



APPLICABLE FROM TRAINSET 190+ AS PER BASELINE 10.4

SELF INSPECTION SHEET

CONFIDENTIAL INFORMATION

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

APPLICATION REFERENCE

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 
				TCL	M1	M2	M3	M4	TCL		
<input type="checkbox"/>	DTR3000152644	AAD0001278566	CARBODYSHELL M3,M4 ASSEMBLY	CB2210		X			X	PRA.CB2210.DTR3022S 487/3.V30	YES
<input type="checkbox"/>					X						

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 Mulaudzi	
			REVISED BY	Mpho Mulaudzi	
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	
30	20/07/2023	New Baseline change 10.4	APPROVER	Ngobeni Tyson	28/07/2023
			CHECKER	Mohlampe Amogelang	
			REVISED BY	Mohlampe Amogelang	
31	07/11/2023	Added traceability for welding sections	APPROVER	Ngobeni Tyson	07/11/2023
			CHECKER	Mohlampe Amogelang	
			REVISED BY	Ntokozi Zwane	

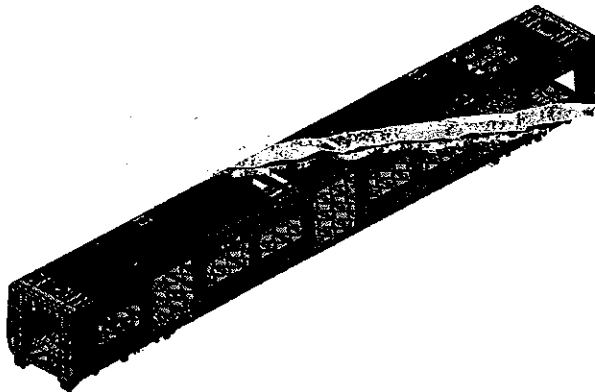
TRAINSET	CAR	OPERATOR NAME & ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES
15226	M4	Itumeleng 4110081	06.05.24	SI.CB2210.254.V30	17

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

Car: M3 & M4	NCR:	Work station: CB2210
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Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car						Revision	Observation	OK	Signature/Date (Manufacture)	Signature/Date (Quality)
	1	2	3	4	5	6					
DTR30225487/3						✓	31		OK	07.05.24	05/24

I.2 - Instruments Control


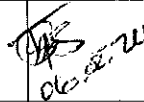

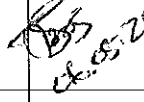
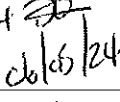
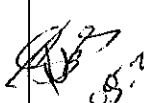
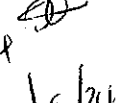

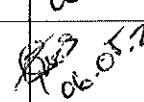
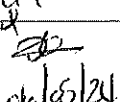
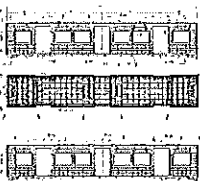
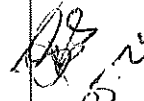
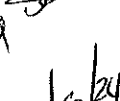

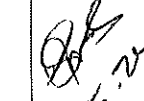
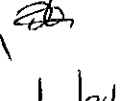
Monitoring and Measuring Instrument Control - Used for Special Process


Instruments	Serial number	Calibration or Verification Validation Date	OK	Signature/Date (Manufacture)	Signature/Date (Quality)
1464472	32823-2	15/03/2025	OK	07.05.24	05/24
LABER TAPE	125425924	08/01/25	OK	07.05.24	05/24
30m TAPE	16770102	18/11/24	OK	07.05.24	05/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

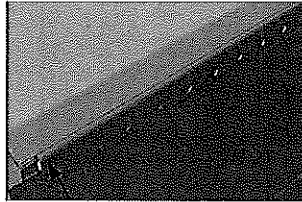
Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacture)	Signature/Date (Quality)
EL 308LS1	314018-74097	MIG	OK	07.05.24	05/24
EL 308L	299687-70822	TIG	OK	07.05.24	05/24


		Rev. 31 Date 07/11/2023	Project: PRASA SI.CB2210.254.V30			
CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3						
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	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓	 06.05.24	 06/05/24
02	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 e DTD0000210675	✓	 06.05.24	 06/05/24
03	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 06.05.24	 06/05/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 06.05.24	 06/05/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓	 06.05.24	 06/05/24
06	N/A 	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	✓	 06.05.24	 06/05/24

	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 31	Project: PRASA SI.CB2210.254.V30
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
Welding Traceability

Roof ring welds



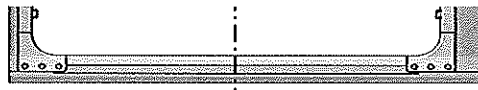
LHS	
Boiler maker (Name & Sign): <u>PONTIS MPR</u>	Welder (Name & Sign): <u>ROBERT ABRAHAM</u>
RHS	
Boiler maker (Name & Sign): <u>SEAN</u> 	Welder (Name & Sign): <u>ROBERT ABRAHAM</u>



END 1



LHS	
Boiler maker (Name & Sign): <u>PONTIS MPR</u>	Welder (Name & Sign): <u>ROBERT ABRAHAM</u>
RHS	
Boiler maker (Name & Sign): <u>SEAN</u> 	Welder (Name & Sign): <u>ROBERT ABRAHAM</u>


END 2

Door ring welds

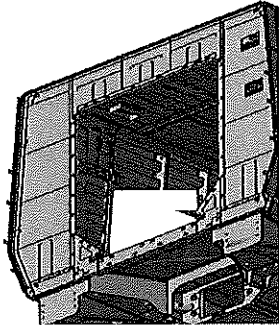
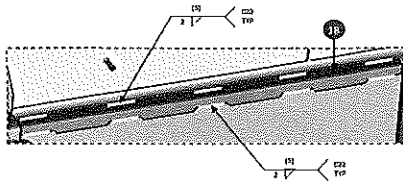


LHS	
Boiler maker (Name & Sign): <u>SEAN</u> 	
Welder (Name & Sign): <u>SIPHAKITZ</u> 	

RHS	
Boiler maker (Name & Sign): <u>SEAN</u> 	
Welder (Name & Sign): <u>SIPHAKITZ</u> 	

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EUF Reinforcement Plates



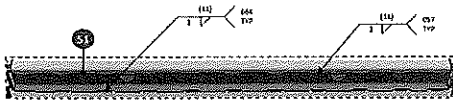
END 1

Boiler maker (Name & Sign):

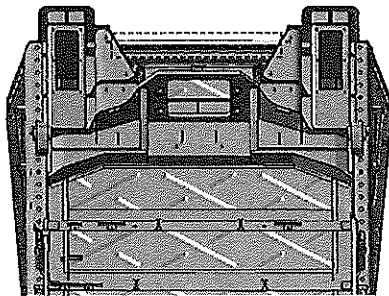
GEBALLO

Welder (Name & Sign):

Thebang



END 2



Underneath the CAR

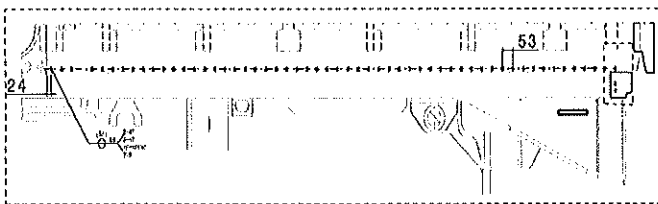
END 2

Boiler maker (Name & Sign):

GEBALLO

Welder (Name & Sign):


Wit

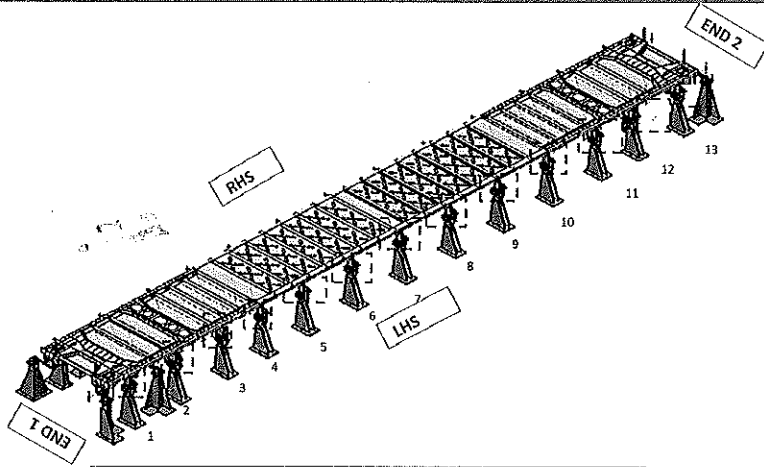


FEDOLI

Operator:

SIMPOT

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



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

After loading and clamping

Fill in the gap 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 Operations:

[Signature]

Date:

06.05.24

After Welding.

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

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

Signature Industrial Quality:

[Signature]

Date:

06/05/24

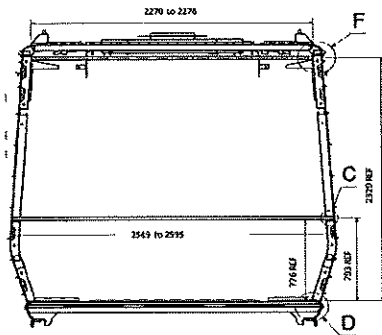
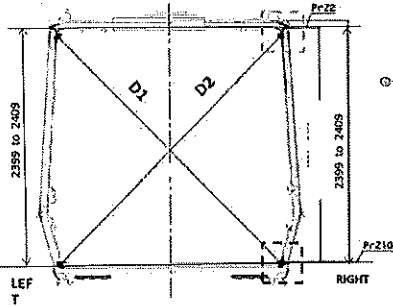
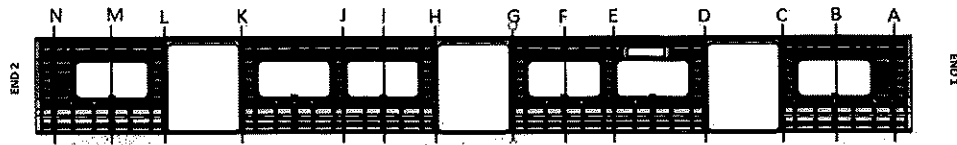


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Specifications of Details for CBS measurement



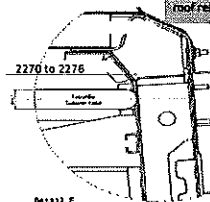
Measurement positions on roof rail and sidewall omega corner



Measurement positions on sidewall and side sill corner

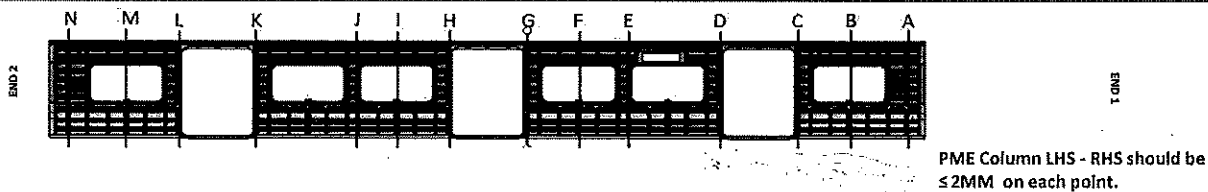


Reinforcement area measurement positions on roof reinforcement area



Reinforcement area measurement positions on roof reinforcement area

Specifications of Details for CBS measurement

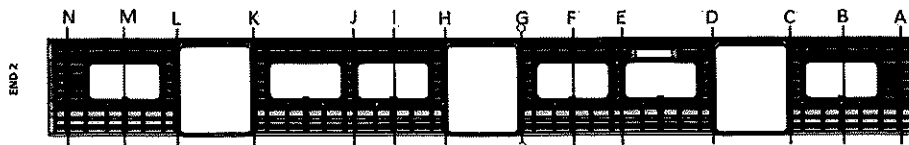


BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3268	3268	0	2406	2406	0
B	3270	3269	1	2405	2407	2
C	3267	3267	0	2406	2405	1
D	3268	3268	0	2406	2406	0
E	3271	3270	1	2406	2406	0
F	3269	3268	1	2405	2406	1
G	3267	3267	0	2404	2405	1
H	3268	3268	0	2406	2406	0
I	3270	3269	1	2406	2405	1
J	3271	3270	1	2406	2406	0
K	3269	3269	0	2406	2406	0
L	3268	3268	0	2405	2406	1
M	3268	3269	1	2406	2406	0
N	3267	3267	0	2404	2405	1

06.05.24


Specifications of Details for CBS measurement


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

AFTER WELDING

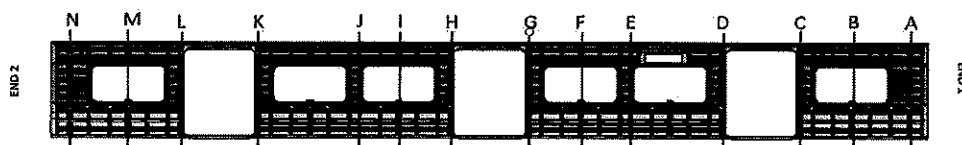
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3296	3296	0	2406	2406	0
B	3267	3268	2	2405	2404	1
C	3298	3298	0	2406	2405	1
D	3296	3296	0	2406	2406	0
E	3271	3270	1	2408	2406	2
F	3269	3268	1	2406	2407	1
G	3297	3296	1	2408	2406	0
H	3294	3295	1	2405	2405	0
I	3269	3267	2	2406	2407	1
J	3270	3271	1	2406	2405	1
K	3296	3295	1	2407	2406	1
L	3295	3295	0	2406	2405	1
M	3269	3267	2	2408	2407	1
N	3297	3297	0	2406	2406	0

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CBS measurement

BEFORE WELDING



2270 to 2276

A 2274

B 2275

C 2272

D 2271

E 2275

F 2274

G 2271

H 2270

I 2272

J 2275

K 2273

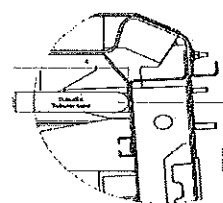
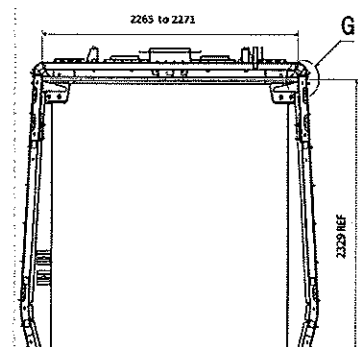
L 2271

M 2272

N 2271



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




2265 to 2271

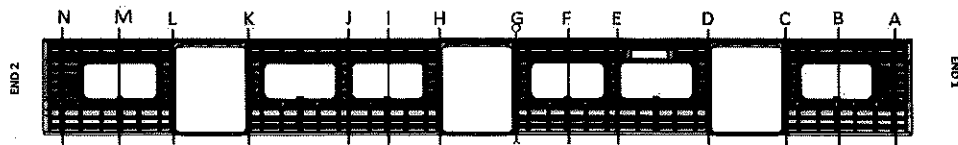
Detail a

Considering the reinforcement profile

06.05.24

	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 31	Project: PRASA S1.CB2210.254.V30
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		CBS measurement	

AFTER WELDING



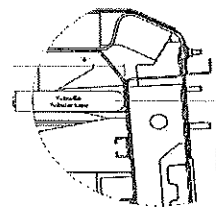
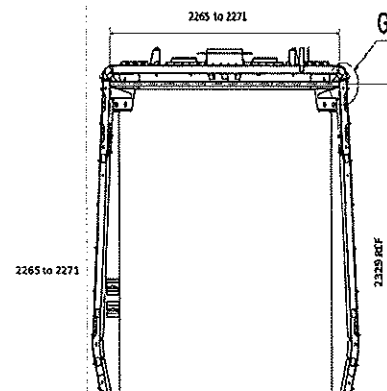
	2265 to 2271	2270 to 2276
A	2268	
B		2273
C	2267	
D	2268	
E		2276
F		2275
G	2267	
H	2266	
I		2274
J		2278
K	2268	
L	2267	
M		2274
N	2269	



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



Take measurement close to radius (considering reinforcement)

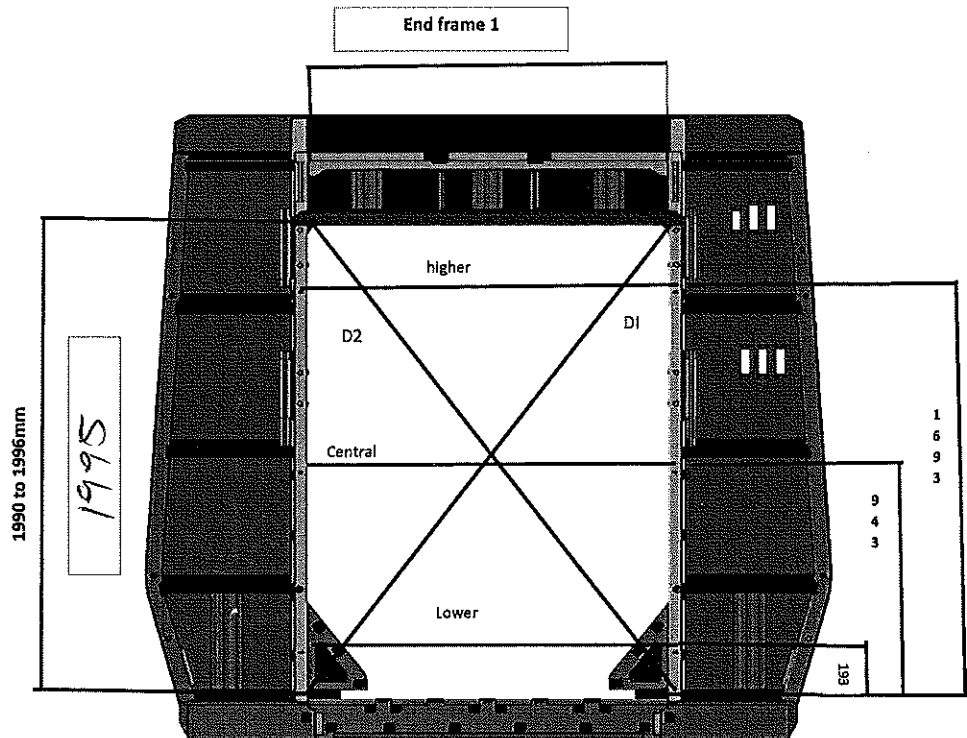


2265 to 2271

Detail 0
Considering reinforcement plus

06.05.24

Specifications of Details for CBS measurement



1380 to 1382 mm

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

Higher Dimension

1381

D1

2417

Central Dimension

1380

D2

2418

Lower Dimension

1380

D1-D2

2

06.05.24



CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3

Rev.

31

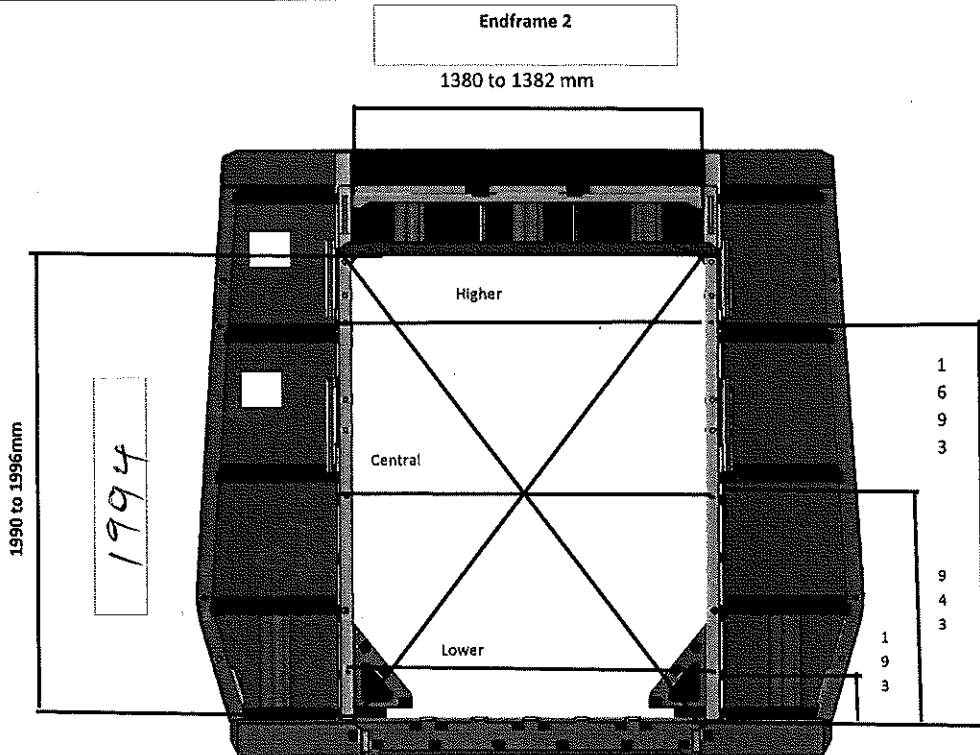
Project: PRASA

SI.CB2210.254.V30

Date

07/11/2023

Specifications of Details for CBS measurement



1380 to 1382 mm

DIAGONAL DIFFERENCE D1-D2 ≤ 3mm

Higher Dimension

1380

D1

2418

Central Dimension

1381

D2

2417

Lower Dimension

1381

D1-D2

1

06.05.24



CARBOOYSHELL M3,M4 ASSEMBLY DTR30225487/3

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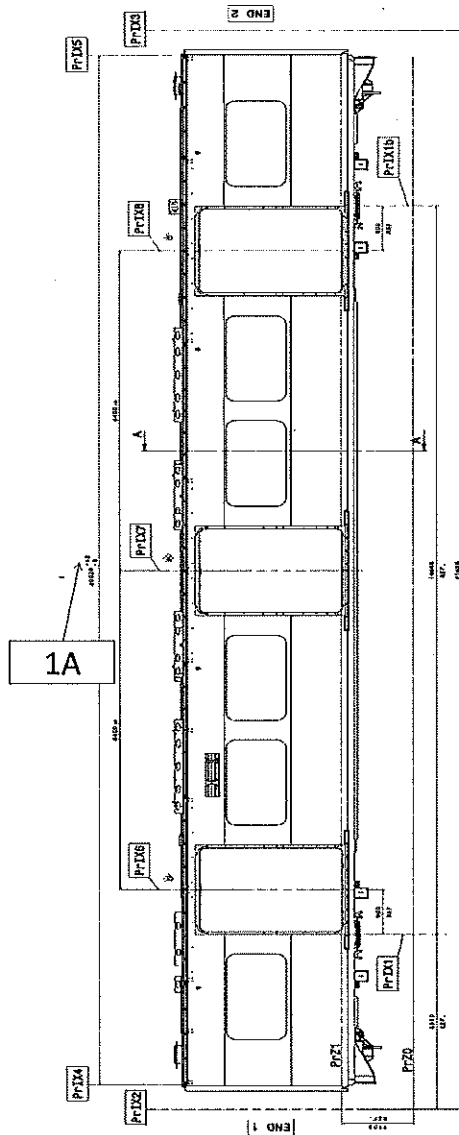
Project: PRASA

SI.CB2210.254.V30

Date

07/11/2023

Specifications of Details for CBS measurement



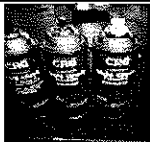
LEFT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20681

RIGHT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20629



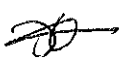
06.05.24

Dye penetrant test

Dye-penetration test to be performed by quality personnel



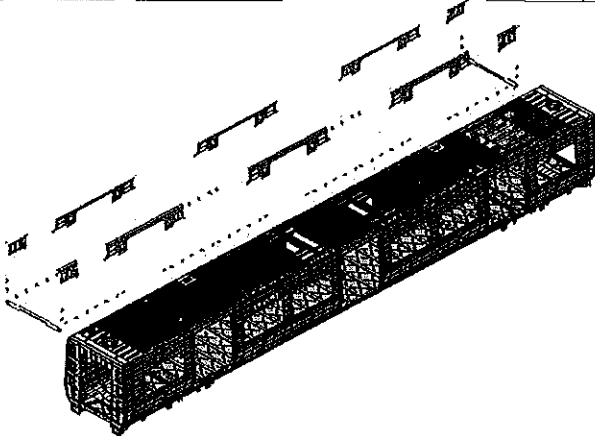




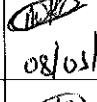
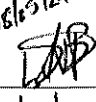
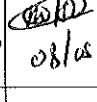
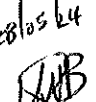
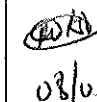

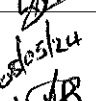
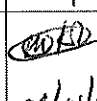
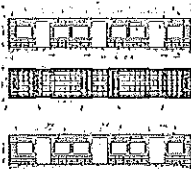

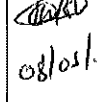
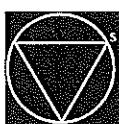
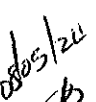
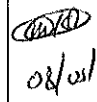
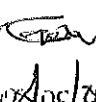
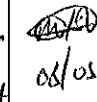
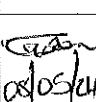
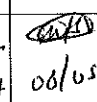

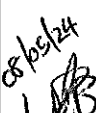
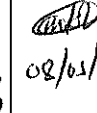
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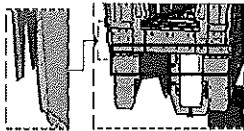


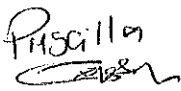
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				Date 07/11/2023		
Self Inspection - Final Result						
			DATE	NAME	SIGNATURE	
HOLD POINT		GO	(If activities are not complete, the missing activities must not impact the next stage)	06.05.24	Tumelo Operations	
			Every auto inspection performed conforma la specification or in case of discrepancy the same is approved by the competent party.)	06/05/24	Andani Industrial Quality	
			There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)			
			There are non-conformities Impact the quality of the product and there is no corrective action defined yet)			
In case of "NO GO", describe blocking problems						
In case of "NO GO", the operations manager must define below action plan to ensure "GO":						
Item	Description		Responsible	Due date	Status	


Operations

Quality

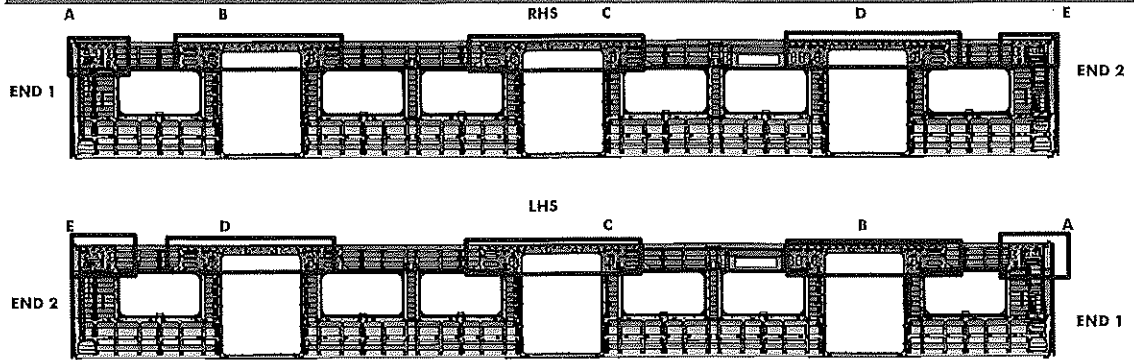
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA								
		29									
		Date	SI.CB2220.250.V29								
28/10/2023											
Car: M1,M3&M4	NGR:	Work station:	CB2220								
 Safety Related											
											
I - Documentation and Instruments Control											
I.1 - Documentation Control											
Document	Type of car					Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	M1	M3	M4	M5	M6						
DTR30225487/2						29	28/01/2023	V		NA	08/05/24 08/05/24
I.2 - Instruments Control											
Monitoring and Measuring Instrument Control - Used for Special Process											
Instruments	Serial number	Calibration or Verification Validation Date		OK		Signature/Date (Manufacturing)		Signature/Date (Quality)			
Measuring Tape	9187740	22/07/2023 - 22/07/24		X		08/05/24		08/05/24			
Tubular	32823-3	15/05/2024 - 15/05/24		X		08/05/24		08/05/24			
1.3 Consumables											
Welding Consumable Control - Used for Special Process											
Filler Material	Heat Number	Welding Process		OK		Signature/Date (Manufacturing)		Signature/Date (Quality)			
Welding 308LS1	E221880	Mig		X		08/05/24		08/05/24			

	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev. 29	Project: PRASA			
		Date 28/10/2023	SI.CB2220.250.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.CB2220.DTR30225487/2 Verification of fitment for all reinforcement brackets.	PRA.CB2220.DTR30225487/2	✓	08/05/24 	08/05/24 
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DT00000210675	✓	08/05/24 	08/05/24 
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	08/05/24 	08/05/24 
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	08/05/24 	08/05/24 
05		Functional dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓	08/05/24 	08/05/24 
06		Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	✓	08/05/24 	08/05/24 
07	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified. Temperature Mn - Max (°) Mn - Max 10°C - 35°C Relative humidity Mn - Max (°) Mn - Max 25% - 80%	Sealant Batch No: <u>15K 72-013</u> Exp Date: <u>09/10/24</u> Actuals Temperature: <u>15°C</u> Humidity: <u>40%</u>	✓	08/05/24 	08/05/24 
08	NA	Verification of sealant application in certain regions in the drawing.	AAD0001278566	✓	08/05/24 	08/05/24 
09		Verification of safety welds	Approved according to DTD000210658 reference and Self inspection	✓	08/05/24 	08/05/24 

	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA
		29	
		Date	
		28/10/2023	SI.CB2220.250.V29
II - Self Inspection - Items to Check			
SEALANT APPLICATION			
		AREA 1 & 2 END 1	
		Operator (Name & sign): 	
		Operator (Name & sign): 	


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

II - Self Inspection - Items to Check

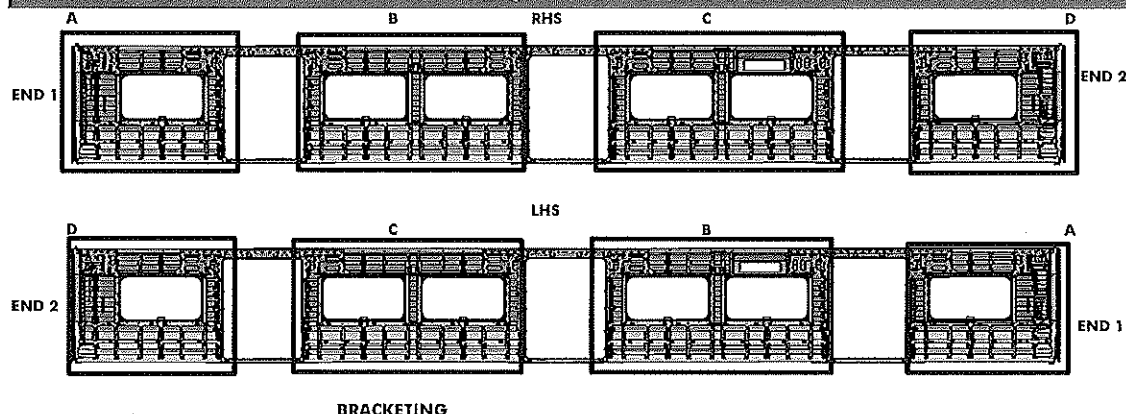



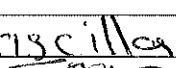
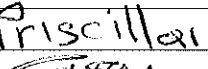
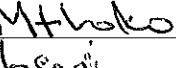
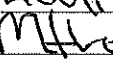
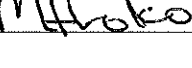


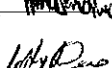
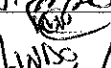


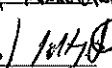
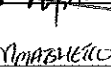


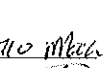

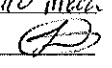



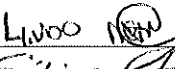
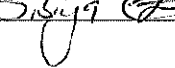
REINFORCEMENT WELDING

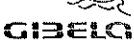
AREA	LHS	RHS
A	Operator (Name&sign): <u><i>[Signature]</i></u>	<u>LINDO <i>[Signature]</i></u>
B	Operator (Name&sign): <u>LINDO <i>[Signature]</i></u>	<u>LINDO <i>[Signature]</i></u>
C	Operator (Name&sign): <u><i>[Signature]</i></u>	<u><i>[Signature]</i></u>
D	Operator (Name&sign): <u><i>[Signature]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

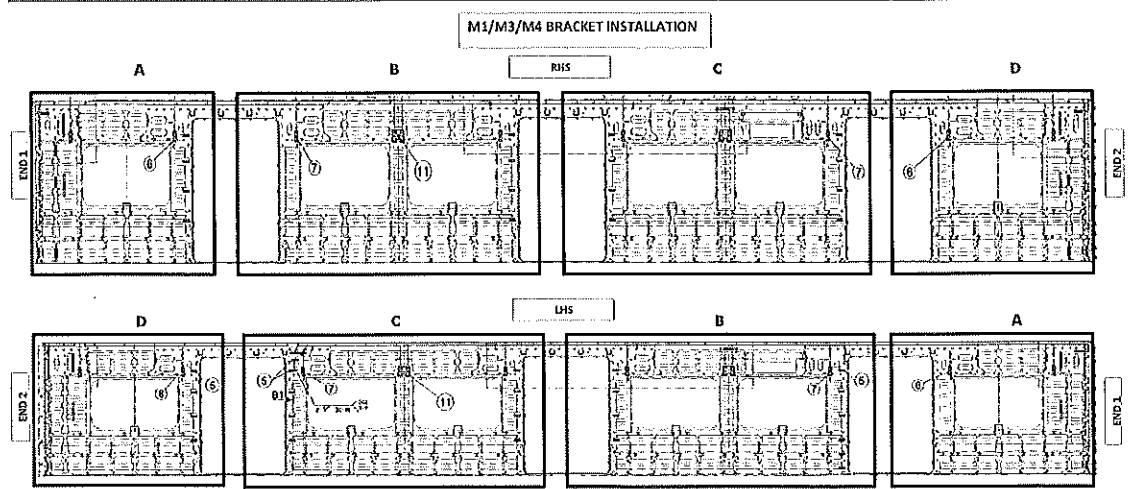
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA SI.CB2220.250.V29
		29	
		Date	
		28/10/2023	

II - Self Inspection - Items to Check



		INSTALLATION	
C-RAILS:	Operator:	ASANDA	
	Operator:		
DOOR MECHANISMS:	Operator:	Priscilla	
	Operator:		
TAPPING PADS	Operator:	Priscilla	
	Operator:		
		INSTALLATION & VERIFICATION	
SEAT & LUGGAGE BRACKETS:	Operator:	Mthoko	
	Operator:	heni	
SEAT BRACKETS VERIFICATION:	Operator:	Mthoko	
	Operator:		
		WELDING	
AREA		LHS	RHS
A (Seat brackets)	: Operator (Name&sign):	LINDO 	LINDO 
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	Mashon 	S. 
B (Seat brackets)	: Operator (Name&sign):	LINDO / 	LINDO / 
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	Mashon 	S. 
C (Seat brackets)	: Operator (Name&sign):	MASHON / 	MASHON / 
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	S. 	THULANI 
D (Seat brackets)	Operator (Name&sign):	MASHON / 	MASHON / 
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):	S. 	THULANI 
ENDS			
END 1 TAPPING PADS WELDING:	Operator (Name&sign):	LINDO 	
END 1 TAPPING PADS WELDING:	Operator (Name&sign):	S. 	

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



QUANTITIES (M3/M4)

RHS

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

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

VERIFICATION BY: _____

LHS

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

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

VERIFICATION BY: _____

QUANTITIES (M1)

RHS

	SECTION	QUANTITY	OK	NOK
C-RAILS	A	7		
	B	8		
	C	8		
	D	8		
SEAT BRACKETS	A	13		
	B	21		
	C	21		
	D	13		
EARTH BUSH	A	2		
	B	4		
	C	5		
	D	3		

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

VERIFICATION BY: _____

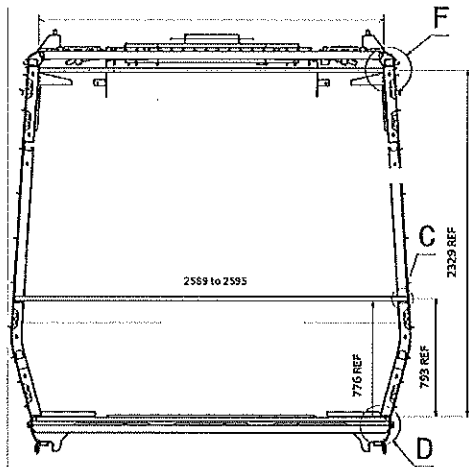
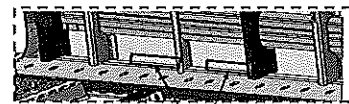
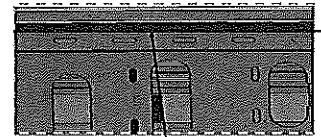
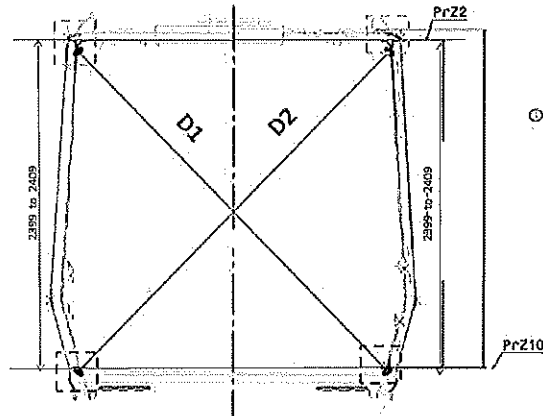
LHS

	SECTION	QUANTITY	OK	NOK
C-RAILS	A	2		
	B	10		
	C	11		
	D	6		
SEAT BRACKETS	A	13		
	B	21		
	C	21		
	D	13		
EARTH BUSH	A	3		
	B	7		
	C	6		
	D	2		

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

VERIFICATION BY: _____

Specifications of Details for CBS measurement



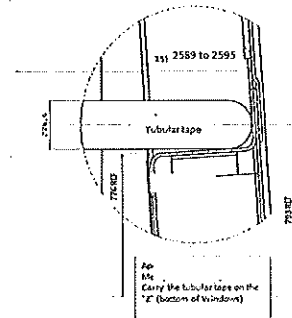
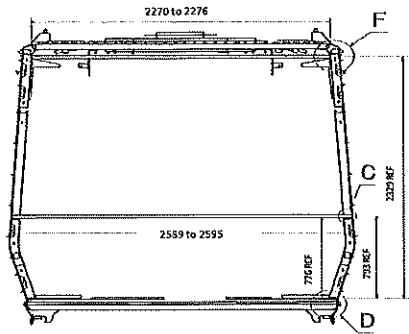


CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30226487/2

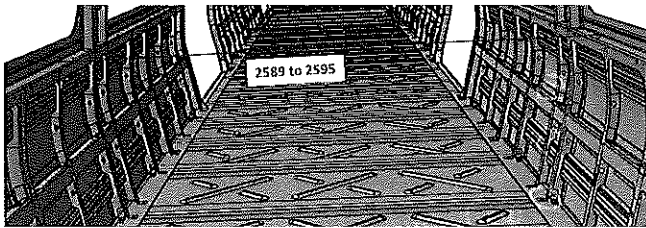
Rev.
29
Date
28/10/2023

Project: PRASA
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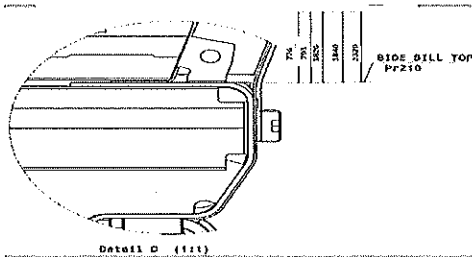
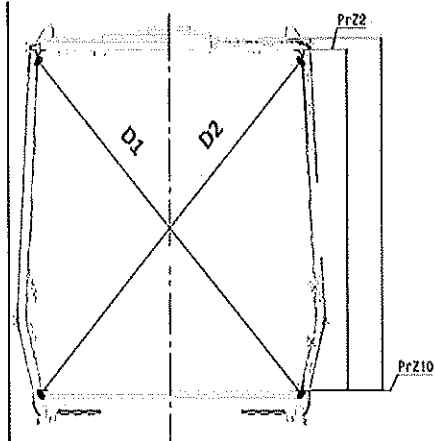
CBS measurement




Detail C

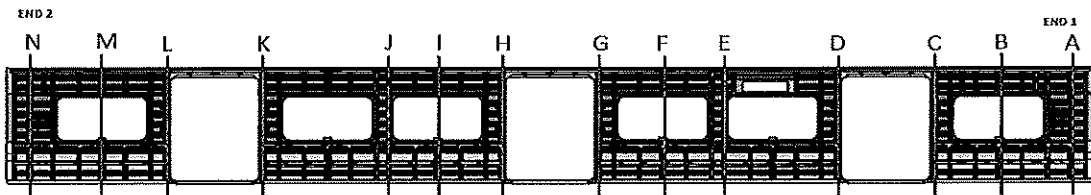


Take measurement close to
radius




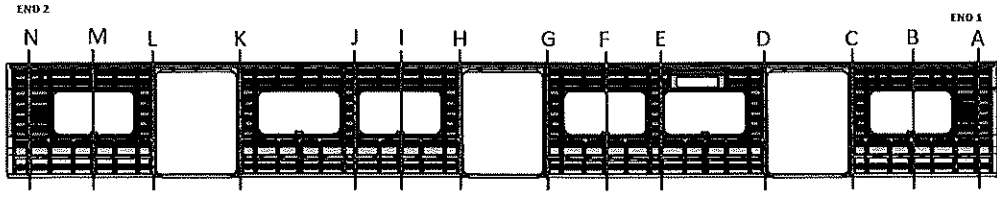
Detail D (1:1)

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



BEFORE WELDING

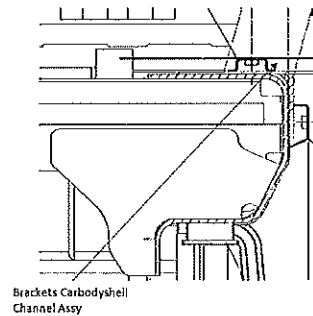
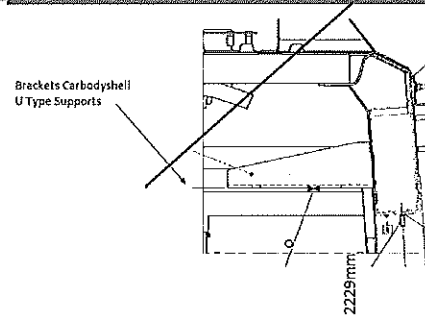
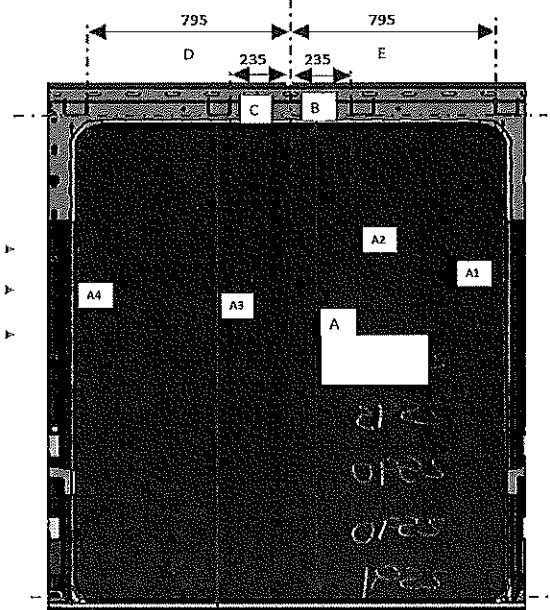
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3261			
B	3262	3261	5	
C	3261	3262	5	
D	3294	3294	0	
E	3262	3265	3	
F	3262	3264	2	
G	3295	3296	1	
H	3294	3295	1	
I	3265	3262	3	
J	3266	3265	1	
K	3298	3297	1	
L	3294	3293	1	
M	3265	3265	0	
N	3298	3293	5	

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

AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3300	3295	5	2592
B	3266	3269	3	2595
C	3295	3291	2	2590
D	3298	3300	2	2590
E	3260	3265	5	2591
F	3260	3265	5	2590
G	3295	3298	3	2590
H	3295	3298	3	2590
I	3265	3262	3	2592
J	3265	3265	0	2590
K	3295	3298	3	2595
L	3295	3293	2	2594
M	3265	3261	2	2590
N	3293	3295	2	2595

Specifications of Details for CBS measurement CB1220



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

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

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

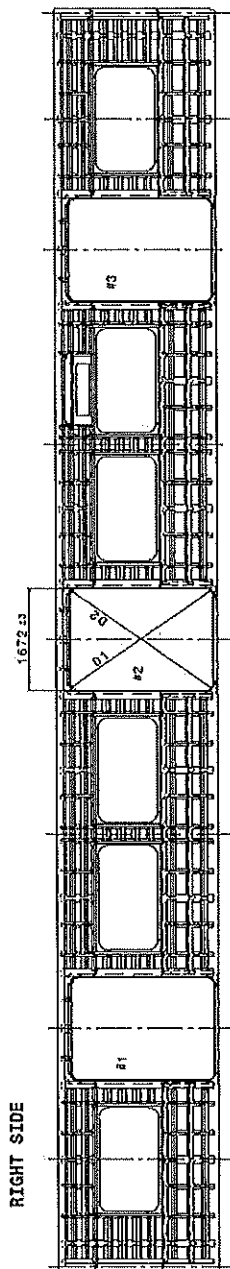
DOOR 1 - RHS		
	VALUE	ACTUAL
A1	2230 to 2232	2230
A2	2230 to 2232	2230
A3	2230 to 2232	2231
A4	2230 to 2232	2231
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	795

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

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

Specifications of Details for CBS measurement CB1220

End #2



RIGHT SIDE

End #1

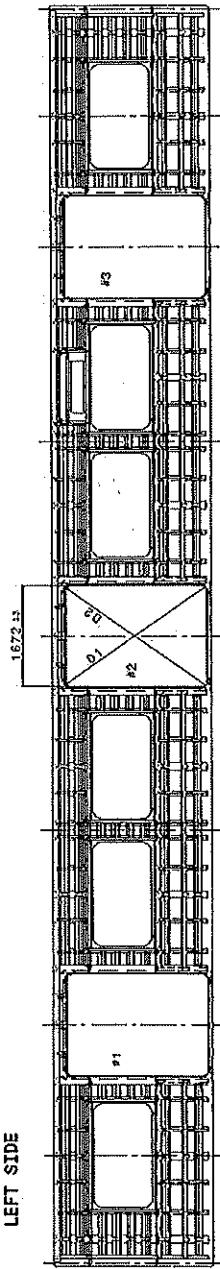
Doors diagonal D1-D2 maximum difference $\leq 4\text{mm}$

#1	#2	#3
D1	2748	2749
D2	2747	2747
D1-D2	1	2

Doors length - 1672.33mm

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

End #1



LEFT SIDE




End #2


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

#1	#2	#3
D1	2747	2748
D2	2749	2747
D1-D2	2	1

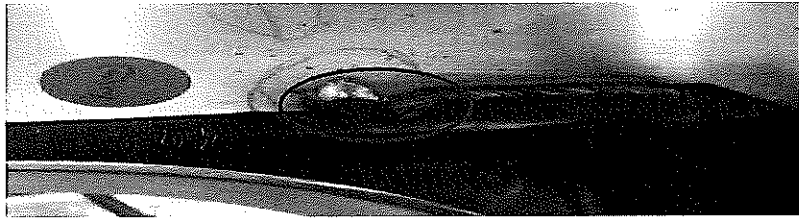
Doors length - 1672.33mm

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

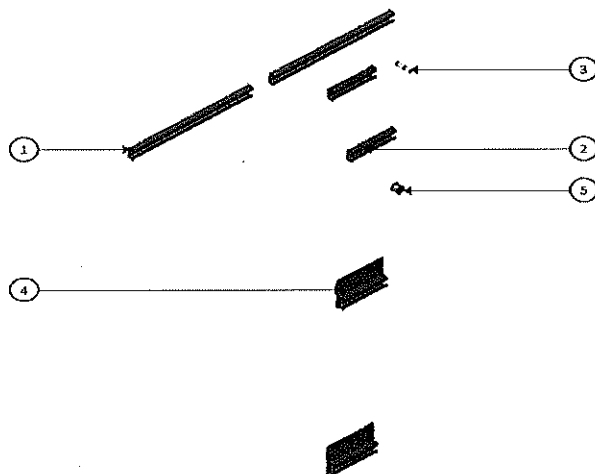
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRA5A SI.CB2220.250.V29		
		29			
		Date			
		28/10/2023			
Self Inspection - Final Result					
Is the car good to advance to the next workstation/process? (Approval of Operations Manager and Industrial Quality)		DATE	NAME	SIGNATURE	
HOLD POINT	GO	(if activities are not complete, the missing activities must not impact the next stage)	08/05/24	Levi Operations	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party	08/05/24	Richmond Industrial Quality	
	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	
<div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;"> <hr style="width: 150px;"/> Operations </div> <div style="text-align: center;"> <hr style="width: 150px;"/> Quality </div> </div>					

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

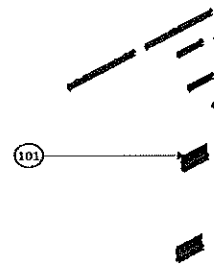
ANNEXURE A: Arc Welding Quality Acceptance Standard



Station: CB1220-004- U108 & U107



PART NO.	ITEM NO.	QTY	DESCRIPTION	MASS [KG]
DTR00200740/3	5	6	EARTH STUD 6	0.095
AA00001201843	4	6	ASSEMBLY SUPPORT	0.271
DTR00003430/5	3	12	WELDED STUD ISO13318 PT - P/2420 - SST	0.007
AA00001160424	2	12	ASSEMBLY SUPPORT	0.193
A/00001164418	1	14	ASSEMBLY SUPPORT	0.532
AA00001161080	101	6	CARBODYSHELL BRACKETS CARBODYSHELL M1/M3/M4 CAR[SIDE FRAME MODULE E70 - OP2]	12.132



GIBELA

PRASA PROJECT



APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1


SELF INSPECTION SHEET

CONFIDENTIAL INFORMATION

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

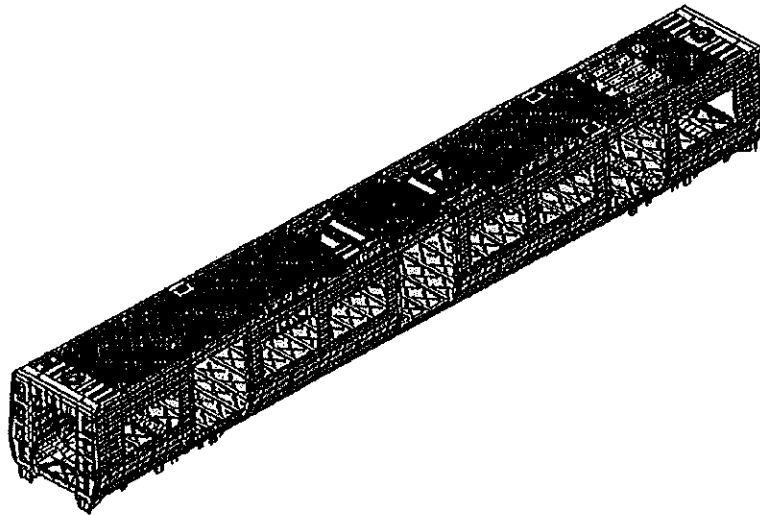
APPLICATION REFERENCE

MOU/IR/IG	DRAWING	DESCRIPTION	STATION	CAR TYPE								WORK INSTRUCTION	SAFETY
				YCL	MY	HI	JE	HR	TC				
<input type="checkbox"/> DT0000075497	AAD0001278566	CARBODYSHELL M1230, M4 ASSEMBLY	CB1230		X	X			X		PRACB1230.DT000002 25607.V20	YES	
<input type="checkbox"/>													
<input type="checkbox"/>													
REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE								
0	2018/08/02	GIBELA NEW CREATION	APPROVER	Philippe Marques	2018/08/02								
			CHECKER	Nosiro Pindela	2018/08/02								
			COMPILER	Nosiro 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	Nosiro Pindela	30/5/2018								
			REVISED BY	Nosiro Pindela	30/5/2018								
2	2018/05/07	Certain dimensional checks moved to CB1220	APPROVER	Itumeleng Modiba	2018/05/07								
			CHECKER	Nosiro 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	Nosiro 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	Nosiro Pindela	13/03/2019								
			REVISED BY	Nosiro Pindela	13/03/2019								
10	23/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	23/08/2019								
			CHECKER	Nosiro Pindela	23/08/2019								
			REVISED BY	Nosiro 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 Mkhombhi	20/02/2022								
			CHECKER	Andani Muthelo									
			REVISED BY	Andani Muthelo									
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Collins Mkhombhi	14/06/2022								
			CHECKER	Andani Muthelo									
			REVISED BY	Andani Muthelo									
27	19/10/2022	Addition of traceability for sealant application	APPROVER	Collins Mkhombhi	19/10/2022								
			CHECKER	Ntshero Zwane									
			REVISED BY	Amogelang Mkhamphe									
28	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023								
			CHECKER	Ntshero Zwane									
			REVISED BY	Amogelang Mkhamphe									
29	06/11/2023	Added thresholds traceability for boiler makers and welders	APPROVER	Tyson Ngobeni	06/11/2023								
			CHECKER	Andani Muthelo									
			REVISED BY	Ntshero Zwane									
TRAINSET	CAR	OPERATOR NAME & ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES								
266	M4	Benke 4827K	08/04/20	SI.CB1230.256.V28	11								

	CARBODYSHELL M1,M3,M4 ASSEMBLY DT00000225487	Rev. 29	Project: PRASA SI.CB1230.256.V28
		Date	
		06/11/2023	
Car:	NCR:	Work station: CB1230	



Safety Related



1 - Documentation and Instruments Control

1.1 - Documentation Control

Document	Type of car					Revision	Observation	OK	NOK	Review	Signature/Date (Operations)	Signature/Date (Quality)
	M1	M2	M3	M4	TC							
PRA.CB1230.DT00000225487				X		29		X		N/A	08/05/24	08/05/24

1.2 - Instruments Control








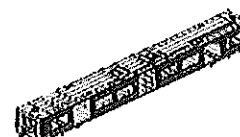


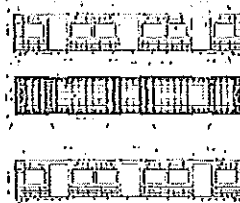


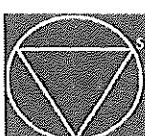






Monitoring and Measuring Instrument Control - Used for Special Process


Instruments	Serial number	Calibration or Verification Validation Date	OK	NOK	Signature/Date (Operations)	Signature/Date (Quality)
Tulor	27713	26/05/24	X		08/05/24	08/05/24
Line measurement	91B0794	25/05/24	X		08/05/24	08/05/24
Combination square	291B0072	27/07/24	X		08/05/24	08/05/24

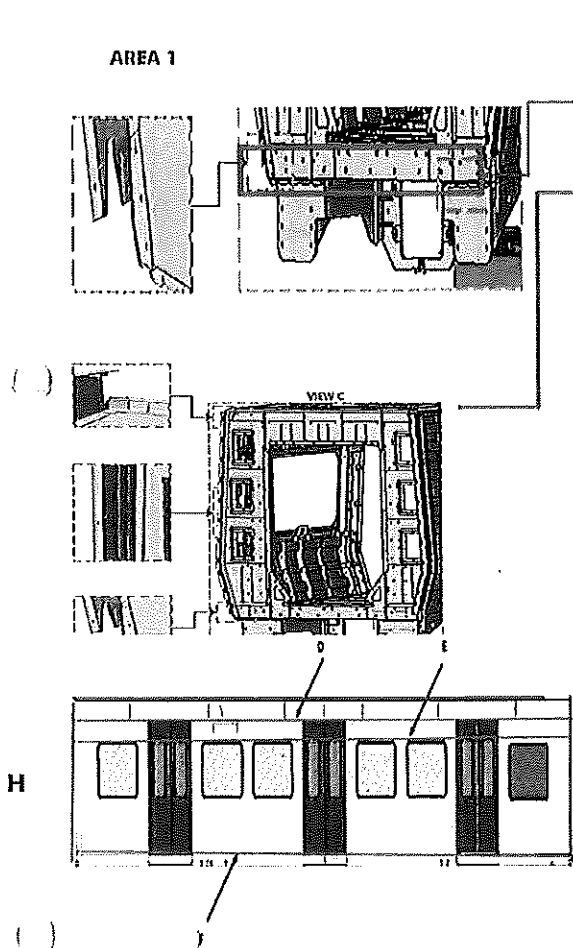
1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
208 CSI	373719	Mig	X		08/05/24	08/05/24

		CARBODYSHELL M1,M3,M4 ASSEMBLY DT00000225487		Rev. 29 Date 06/11/2023	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	Not	Not work	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	X			 08/05/24	 08/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	Y			 08/05/24	 08/05/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	X			 08/05/24	 08/05/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	X			 08/05/24	 08/05/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	X			 08/05/24	 08/05/24
06		Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	X			 08/05/24	 08/05/24
07	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified: Temperature Min - Max (°) Min-Max 10°C - 35°C Relative humidity Min - Max (%) Min-Max 25% - 60%	Sealant Batch No: 33497-8567 Exp Date: 06/2025 Actuals Temperature: 19°C Humidity: 35%	X			 08/05/24	 08/05/24
08	N/A	Verification of sealant application in regions of roof and sideframe.	Sealant applied in regions of roof and sideframe.	X			 08/05/24	 08/05/24

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



END 2 SEALANT

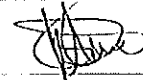
OPERATOR
(Name & sign):

Leroy 

OPERATOR
(Name & sign):

Leroy 

OPERATOR
(Name & sign):


Leroy 

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

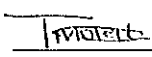
Operator (Name & sign) : D.E.F.G.H.I

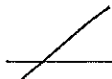
LHS

Operator (Name & sign) : Silve

Operator (Name & sign) : 

Operator (Name & sign) : Tshenolo

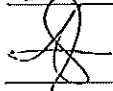
Operator (Name & sign) : 

Operator (Name & sign) : 

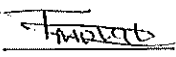
RHS

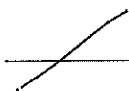
D.E.F.G.H.I

Operator (Name & sign) : Silve

Operator (Name & sign) : 

Operator (Name & sign) : Tshenolo

Operator (Name & sign) : 

Operator (Name & sign) : 



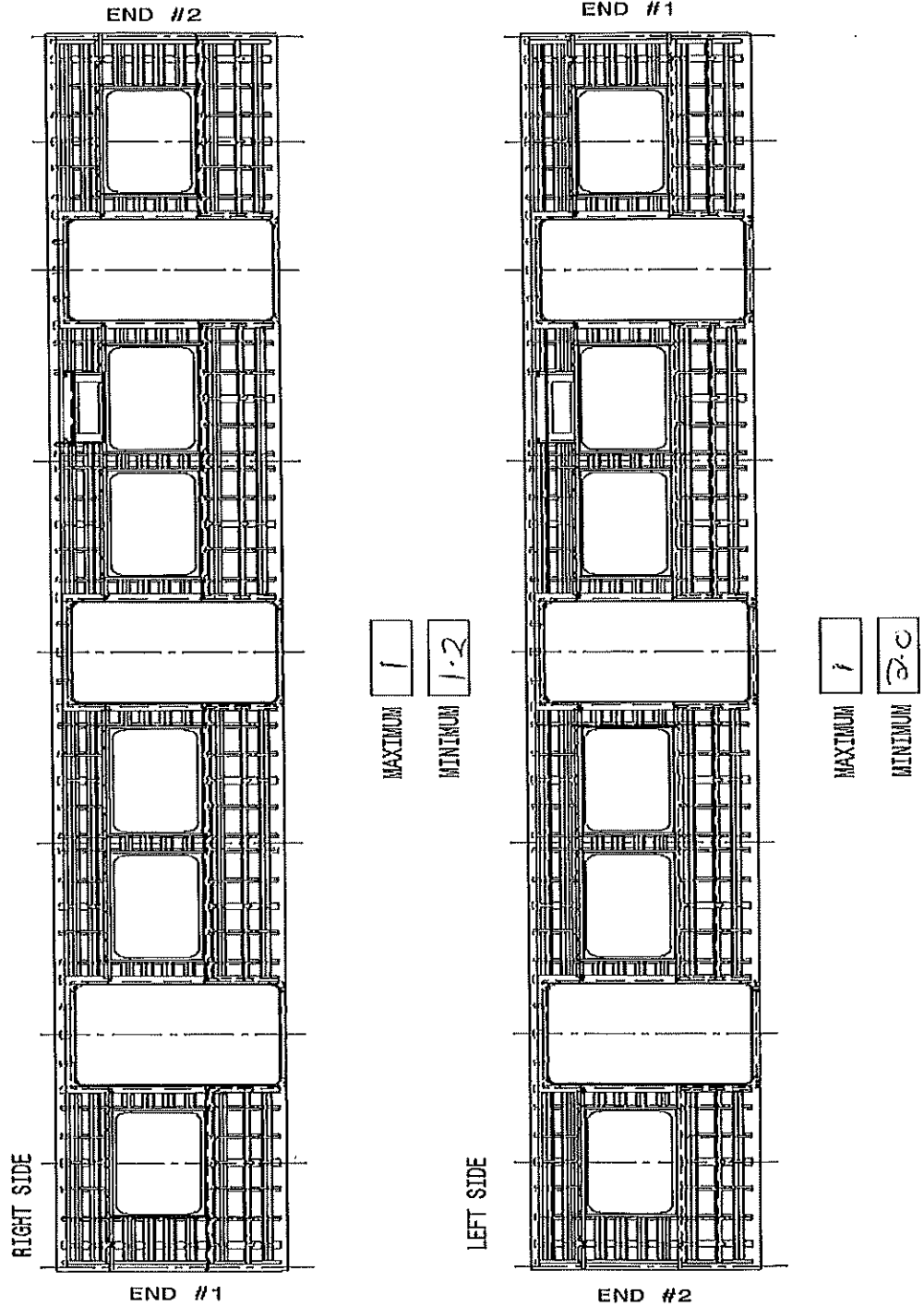
CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000226487

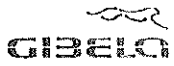
Rev.
29
Date
09/11/2023

Project: PRASA
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. Recod the maximum and minimum value found and indicate the corresponding region.





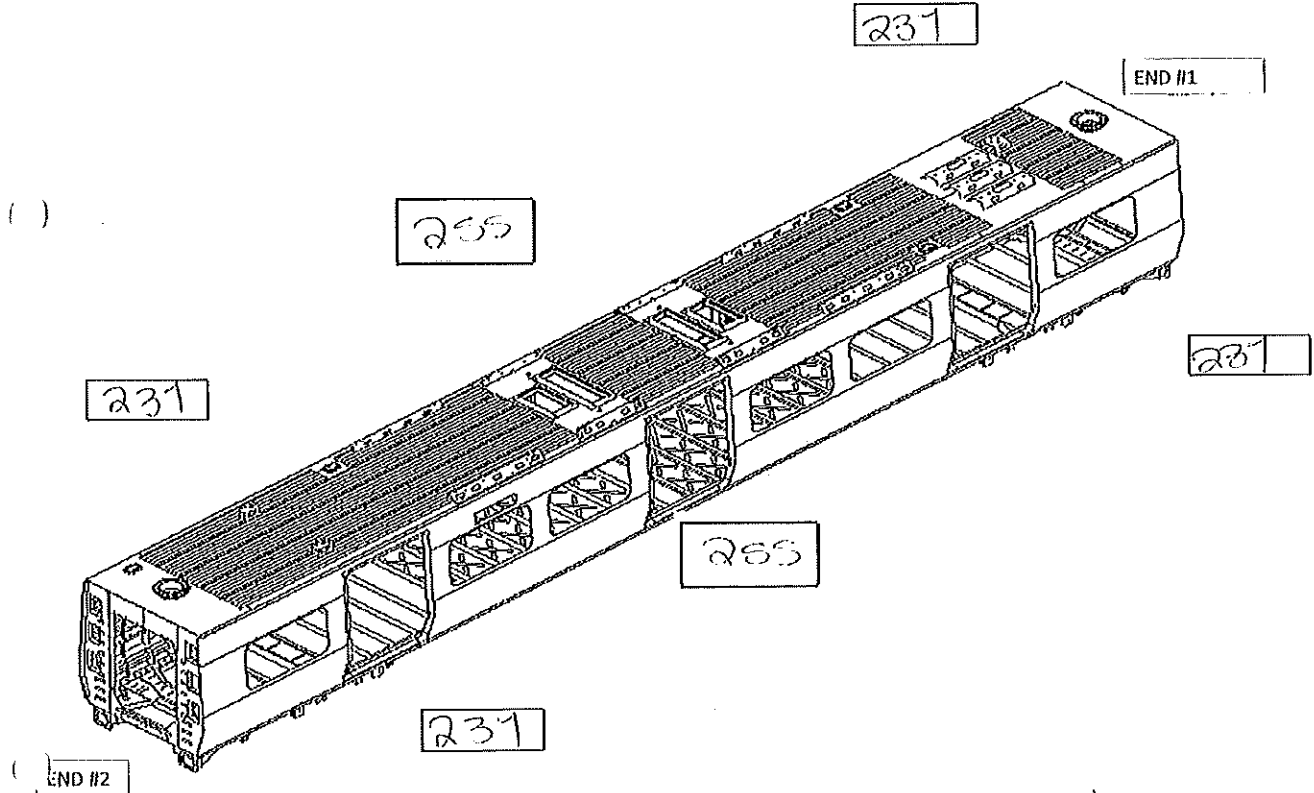
CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000225487

Rev.
29
Date
06/11/2023

Project: PRA5A
SI.CB1230.256.V28

Specifications of Details for GBS measurement CB1230

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



MEASURED CAMBER VALUES

RIGHT	¹	18
LEFT	¹	18



CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000226487

Rev.
29

Date

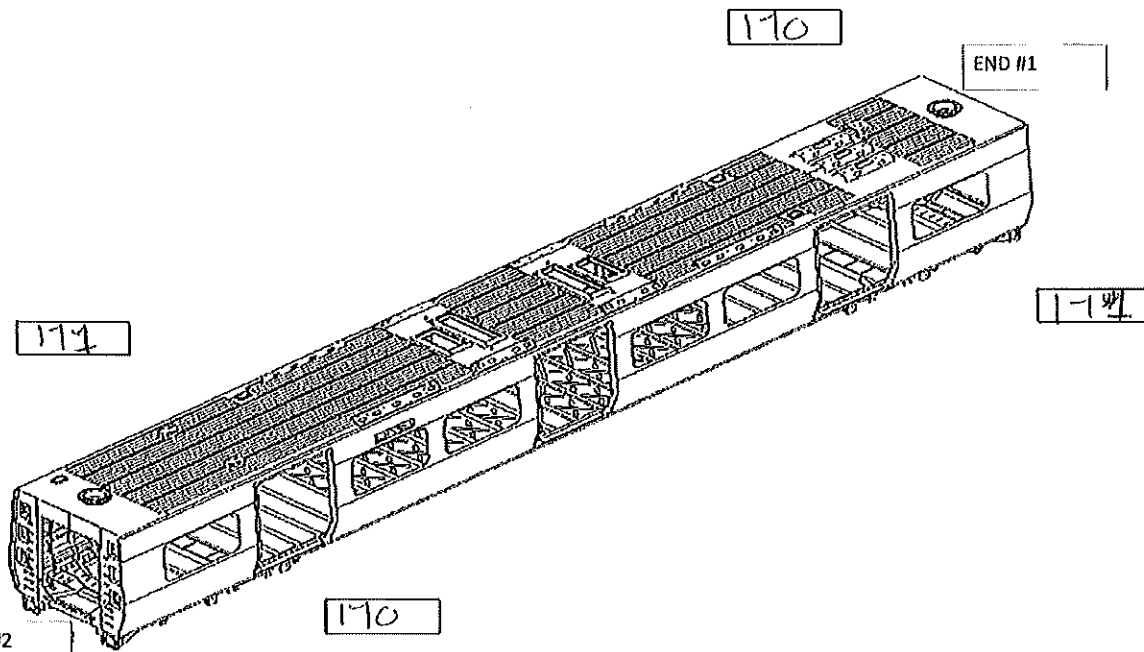
06/11/2023

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

1

LONGITUDIN

1

TWIST FOUND ON END 2

TRANVERSE

1

LONGITUDINAL

1



CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000225487

Rev.
29

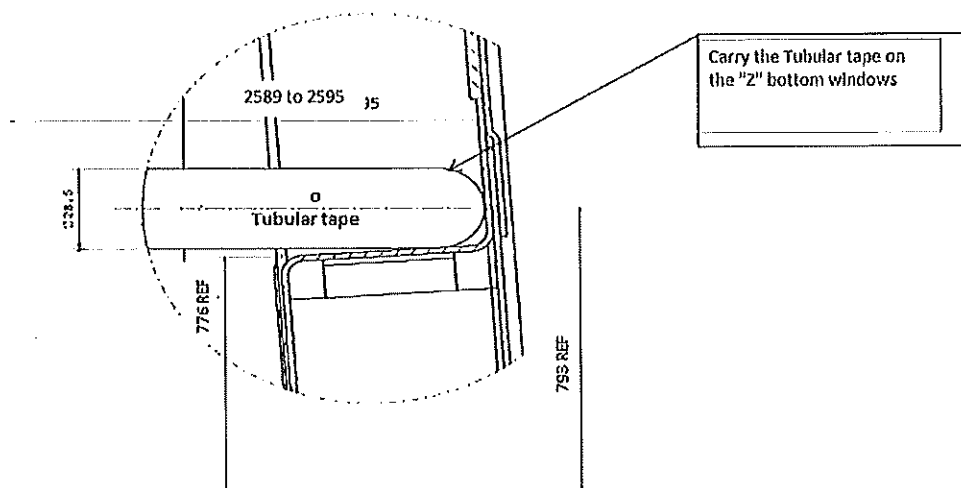
Date

06/11/2023

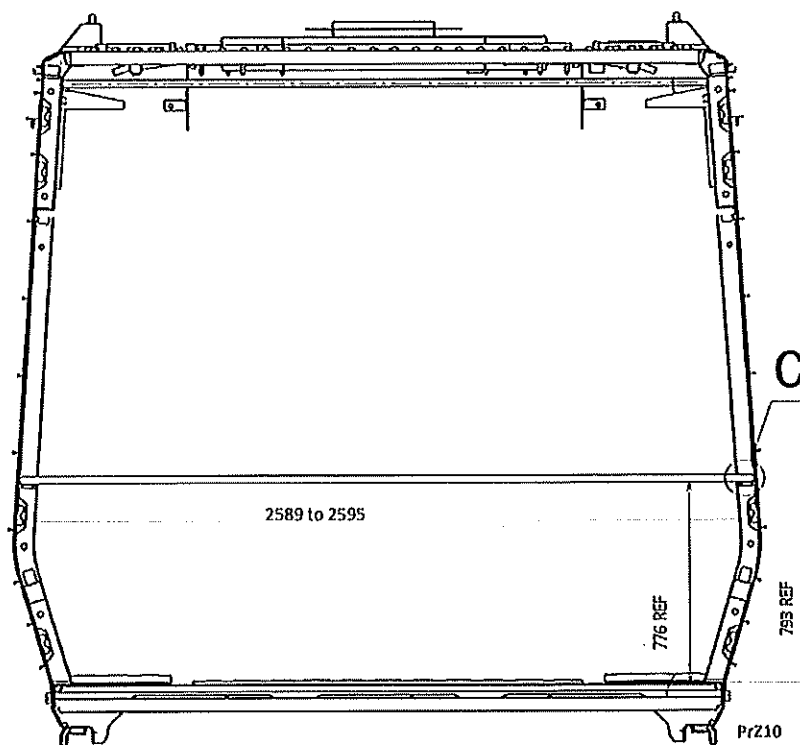
Project: PRASA

SI.CB1230.256.V28

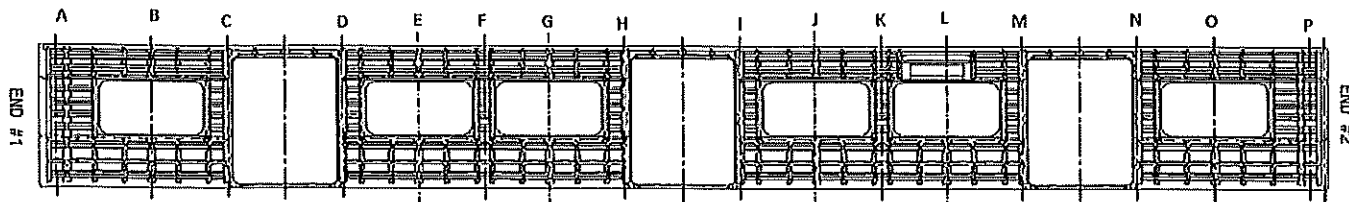
Specifications of Details for CBS measurement CB1230



Detail C

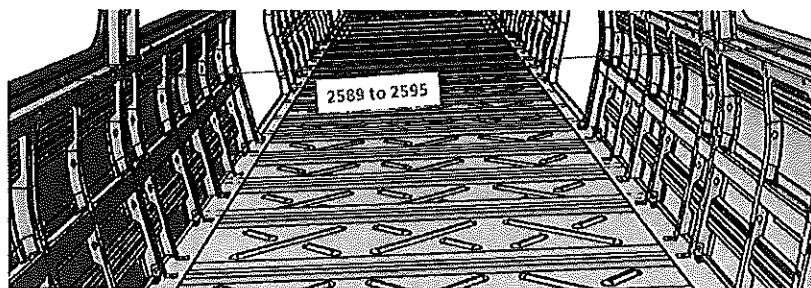


Specifications of Details for CBS measurement CB1230



2589 to 2595mm

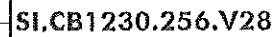
A	2590
B	2591
C	2590
D	2593
E	2592
F	2592
G	2593
H	2595
I	2595
J	2592
K	2593
L	2594
M	2595
N	2593
O	2592
P	2595




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


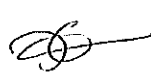
BOILER MAKER: *Eduardo - Bonifacio*

Welder: *Zarrete*



	CARBODYSHELL M1,M3,M4 ASSEMBLY DT00000225407	Rev. 29	Project: PRASA SI.CB1230.256.V28
		Date	
		06/11/2023	

Self Inspection - Final Result

Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)				DATE	NAME	SIGNATURE
HOLD POINT		GO	(If activities are not complete, the missing activities must not impact the next stage)	08/05/24	Zarele Operations	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	08/05/24	Andani Industrial Quality	
		NO GO	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

