



PRASA PROJECT
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

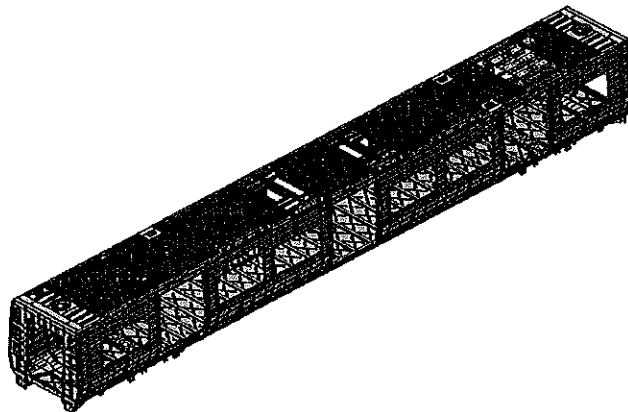
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 	
				TC1	M1	M2	M3	TC2				
<input type="checkbox"/>	DTR3000152644	AAD0001278566	CARBODYSHELL M3, M4 ASSEMBLY	CB1210	<input checked="" type="checkbox"/>				X		PRA.CB1210.DTR30225 487/3.V30	YES
<input type="checkbox"/>												
REV	DATE	MODIFICATION CONTENT			RESPONSIBLE		NAME		DATE			
0	10/01/2018	GIBELA NEW CREATION			APPROVER	Itumeleng Modiba	10/01/2018					
					CHECKER	Nosizo Pindela	10/01/2018					
					COMPILER	Thanyani Mathegu	10/01/2018					
1	2018/05/18	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager			APPROVER	Itumeleng Modiba	2018/05/18					
					CHECKER	Nosizo Pindela	2018/05/18					
					REVISED BY	Ramokone Motama	2018/05/18					
2	2018/07/04	Certain dimensional checks moved to CB1220 and CB1230			APPROVER	Itumeleng Modiba	2018/07/04					
					CHECKER	Nosizo Pindela	2018/07/04					
					REVISED BY	Ramokone Motama	2018/07/04					
3	2018/12/12	Added dimensional check points to CB1210			APPROVER	Itumeleng Modiba	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					
28	07/11/2023	Added traceability for welding sections			APPROVER	Ngobeni Tyson	07/11/2023					
					CHECKER	Mohlampe Amogelang	07/11/2023					
					REVISED BY	Ntokoza Zwane	07/11/2023					
TRAINSET	CAR	OPERATOR NAME & ALPS NO		DATE	SELF INSPECTION NUMBER		PAGES					
230	M4	Tebogo 482833		25/05/24	SI.CB1210.254.V30		17					

	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRA5A SI.CB1210.254.V30
		Date 07/11/2023	

Car: M3 & M4	NCR:	Work station: CB1210
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Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car						Revision	Obsevation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
	D	M	S	E	Z	B						
DTR30225487/3					X		29				<i>[Signature]</i>	<i>[Signature]</i> 23/03/24

I.2 - Instruments Control


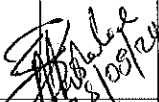
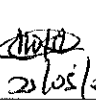

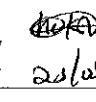

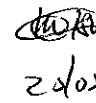

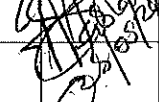
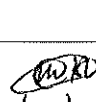
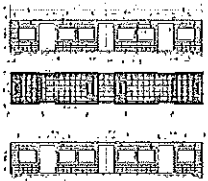
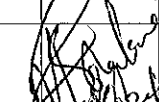
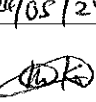


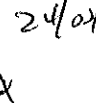
Monitoring and Measuring Instrument Control - Used for Special Process

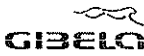
Instruments	Serial number	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Tubular	32423-2	15/03/25	✓		<i>[Signature]</i>	
Born tape	1254 918TP0102	18/11/24	✓		<i>[Signature]</i>	<i>[Signature]</i>
herber tape	1254 23924	08/01/25	✓		<i>[Signature]</i>	<i>[Signature]</i> 23/03/24

1.3 Consumables

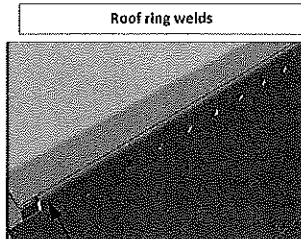
Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
EL308LSI	314018-74097	Mig	✓		<i>[Signature]</i>	
EL308L	299687-70322	Tig	✓		<i>[Signature]</i>	<i>[Signature]</i> 23/03/24

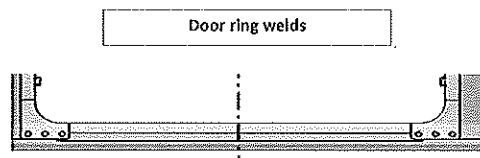
		CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 28 Date 07/11/2023	Project: PRASA SI.CB1210.254.V30			
II - Self Inspection - Items to Check							
II.1 - Items to check							
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Corshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓		 25/05/24	 25/05/24
02	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 e DTD0000210675	✓		 25/05/24	 25/05/24
03	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓		 25/05/24	 24/05/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓		 25/05/24	 24/05/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓		 25/05/24	 24/05/24
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.	✓		 25/05/24	 24/05/24

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Welding Traceability



<u>LHS</u>	
Boiler maker (Name & Sign): <u>Lebogang Mthabane</u>	Welder (Name & Sign): <u>Robert Bobbert</u>
<u>RHS</u>	
Boiler maker (Name & Sign): <u>Tim Roub</u>	Welder (Name & Sign): <u>Robert Bobbert</u>



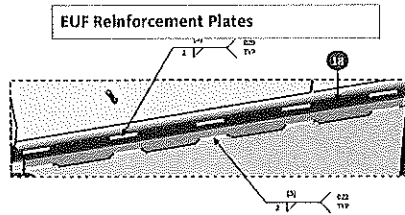
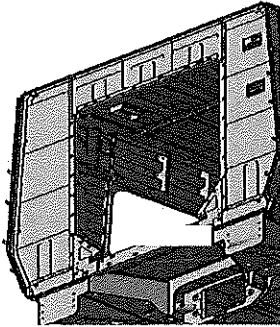
<div style="text-align: center;"><u>LHS</u></div> Boiler maker (Name & Sign): <u>Lebogang Mthabane</u> Welder (Name & Sign): <u>MTHOKOZISI</u>	<div style="text-align: center;"><u>RHS</u></div> Boiler maker (Name & Sign): <u>KUNGA</u> Welder (Name & Sign): <u>MTHOKOZISI</u>
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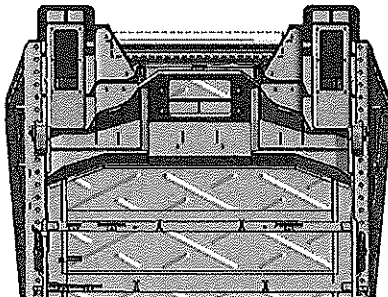
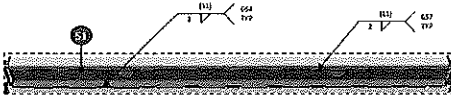
END 1

Boiler maker (Name & Sign):

Timelo P.3

Welder (Name & Sign):

Kenu K.11.00



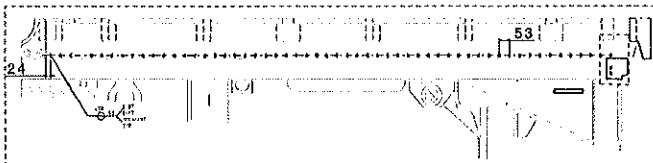
END 2

Boiler maker (Name & Sign):

Cepay

Welder (Name & Sign):


Sipho K.11.00

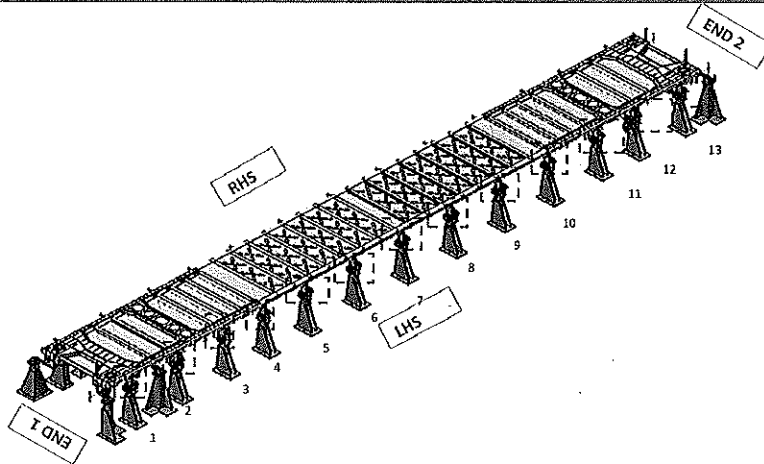


FEDOLI

Operator:

Lebago M.11.00

	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB1210.254.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						NA							
Right Hand Side													

Signature Operations:

Date:

[Signature] 25/05/24

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						NA							
Right Hand Side													

Signature Industrial Quality:

Date:

[Signature] 25/05/24



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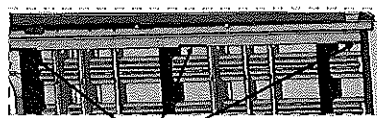
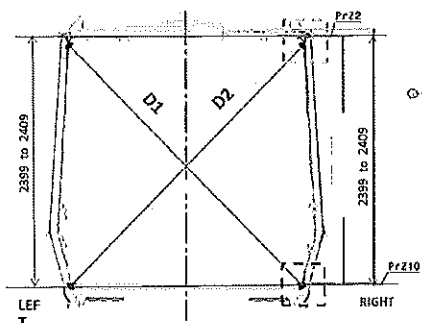
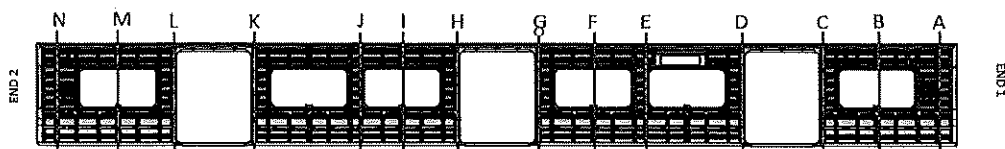
Date

07/11/2023

Project: PRASA

SI.CB1210.254.V30

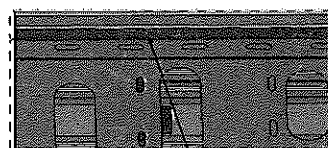
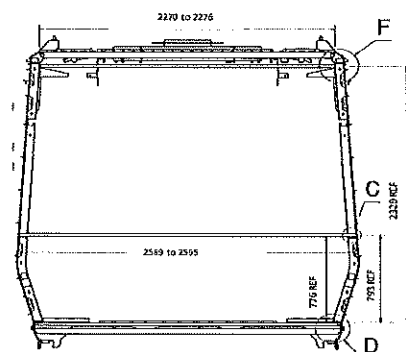
Specifications of Details for CBS measurement



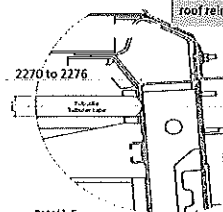
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.



Reinforcement area measurement positions on roof reinforcement area.



Detail F

Don't consider the reinforcement



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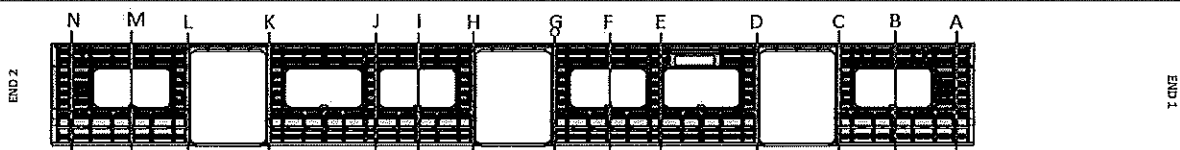
Date

07/11/2023

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Specifications of Details for GBS measurement

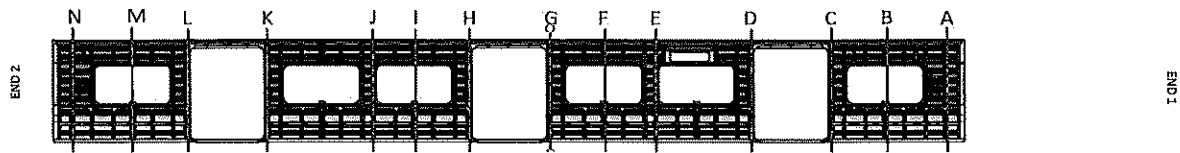
PME Column LHS - RHS should be $\leq 2\text{MM}$ on each point.

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	3265	3266	1	2404	2405	1
B	3266	3267	1	2406	2405	1
C	3267	3265	2	2405	2403	0
D	3266	3266	0	2406	2405	1
E	3264	3266	2	2405	2407	2
F	3265	3266	1	2406	2407	1
G	3265	3264	1	2405	2406	1
H	3267	3266	1	2407	2406	1
I	3265	3265	0	2404	2406	2
J	3265	3266	1	2404	2405	1
K	3265	3266	1	2406	2405	1
L	3264	3265	1	2407	2406	1
M	3268	3265	3	2405	2407	2
N	3267	3268	1	2408	2407	1

25.05.24

Specifications of Details for CBS measurement



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

AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3296	3297	1	2404	2405	1
B	3265	3267	2	2405	2406	1
C	3294	3295	1	2404	2404	0
D	3295	3296	1	2406	2405	1
E	3265	3265	0	2404	2405	1
F	3266	3265	1	2404	2406	2
G	3293	3295	2	2404	2405	1
H	3295	3296	1	2405	2405	0
I	3265	3266	1	2406	2404	2
J	3265	3267	2	2406	2407	1
K	3294	3296	2	2405	2404	1
L	3295	3295	0	2405	2404	1
M	3264	3265	1	2406	2405	1
N	3298	3299		2406	2407	1

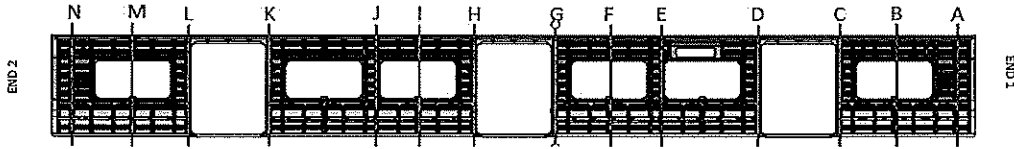


25.05.24

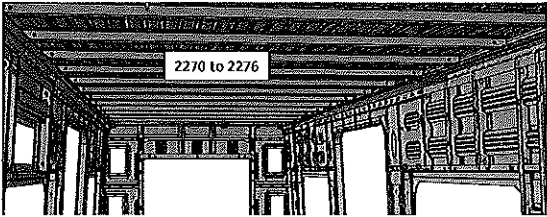
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		Date 07/11/2023	

CBS measurement

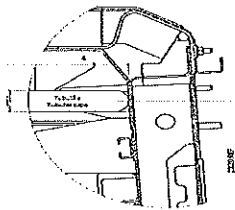
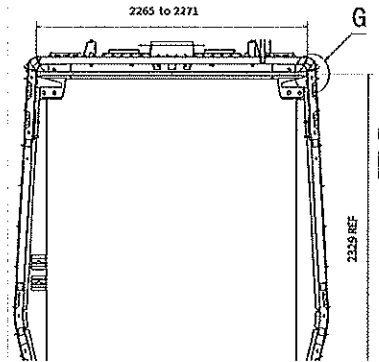
BEFORE WELDING



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



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

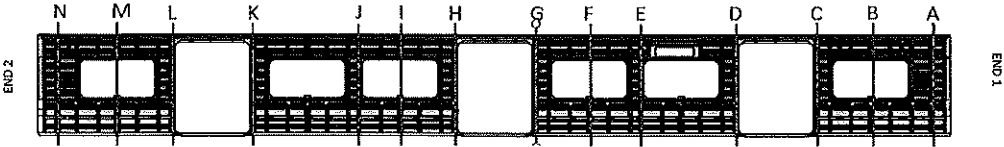


2265 to 2271

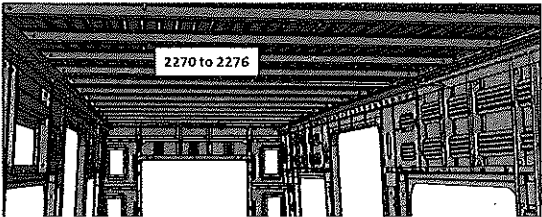
Detail 0
Consider in the reinforcement plate

TBS
25.05.24

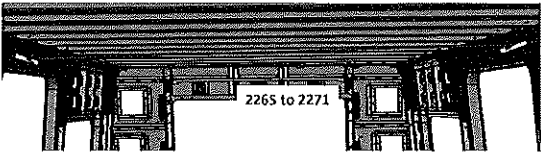
AFTER WELDING



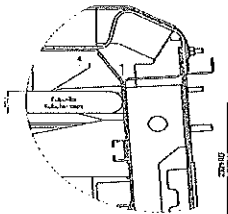
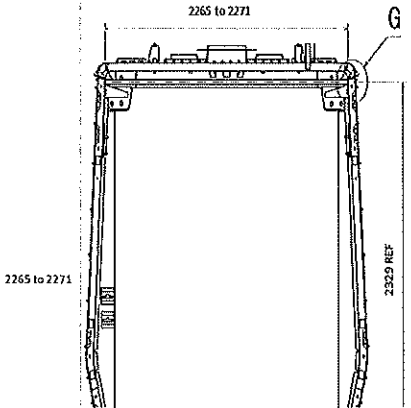
	2265 to 2271	2270 to 2276
A	2271	
B		2274
C	2269	
D	2271	
E		2276
F		2273
G	2268	
H	2270	
I		2276
J		2274
K	2271	
L	2269	
M		2274
N	2267	



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



Take measurement close to radius (considering reinforcement)



Detail G

Consider the reinforcement plate

25.05.24



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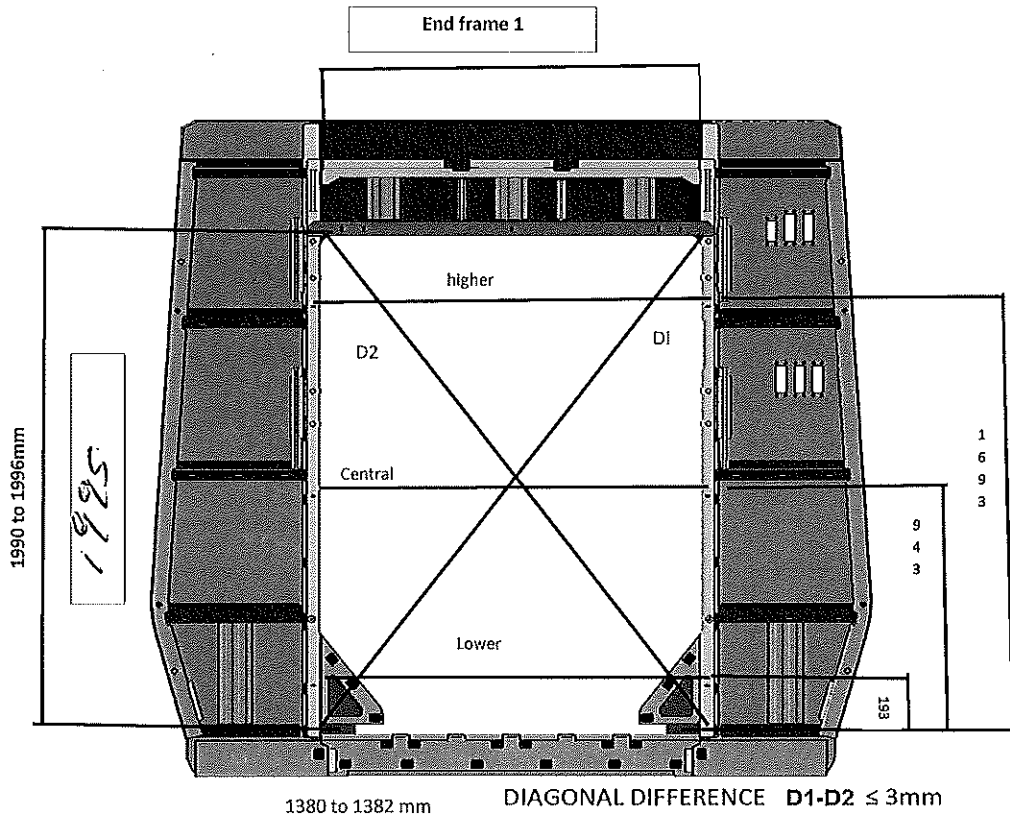
Date

07/11/2023

Project: PRA5A

SI.CB1210.254.V30

Specifications of Details for CBS measurement



Higher Dimension

1372

D1

2416

Central Dimension

1381

D2

2415

Lower Dimension

1381

D1-D2

1

Handwritten signature

25.05.24

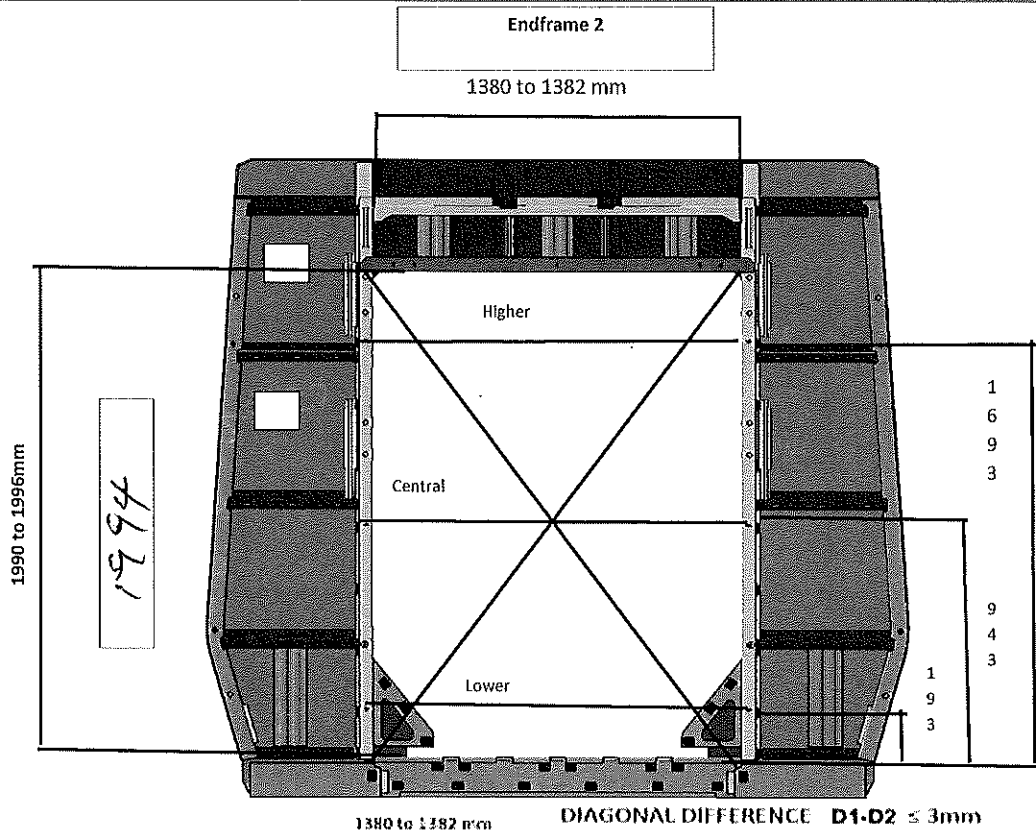


CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3

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Project: PRASA
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Specifications of Details for CBS measurement



Higher Dimension

1381

D1

2413

Central Dimension

1381

D2

2415

Lower Dimension


1380


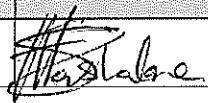
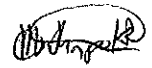
D1-D2


2

[Signature]
25.05.24

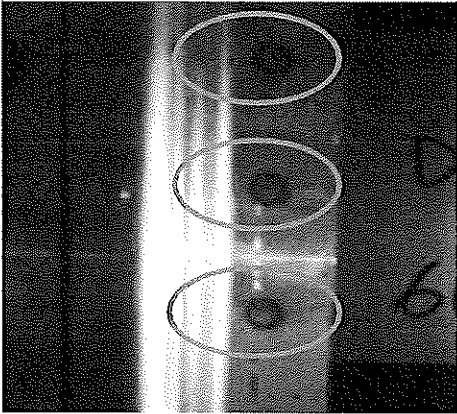
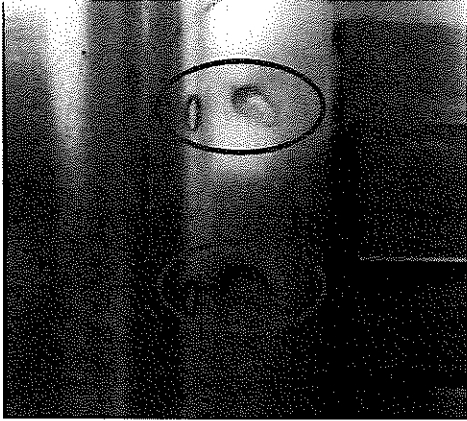



		CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3		Rev. 28		Project: PRASA			
				Date 07/11/2023		SI.CB1210.254.V30			
Item	Description of the Issue					OK	Signature/Date (Manufacturing)		Signature/Date (Quality)
II.2 - Check List REX									
Check List Items									
Item	Picture/Drawing	Description	Criteria /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						

		CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3		Rev. 28	Project: PRA5A	
				Date 07/11/2023	SI.CB1210.254.V30	
Self Inspection - Final Result						
				DATE	NAME	SIGNATURE
HOLD POINT		GO	(If activities are not complete, the missing activities must not impact the next stage)	25/05/24	Tebozo Operations	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	25/05/24	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	
			Operations			
			Quality			

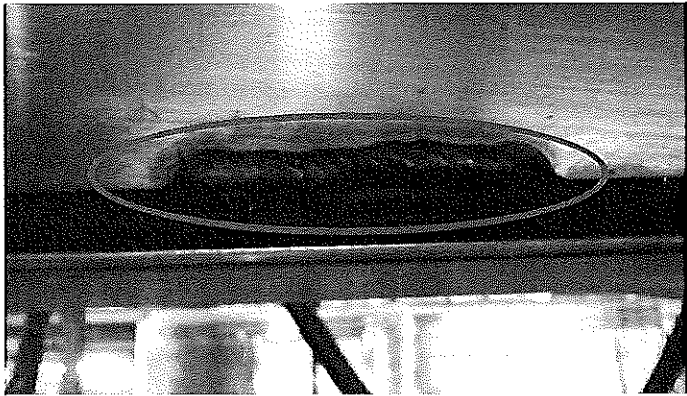
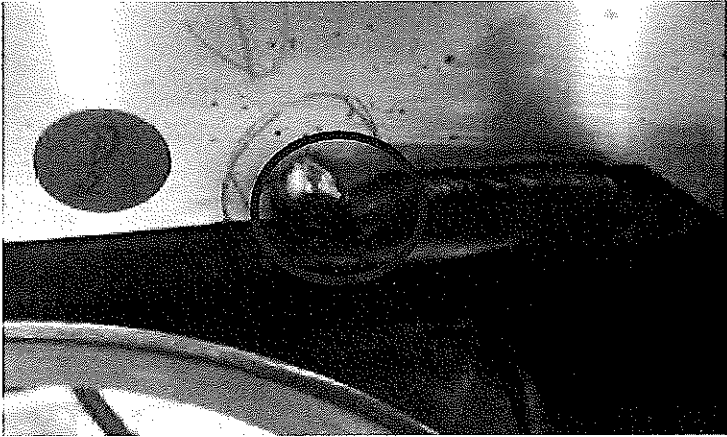
	CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3	Rev. 28	Project: PRA5A SI.CB1210.254.V30
		Date 07/11/2023	











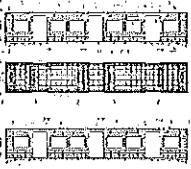


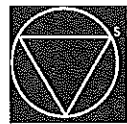









ANNEXURE A: Spot Welding Quality Acceptance Standard




	CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB1210.254.V30
		Date 07/11/2023	

ANNEXURE B: Arc Welding Quality Acceptance Standard

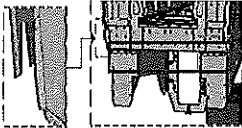



	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA SI.CB2220.250.V29			
		29				
		Date				
		28/10/2023				
II - Self Inspection - Items to Check						
II.1 - Items to check						
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Signature/Date (Manufacturing)	Signature/Date (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	✓	 27/05/24	 27/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓	 27/05/24	 27/05/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 27/05/24	 27/05/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 27/05/24	 27/05/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓	 27/05/24	 27/05/24
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.	✓	 27/05/24	 27/05/24
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 (°C): Min-Max 10°C - 35°C Relative humidity Min - Max (%): Min-Max 25% - 60%	Sealant Batch No: 63497 Exp Date: 09/06/24 Actuals Temperature: 25°C Humidity: 35%	✓	 27/05/24	 27/05/24
08	NA	Verification of sealant application in certain regions in the drawing.	AAD0001278556	✓	 27/05/24	 27/05/24
09		Verification of safety welds	Approved according to DTD000210658 reference and Self inspection	✓	 27/05/24	 27/05/24


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


II - Self Inspection - Items to Check

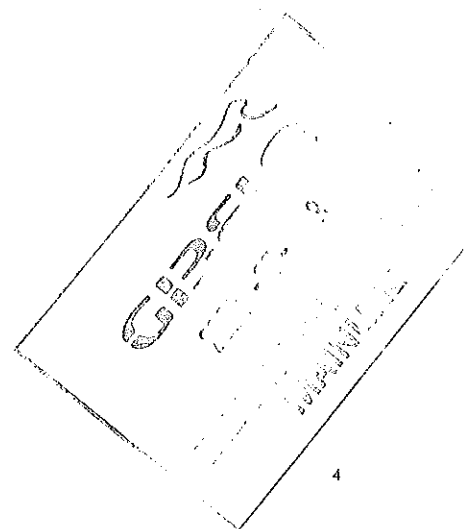
SEALANT APPLICATION





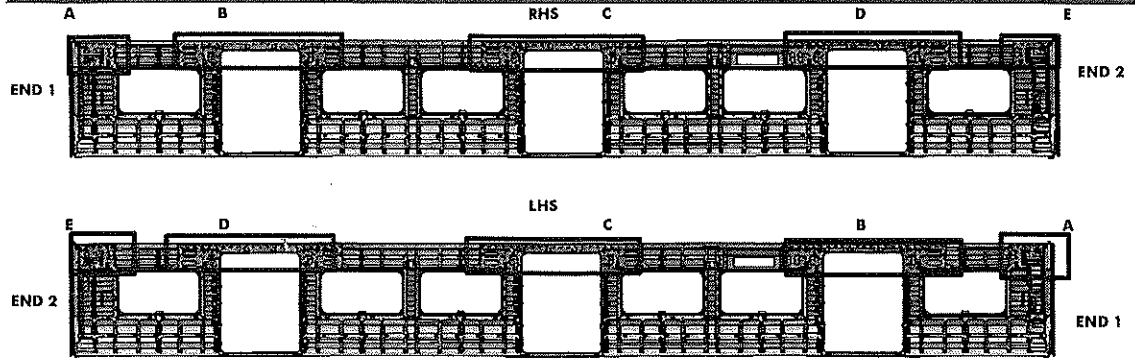
AREA 1 & 2 END 1

Operator (Name & sign):
Methelozzi 


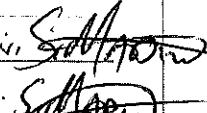
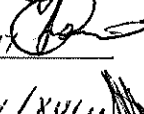
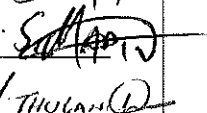

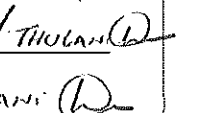
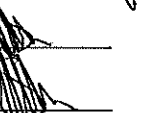

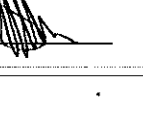

Operator (Name & sign):
Methelozzi 

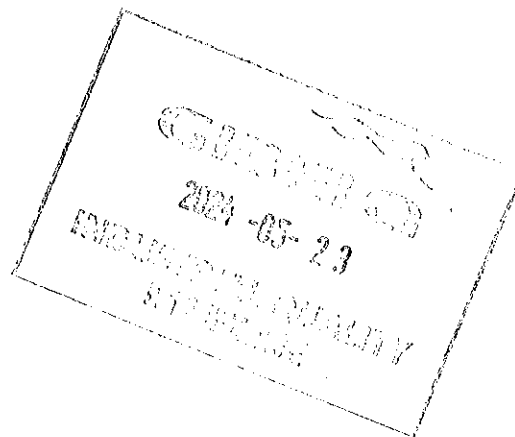



	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA SI.CB2220.250.V29
		29	
		Date	
		28/10/2023	
II - Self Inspection - Items to Check			



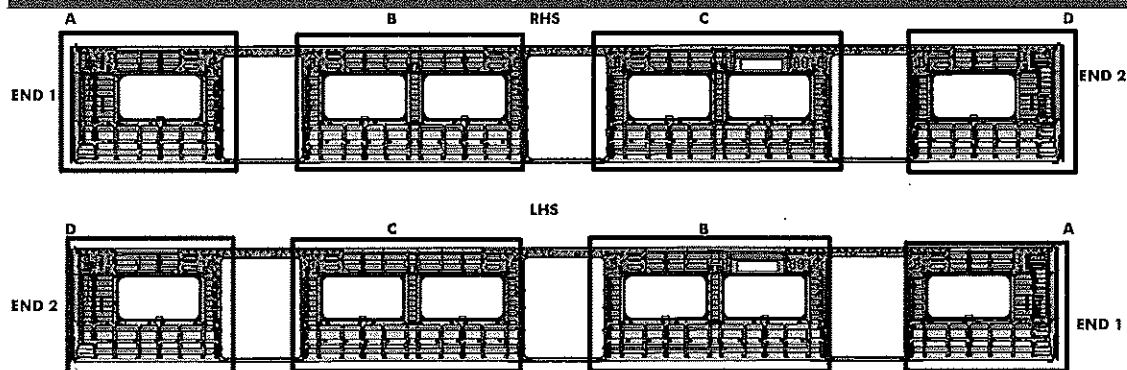
REINFORCEMENT WELDING

AREA	LHS	RHS
A	Operator (Name&sign): <u>JOHNY</u> 	<u>MADINI</u> 
B	Operator (Name&sign): <u>JOHNY</u> 	<u>MADINI</u> 
C	Operator (Name&sign): <u>JOHNY / XULU</u> 	<u>MADINI / THULANI</u> 
D	Operator (Name&sign): <u>XULU</u> 	<u>THULANI</u> 
E	Operator (Name&sign): <u>XULU</u> 	<u>THULANI</u> 




	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

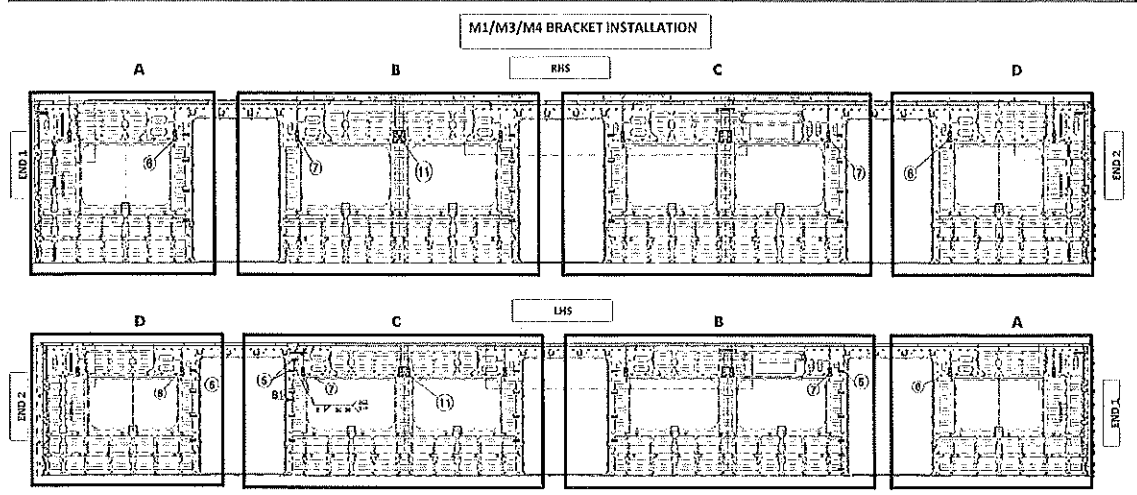


BRACKETING

INSTALLATION	
C-RAILS:	Operator: <u>M. H. K. S. S. S.</u>
	Operator: _____
DOOR MECHANISMS:	Operator: <u>Mashhad Mashhad</u>
	Operator: _____
TAPPING PADS	Operator: <u>[Signature]</u>
	Operator: _____
INSTALLATION & VERIFICATION	
SEAT & LUGGAGE BRACKETS:	Operator: <u>ASAZIDA</u> <u>[Signature]</u>
	Operator: _____
SEAT BRACKETS VERIFICATION:	Operator: <u>ASAZIDA</u> <u>[Signature]</u>
	Operator: _____
WELDING	
AREA	LHS
A (Seat brackets)	: Operator (Name&sign): <u>LINDO</u> <u>[Signature]</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>[Signature]</u>
B (Seat brackets)	: Operator (Name&sign): <u>[Signature]</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>[Signature]</u>
C (Seat brackets)	: Operator (Name&sign): <u>[Signature]</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>[Signature]</u>
D (Seat brackets)	: Operator (Name&sign): <u>M. M. S. S. S.</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>[Signature]</u>
RHS	
A (Seat brackets)	: Operator (Name&sign): <u>LINDO</u> <u>[Signature]</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>[Signature]</u>
B (Seat brackets)	: Operator (Name&sign): <u>[Signature]</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>[Signature]</u>
C (Seat brackets)	: Operator (Name&sign): <u>M. M. S. S. S.</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>[Signature]</u>
D (Seat brackets)	: Operator (Name&sign): <u>M. M. S. S. S.</u>
(C-rails, Luggage and earth bushes)	: Operator (Name&sign): <u>[Signature]</u>
ENDS	
END 1 TAPPING PADS WELDING:	Operator (Name&sign): <u>[Signature]</u>
END 2 TAPPING PADS WELDING:	Operator (Name&sign): <u>[Signature]</u>

	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA SI.CB2220.250.V29
		29	
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II - Self Inspection - Items to Check



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

VERIFICATION BY: Tetelo

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: Tetelo

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

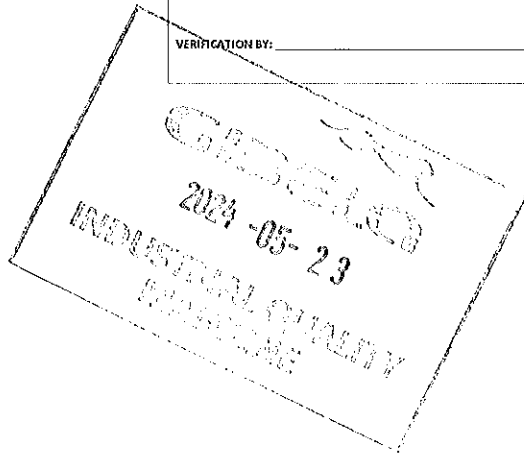
VERIFICATION BY: _____

LHS

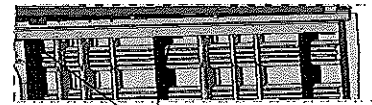
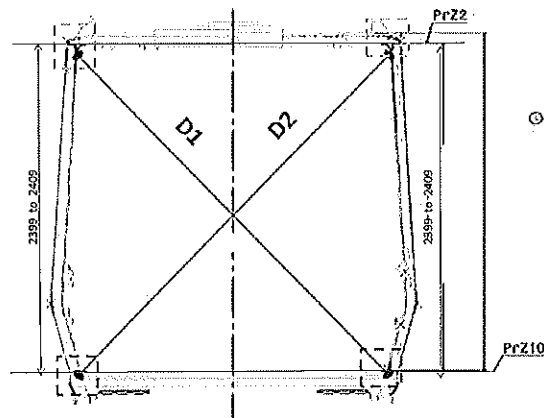
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C-RAILS	A	2		
	B	10		
	C	11		
	D	8		
SEAT BRACKETS	A	13		
	B	21		
	C	21		
	D	13		
EARTH BUSH	A	3		
	B	7		
	C	6		
	D	2		

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

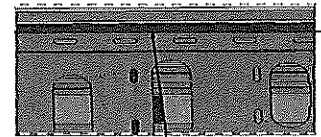
VERIFICATION BY: _____



Specifications of Details for CBS measurement



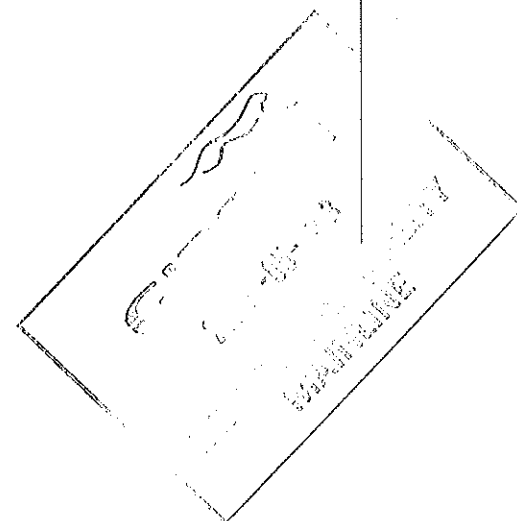
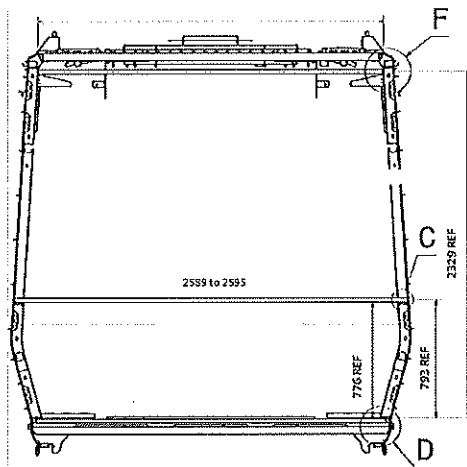
Measurement positions on roof rail and sidewall omega corner.

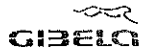


Reinforcement area measurement positions on roof reinforcement area.



Measurement positions on sidewall and side sill corner.





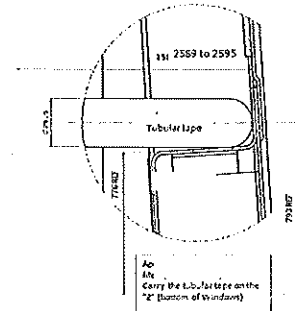
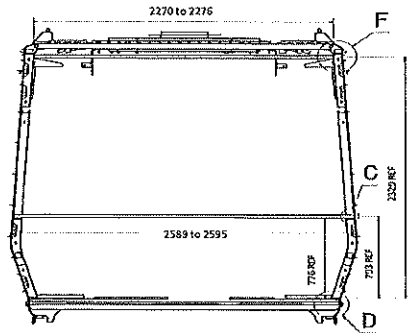
CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30226487/2

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Date
28/10/2023

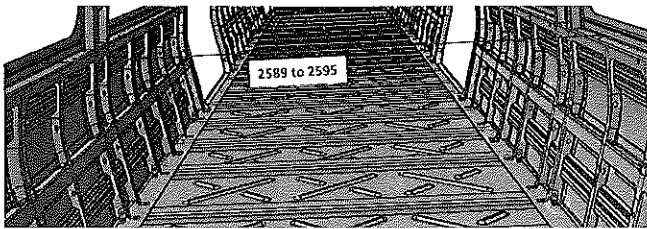
Project: PRASA

SI.CB2220.250.V29

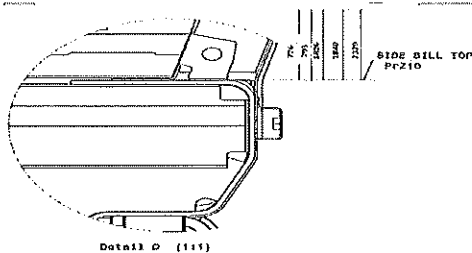
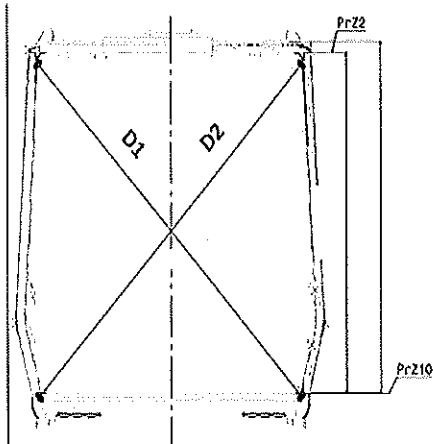
CBS measurement



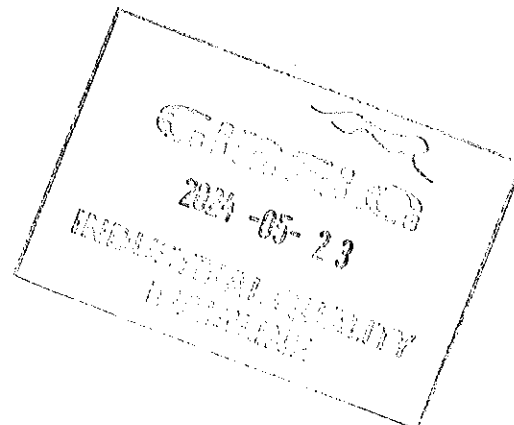
Detail C




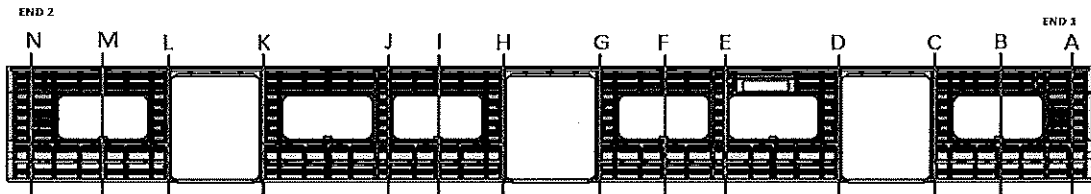
Take measurement close to
radius



Detail D (1:1)

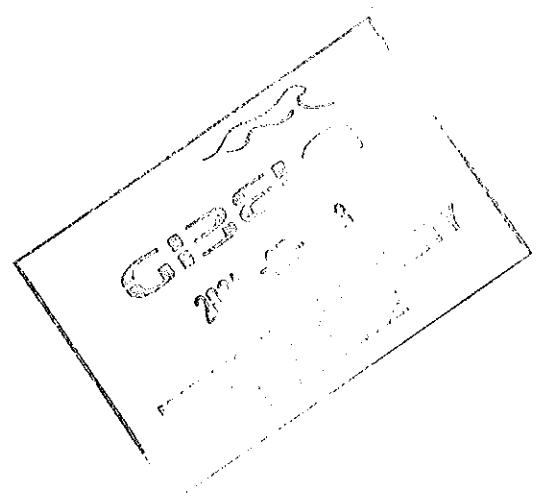


	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA
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		Date	
		28/10/2023	SI.CB2220.250.V29
CBS measurement			

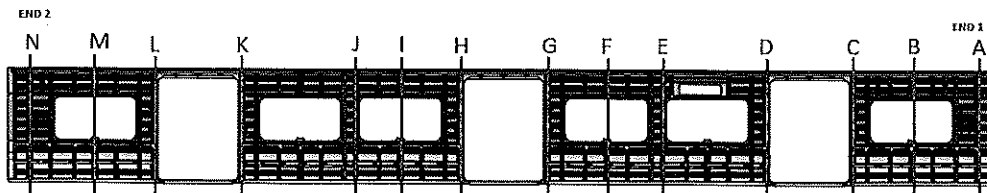


BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3299	3297	2	
B	3265	3267	2	
C	3299	3300	1	
D	3300	3300	0	
E	3269	3267	2	
F	3268	3265	3	
G	3300	3297	3	
H	3299	3298	1	
I	3265	3268	3	
J	3266	3267	2	
K	3297	3295	2	
L	3298	3298	0	
M	3267	3260	1	
N	3299	3298	1	

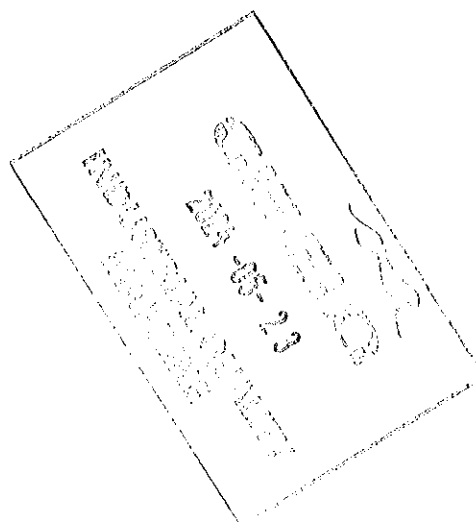


CBS measurement

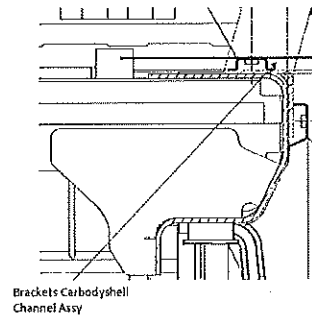
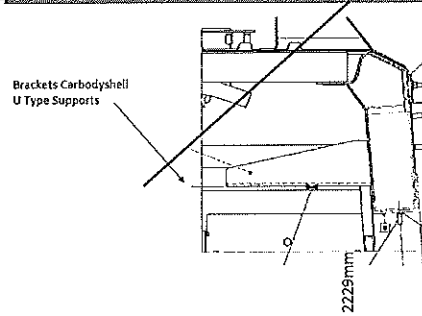
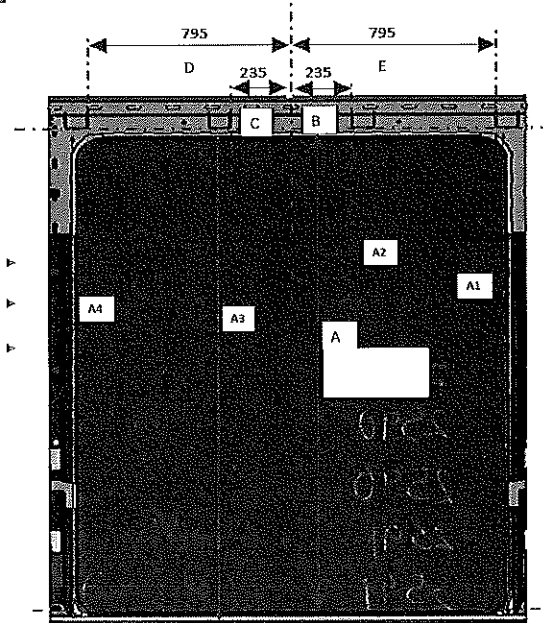


AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3300	3297	3	2589
B	3266	3268	2	2590
C	3298	3296	2	2590
D	3299	3298	1	2591
E	3265	3266	1	2591
F	3267	3266	1	2591
G	3297	3295	2	2590
H	3299	3300	1	2591
I	3267	3266	1	2590
J	3265	3267	2	2592
K	3299	3298	1	2591
L	3300	3298	2	2590
M	3265	3266	1	2591
N	3300	3301	1	2590



Specifications of Details for CBS measurement - CB1220



DOOR 1 - LHS

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

DOOR 2 - RHS

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

DOOR 1 - RHS

	VALUE	ACTUAL
A1	2230 to 2232	2231
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	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	234
D	794 to 796	795
E	794 to 796	794

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	795

2024-05-23
QUALITY
MANLINE



CARBODYSHELL M1,M3,M4 ASSEMBLY
DTR30226487/2

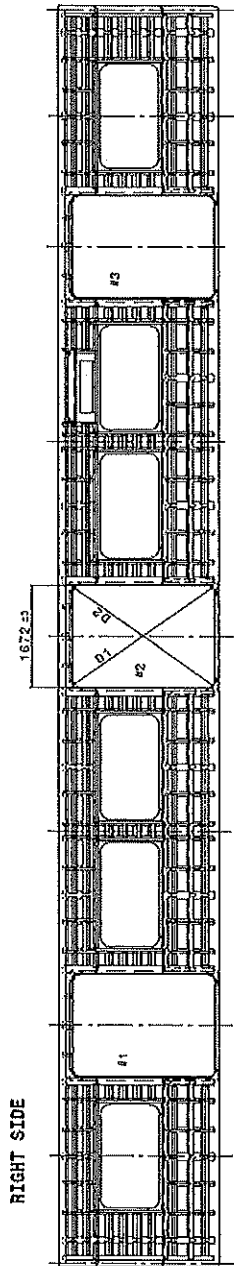
Rev.
29
Date
28/10/2023

Project: PRA5A

SI.CB2220.250.V29

Specifications of Details for CBS measurement CB1220

End #2



End #1

Doors diagonal D1-D2 maximum difference ≤4mm

	#1	#2	#3
D1	2752	2751	2750
D2	2751	2750	2749
D1-D2	1	1	1

HIGHER DIMENSION

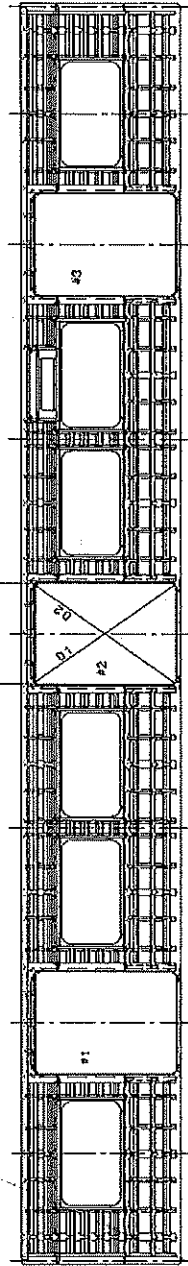
CENTRAL DIMENSION

LOWER DIMENSION

Doors length - 1672 ±3mm

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

End #1



End #2

Doors diagonal D1-D2 maximum difference ≤4mm

	#1	#2	#3
D1	2751	2750	2751
D2	2749	2749	2749
D1-D2	2	1	2

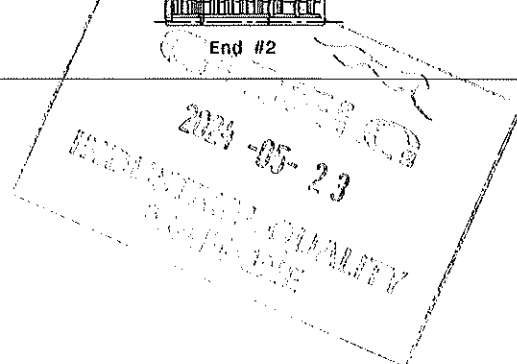
HIGHER DIMENSION




CENTRAL DIMENSION


LOWER DIMENSION

Doors length - 1672 ±3mm


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



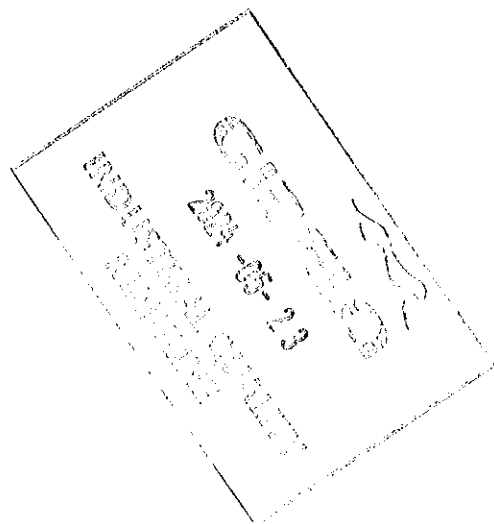
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA			
		29				
		Date	SI.CB2220.250.V29			
		28/10/2023				
Self Inspection - Final Result						
Is the car good to advance to the next workstation/process? (Approval of Operations Manager and Industrial Quality)		DATE	NAME	SIGNATURE		
HOLD POINT		GO	(If activities are not complete, the missing activities must not impact the next stage)	27/05/24	Tebelo	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.			
		NO GO	There are activities pending that impact/stop the activities of the next process Obs: (To describe problems below)			
			There are non-conformities impact the quality of the product and there is no corrective action defined yet			
In case of "NO GO", describe blocking problems						
In case of "NO GO", the operations manager must define below action plan to ensure "GO":						
Item	Description	Responsible	Due date	Status		




Operations

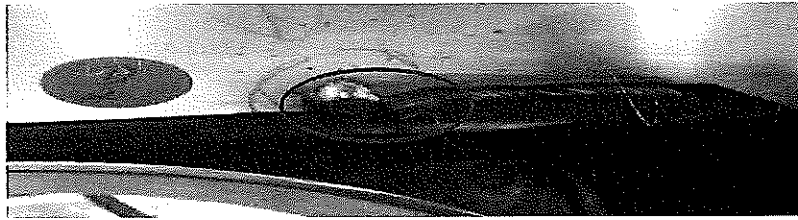


Quality

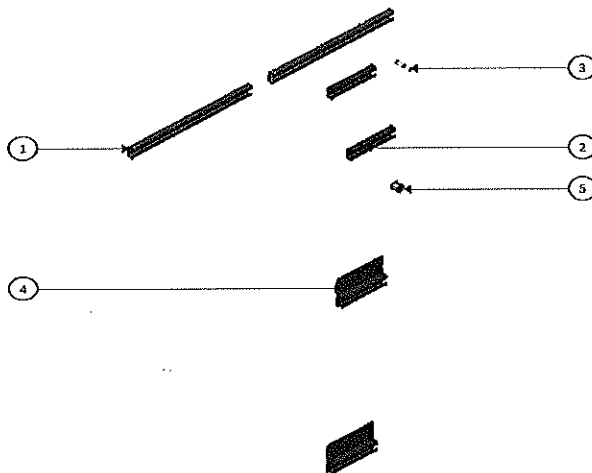


	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev.	Project: PRASA SI.CB2220.250.V29
		29	
		Date 28/10/2023	

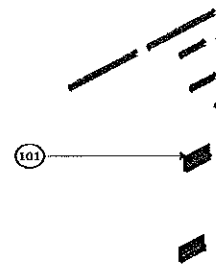
ANNEXURE A: Arc Welding Quality Acceptance Standard



Station: CB1220-004- U108 & U107



PART NO.	ITEM NO.	QTY	DESCRIPTION	MASS (KG)
UTY002007402A	5	6	EARTH STUD 6	0.035
AA0000110144B	4	6	ASSEMBLY SUPPORT	0.221
UTY0000348305	3	12	WELDING STUD ISO13918 PT - 1/2"x20-SS	0.007
AA0000116042A	2	12	ASSEMBLY SUPPORT	0.191
AA0000118441B	1	14	ASSEMBLY SUPPORT	0.322
AA0000116100D	101	6	CARBODYSHELL BRACKETS CARBODYSHELL M1/M3/M4 CAR(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

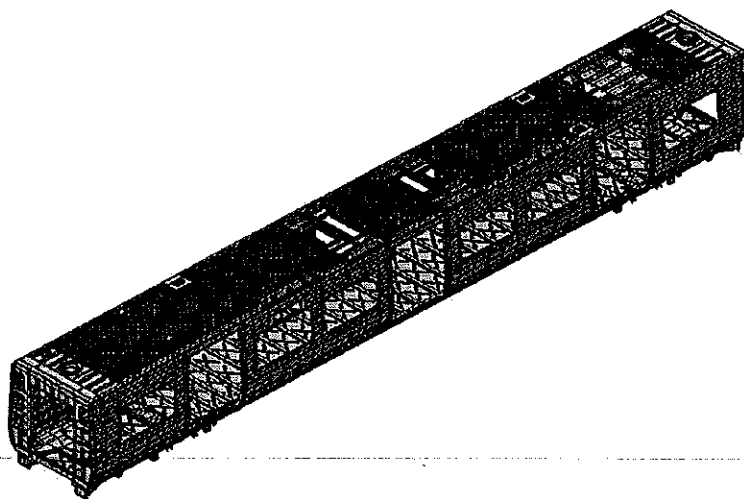
MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ?	
				TC1	MA	MX	MZ	MA	TC2			
<input type="checkbox"/>	DTR3000152669	AAD0001278566	CARBODYSHELL M1,M2,M4 ASSEMBLY	CB2230			X				PRA.CB2230.DT000002 25487.V20	YES
<input type="checkbox"/>	DTR3000152673	AAD0001278566	CARBODYSHELL M1,M2,M4 ASSEMBLY	CB2230		X			X		PRA.CB2230.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 Mqlama	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	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						
25	20/02/2022	New Baseline change 10.3.1		APPROVER	Collins Mbombhi	20/02/2022						
				CHECKER	Andani Muthelo	20/02/2022						
				REVISED BY	Andani Muthelo	20/02/2022						
26	14/06/2022	Update minimum temperature requirement for sealant application		APPROVER	Collins Mbombhi	14/06/2022						
				CHECKER	Andani Muthelo	14/06/2022						
				REVISED BY	Andani Muthelo	14/06/2022						
27	26/07/2022	Threshold measurements addition		APPROVER	Collins Mbombhi	26/07/2022						
				CHECKER	Andani Muthelo	26/07/2022						
				REVISED BY	Andani Muthelo	26/07/2022						
28	17/10/2022	Added traceability of sealant application		APPROVER	Collins Mbombhi	17/10/2022						
				CHECKER	Ntokozo Zwane	17/10/2022						
				REVISED BY	Amogelang Mohlampe	17/10/2022						
29	14/04/2023	Added sealant batch number & welding consumables traceability		APPROVER	Vanessa Ntuli	14/04/2023						
				CHECKER	Ntokozo Zwane	14/04/2023						
				REVISED BY	Amogelang Mohlampe	14/04/2023						
30	06/11/2023	Added threshold traceability for boiler makers and welders		APPROVER	Ngobeni Tyson	06/11/2023						
				CHECKER	Andani Muthelo	06/11/2023						
				REVISED BY	Ntokozo Zwane	06/11/2023						
TRAINSET	CAR	OPERATOR NAME & ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES							
230	M04	Leroy 626959	28/05/2024	SI.CB2230.256.V29	12							

	CARBODYSHELL M1,M3,M4 ASSEMBLY DT00000225487	Rev. 30	Project: PRASA SI.CB2230.256.V29
		Date 08/11/2023	

Car:	NCR:	Work station:	CB2230
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Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car					Revision	Observation	OK		Signature/Date (Operations)	Signature/Date (Quality)
	M1	M2	M3	M4	TC2						
PRA.CB2230.DT00000225487				X		30		X		N/A	28/05/24 26/05/24

I.2 - Instruments Control

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

Instruments	Serial number	Calibration or Verification Validation Date	OK		Signature/Date (Operations)	Signature/Date (Quality)
Combination Square	G1PK50612	2023/02/20	✓		28/05/24	28/05/24
Measuring Tape	GIBTA0431	2023/04/17	✓		28/05/24	28/05/24
Tubular	32823	15/03/2024	✓		28/05/24	28/05/24







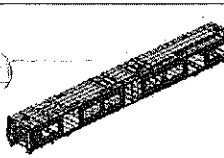


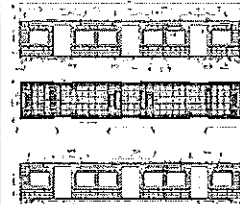











1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
OK Autrod 308LSi	373779	MIG	✓		28/05/24	28/05/24

II - Self Inspection - Items to Check

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB1230.DT00000225487 Verification of fitment for all brackets.	PRA.CB1230.DT00000225487	✓	 28/05/24	 28/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓	 28/05/24	 28/05/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓	 28/05/24	 28/05/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓	 28/05/24	 28/05/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓	 28/05/24	 28/05/24
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.	✓	 28/05/24	 28/05/24
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 (I) Min-Max 10°C - 35°C Relative humidity Min - Max (I) Min-Max 25% - 80%	Sealant Batch No: <u>B3647-603/24</u> Exp Date: <u>15/06/24</u> Actuals Temperature: <u>16°C</u> Humidity: <u>66%</u>	✓	 28/05/24	 28/05/24
08	N/A	Verification of sealant application on the roof and sidewall finishers.	Sealant must be: -Applied straight and even -Free of gaps,cracks,damage and debris (flashes, dirt, dust) Refer to Annexure B	✓	 28/05/24	 28/05/24
09	N/A	Verification of sealant application in certain regions in the drawing.	AAD0001278566	✓	 28/05/24	 28/05/24

QUALITY
67-50-473
2023-05-23



CARBODYSHELL M1,M3,M4 ASSEMBLY
DT00000225487

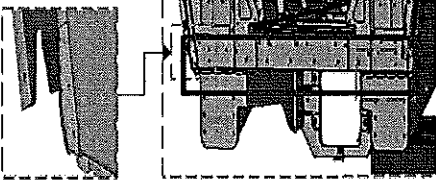
Rev.
30
Date
06/11/2023

Project: PRASA

SI.CB2230.256.V29

II - Self Inspection - Items to Check

AREA 1



END 2 SEALANT

OPERATOR
(Name & sign):

Leroy [Signature]

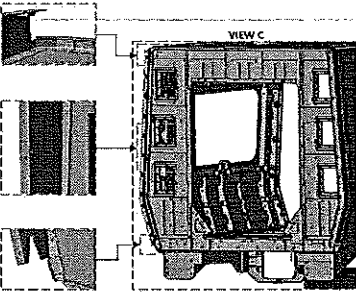
OPERATOR
(Name & sign):

Leroy [Signature]

OPERATOR
(Name & sign):

Leroy [Signature]

AREA 2 (VIEW C)



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

Operator (Name & sign):

LHS
D.E.F.G.H.I [Signature]

RHS
D.E.F.G.H.I [Signature]

Operator (Name & sign):

Sihle [Signature]

Sihle [Signature]

Operator (Name & sign):

[Signature]

[Signature]

Operator (Name & sign):

Shenolo [Signature]

Shenolo [Signature]

Operator (Name & sign):

[Signature]

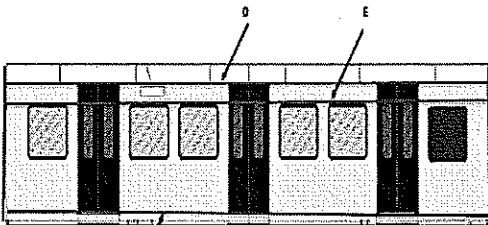
[Signature]

Operator (Name & sign):

[Signature]

[Signature]

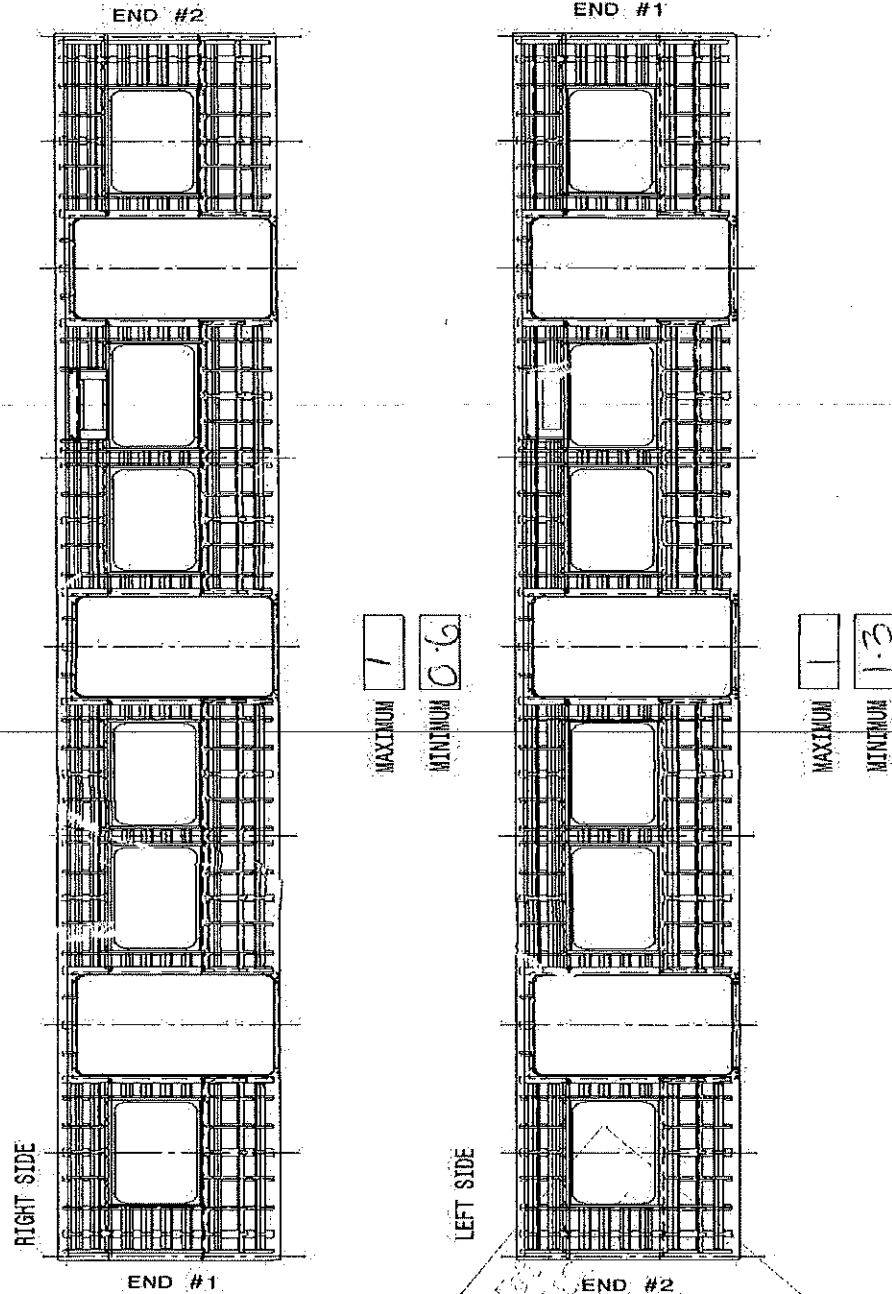
H



INDUSTRIAL QUALITY
2024-05-23
[Signature]

Specifications of Details for CBS measurement CB1230

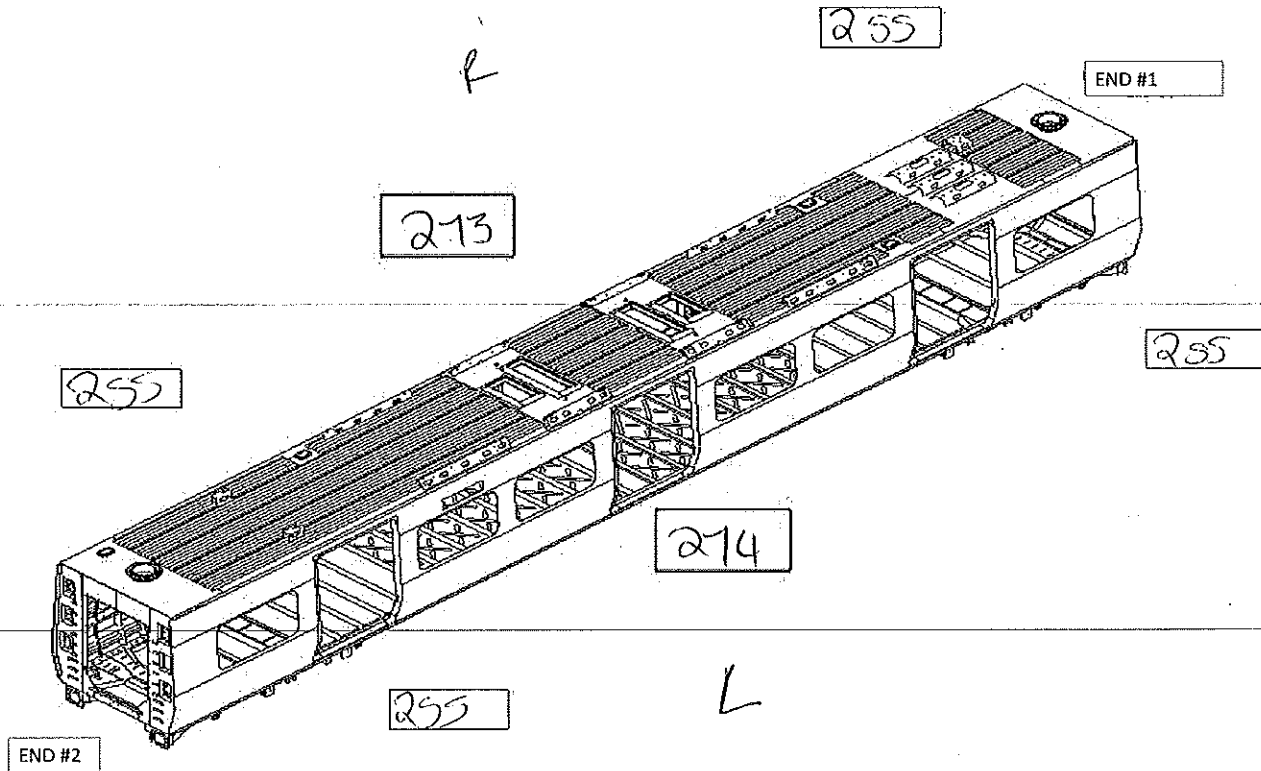
Flatness side left and right maximum of 2mm in the valley to peak measured in 900mm. Record the maximum and minimum value found and indicate the corresponding region.



APPROVED FOR
67-50-4882
GIBEL

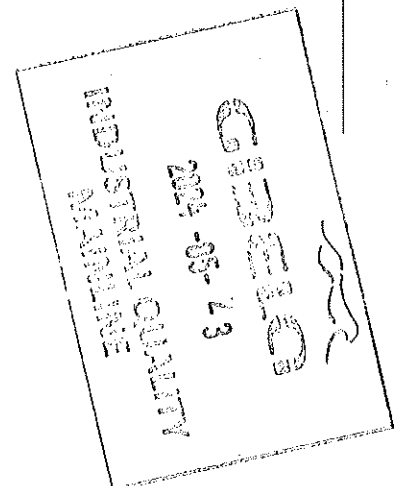
Specifications of Details for CBS measurement CB1230

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



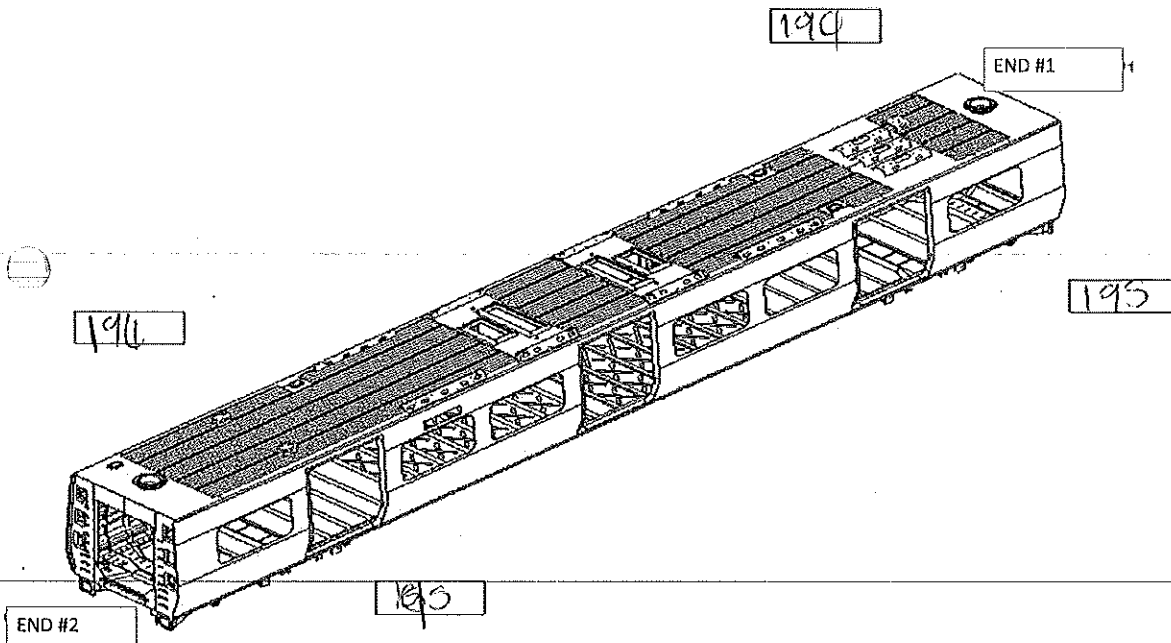
MEASURED CAMBER VALUES

RIGHT	11	18
LEFT	11	19



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

TRANVERSE

1

LONGITUDINAL

0

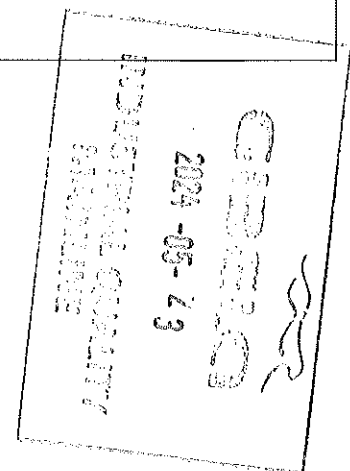
TWIST FOUND ON END 2

TRANVERSE

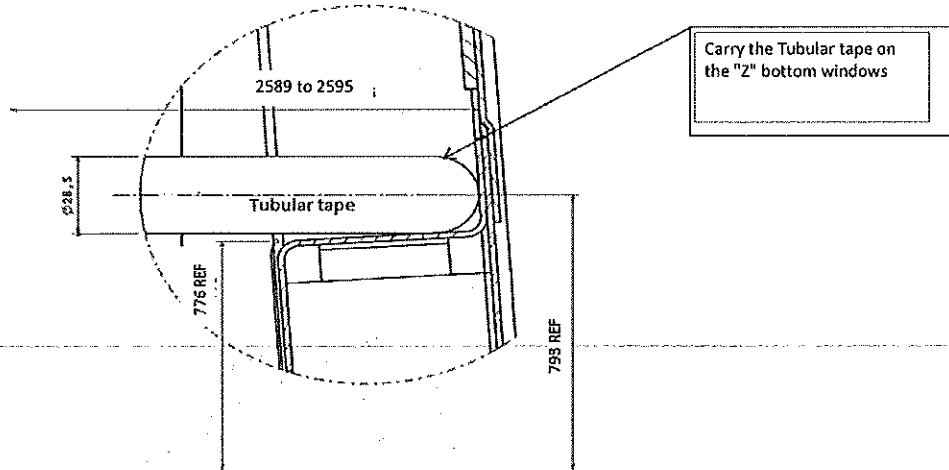
1

LONGITUDINAL

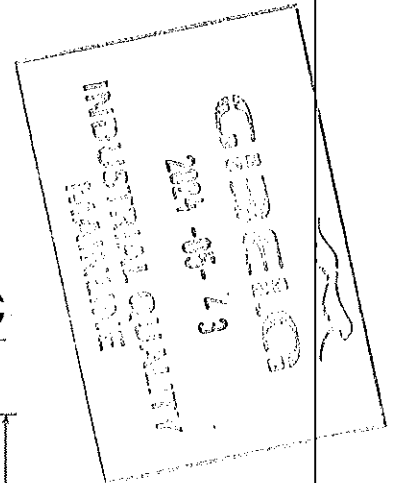
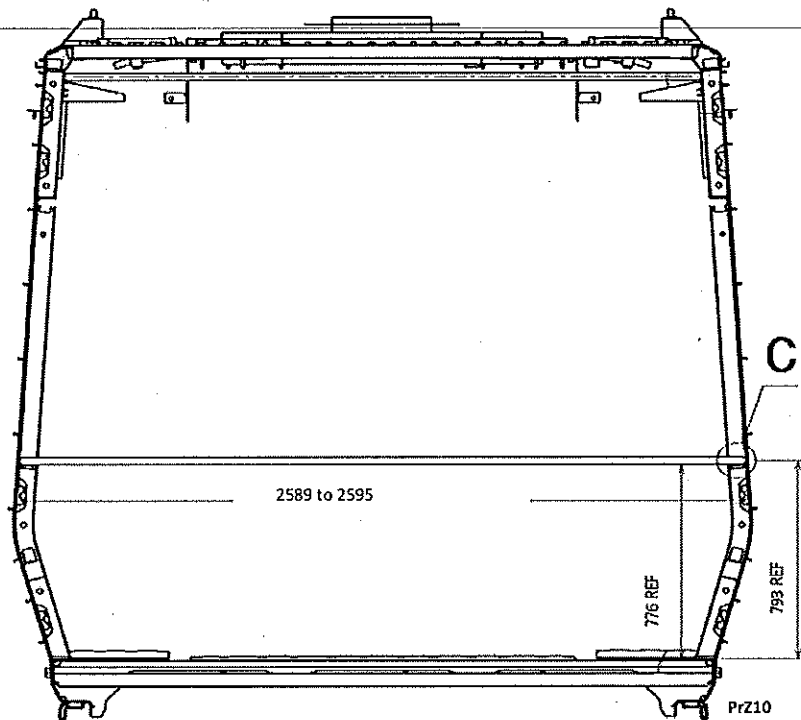
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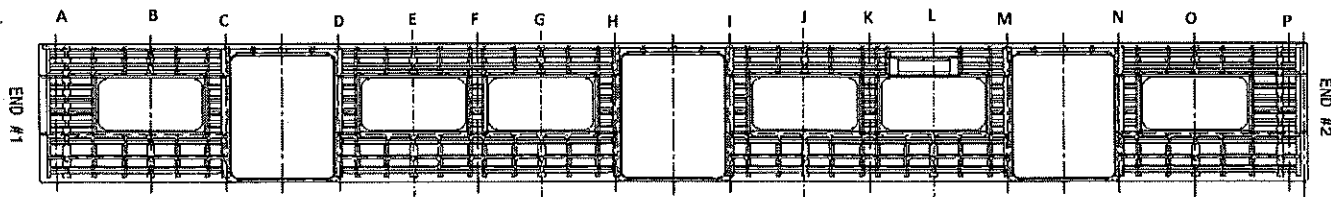
Specifications of Details for CBS measurement CB1230



Detail C

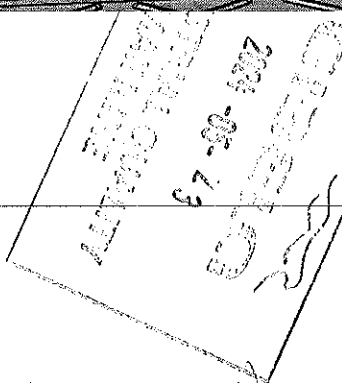
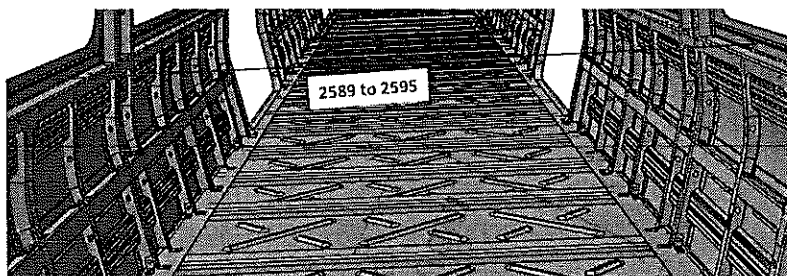


Specifications of Details for CBS measurement CB1230



2589 to 2595mm

A	25 95
B	25 94
C	25 89
D	25 95
E	25 95
F	25 95
G	25 94
H	25 94
I	25 95
J	25 95
K	25 95
L	25 95
M	25 95
N	25 95
O	25 95
P	25 90



Threshold verification

Nominal value :38

Door 1		Door 2		Door 3	
L	R	L	R	L	R
38	39	38	37	39	38
Door 4		Door 5		Door 6	
L	R	L	R	L	R
89	89	89	89	89	38

BOILER MAKER:

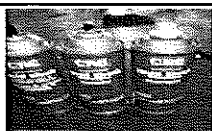
EMMANUEL K. K. K.

WELDER:

ZANELE. [Signature]

Dye penetrant test

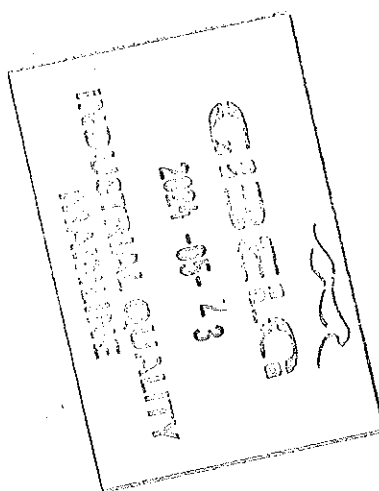
Dye-penetration test to be performed by quality personnel




06/11/2023



[illegible]

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



	CARBODYSHELL M1,M3,M4 ASSEMBLY DT00000225487	Rev. 30	Project: PRASA SI.CB2230.256.V29
		Date	
		06/11/2023	

Self Inspection - Final Result

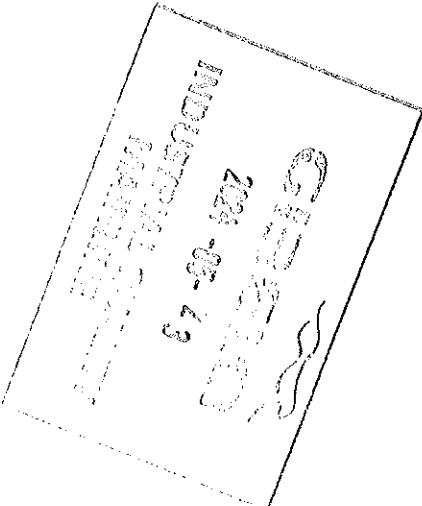
Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)			DATE	NAME	SIGNATURE
HOLD POINT	GO	(if activities are not complete, the missing activities must not impact the next stage)	28/05/2024	Leroy Operations	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	28/05/2024	Andani Industrial Quality	
		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 "NO GO", describe blocking problems

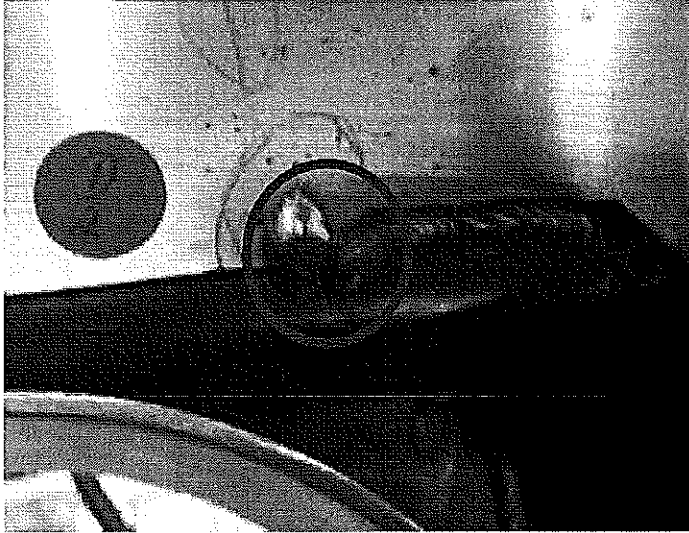
In case of "NO GO", the operations manager must define below action plan to ensure "GO":					
Item	Description		Responsible	Due date	Status

Operations

Quality



ANNEXURE A: Arc Welding Quality Acceptance Standard





CARBODYSHELL M1,M3,M4 ASSEMBLY
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ANNEXURE B: Sealant

