11/2023	Project: PR03A SI.CB1210.254.V28
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ANNEXURE B: 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											SAFETY ?	
MEETING	DRAWING	DESCRIPTION	STATION	CAR TYPE					WORK INSTRUCTION	SAFETY ?		
				TC	MS	MS	MS	TC				
☐	DT002248/2	CARBODY/SHELL PLATE/PLATE ASSEMBLY	CLASSO		X	☒			PRASA CB1220.DT002248 7/2 V21	YES		
☐												
☐												
☐												
☐												
☐												
☐												
☐												
REV	DATE	MODIFICATION CONTENT						RESPONSIBLE	NAME	DATE		
0	01/02/2018	GIBELA NEW CREATION						APPROVER	Ismailing Modiba	01/02/2018		
								CHECKER	Nodzo Phidela	01/02/2018		
								COMPLER	Thangeni Mathibane	01/02/2018		
1	18/05/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager						APPROVER	Ismailing Modiba	18/05/2018		
								CHECKER	Nodzo Phidela	18/05/2018		
								REVISOR BY	Ramokone Masina	18/05/2018		
2	2018/07/05	Certain dimensional checks added and others moved to CB1210						APPROVER	Ismailing Modiba	2018/07/05		
								CHECKER	Nodzo Phidela	2018/07/05		
								REVISOR BY	Ramokone Masina	2018/07/05		
3	2018/06/12	Width tolerance as per DT000335600						APPROVER	Ismailing Modiba	2018/06/12		
								CHECKER	Nodzo Phidela	2018/06/12		
								REVISOR BY	Nodzo Phidela	2018/06/12		
5	24/01/2019	As per Baseline 10.2						APPROVER	Ismailing Modiba	24/01/2019		
								CHECKER	Nodzo Phidela	24/01/2019		
								REVISOR BY	Vanessa Nkomo	24/01/2019		
6	13/03/2019	Added D1 and D2 on Self - Inspection length measurements Remove						APPROVER	Ismailing Modiba	13/03/2019		
								CHECKER	Nodzo Phidela	13/03/2019		
								REVISOR BY	Nodzo Phidela	13/03/2019		
10	22/08/2019	New Baseline 10.2.5						APPROVER	Ismailing Modiba	22/08/2019		
								CHECKER	Nodzo Phidela	22/08/2019		
								REVISOR BY	Nodzo Phidela	22/08/2019		
15	06/08/2020	New Baseline 10.2.6						APPROVER	Timothy Mamele	06/08/2020		
								CHECKER	Bongane Masina	06/08/2020		
								REVISOR BY	Bongane Masina	06/08/2020		
20	19/04/2021	New Baseline change 10.3						APPROVER	Timothy Mamele	19/04/2021		
								CHECKER	Bongane Masina	19/04/2021		
								REVISOR BY	Bongane Masina	19/04/2021		
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING						APPROVER	Mphahleli Collins	17/08/2021		
								CHECKER	Mphahleli Collins	17/08/2021		
								REVISOR BY	Mphahleli Collins	17/08/2021		
25	20/02/2022	New Baseline change 10.3.1						APPROVER	Ardeni Mathibane	19/02/2022		
								CHECKER	Ardeni Mathibane	19/02/2022		
								REVISOR BY	Ardeni Mathibane	19/02/2022		
26	14/05/2022	Update minimum temperature requirement for sealant application						APPROVER	Mphahleli Collins	14/05/2022		
								CHECKER	Ardeni Mathibane	14/05/2022		
								REVISOR BY	Ardeni Mathibane	14/05/2022		
27	17/10/2022	Addition of traceability for sealant application and welding						APPROVER	Mphahleli Collins	17/10/2022		
								CHECKER	Nodozo Zwane	17/10/2022		
								REVISOR BY	Amagang Mochlame	17/10/2022		
28	14/04/2023	Added sealant batch number & welding consumables traceability						APPROVER	Vanessa Nkomo	14/04/2023		
								CHECKER	Nodozo Zwane	14/04/2023		
								REVISOR BY	Nodozo Zwane	14/04/2023		
29	28/10/2023	Addition of bracket quantity						APPROVER	Ngetheni Tshepo	28/10/2023		
								CHECKER	Nodozo Zwane	28/10/2023		
								REVISOR BY	Nodozo Zwane	28/10/2023		
TRAINSET	CAR	OPERATOR NUMBER/OPS NO	DATE	SELF INSPECTION NUMBER				PAGES				
210	M1	Uthabeni 126554	08/04/24	SI.CB1220.250.V29				14				



CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR302254872

Rev. 29
Date 28/02/23
Project: PRASA
SI.CB1220.250.V29

Car: M1,M3,M4

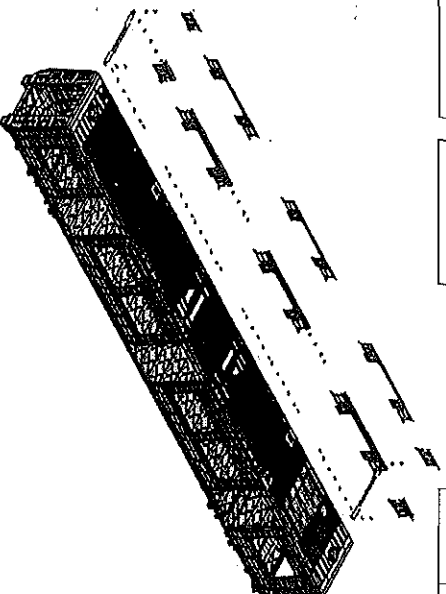
NCR:

Work station:

CB1220



Safety Related



1 - Documentation and Instruments Control

1.1 - Documentation Control

Document	Type of car				Revision	Observation	OK	Signature Date (Manufacturing)	Signature Date (Quality)
	TC1	M1	M2	M3					
DTR302254872									
					29	08/02/24	✓	N/A	08/02/24

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	027131	29/11/2024	✓	08/02/24	08/02/24
Tape measure	G-BM037	2024/04/05	✓	08/02/24	08/02/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

Filter Material	Heat Number	Welding Process	OK	Signature Date (Manufacturing)	Signature Date (Quality)
208	34018	308 MIG	✓	08/02/24	08/02/24

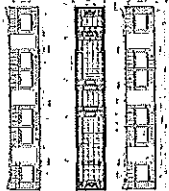


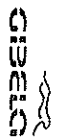
CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30225487/2

Rev. 29
Date 28/10/2023
Project: PRASA
SI.CB1220.250.V29

II - Self Inspection - Items to Check

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB1220.DTR30225487/2 Verification of fitment for all reinforcement brackets.	PRA.CB1220.DTR30225487/2	☒	 08/02/24	 08/02/24
02	N/A	Cansell free of significant flaws which compromise the appearance or functionality	DTD0000210673	☒	 08/02/24	 08/02/24
03	REFER TO ANNEXURE A	Arg Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	☒	 08/02/24	 08/02/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	☒	 08/02/24	 08/02/24
05		Functional dimension approved according drawing or complementary document approved by Atom engineering and registered in this document.	Approved according specified on pages below.	☒	 08/02/24	 08/02/24
06		Perform visual inspection of welds in 100% of the project. Run by percent testing in electric arc welding (weld ring) as IND-SAL-WMS-016. Run by percent testing welds (weld ring) and fillet sampling as described in DTD0000210684.	As the welding procedure IND-SAL-WMS-016 and DTD0000210684.	☒	 08/02/24	 08/02/24
07	N/A	Before application of sealant record the empty date and make sure that the room temperature and humidity are within specified values as per Work Instructions Specified: Temperature: Min - Max 35°C Relative humidity Min - Max 80%	Section Batch No: 2083 Exp Date: 02/02/24 Actuals Temperature: 22 Humidity: 60	☒	 08/02/24	 08/02/24
08	N/A	Verification of sealant application in certain regions in the drawing.	AA0000178556	☒	 08/02/24	 08/02/24
09		Verification of safety welds	Approved according to DTD0000210658 reference and Self inspection	☒	 08/02/24	 08/02/24



CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30225487/2

Rev.	Project: PRASA
28	
Date	
28/10/2023	SI.CB1220.250.V29

II - Self Inspection - Items to Check

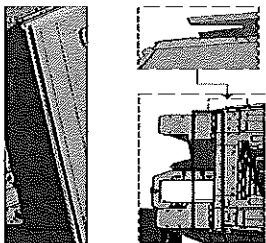
SEALANT APPLICATION

AREA 1 & 2 END 1

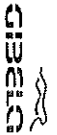
Operator (Name & sign):

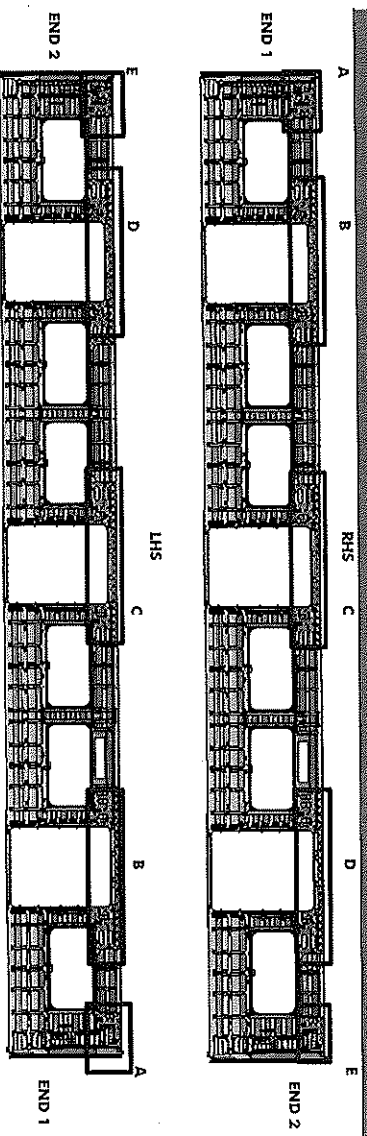
Operator (Name & sign):

Operator (Name & sign):



foral
foral
foral

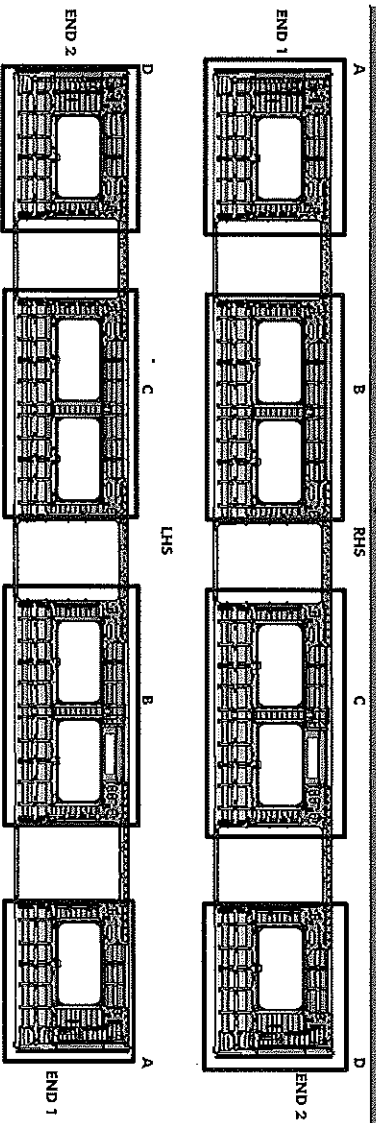
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2		Rev. 29	Project: PRASA
	II - Self Inspection - Items to Check		Date 28/10/2023	SI.CB1220.250.V29



REINFORCEMENT WELDING

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

II - Self Inspection - Items to Check



BRACKETING

INSTALLATION

C-RAILS:

Operator:

LENI

[Signature]

Operator:

DOOR MECHANISMS:

Operator:

Wahrooia

[Signature]

Operator:

TAPPING PADS

Operator:

Si. Diga

[Signature]

Operator:

Thabul

[Signature]

INSTALLATION & VERIFICATION

SEAT & LUGGAGE BRACKETS:

Operator:

Asandig / Mudi

[Signature]

Operator:

Leni

[Signature]

SEAT BRACKETS VERIFICATION:

Operator:

Leni

[Signature]

WELDING

AREA

LHS

A (Seat brackets)

: Operator (Name&sign):

[Signature]

[Signature]

(C-rails, Luggage and earth bushes): Operator (Name&sign):

[Signature]

[Signature]

B (Seat brackets)

: Operator (Name&sign):

[Signature]

[Signature]

(C-rails, Luggage and earth bushes): Operator (Name&sign):

[Signature]

[Signature]

C (Seat brackets)

: Operator (Name&sign):

[Signature]

[Signature]

(C-rails, Luggage and earth bushes): Operator (Name&sign):

[Signature]

[Signature]

D (Seat brackets)

Operator (Name&sign):

[Signature]

[Signature]

(C-rails, Luggage and earth bushes): Operator (Name&sign):

[Signature]

[Signature]

ENDS

END 1 TAPPING PADS WELDING:

Operator (Name&sign):

[Signature]

[Signature]

END 2 TAPPING PADS WELDING:

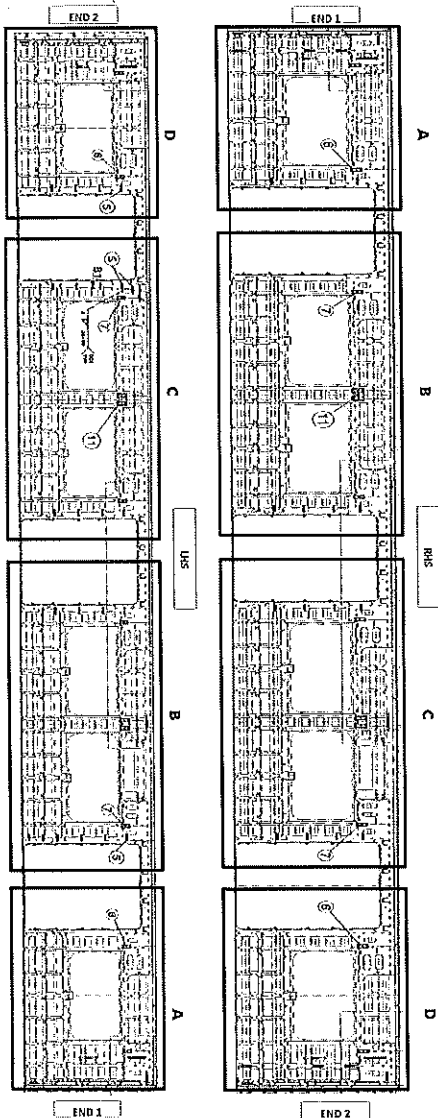
Operator (Name&sign):

[Signature]

[Signature]

I - Self Inspection - Items to check

M1/M3/M4 BRACKET INSTALLATION



QUANTITIES (M3/M4)

RHS			
SECTION	QUANTITY	OK	NOK
C-RAILS	A	7	
	B	4	
	C	8	
	D	13	
SEAT BRACKETS	A	13	
	B	21	
	C	21	
	D	13	
EARTH BUSH	A	3	
	B	3	
	C	4	
	D	2	

ROOF ENDS:
CHAILS 2 OFF EACH END
EARTH BUSH 6 OFF EACH END
VERIFICATION BY: N/A

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

ROOF ENDS:
CHAILS 2 OFF EACH END
EARTH BUSH 6 OFF EACH END
VERIFICATION BY: N/A

QUANTITIES (M4)

RHS			
SECTION	QUANTITY	OK	NOK
C-RAILS	A	7	
	B	8	
	C	8	
	D	13	
SEAT BRACKETS	A	13	
	B	21	
	C	21	
	D	13	
EARTH BUSH	A	3	
	B	3	
	C	4	
	D	2	

ROOF ENDS:
CHAILS 2 OFF EACH END
EARTH BUSH 6 OFF EACH END
VERIFICATION BY: Masbudi

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

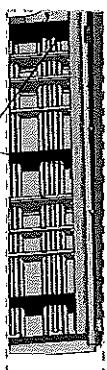
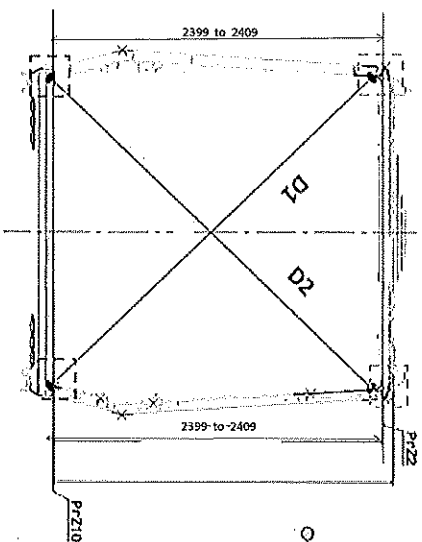
ROOF ENDS:
CHAILS 2 OFF EACH END
EARTH BUSH 6 OFF EACH END
VERIFICATION BY: Masbudi



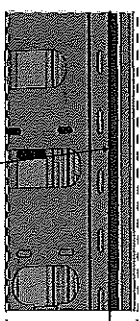
CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30225487/2

Rev.	Project: PRASA
29	
Date	
28/10/2023	
	SI.CB1220.250.V29

Specifications of Details for CBS measurement



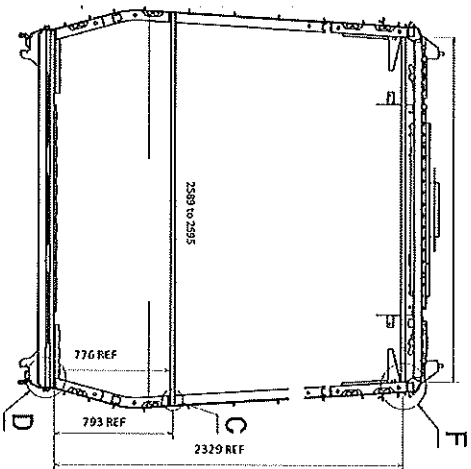
Measurement positions on roof rail and sidewall omega corner.

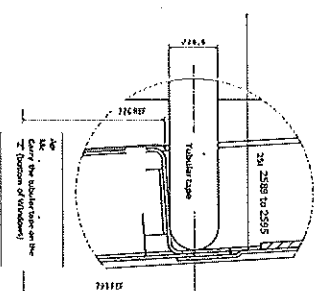
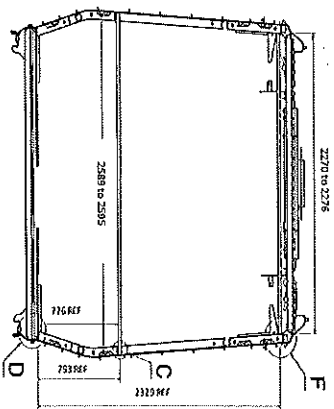


Measurement positions on roof rail and sidewall omega corner.

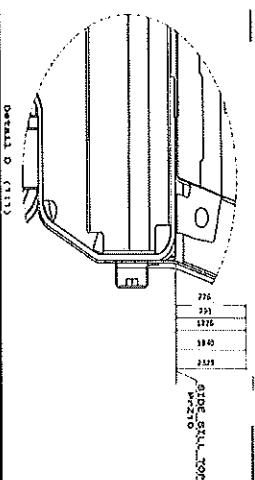
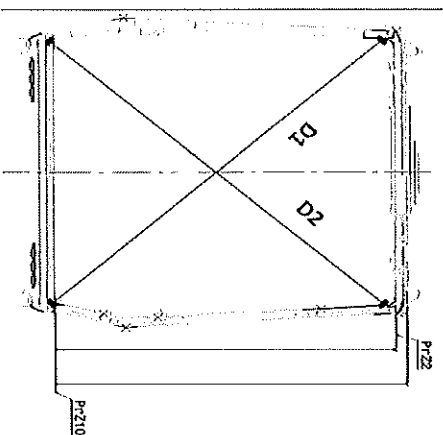
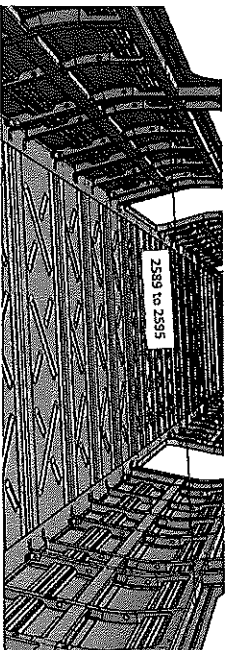


Measurement positions on sidewall and side sill corner.



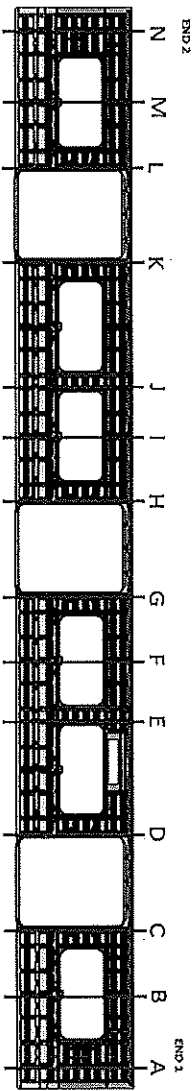


Take measurement close to radius



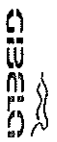
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2		Rev. 28	Project: PRASA
			Date 28/10/2023	SI.CB1220.250.V29

CBS measurement



BEFORE WELDING

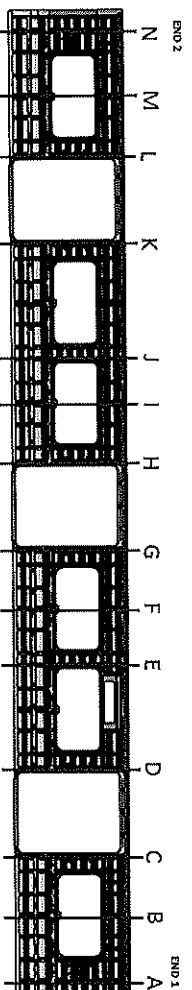
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3300	3300	0	-
B	3270	3268	2	-
C	3360	3294	6	-
D	3299	3297	2	-
E	3269	3267	2	-
F	3267	3265	2	-
G	3299	3300	1	-
H	3300	3299	1	-
I	3265	3265	0	-
J	3269	3267	2	-
K	3296	3300	4	-
L	3292	3297	5	-
M	3264	3270	6	-
N	3294	3200	6	-



CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30226467/2

Rev.	Project: PRASA
29	
Date	
28/10/2023	SI.CB1220.250.V29

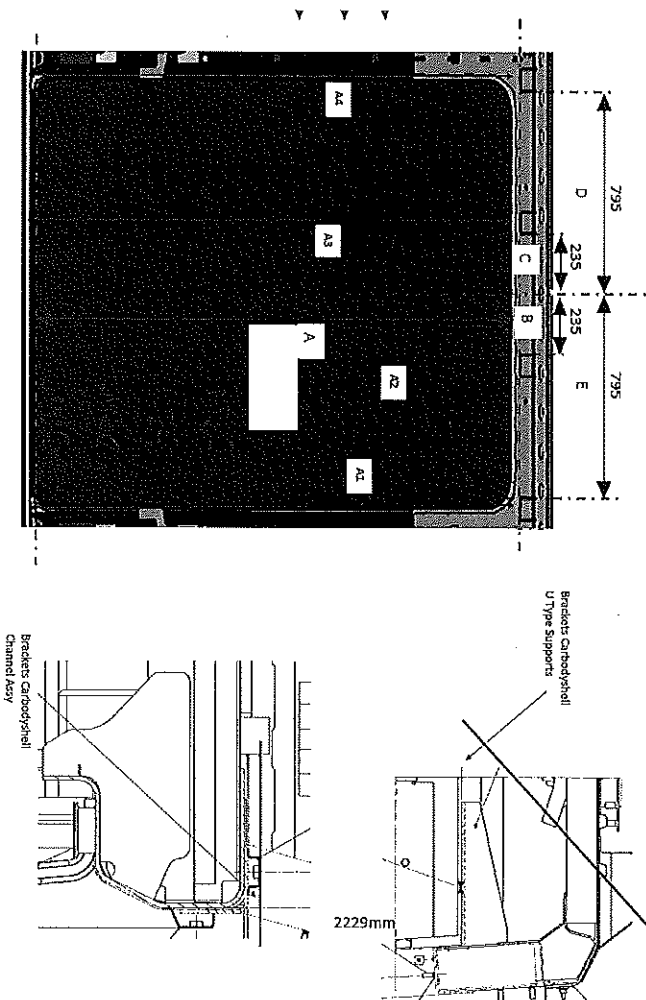
CB5 measurement



AFTER WELDING

Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A 3300	3320	0	2595
B 3265	3268	3	2589
C 3293	3298	5	2591
D 3293	3298	5	2594
E 3268	3268	0	2594
F 3264	3265	1	2594
G 3300	3298	3298	2595
H 3297	3296	1	2595
I 3265	3264	1	2595
J 3268	3268	0	2595
K 3300	3296	4	2593
L 3299	3295	4	2594
M 3268	3263	5	2589
N 3290	3294	4	2594

Specifications of Details for GBS measurement CB1220



DOOR 1 - LHS

VALUE	ACTUAL
A1 2230 to 2232	2232
A2 2230 to 2232	2232
A3 2230 to 2232	2232
A4 2230 to 2232	2232
B 234 to 236	235
C 234 to 236	235
D 794 to 796	745
E 794 to 796	745

DOOR 2 - LHS

VALUE	ACTUAL
A1 2230 to 2232	2233
A2 2230 to 2232	2233
A3 2230 to 2232	2233
A4 2230 to 2232	2233
B 234 to 236	235
C 234 to 236	235
D 794 to 796	745
E 794 to 796	745

DOOR 2 - RHS

VALUE	ACTUAL
A1 2230 to 2232	2231
A2 2230 to 2232	2231
A3 2230 to 2232	2231
A4 2230 to 2232	2231
B 234 to 236	235
C 234 to 236	235
D 794 to 796	745
E 794 to 796	745

DOOR 1 - RHS

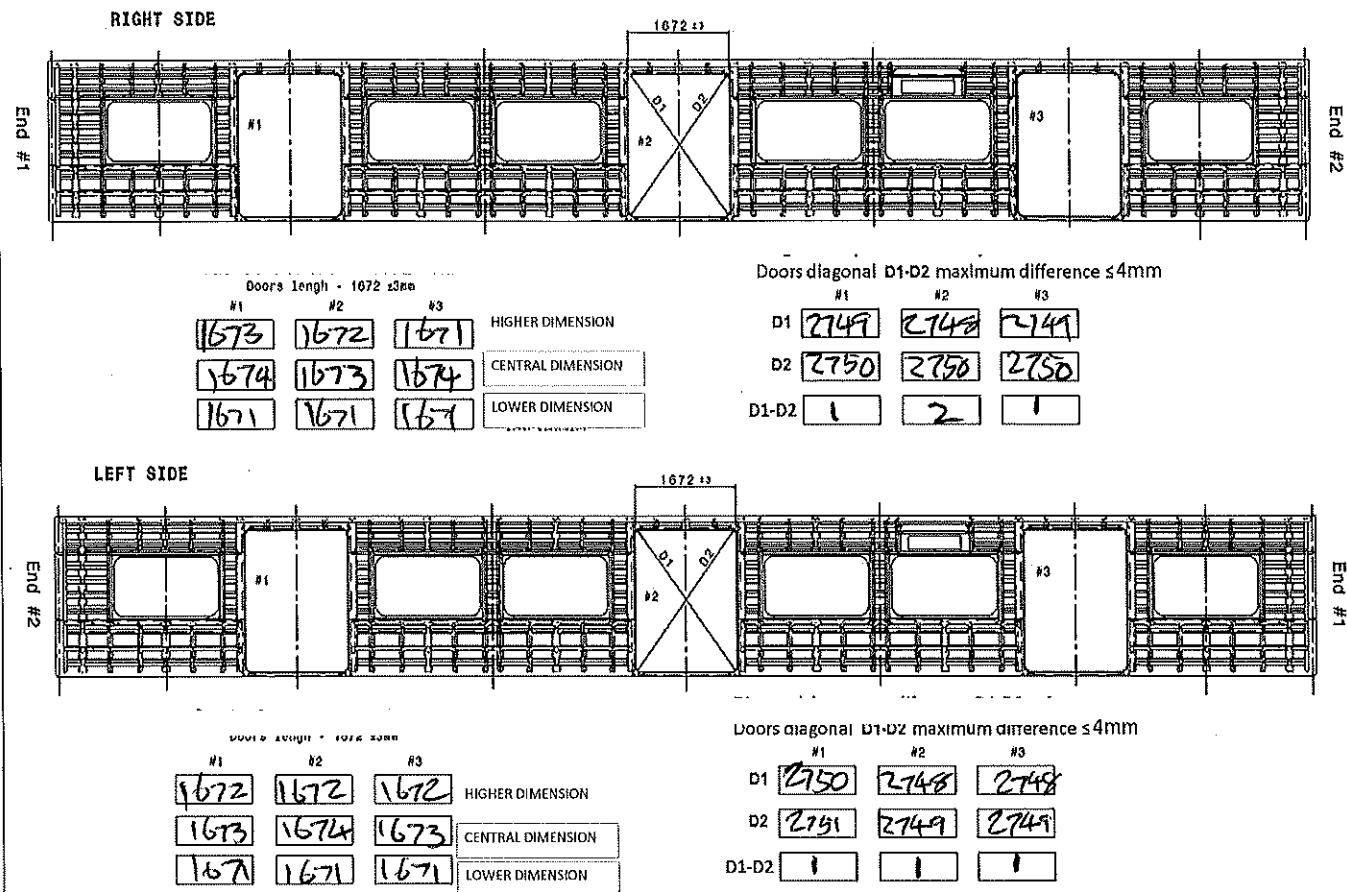
VALUE	ACTUAL
A1 2230 to 2232	2233
A2 2230 to 2232	2233
A3 2230 to 2232	2233
A4 2230 to 2232	2233
B 234 to 236	235
C 234 to 236	235
D 794 to 796	745
E 794 to 796	745

DOOR 2 - RHS

VALUE	ACTUAL
A1 2230 to 2232	2232
A2 2230 to 2232	2232
A3 2230 to 2232	2232
A4 2230 to 2232	2232
B 234 to 236	235
C 234 to 236	235
D 794 to 796	745
E 794 to 796	745

DOOR 3 - RHS

VALUE	ACTUAL
A1 2230 to 2232	2232
A2 2230 to 2232	2232
A3 2230 to 2232	2232
A4 2230 to 2232	2232
B 234 to 236	235
C 234 to 236	235
D 794 to 796	745
E 794 to 796	745



	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR302254872	Rev.	Project: PRASA
		29	
		Date	SI.CB1220.250.V29
		28/10/2023	

Self Inspection - Final Result

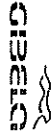
Is the car good to advance to the next workstation/process? (Approval of Operations Manager and Industrial Quality)		DATE	NAME	SIGNATURE
HOLD POINT	GO	08/02/24	Operations Mtkhrocisi	
		08/02/24	Operations Amogelay	
			Industrial Quality	

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

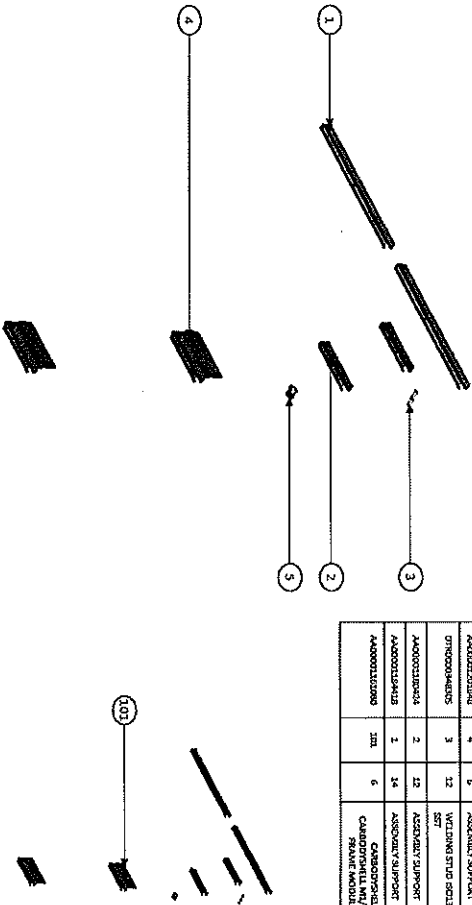
	Project: PRASA	
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR302254872	Rev. 28 Date 28/10/2023
SI.CB1220.250.V29		

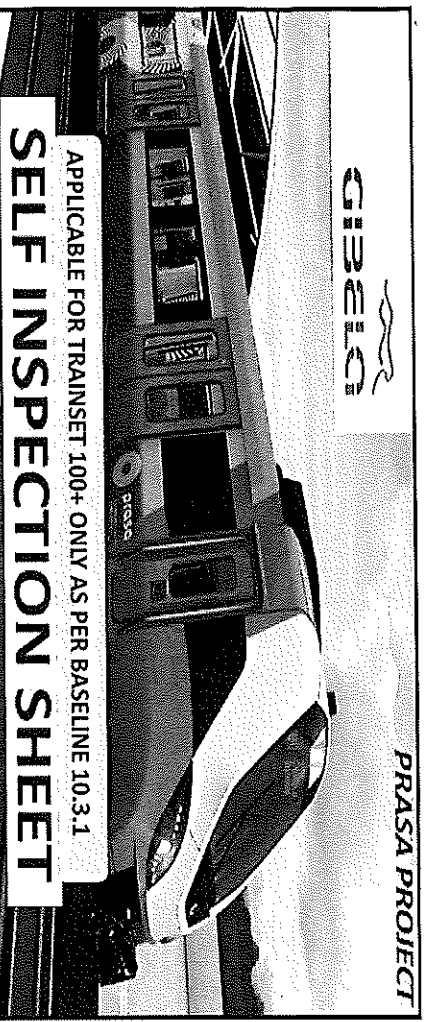
ANNEXURE A: Arc Welding Quality Acceptance Standard



Station: CB1220-004- U108 & U107

PART NO.	ITEM NO.	QTY	DESCRIPTION	MASS (KG)
07N0200740A	5	6	LATCH STUD G	0.06
AA00001010A4	4	6	ASSEMBLY SUPPORT	0.21
07N0200440D5	3	12	WELDING STUD BOLTS/ST - M8X20 - 304	0.07
AA0000110004	2	12	ASSEMBLY SUPPORT	0.41
AA00001010A12	1	14	ASSEMBLY SUPPORT	0.22
AA0000101000	101	6	CARBODYSHELL BRACKETS CARBODYSHELL M1/M3/M4 CARBODYSHELL MODULE DND - 079	11.40





APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

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	M4	M5	M6	TCS				
☐	DT00000225.87	CARBODYSHELL	CB1230		X	☒			PRA-CB1230.DT000002	YES		
☐	AADU0001278556	M4, M5, M6 ASSEMBLY							25.87.V20			
☐												
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	Izumeleng 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	Izumeleng 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	Izumeleng 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	Izumeleng Modiba	13/03/2019	
									CHECKER	Nosizo Pindela	13/03/2019	
									REVISED BY	Nosizo Pindela	13/03/2019	
									APPROVER	Izumeleng Modiba	23/08/2019	
									CHECKER	Nosizo Pindela	23/08/2019	
									REVISED BY	Nosizo Pindela	23/08/2019	
15	06/06/2020	New Baseline 10.2.5							APPROVER	Timothy Maimela	06/06/2020	
									CHECKER	Bongane Masina		
									REVISED BY	Bongane Masina		
20	19/04/2021	New Baseline change 10.3							APPROVER	Timothy Maimela	19/04/2021	
									CHECKER	Bongane Masina		
									REVISED BY	Bongane Masina		
25	20/02/2022	New Baseline change 10.3.1							APPROVER	Collins Mhombhi	20/02/2022	
									CHECKER	Andani Muthelo		
									REVISED BY	Andani Muthelo		
26	14/06/2022	Update minimum temperature requirement for sealant application							APPROVER	Collins Mhombhi	14/06/2022	
									CHECKER	Andani Muthelo		
									REVISED BY	Andani Muthelo		
27	19/10/2022	Addition of traceability for sealant application							APPROVER	Collins Mhombhi	19/10/2022	
									CHECKER	Neloko Zwane		
									REVISED BY	Amogelang Mofhlampe		
28	14/04/2023	Added sealant batch number & welding consumables traceability							APPROVER	Vanessa Ntuli	14/04/2023	
									CHECKER	Neloko Zwane		
									REVISED BY	Amogelang Mofhlampe		
29	06/11/2023	Added thresholds traceability for boiler makers and welders							APPROVER	Tyson Ngobeni	06/11/2023	
									CHECKER	Andani Muthelo		
									REVISED BY	Neloko Zwane		
TRAINSET	CAR	OPERATOR NAME	ALPS NO	DATE	SELF INSPECTION NUMBER			PAGES				
110	1001	Amogelang Mofhlampe	1183001	20/02/24	SI.CB1230.256.V28			11				



CARBODYSHELL M1,M3,M4 ASSEMBLY
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Car:

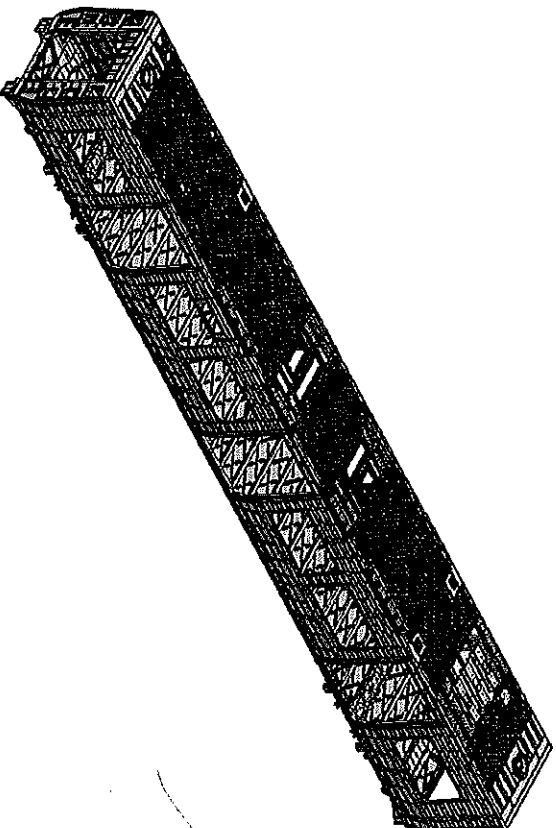
NGR:

Work station:

CB1230



Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car					Revision	Observation	OK	Signature/Date (Operations)	Signature/Date (Quality)
	M1	M2	M3	M4	CL					
PRA.CB1230.DT00000225487	☒					29		☒	N/A	<i>[Signature]</i> 10/03/24

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial number	Calibration or Verification Validation Date	OK	Signature/Date (Operations)	Signature/Date (Quality)
Combination square	GIB 560 008	27/01/2024	☒	<i>[Signature]</i> 10/03/24	<i>[Signature]</i> 10/03/24
Caliper	22316	07/02/2023	☒	<i>[Signature]</i> 10/03/24	<i>[Signature]</i> 10/03/24
Measuring Tape	GIB 720084	31/03/2023	☒	<i>[Signature]</i> 10/03/24	<i>[Signature]</i> 10/03/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
308Si	30120	MIG	☒	<i>[Signature]</i> 10/03/24	<i>[Signature]</i> 10/03/24



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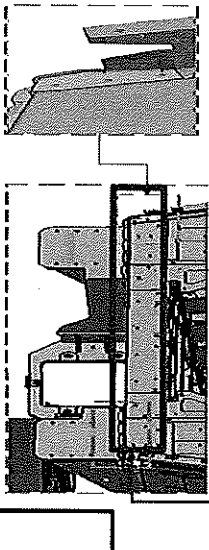
Project: PRASA
SI.CB1230.256.V28

II - Self Inspection - Items to Check

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB1 230.DT00000225487 Verification of fitment for all brackets.	PRA.CB1 230.DT00000225487	✓	 10/02/24	 16/02/01
02	N/A	Carshall free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓	 10/02/24	 16/02/01
03	REFER TO ANNEXURE A	Arc Welding Inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 10/02/24	 16/02/01
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 10/02/24	 16/02/01
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓	 10/02/24	 16/02/01
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.	✓	 10/02/24	 16/02/01
07	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified: Temperature Min - Max (°) Min-Max 10°C - 35°C Relative humidity Min - Max (%) Min-Max 25% - 80% Actuals Temperature: 17°C Humidity: 54%	Sealant Batch No: 154-76-53 Exp Date: 05/24	✓	 10/02/24	 16/02/01
08	N/A	Verification of sealant application in regions of roof and sideframe.	Sealant applied in regions of roof and sideframe.	✓	 10/02/24	 16/02/01

AREA 1



OPERATOR
(Name & sign):

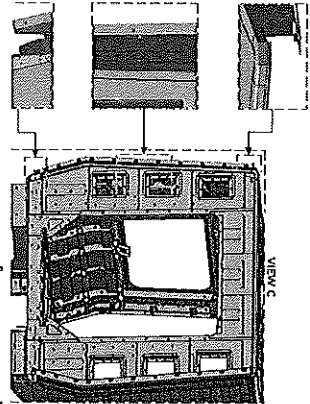
Leroy 

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):

Ishenalo

Ishenalo

Operator (Name & sign):

ttttt

ttttt

Operator (Name & sign):

Silvie

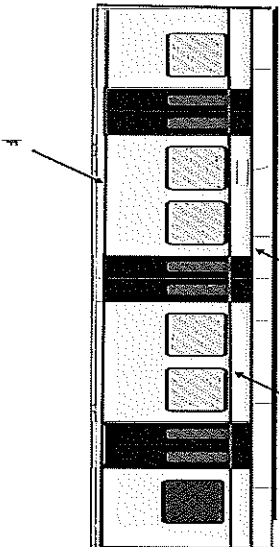
khosi

Operator (Name & sign):

khosi

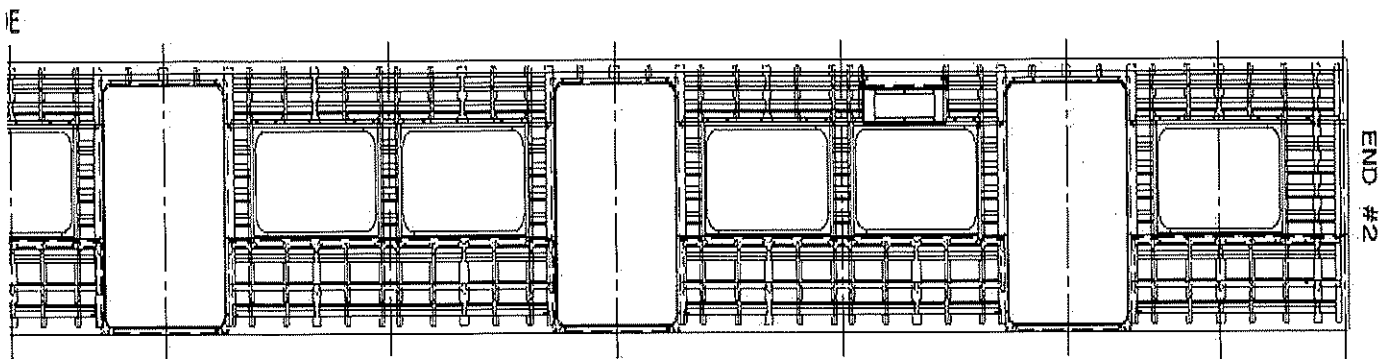
Operator (Name & sign):

H

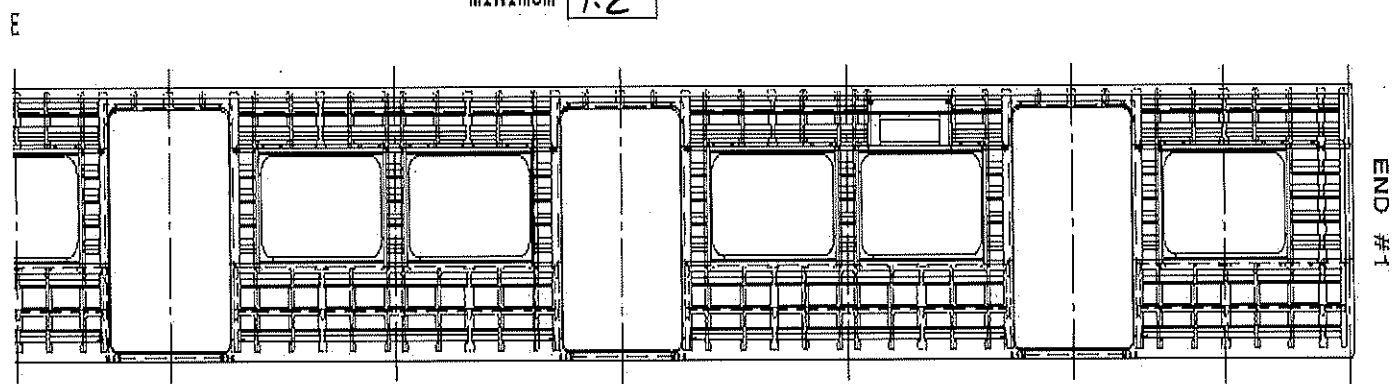


Specifications of Details for CBS measurement CB1230

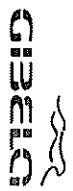
Flatness side left and right maximum of 2mm in the valley to peak measured in 900mm. Recod the maximum and minimum value foundand indicate the corresponding region.



MAXIMUM 1.4
MINIMUM 1.2



MAXIMUM 1.7
MINIMUM 1.7

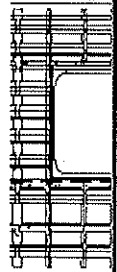


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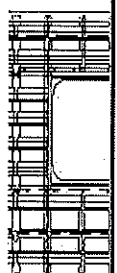
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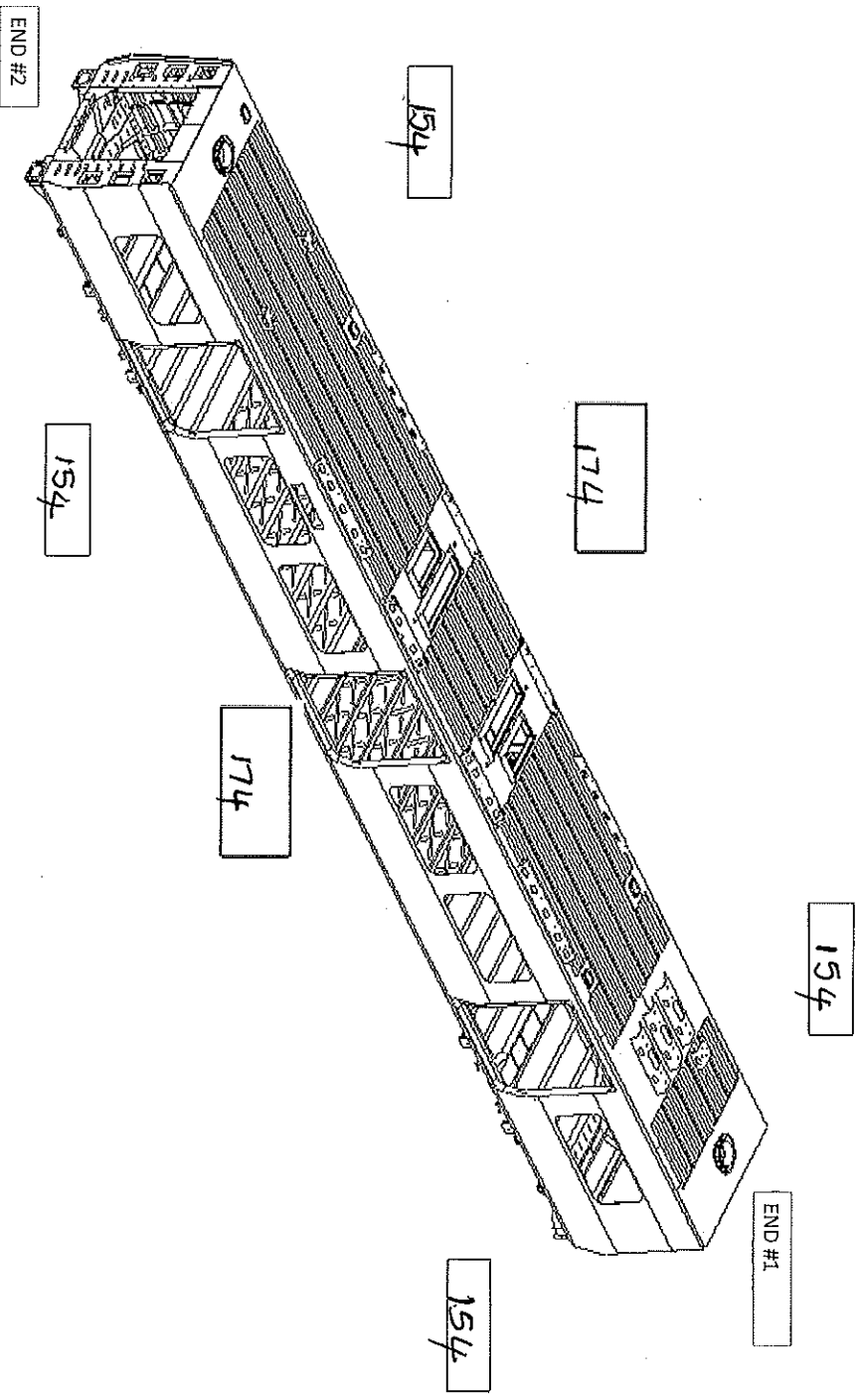
RIGHT SIDE



LEFT SIDE



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



MEASURED CAMBER VALUES

RIGHT	1	20
LEFT	21	20



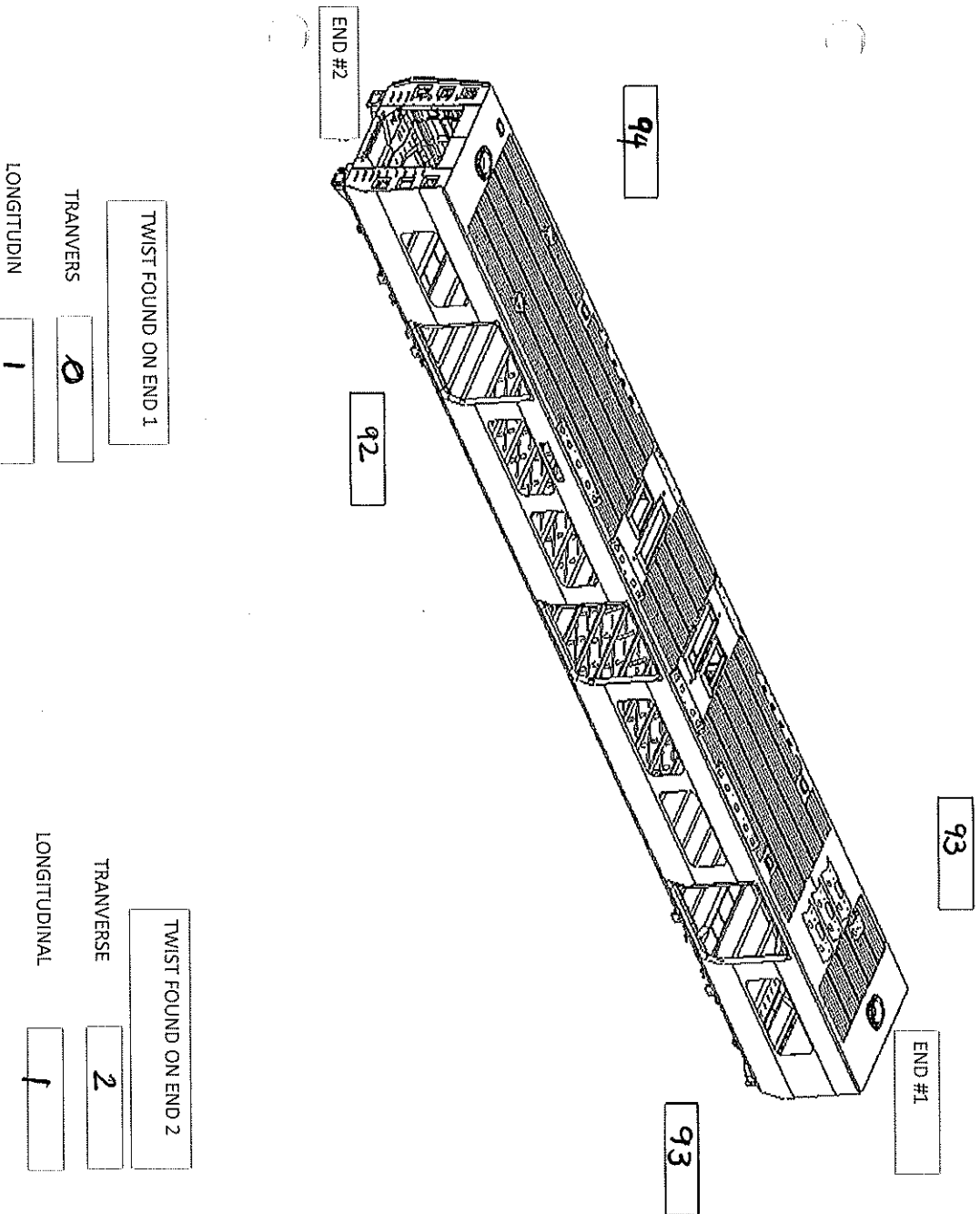
CARBODYSHELL M1,M3,M4 ASSEMBLY
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Specifications of Details for GBS measurement CB1230

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.



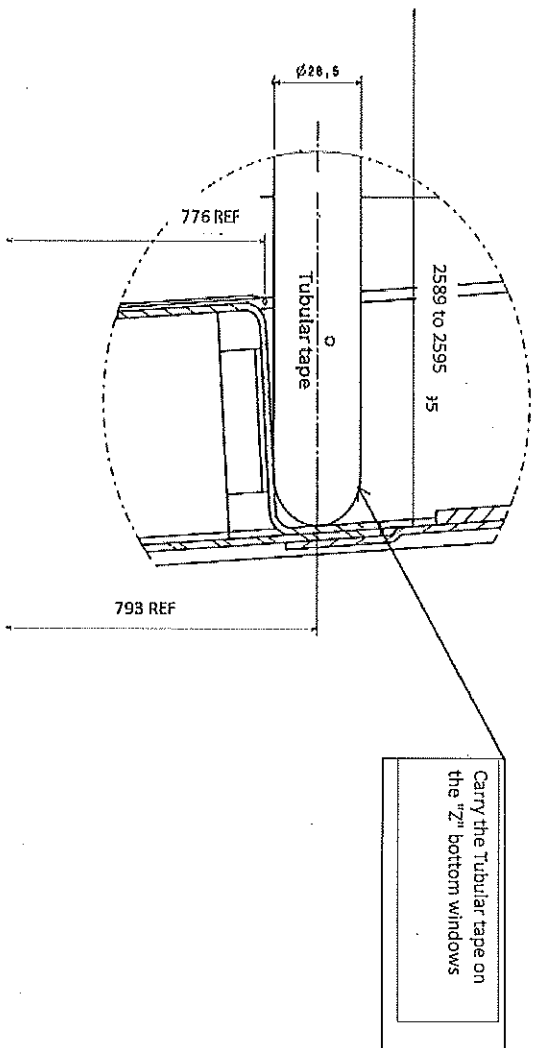


CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000225487

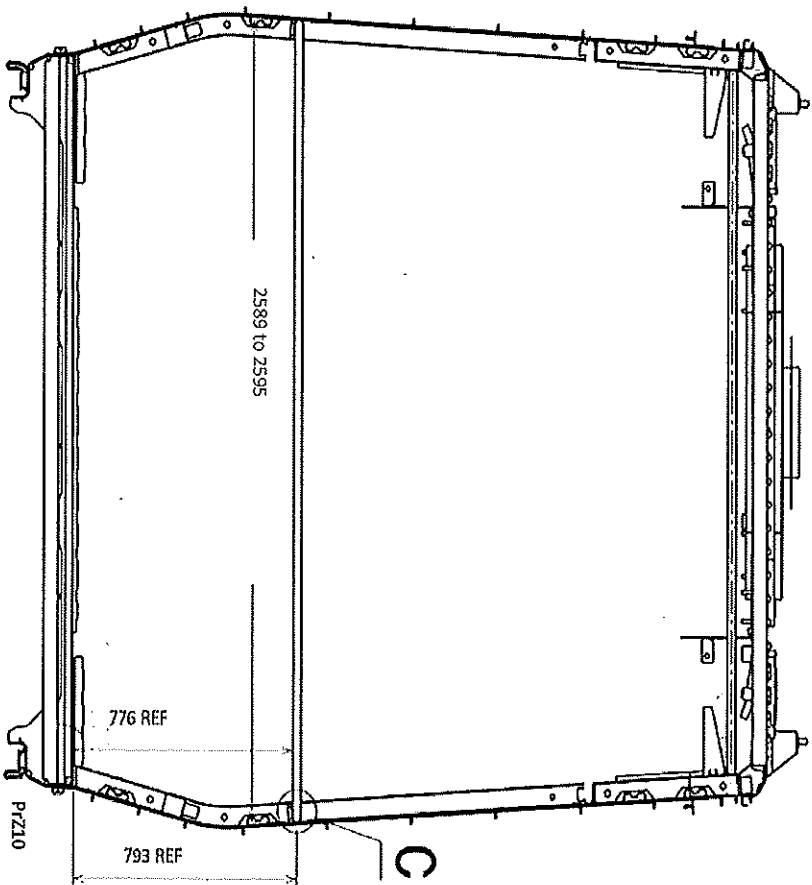
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Project: PRASA
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Specifications of Details for CBS measurement CB1230



Detail C



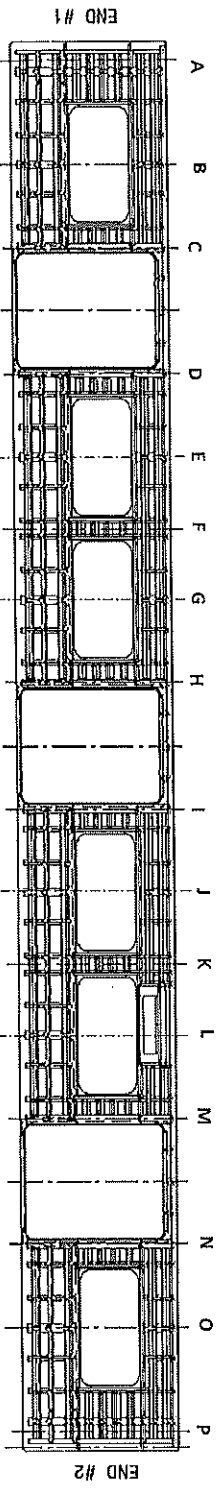


CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000225487

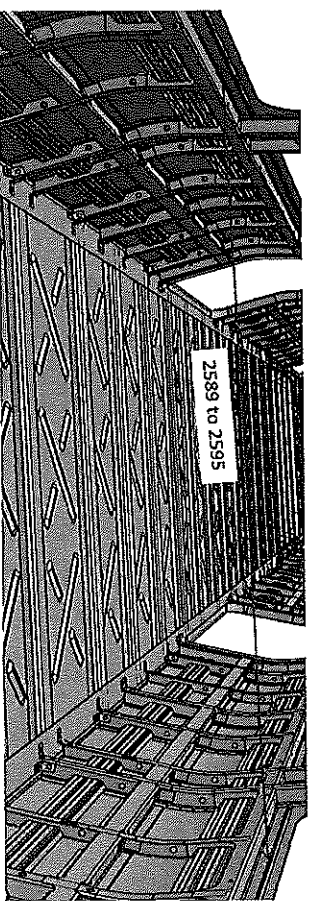
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Specifications of Details for GBS measurement CB1230



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



Threshold verification

		Nominal value :38	
Door 1		Door 2	Door 3
L	R	L	R
38	39	38	38
Door 4		Door 5	Door 6
L	R	L	R
38	39	37	38

BOILER MAKER: Isheona Hilt

WELDER: Zanele

Matlapelo

Dye penetrant test

Dye-penetration test to be performed by quality personnel



Specifications of Details for CBS measurement

[illegible]

11.2 - Check List REX

Check List Items

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



CARBODYSHELL M1,M3,M4 ASSEMBLY
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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	10/02/2024	mananapao Operations	M. Adas
		10/02/2024	Ano Industrial Quality	
	NO 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.)				
There are activities pendings that impact/stop the activities of the next process Obs. (To describe problems below)			Operations	
There are non-conformities impact the quality of the product and there is no corrective action defined yet)			Industrial Quality	

In case of "NO GO", describe blocking problems

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

Operations

Quality



CARBODYSHELL M1,M3,M4 ASSEMBLY
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ANNEXURE A: Arc Welding Quality Acceptance Standard

