


PRASA PROJECT
APPLICABLE FROM TRAINSET 100+ AS PER BASELINE 10.3.1


SELF INSPECTION SHEET

CONFIDENTIAL INFORMATION

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

APPLICATION REFERENCE

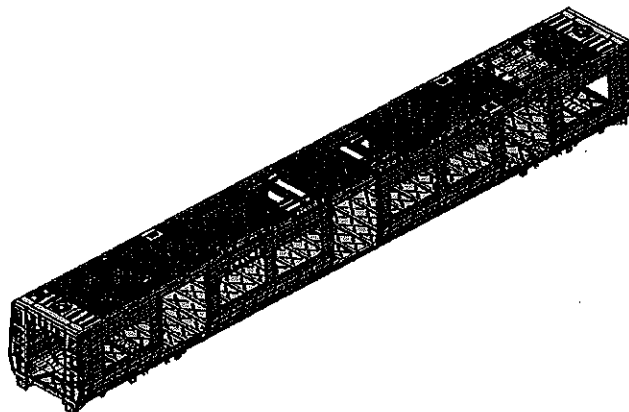
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE							WORK INSTRUCTION	SAFETY ?
				TC1	M4	M1	M2	M3	TC2			
<input type="checkbox"/>	DTR3000152640	AAD0001278565	CARBODYSHELL M1 ASSEMBLY	CB2210			X				PRA.CB2210.DTR30225 487/3.V25	YES
<input type="checkbox"/>												
REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE							
0	10/01/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	10/01/2018							
			CHECKER	Nosizo Pindela	10/01/2018							
			COMPILER	Thanyani Mathegu	10/01/2018							
1	2018/05/18	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	2018/05/18							
			CHECKER	Nosizo Pindela	2018/05/18							
			REVISED BY	Ramokone Motama	2018/05/18							
2	2018/07/04	Certain dimensional checks moved to CB1220 and CB1230	APPROVER	Itumeleng Modiba	2018/07/04							
			CHECKER	Nosizo Pindela	2018/07/04							
			REVISED BY	Ramokone Motama	2018/07/04							
3	2018/12/12	Added dimensional check points to 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	06/08/2020							
			REVISED BY	Bongane Masina	06/08/2020							
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021							
			CHECKER	Bongane Masina	19/04/2021							
			REVISED BY	Bongane Masina	19/04/2021							
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING	APPROVER	Mbhombi collins	17/08/2021							
			CHECKER	Mpho Mulaudzi	17/08/2021							
			REVISED BY	Mpho Mulaudzi	17/08/2021							
25	19/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombi collins	19/02/2022							
			CHECKER	Andani Muthelo	19/02/2022							
			REVISED BY	Andani Muthelo	19/02/2022							
26	14/04/2023	Addition of welding consumable traceability	APPROVER	Ntuli Vanessa	14/04/2023							
			CHECKER	Mohlampe Amogelang	14/04/2023							
			REVISED BY	Mohlampe Amogelang	14/04/2023							
27	27/07/2023	Added verification of loaded parts	APPROVER	Ngobeni Tyson	27/07/2023							
			CHECKER	Zwane Ntokozo	27/07/2023							
			REVISED BY	Mohlampe Amogelang	27/07/2023							
28	07/11/2023	Addition of welding traceability	APPROVER	Ngobeni Tyson	07/11/2023							
			CHECKER	Andani Muthelo	07/11/2023							
			REVISED BY	Ntokozo Zwane	07/11/2023							
TRAINSET	CAR	OPERATOR NAME& ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES							
233	M1	Timothy - 418354	13/06/24	SI.CB2210.254.V28	17							

	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V28
		Date 07/11/2023	

Car: M1	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/Data (Manufacturing)	Signature/Data (Quality)
	D	E	S	S	S	D						
DTR30225487/3							28				13/06/24	13/06/24

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process


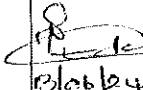
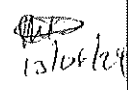

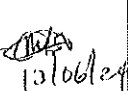
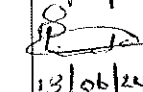
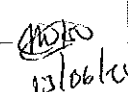

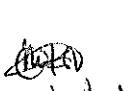

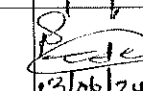
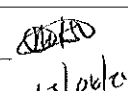
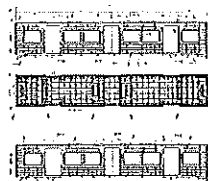
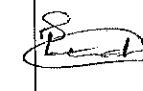



Instruments	Serial number	Calibration or Verification Validation Date	OK		Signature/Data (Manufacturing)	Signature/Data (Quality)
LASER TAPE	618150084	31/08/25	✓		13/06/24	
MEASURING TAPE	12542594	07/02/25	✓		13/06/24	12/06/24
TUBULAR	22316	07/02/25	✓			

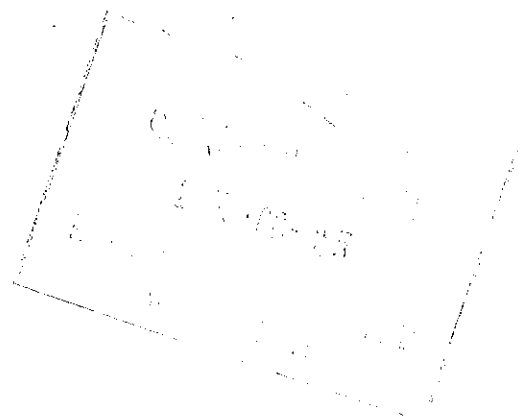
1.3 Consumables


Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK		Signature/Data (Manufacturing)	Signature/Data (Quality)
ER 308 LSi	327730-74791	MIG	✓		13/06/24	
ER 309 LSi	318394-74708	MIG	✓			
ER 308 L	310442-73092	TIG	✓			

28
07/11/23
13/06/24
13/06/24

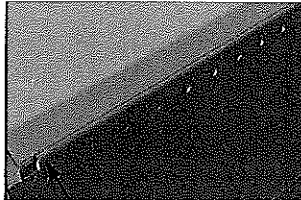
		CARBODYSHELL M1 ASSEMBLY DTR30225487/3		Rev. 28	Project: PRASA SI.CB2210.254.V28			
				Date 07/11/2023				
II - Self Inspection - Items to Check								
II.1 - Items to check								
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK			Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls, Endframes, Roof and Underframe)	DT00000311225	✓			 13/06/24	 13/06/24
02	N/A	Corshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓			 13/06/24	 13/06/24
03	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 e DTD0000210675	✓			 13/06/24	 13/06/24
04	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓			 13/06/24	 13/06/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓			 13/06/24	 13/06/24
06		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓			 13/06/24	 13/06/24
07	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	✓			 13/06/24	 13/06/24



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Welder Traceability

Roof ring welds



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

LHS

Welder (Name & Sign): Mithokozisi [Signature]

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

RHS

Welder (Name & Sign): Mithokozisi [Signature]

Door ring welds



LHS

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


Welder (Name & Sign): BOBBY [Signature]

RHS

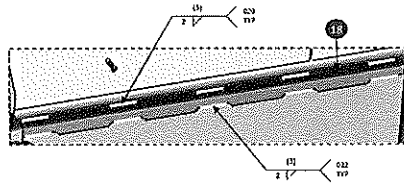
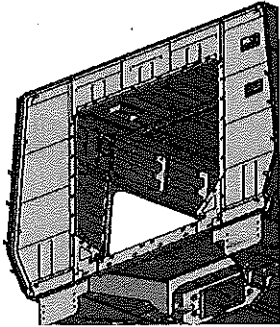
Boiler maker (Name & Sign): WINGA [Signature]

Welder (Name & Sign): BOBBY [Signature]

1. 3831
 1. 400 2!
 1. 401
 1. 402

	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRA5A SI.CB2210.254.V28
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EUf Reinforcement Plates

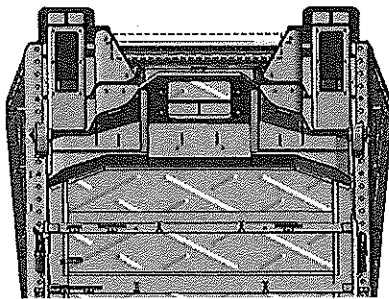


END 1

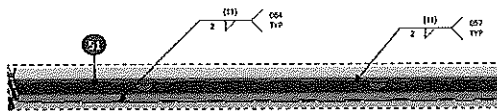
Boiler maker (Name & Sign): UNWA

Welder (Name & Sign): SIPHOKAZI

END 2



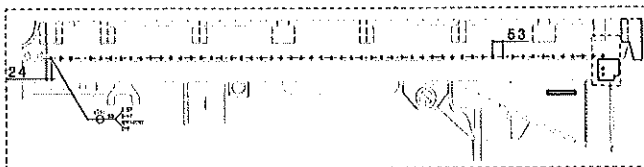
Underneath the CAR



END 2

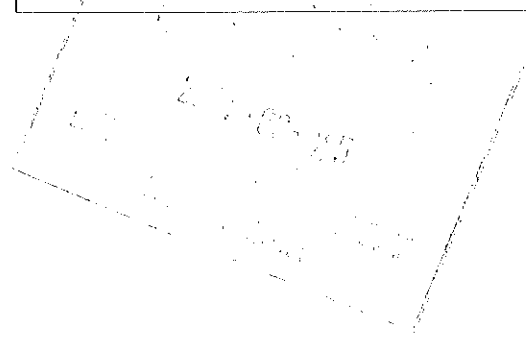
Boiler maker (Name & Sign): Thabang


Welder (Name & Sign): Thabang

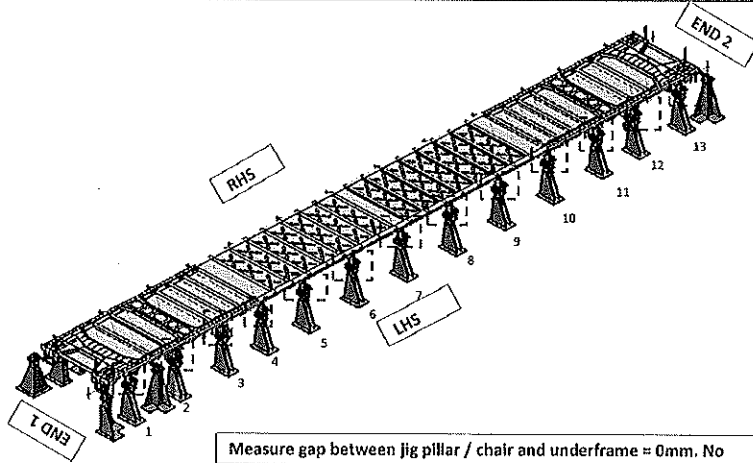


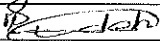
FEDOLI

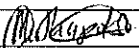
Operator: LAWRENCE



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		07/11/2023	
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						NA							
Right Hand Side													
Signature Operations:  Date: 13/06/24													

After Weiding.													
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						NA							
Right Hand Side													
Signature Industrial Quality:  Date: 13/06/24													

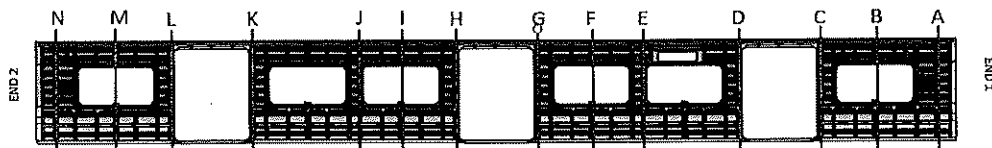


CARBODYSHELL M1 ASSEMBLY DTR30226487/3

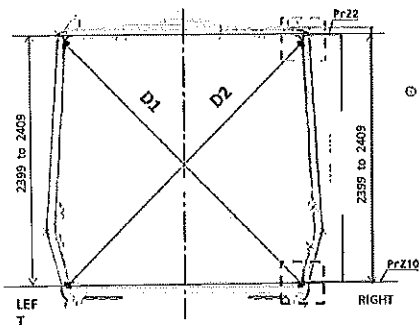
Rev.
28
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07/11/2023

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SI.CB2210.254.V28

Specifications of Details for CBS measurement



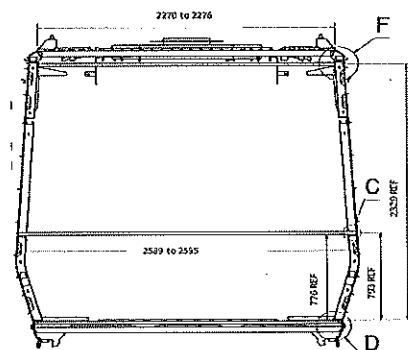
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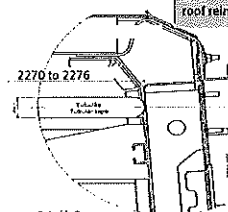
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.




Reinforcement area measurement positions on roof reinforcement area.

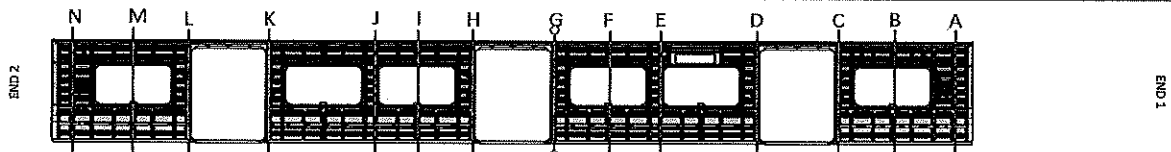


Detail F
Don't considering the reinforcement

8
13/06/24

	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V28
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Specifications of Details for CBS measurement



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

BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3268	3266	2	2407	2406	1
B	3269	3267	2	2405	2404	1
C	3267	3267	0	2406	2408	2
D	3269	3266	3	2407	2405	2
E	3266	3264	2	2405	2405	0
F	3268	3266	2	2406	2405	1
G	3266	3266	0	2406	2406	0
H	3265	3264	1	2406	2407	1
I	3265	3267	2	2405	2405	0
J	3267	3266	1	2404	2406	2
K	3264	3268	4	2405	2403	2
L	3266	3267	1	2407	2407	0
M	3263	3265	2	2406	2405	1
N	3266	3265	1	2407	2406	1

CM

2023

13/06/24

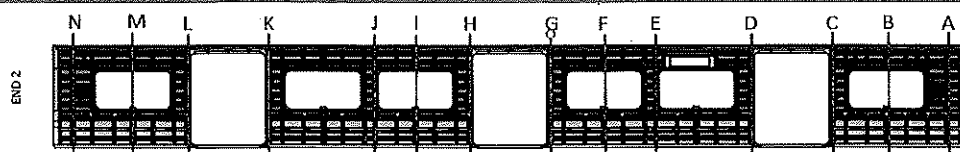
13/06/24



CARBODYSHELL M1 ASSEMBLY DTR30225487/3

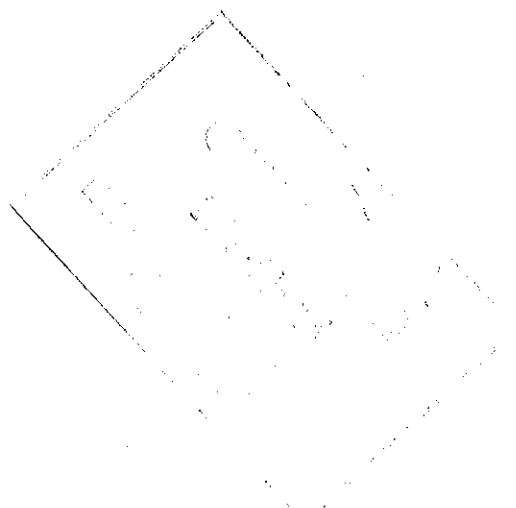
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07/11/2023Project: PRASA
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Specifications of Details for CBS measurement


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	3298	3296	2	2407	2406	1
B	3269	3267	2	2405	2404	1
C	3299	3297	0	2406	2408	2
D	3299	3296	3	2407	2405	2
E	3266	3264	2	2405	2405	0
F	3268	3266	2	2406	2405	1
G	3296	3296	0	2406	2406	0
H	3295	3294	1	2406	2407	1
I	3265	3267	2	2405	2405	0
J	3267	3266	1	2404	2406	2
K	3294	3298	4	2405	2403	2
L	3296	3297	1	2407	2407	0
M	3263	3265	2	2406	2405	1
N	3296	3295	1	2407	2406	1

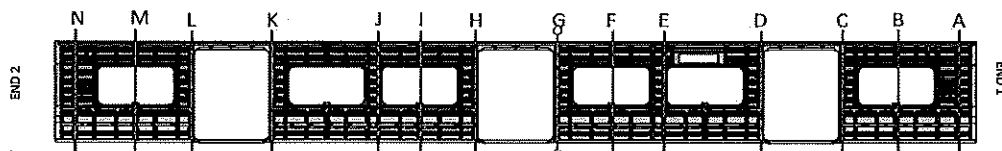



13/06/24

	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V28
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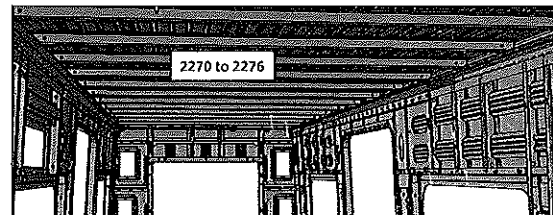
CBS measurement

BEFORE WELDING

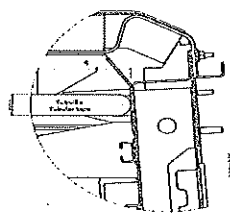
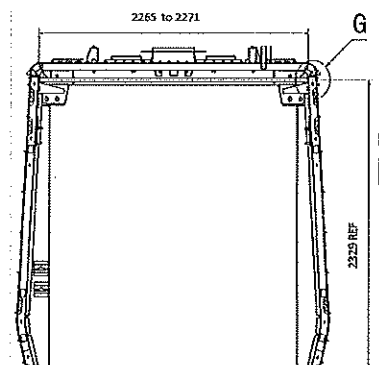


	2270 to 2276
A	2273
B	2275
C	2276
D	2275
E	2273
F	2275
G	2276
H	2274
I	2276
J	2274
K	2273
L	2275
M	2276
N	2272

1990 to




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

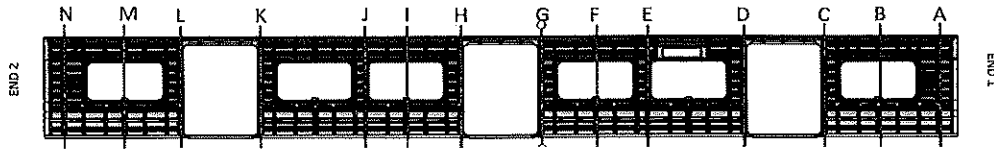


Detail 9
Consider as the
regular corner plate

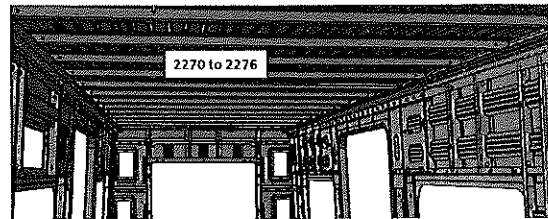
B. Edet
13/06/24

	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V28
		Date 07/11/2023	
CBS measurement			

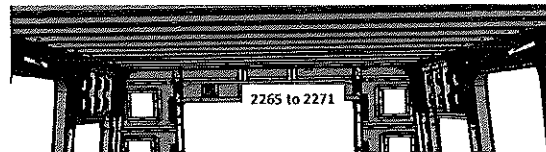
AFTER WELDING



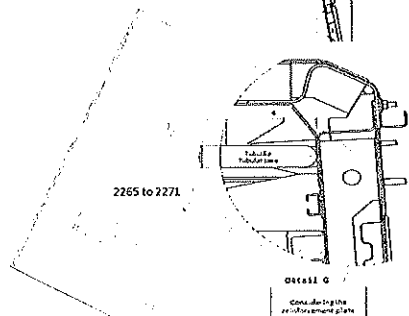
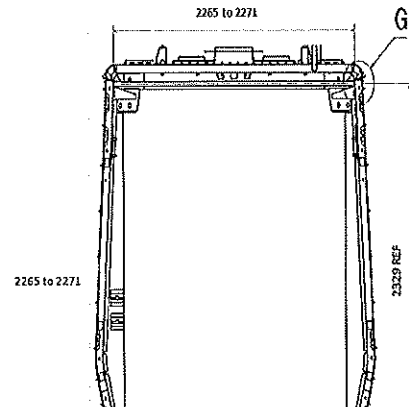
	2265 to 2271	2270 to 2276
A	2266	/
B	/	2275
C	2268	/
D	2265	/
E	/	2273
F	/	2275
G	2269	/
H	2264	/
I	/	2276
J	/	2274
K	2263	/
L	2265	/
M	/	2276
N	2267	/



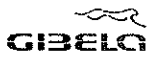
Do not consider reinforcement (Take measurements top area of zee profile



Take measurement close to radius (considering reinforcement)



13/06/24



CARBODYSHELL M1 ASSEMBLY DTR30225487/3

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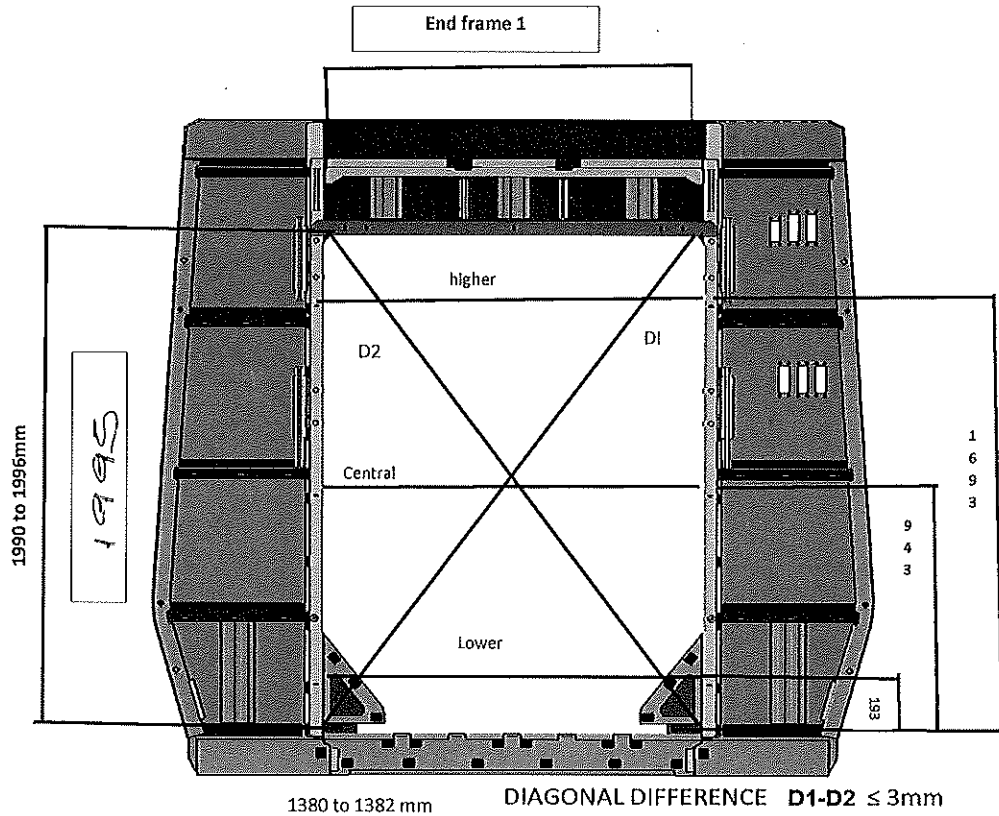
Date

07/11/2023

Project: PRASA

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Specifications of Details for CBS measurement



Higher Dimenision

1382

D1

2446

Central Dimension

1381

D2

2445

Lower Dimension

1381

D1-D2

1

B
13/06/24

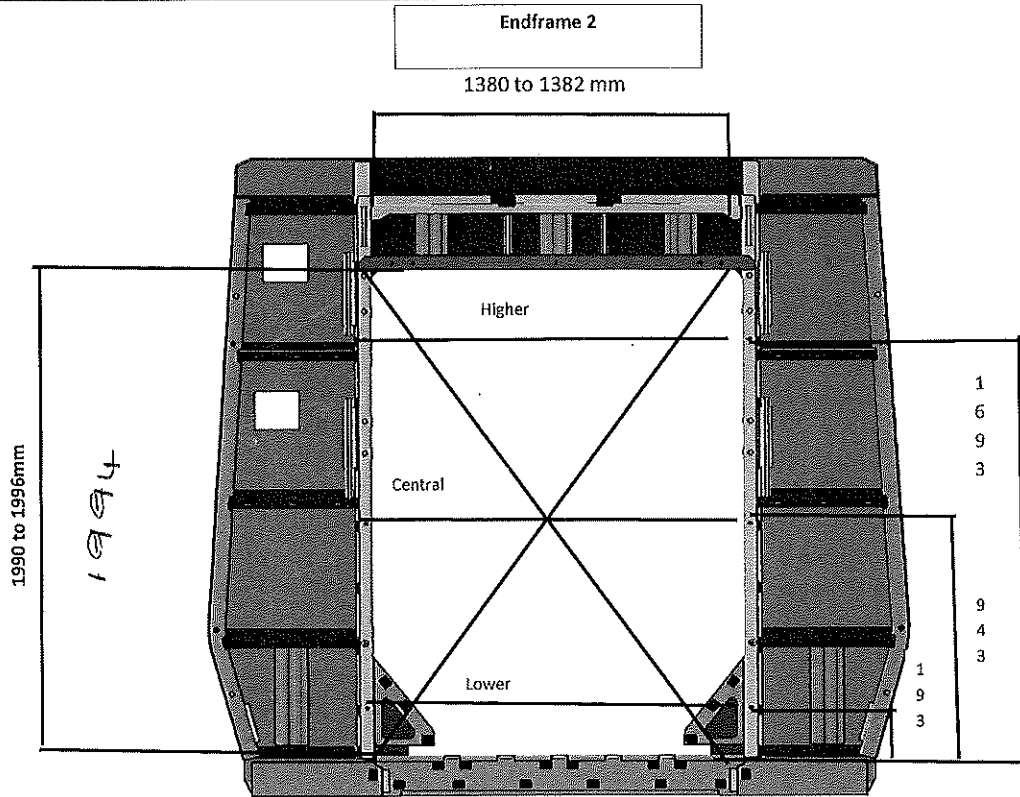


CARBODYSHELL M1 ASSEMBLY DTR30226487/3

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07/11/2023

Project: PRASA
SI.CB2210.254.V28

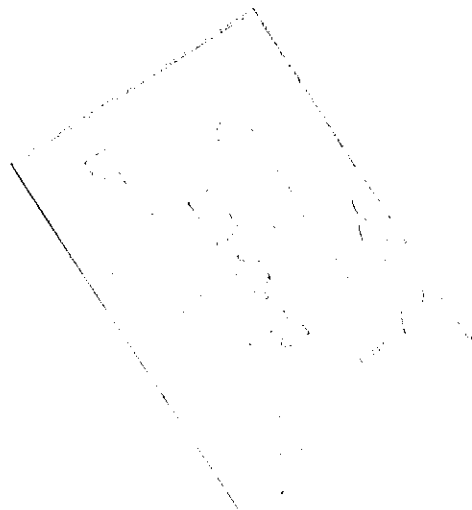
Specifications of Details for CBS measurement



1380 to 1382 mm

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

Higher Dimension	1381	D1	2414
Central Dimension	1382	D2	2414
Lower Dimension	1382	D1-D2	0



[Signature]
13/06/24



CARBODYSHELL M1 ASSEMBLY DTR30225487/3

Rev.

28

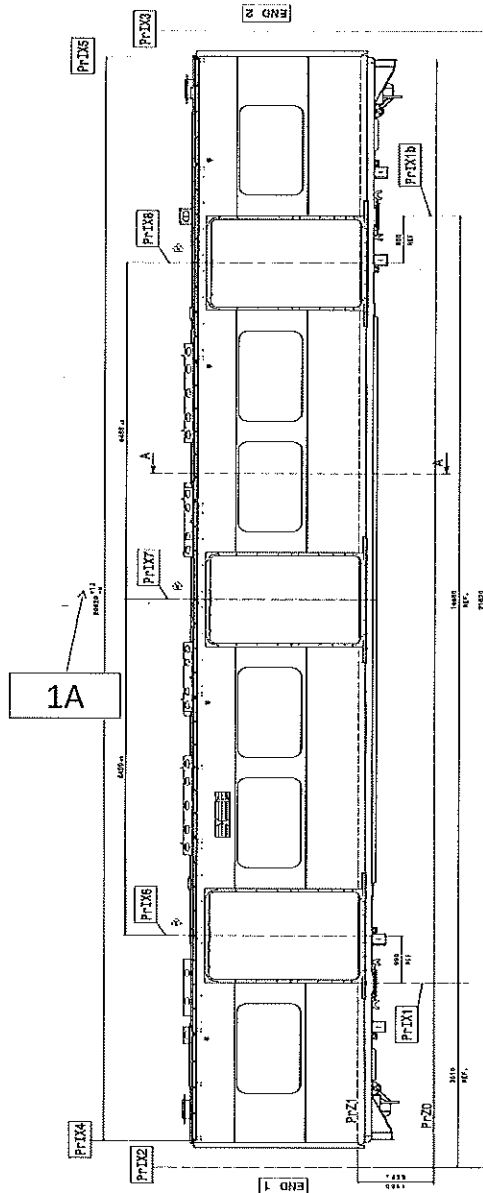
Project: PRASA

SI.CB2210.254.V28

Date

07/11/2023

Specifications of Details for CBS measurement



LEFT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20628


RIGHT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20628

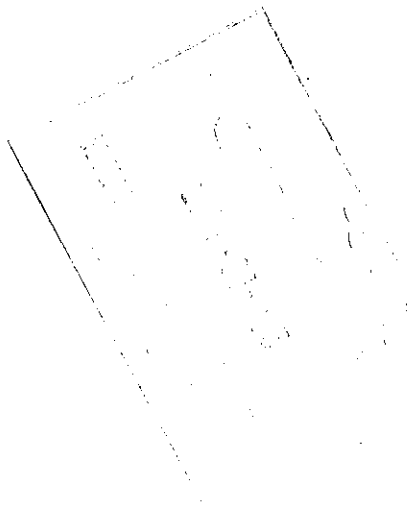
Dye penetrant test


Dye-penetration test to be performed by quality personnel



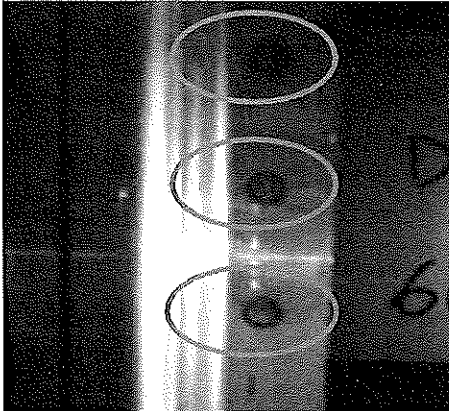
[Signature]
13/06/24


		CARBODYSHELL M1 ASSEMBLY DTR30225487/3		Rev. 28	Project: PRASA			
				Date 07/11/2023	SI.CB2210.254.V28			
Item	Description of the Issue				OK	Signature/Date (Manufacturing)		Signature/Date (Quality)
II.2 - Check List REX								
Check List Items								
Item	Picture/Drawing	Description	Criteria /Record	OK		Signature/Date (Manufacturing)		Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX					



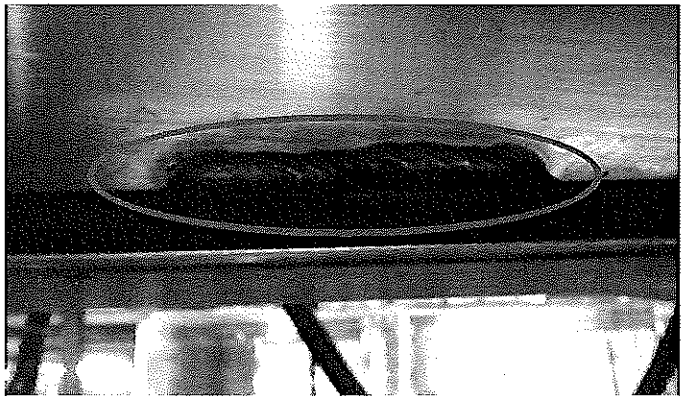
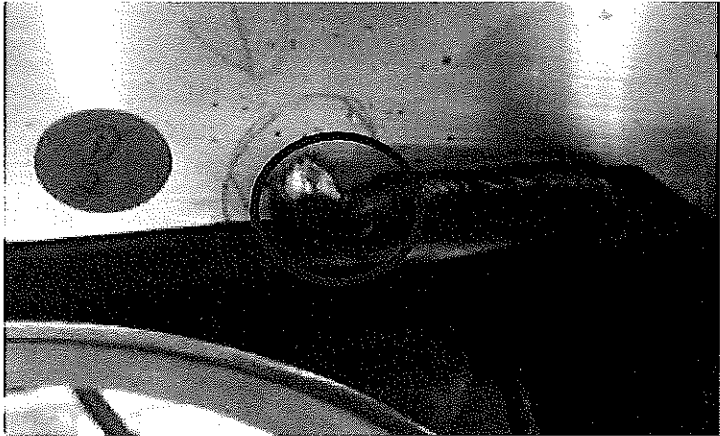
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		Date 07/11/2023	

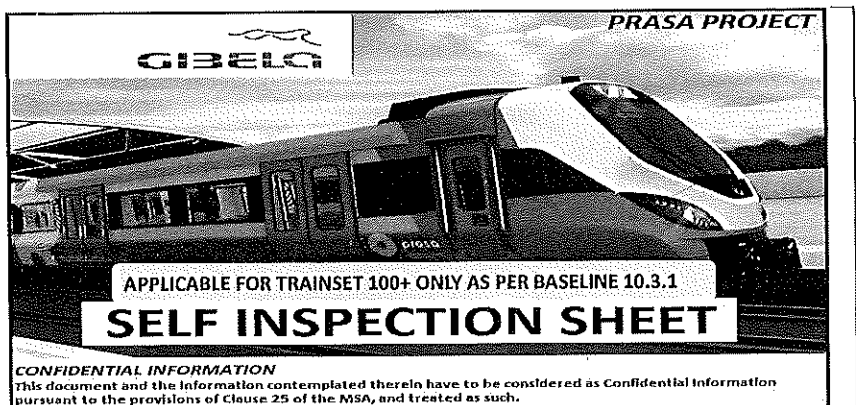
ANNEXURE A: Spot Welding Quality Acceptance Standard



	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRA5A SI.CB2210.254.V28
		Date 07/11/2023	

ANNEXURE B: Arc Welding Quality Acceptance Standard





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

Safety Related

I - Documentation and Instruments Control

1.1 - Documentation Control

Document	Type of car						Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)	
	TCT	M1	M2	M3	M4	TCT							
DTR30225487/2	✓						29	14/06/24	✓		N/A	 14/06/24	 14/06/24


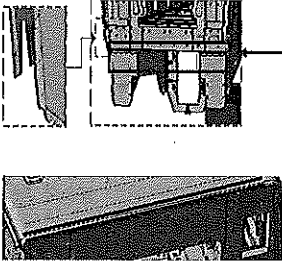
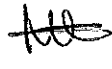
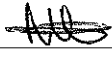
1.2 - Instruments Control

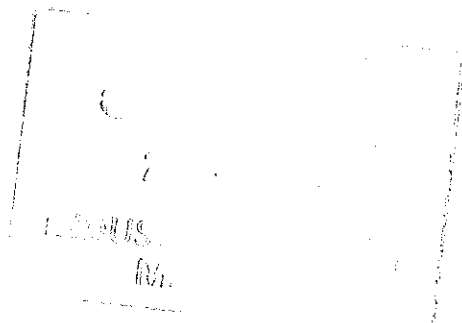
Monitoring and Measuring Instrument Control - Used for Special Process						
Instruments	Serial number	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Measuring Tape	G5187A0311	12/04/25	✓		 14/06/24	 14/06/24
Turbular	32823-2	15/03/25	✓		 14/06/24	 14/06/24


1.3 Consumables

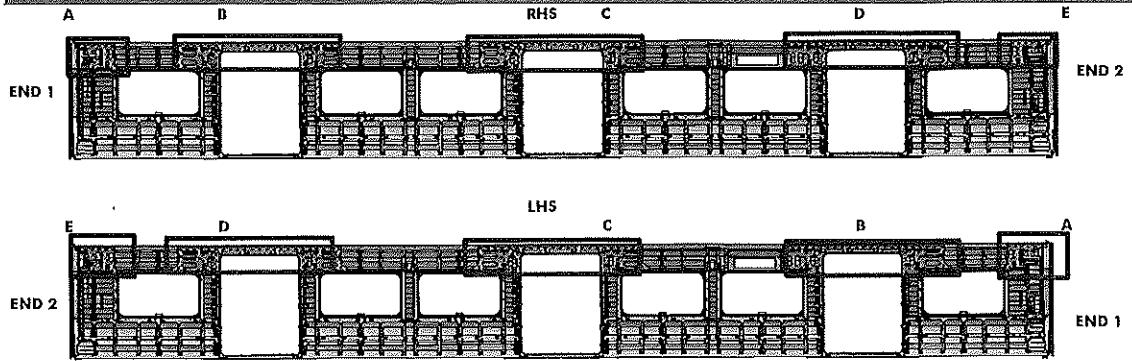
Welding Consumable Control - Used for Special Process						
Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Welding wire	E231061	MIG Welding	✓		 14/06/24	 14/06/24

GIBELQ		CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2		Rev. 29 Date 28/10/2023	Project: PRASA 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	✓		14/06/24	14/06/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓		14/06/24	14/06/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		14/06/24	14/06/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		14/06/24	14/06/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		14/06/24	14/06/24
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.	✓		14/06/24	14/06/24
07	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified: Temperature Min - Max (°C) Min-Max 10°C - 35°C Relative humidity Min - Max (%) Min-Max 25% - 60%	Sealant Batch No: <u>PA431</u> Exp Date: <u>1 02 125</u> Actuals Temperature: <u>13</u> Humidity: <u>68</u>	✓		15/06/24	14/06/24
08	NA	Verification of sealant application in certain regions in the drawing.	AAD0001278566	✓		15/06/24	14/06/24
09		Verification of safety welds	Approved according to DTD0000210658 reference and Self inspection	✓		14/06/24	14/06/24

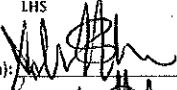


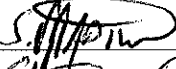
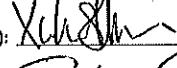
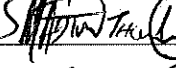
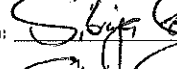
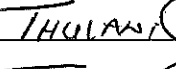
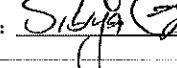
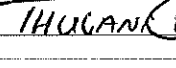
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA SI.CB2220.250.V29
		29	
		Date	
		28/10/2023	
II - Self Inspection - Items to Check			
SEALANT APPLICATION			
		<div> AREA 1 & 2 END 1 Operator (Name & sign): Mthobeni:  Operator (Name & sign): Mthobeni:  </div>	

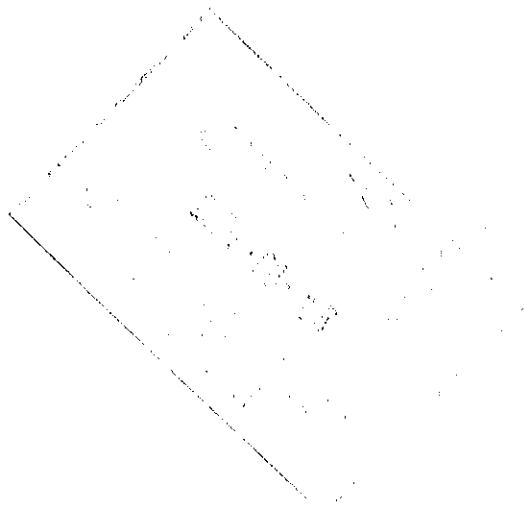



	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA
		29	
		Date	
		28/10/2023	
		SI.CB2220.250.V29	
II - Self Inspection - Items to Check			



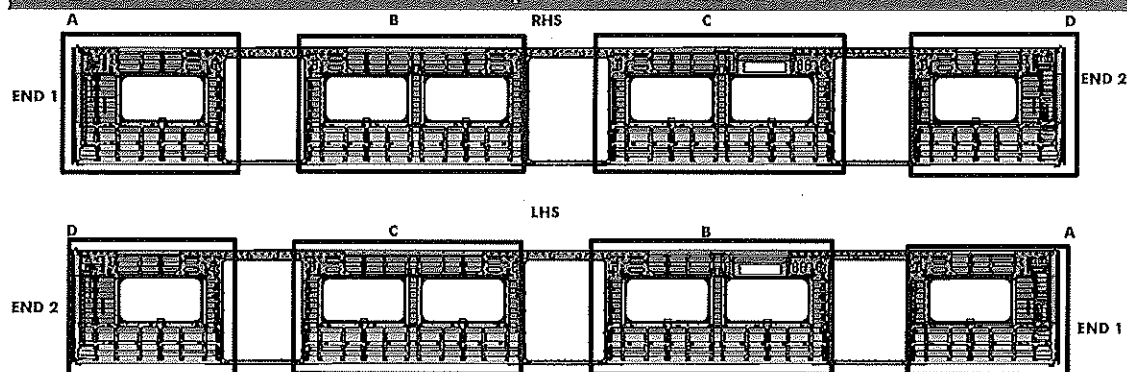
REINFORCEMENT WELDING

AREA	LHS	RHS
A	Operator (Name&sign): 	
B	Operator (Name&sign): 	
C	Operator (Name&sign): 	
D	Operator (Name&sign): 	
E	Operator (Name&sign): 	



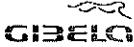
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA
		29	
		Date	SI.CB2220.250.V29
		28/10/2023	

II - Self Inspection - Items to Check

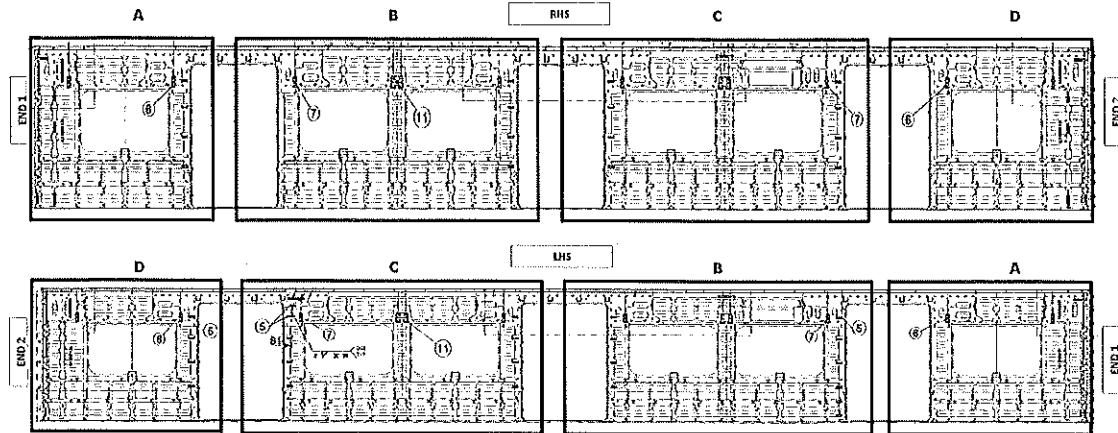


BRACKETING

INSTALLATION	
C-RAILS:	Operator: <u>Tetelo</u>
	Operator: <u>Moshu</u>
DOOR MECHANISMS:	Operator: <u>Mkhize</u>
	Operator: <u>Asanda</u>
TAPPING PADS	Operator: <u>Asanda</u>
	Operator: <u>Asanda</u>
INSTALLATION & VERIFICATION	
SEAT & LUGGAGE BRACKETS:	Operator: <u>Asanda</u>
	Operator: <u>Asanda</u>
SEAT BRACKETS VERIFICATION:	Operator: <u>John</u>
	Operator: <u>John</u>
WELDING	
AREA	LHS
A (Seat brackets)	: Operator (Name&sign): <u>LINDO</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>LINDO</u>
B (Seat brackets)	: Operator (Name&sign): <u>LINDO</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>LINDO</u>
C (Seat brackets)	: Operator (Name&sign): <u>Asanda</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>Asanda</u>
D (Seat brackets)	Operator (Name&sign): <u>Asanda</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>Asanda</u>
ENDS	
END 1 TAPPING PADS WELDING:	Operator (Name&sign): <u>Asanda</u>
END 2 TAPPING PADS WELDING:	Operator (Name&sign): <u>Asanda</u>

	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA SI.CB2220.250.V29
		29	
		Date	
		28/10/2023	
II - 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	6		
SEAT BRACKETS	A	13		
	B	21		
	C	21		
	D	13		
EARTH BUSH	A	3		
	B	5		
	C	4		
	D	3		

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

QUANTITIES (M1)

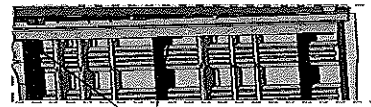
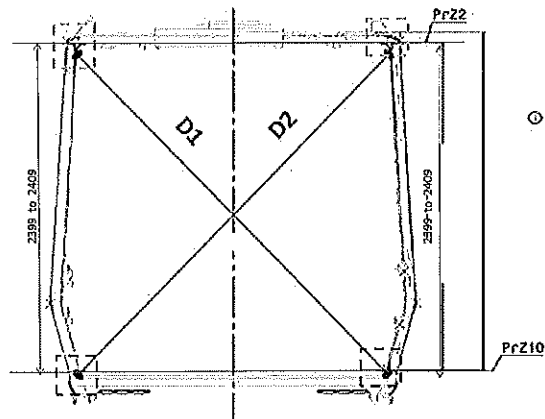
RHS				
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	7	✓	
	B	8	✓	
	C	8	✓	
	D	6	✓	
SEAT BRACKETS	A	13	✓	
	B	21	✓	
	C	21	✓	
	D	13	✓	
EARTH BUSH	A	2	✓	
	B	4	✓	
	C	5	✓	
	D	3	✓	

ROOF ENDS:
 CRAILS 2 OFF EACH END
 EARTH BUSH 6 OFF EACH END
 VERIFICATION BY: Tetelo

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:
 CRAILS 2 OFF EACH END
 EARTH BUSH 6 OFF EACH END
 VERIFICATION BY: Tetelo

Specifications of Details for CBS measurement



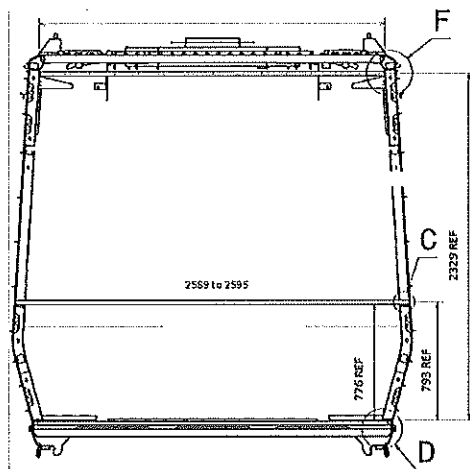
Measurement positions on roof rail and sidewall omega corner.



Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.





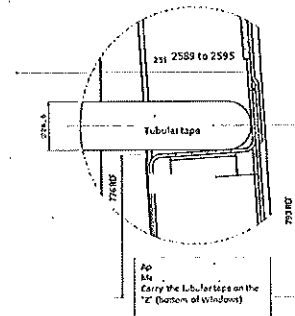
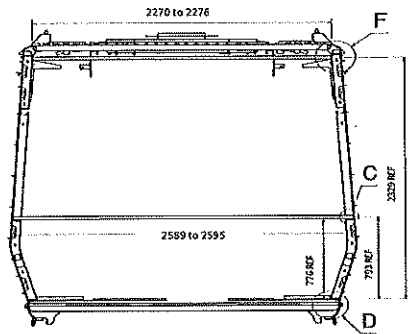
CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30226487/2

Rev.
29
Date
28/10/2023

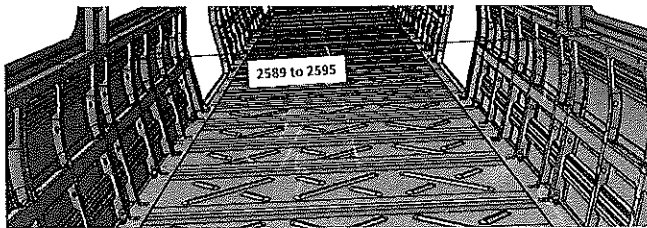
Project: PRASA

SI.CB2220.250.V29

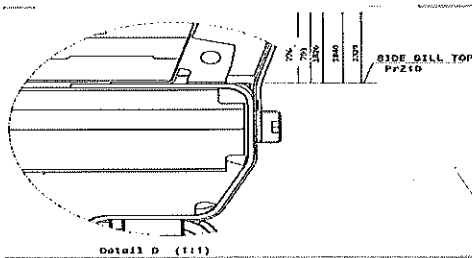
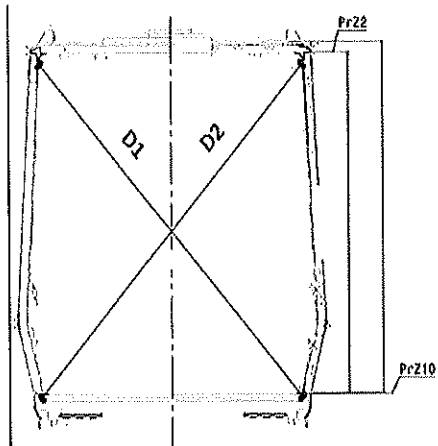
CBS measurement




Detail C

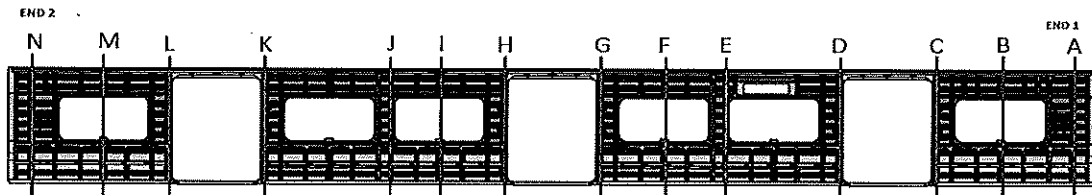


Take measurement close to
radius



Detail D (1:1)


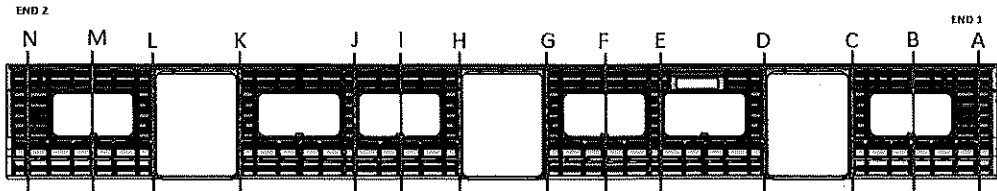
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA SI.CB2220.250.V29
		29	
		Date	
		28/10/2023	
CBS measurement			



BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3295	3297	2	
B	3265	3266	1	
C	3300	3296	4	
D	3294	3296	2	
E	3265	3266	1	
F	3266	3265	1	
G	3294	3296	2	
H	3295	3296	1	
I	3265	3266	1	
J	3267	3269	2	
K	3296	3294	2	
L	3298	3296	1	
M	3267	3268	1	
N	3297	3295	2	

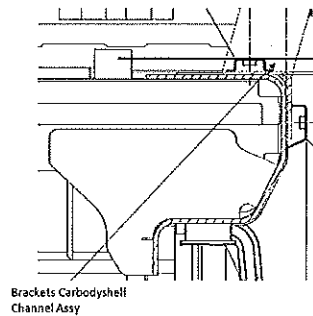
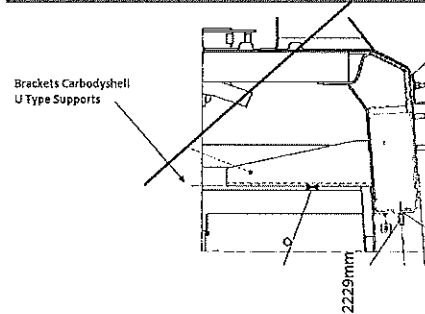
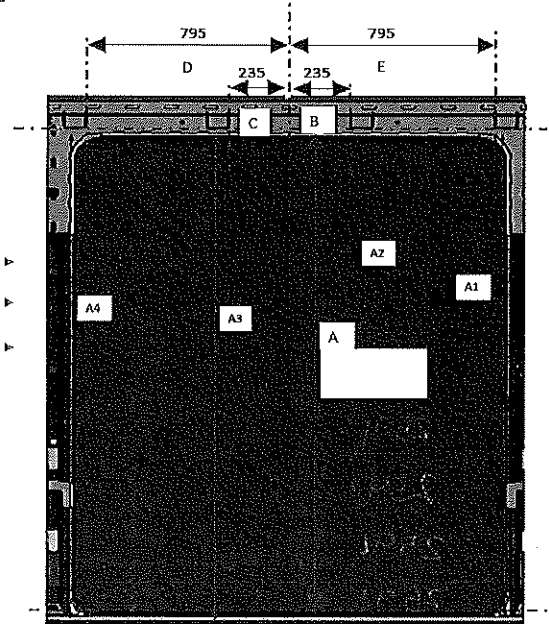
N/A

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

AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3295	3297	2	2590
B	3265	3267	2	2591
C	3295	3296	1	2592
D	3297	3296	1	2594
E	3265	3266	1	2591
F	3268	3269	1	2590
G	3295	3296	1	2591
H	3294	3296	2	2592
I	3265	3267	2	2593
J	3268	3267	1	2591
K	3297	3299	2	2590
L	3296	3295	1	2591
M	3265	3267	2	2590
N	3298	3297	1	2591

Specifications of Details for CBS measurement CB1220



DOOR 1 - LHS

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

DOOR 2 - LHS

	VALUE	ACTUAL
A1	2230 to 2232	2231
A2	2230 to 2232	2232
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	796

DOOR 2 - RHS

	VALUE	ACTUAL
A1	2230 to 2232	2230
A2	2230 to 2232	2232
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	796

DOOR 1 - RHS

	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	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	795

DOOR 2 - RHS

	VALUE	ACTUAL
A1	2230 to 2232	2232
A2	2230 to 2232	2230
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	796

DOOR 3 - RHS

	VALUE	ACTUAL
A1	2230 to 2232	2231
A2	2230 to 2232	2230
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	796



CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30225487/2

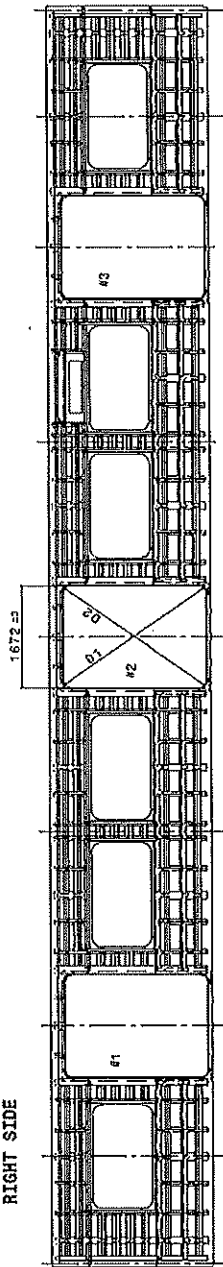
Rev.
29
Date
28/10/2023

Project: PRASA

SI.CB2220.250.V29

Specifications of Details for CBS measurement CB1220

End #2



RIGHT SIDE

End #1

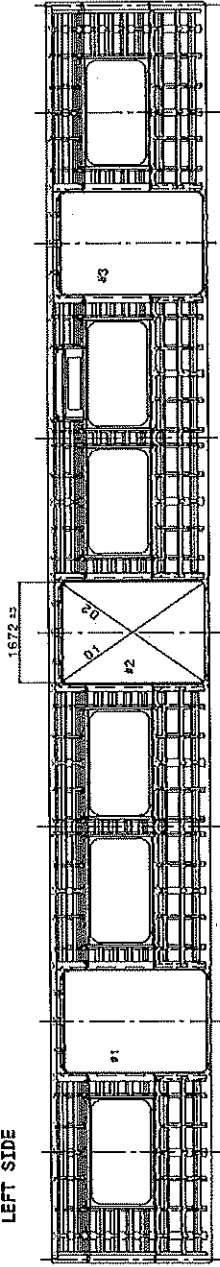
Doors diagonal D1-D2 maximum difference $\leq 4\text{mm}$

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

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

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

End #1



LEFT SIDE

End #2





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

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


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

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

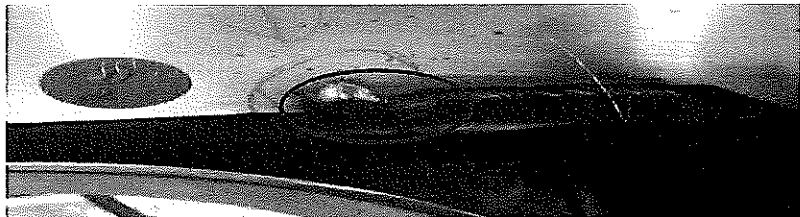
1944

	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA SI.CB2220.250.V29		
		29			
		Date			
		28/10/2023			
Self Inspection - Final Result					
Is the car good to advance to the next workstation/process? (Approval of Operations Manager and Industrial Quality)		DATE	NAME	SIGNATURE	
HOLD POINT		GO <small>(If activities are not complete, the missing activities must not impact the next stage)</small> <small>Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.</small>	14/06/24	Tetelo <small>Operations</small>	
			14/06/24	Amogielmas <small>Industrial Quality</small>	
		There are activities pending that impact/stop the activities of the next process Obs: (To describe problems below)		<small>Operations</small>	
		There are non-conformities impact the quality of the product and there is no corrective action defined yet)		<small>Industrial Quality</small>	
In case of "NO GO", describe blocking problems					
In case of "NO GO", the operations manager must define below action plan to ensure "GO":					
Item	Description	Responsible	Due date	Status	
		Operations	Quality		

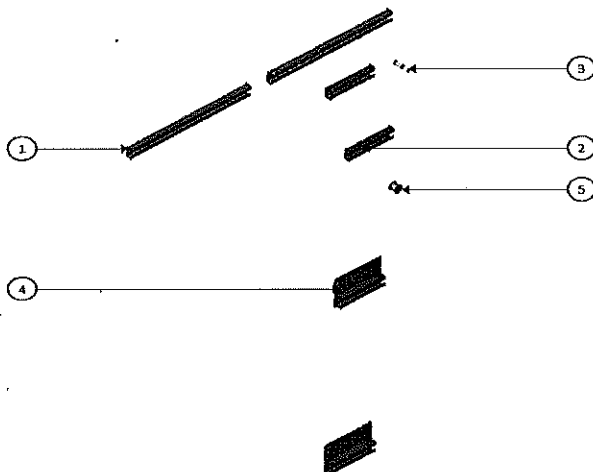
14/06/24

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

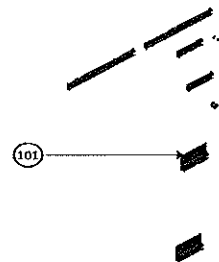
ANNEXURE A: Arc Welding Quality Acceptance Standard



Station: CB1220-004- U108 & U107



PART NO.	ITEM NO.	QTY	DESCRIPTION	MASS [KG]
DTE0920074023	5	6	EARTH STUD 6	0.035
AA000011201543	4	6	ASSEMBLY SUPPORT	0.273
DTF0000348305	3	12	WELDING STUD ISO13318 PT - 1/2"x20-SS1	0.007
AA000011101024	2	12	ASSEMBLY SUPPORT	0.193
AA000011649118	1	14	ASSEMBLY SUPPORT	0.522
AA00001161000	101	6	CARBODYSHELL BRACKETS CARBODYSHELL M1/M3/M4 CASE (SIDE FRAME MODULE END - OFF)	12.132



GIBELA

PRASA PROJECT

APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

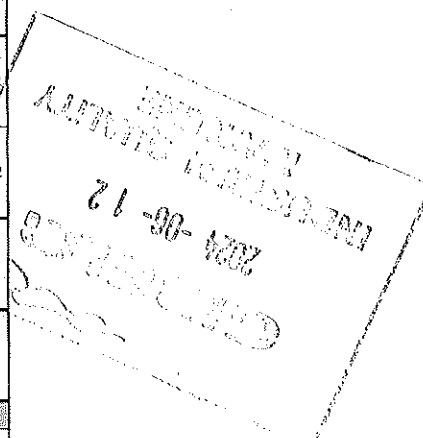
SELF INSPECTION SHEET

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

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ?	
				TC1	M4	M1	M2	M3	TC2			
<input type="checkbox"/>	DTR3000152669	AAD0001278566	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB1230			X				PRA.CB1230.DT000002 25487.V20	YES
<input type="checkbox"/>	DTR-2673	AAD0001278566	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB1230		X			X		PRA.CB1230.DT000002 25487.V20	YES
<input type="checkbox"/>												
REV	DATE	MODIFICATION CONTENT			RESPONSIBLE		NAME		DATE			
0	2018/08/02	GIBELA NEW CREATION			APPROVER		Philippe Marques		2018/08/02			
					CHECKER		Nosizo Pindela		2018/08/02			
					COMPILER		Nosizo Pindela		2018/08/02			
1	30/5/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager			APPROVER		Itumeleng Modiba		30/5/2018			
					CHECKER		Nosizo Pindela		30/5/2018			
					REVISED BY		Nosizo Pindela		30/5/2018			
2	2018/05/07	Certain dimensional checks moved to CB1220			APPROVER		Itumeleng Modiba		2018/05/07			
					CHECKER		Nosizo Pindela		2018/05/07			
					REVISED BY		Ramokone Motama		2018/05/07			
5	24/01/2019	As per Baseline 10.2			APPROVER		Itumeleng Modiba		24/01/2019			
					CHECKER		Nosizo Pindela		24/01/2019			
					REVISED BY		Vanessa Ntuli		24/01/2019			
6	13/03/2019	Added Twist and Door Bracket Measurements Remove Door Measurements			APPROVER		Itumeleng Modiba		13/03/2019			
					CHECKER		Nosizo Pindela		13/03/2019			
					REVISED BY		Nosizo Pindela		13/03/2019			
10	23/08/2019	New Baseline 10.2.5			APPROVER		Itumeleng Modiba		23/08/2019			
					CHECKER		Nosizo Pindela		23/08/2019			
					REVISED BY		Nosizo Pindela		23/08/2019			
15	06/08/2020	New Baseline 10.2.6			APPROVER		Timothy Maimela		06/08/2020			
					CHECKER		Bongane Masina					
					REVISED BY		Bongane Masina					
20	19/04/2021	New Baseline change 10.3			APPROVER		Timothy Maimela		19/04/2021			
					CHECKER		Bongane Masina					
					REVISED BY		Bongane Masina					
25	20/02/2022	New Baseline change 10.3.1			APPROVER		Collins Mbhombhi		20/02/2022			
					CHECKER		Andani Muthelo					
					REVISED BY		Andani Muthelo					
26	14/06/2022	Update minimum temperature requirement for sealant application			APPROVER		Collins Mbhombhi		14/06/2022			
					CHECKER		Andani Muthelo					
					REVISED BY		Andani Muthelo					
27	19/10/2022	Addition of traceability for sealant application			APPROVER		Collins Mbhombhi		19/10/2022			
					CHECKER		Ntokozi Zwane					
					REVISED BY		Amogelang Mohlampe					
28	14/04/2023	Added sealant batch number & welding consumables traceability			APPROVER		Vanessa Ntuli		14/04/2023			
					CHECKER		Ntokozi Zwane					
					REVISED BY		Amogelang Mohlampe					
29	06/11/2023	Added thresholds traceability for boiler makers and welders			APPROVER		Tyson Ngobeni		06/11/2023			
					CHECKER		Andani Muthelo					
					REVISED BY		Ntokozi Zwane					
TRAINSET	CAR	OPERATOR NAME & ALPS NO	DATE	SELF INSPECTION NUMBER		PAGES						
TS233	Mo1	Ntokozi Zwane 458105	16/06/24	SI.CB1230.256.V28		11						





CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000225487

Rev.
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Project: PRASA

Date

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06/11/2023

Car:

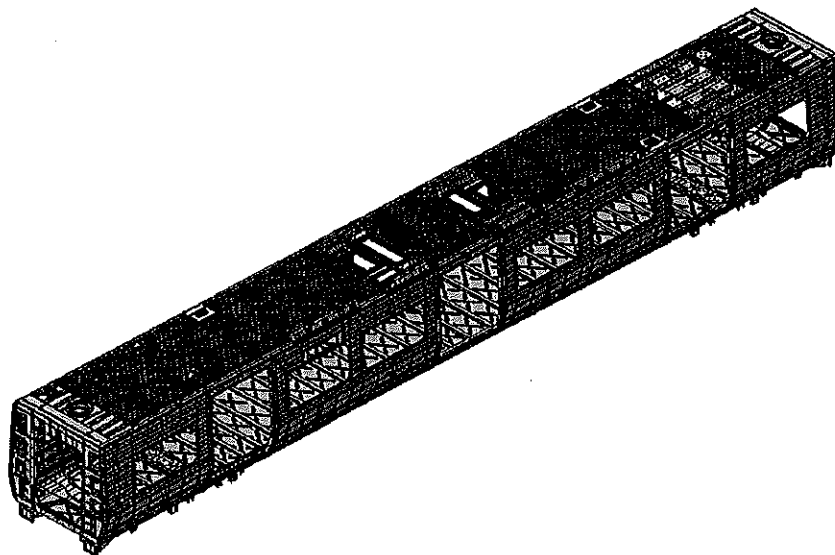
NCR:

Work station:

CB1230



Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car					Revision	Observation	OK	NOK	Signature/Date (Operations)	Signature/Date (Quality)
	M1	M2	M3	M4	TG2						
PRA.CB1230.DT00000225487	X					30	66/11/23	X		N/A	Open 16/06/24 16/06/24

I.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)
AAD0001278566			X		Open 16/06/24	16/06/24
Tubular	22113	06/06/26	X		Open 16/06/24	16/06/24
Measuring Tape	GIBO71484	25/04/25	X		Open 16/06/24	16/06/24
Calibration Set	GA130072	27/07/24	X		Open 16/06/24	16/06/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
308LSI	313171	MIG	X		Open 16/06/24	16/06/24



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II - Self Inspection - Items to Check

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Not OK	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB1230.DT00000225487 Verification of fitment for all brackets.	PRA.CB1230.DT00000225487	✓		<i>Agren</i> 16/06/24	<i>Agren</i> 16/06/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓		<i>Agren</i> 16/06/24	<i>Agren</i> 16/06/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		<i>Agren</i> 16/06/24	<i>Agren</i> 16/06/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		<i>Agren</i> 16/06/24	<i>Agren</i> 16/06/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		<i>Agren</i> 16/06/24	<i>Agren</i> 16/06/24
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.	✓		<i>Agren</i> 16/06/24	<i>Agren</i> 16/06/24
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: <div style="display: flex; justify-content: space-between;"> <div> <p>Temperature Min - Max (1)</p> <p>Relative humidity Min - Max (1)</p> </div> <div> <p>M'n-Max</p> <p>M'n-Max</p> </div> <div> <p>10°C - 35°C</p> <p>25% - 80%</p> </div> </div>	Sealant Batch No: <u>112240</u> Exp Date: <u>16/06/2024</u> Actuals Temperature: <u>22°C</u> Humidity: <u>29%</u>	✓		<i>Agren</i> 16/06/24	<i>Agren</i> 16/06/24
08	N/A	Verification of sealant application in regions of roof and sideframe.	Sealant applied in regions of roof and sideframe.	✓		<i>Agren</i> 16/06/24	<i>Agren</i> 16/06/24



CARBODYSHELL M1,M3,M4 ASSEMBLY
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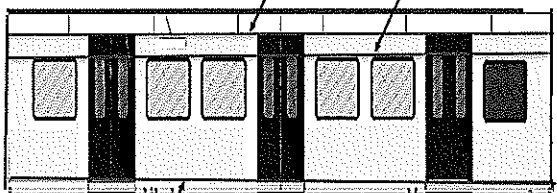
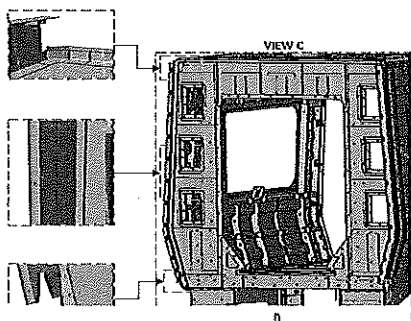
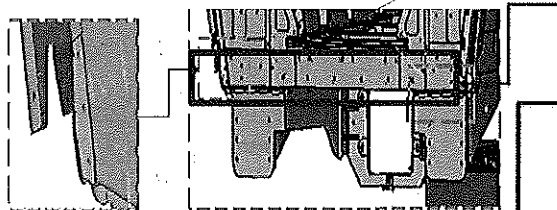
Date

06/11/2023

Project: PRASA

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AREA 1



H

END 2 SEALANT

OPERATOR
(Name & sign):

Zonele

OPERATOR
(Name & sign):

Zonele

OPERATOR
(Name & sign):

Zonele

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

Operator (Name & sign) : J Tshenolo

LHS

RHS

Buhle

Operator (Name & sign) : D Tshenolo

Tshenolo

Buhle

Operator (Name & sign) : E Tshenolo

Tshenolo

Tshenolo

Operator (Name & sign) : H Tshenolo

Tshenolo

Tshenolo

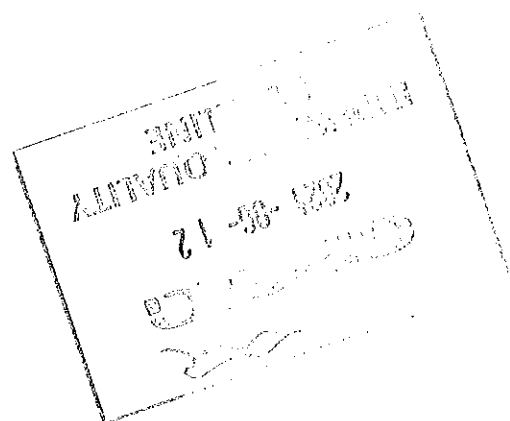
Operator (Name & sign) : I Tshenolo

Tshenolo

Operator (Name & sign) : Tshenolo

Tshenolo

Tshenolo





CARBODYSHELL M1,M3,M4 ASSEMBLY
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29
Date

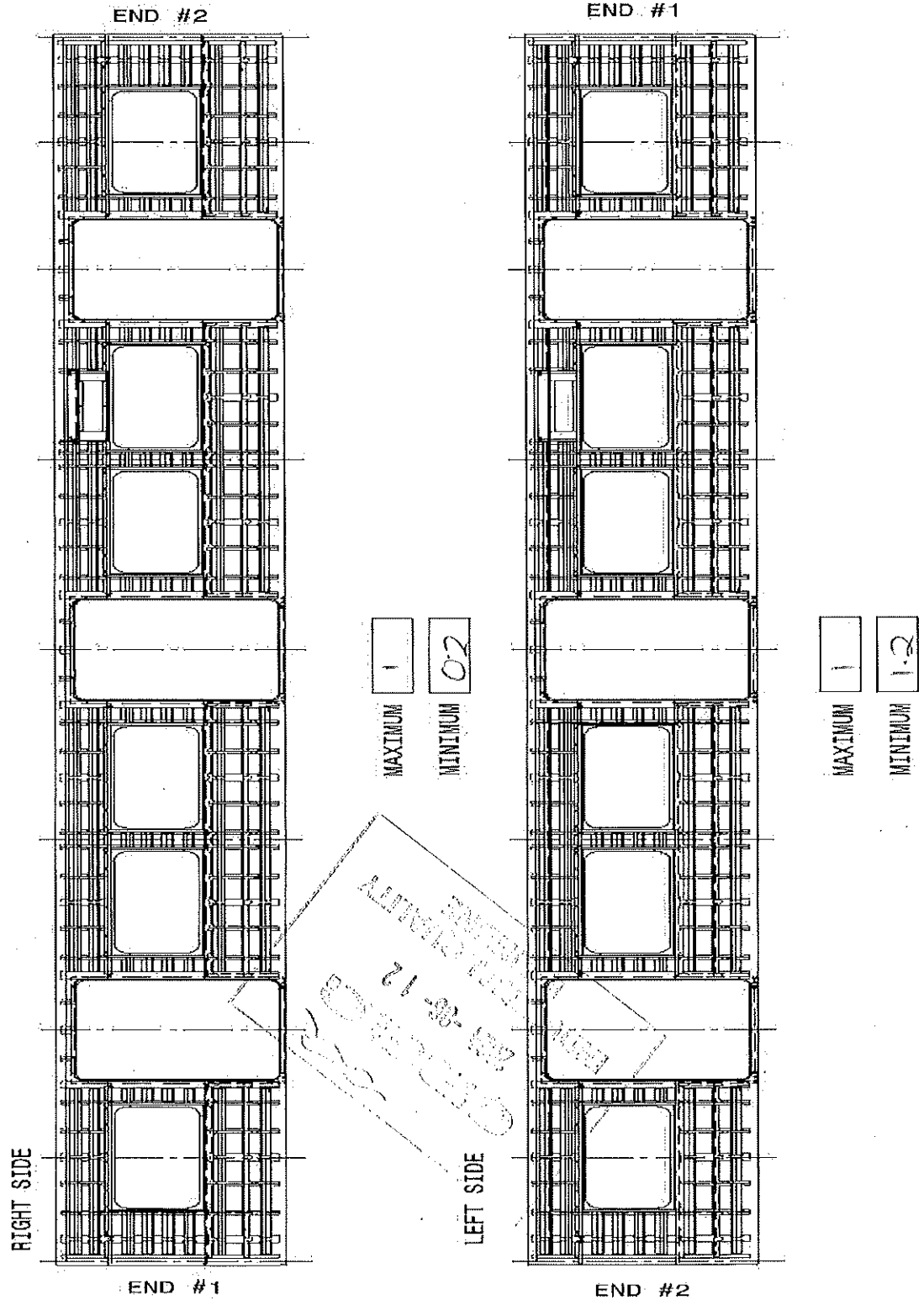
06/11/2023

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Specifications of Details for CBS measurement CB1230

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





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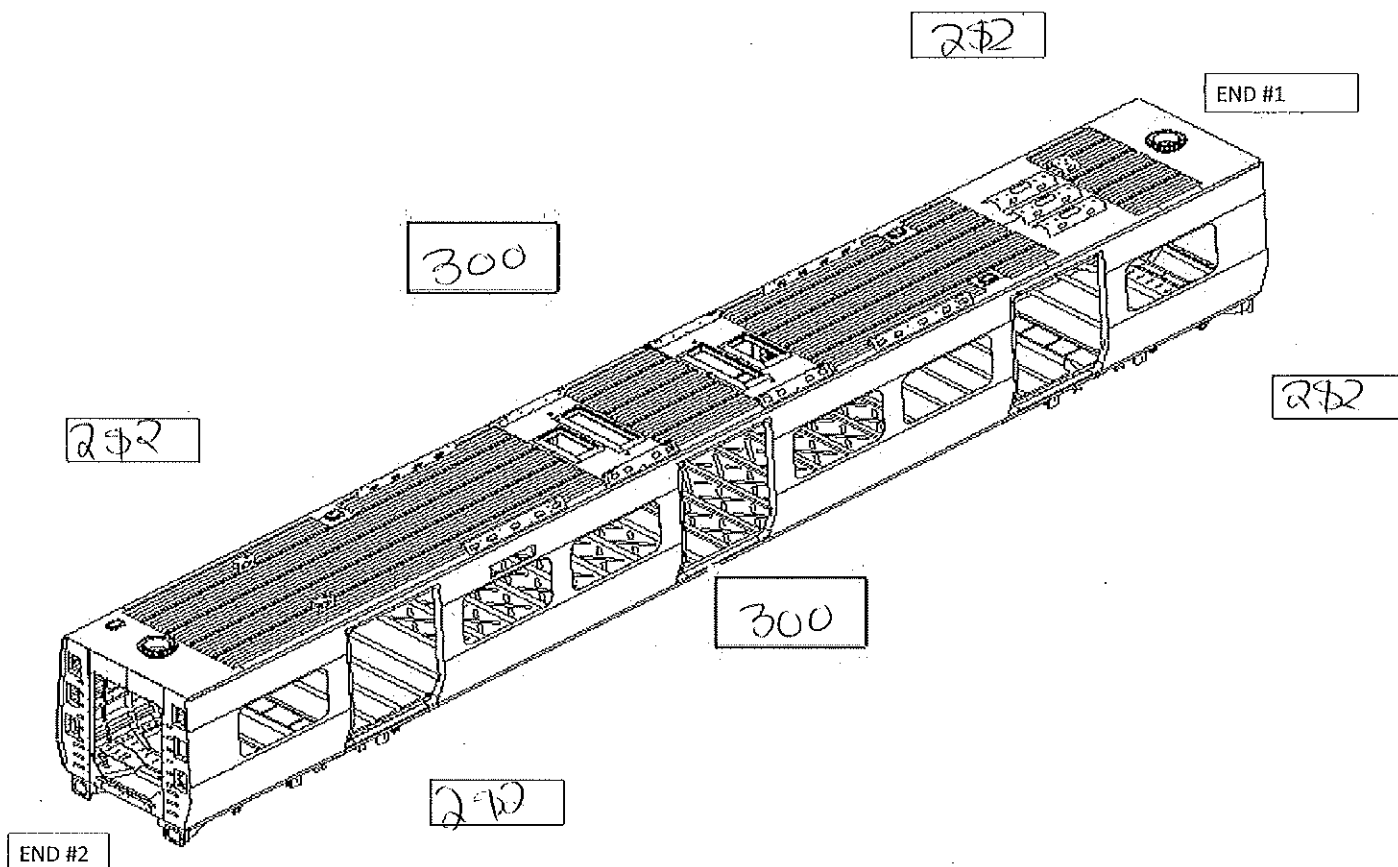
Date

06/11/2023

SI.CB1230.256.V28

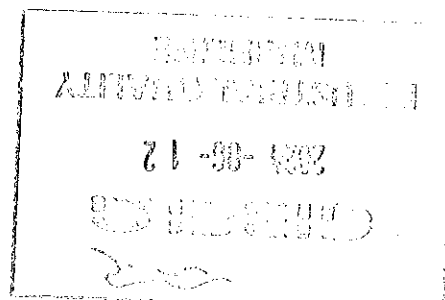
Specifications of Details for CBS measurement CB1230

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



MEASURED CAMBER VALUES

RIGHT	¹	18
LEFT	^{a1}	18





CARBODYSHELL M1,M3,M4 ASSEMBLY
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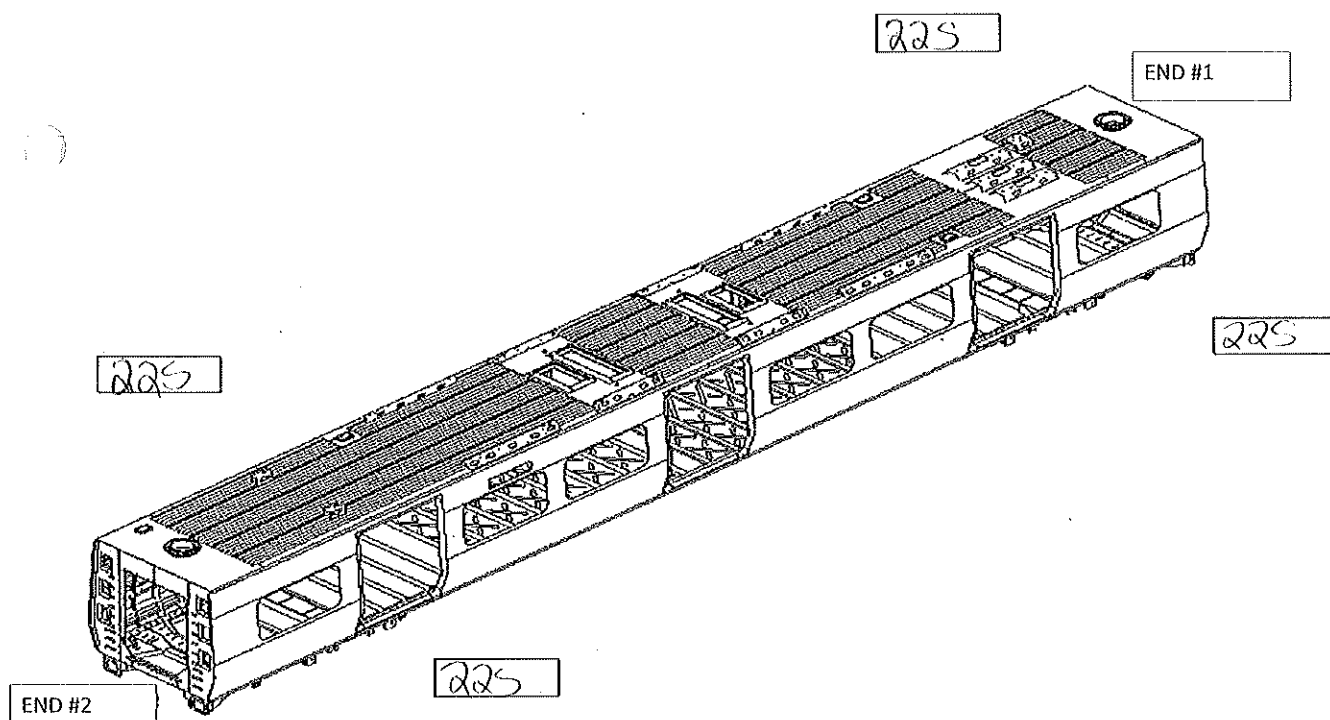
06/11/2023

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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

0

LONGITUDIN

0

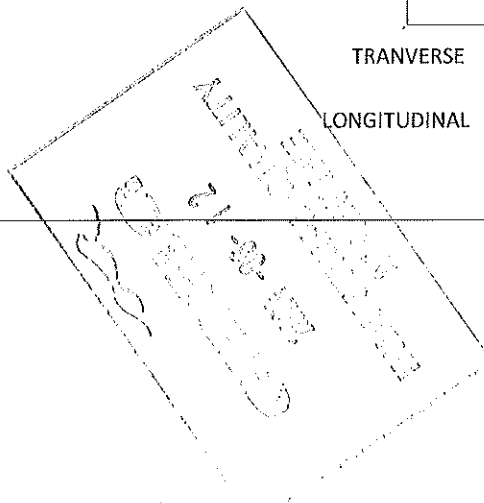
TWIST FOUND ON END 2

TRANVERSE

0

LONGITUDINAL

0





CARBODYSHELL M1,M3,M4 ASSEMBLY
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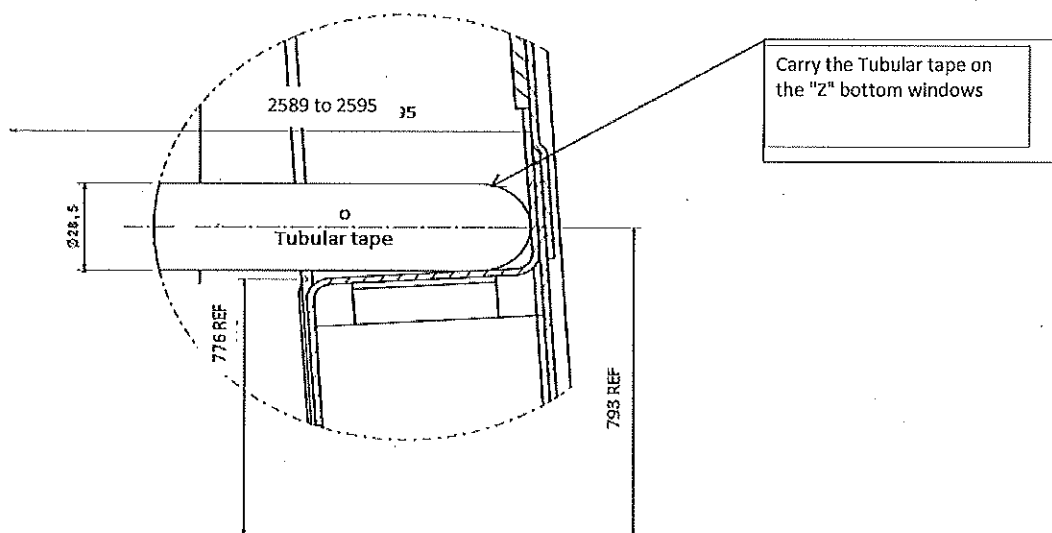
Date

06/11/2023

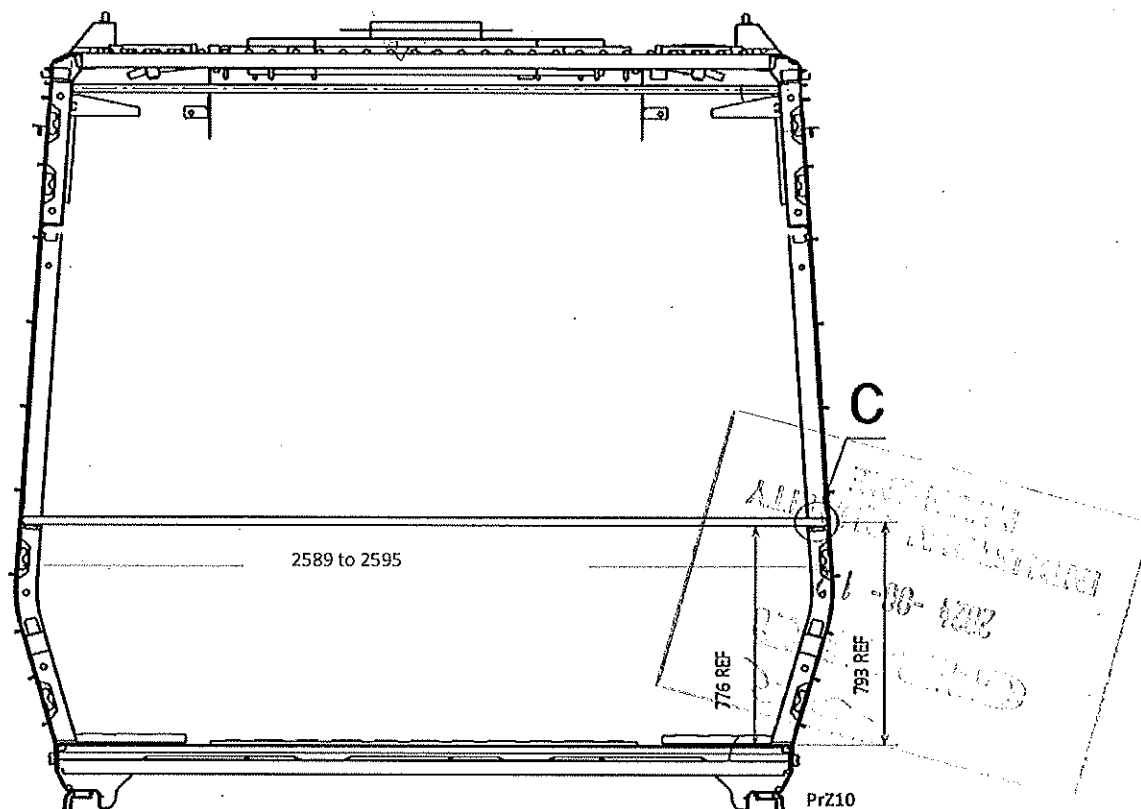
Project: PRASA

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Specifications of Details for CBS measurement CB1230



Detail C





CARBODYSHELL M1,M3,M4 ASSEMBLY
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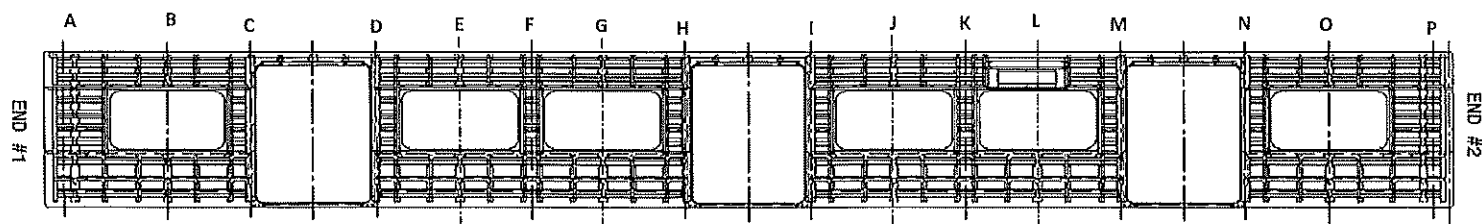
Date

06/11/2023

Project: PRASA

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Specifications of Details for CBS measurement CB1230



2589 to 2595mm

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



Threshold verification

Nominal value :38

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

BOILER MAKER: Emmanuel

Rev.
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Date _____

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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	Not OK	Remarks	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX					

[illegible]



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	(If activities are not complete, the missing activities must not impact the next stage)	16/06/24	Notulungga Magesu	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	16/06/24	Andani	
	NO GO	There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)			
		There are non-conformities impact the quality of the product and there is no corrective action defined yet)			

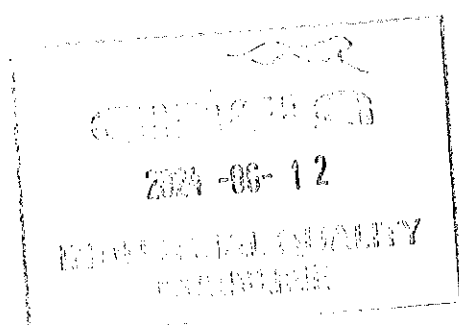
In case of "NO GO", describe blocking problems

In case of "NO GO", the operations manager must define below action 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

