

GIBELA

PRASA PROJECT


APPLICABLE FROM TRAINSET 190+ AS PER BASELINE 10.4


## SELF INSPECTION SHEET

## CONFIDENTIAL INFORMATION

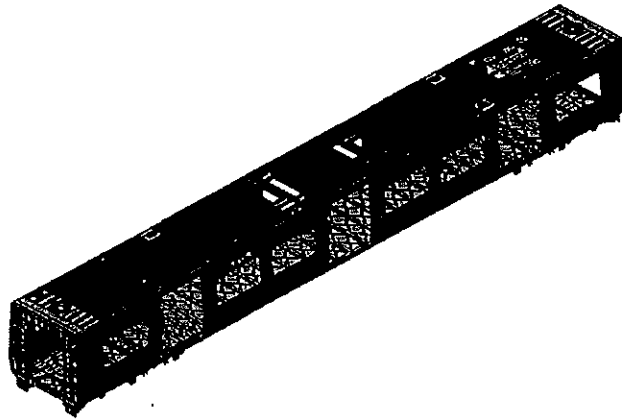
This document and the information contemplated therein have to be considered as Confidential Information pursuant to the provisions of Clause 25 of the MSA, and treated as such.

## APPLICATION REFERENCE

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 
				TC1	M4	M1	M2	M3	TC2		
<input type="checkbox"/> DTR30225487/3	AAD0001278566	CARBODYSHELL M3,M4 ASSEMBLY	CB2210		X				X	PRA.CB2210.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 CB2210	APPROVER	Itumeleng Modiba	2018/12/12						
			CHECKER	Nosizo Pindela	2018/12/12						
			REVISED BY	Ramokone Motama	2018/12/12						
5	22/01/2019	As per Baseline 10.2	APPROVER	Itumeleng Modiba	22/01/2019						
			CHECKER	Nosizo Pindela	22/01/2019						
			REVISED BY	Vanessa Ntuli	22/01/2019						
6	13/03/2019	Added D1 and D2 on Self - Inspection	APPROVER	Itumeleng Modiba	13/03/2019						
			CHECKER	Nosizo Pindela	13/03/2019						
			REVISED BY	Nosizo Pindela	13/03/2019						
10	21/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	21/08/2019						
			CHECKER	Nosizo Pindela	21/08/2019						
			REVISED BY	Nosizo Pindela	21/08/2019						
15	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela	06/08/2020						
			CHECKER	Bongane Masina							
			REVISED BY	Bongane Masina							
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021						
			CHECKER	Bongane Masina							
			REVISED BY	Bongane Masina							
21	17/08/2021	ADDED DIMENSIONS BEFORE WELDING	APPROVER	Mbhombi collins	17/08/2021						
			CHECKER	Mpho Mulaudzi							
			REVISED BY	Mpho Mulaudzi							
25	19/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombi collins	19/02/2022						
			CHECKER	Andani Muthelo							
			REVISED BY	Andani Muthelo							
26	14/04/2023	Addition of welding consumable traceability	APPROVER	Ntuli Vanessa	14/04/2023						
			CHECKER	Mohlampe Amogelang							
			REVISED BY	Mohlampe Amogelang							
30	20/07/2023	New Baseline change 10.4	APPROVER	Ngobeni Tyson	28/07/2023						
			CHECKER	Mohlampe Amogelang							
			REVISED BY	Mohlampe Amogelang							
31	07/11/2023	Added traceability for welding sections	APPROVER	Ngobeni Tyson	07/11/2023						
			CHECKER	Mohlampe Amogelang							
			REVISED BY	Ntokoza Zwane							
TRAINSET	CAR	OPERATOR NAME & ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES						
212	M3	WNGA 471497	19/06/24	SI.CB2210.254.V30	17						

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

Cart: M3 & M4	NCR:	Work station: CB2210
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### I - Documentation and Instruments Control

#### I.1 - Documentation Control

Document	Approved	Revision	Observation	Signature/Date (Manufacturing)	Signature/Date (Quality)
DTR30225487/3	X	31			

#### I.2 - Instruments Control



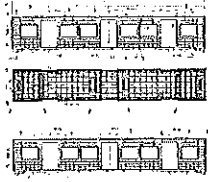
##### Monitoring and Measuring Instrument Control - Used for Special Process


Instruments	Serial Number	Calibration or Verification Validation Date	Signature/Date (Manufacturing)	Signature/Date (Quality)
TUBICAR	22713	04/10/23		
60 M TAPE	GIBTP0084	23/03/31		
LASER TAPE	125425924	08/01/24		

#### I.3 Consumables

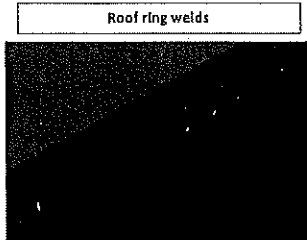
##### Welding Consumable Control - Used for Special Process

Welding Material	Lot Number	Welding Process	Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 LSI	327730-74701	MIG		
ER 309 LSI	318394	MIG		

		<b>CARBODYSHELL M3,M4 ASSEMBLY DTR30225487/3</b>	Rev. 31 Date 07/11/2023	<b>Project: PRASA</b> <b>SI.CB2210.254.V30</b>			
<b>II - Self Inspection - Items to Check</b>							
<b>II.1 - Items to check</b>							
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	Not OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	/		10/10/24 19/02/24	19/02/24
02	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 e DTD0000210675	/		10/10/24 19/02/24	19/02/24
03	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	/		10/10/24 19/02/24	19/02/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	/		10/10/24 19/02/24	19/02/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	/		10/10/24 19/02/24	19/02/24
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.	/		10/10/24 19/02/24	19/02/24

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**Welding Traceability**

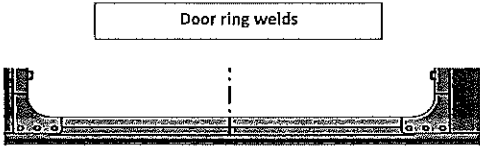


<div style="text-align: center; margin-bottom: 5px;">LHS</div> Boiler maker (Name & Sign): <u><i>Lebogang Mphahlele</i></u>	<div style="text-align: center; margin-bottom: 5px;">Welder</div> Welder (Name & Sign): <u><i>MTHOKOZISI</i></u>
<div style="text-align: center; margin-bottom: 5px;">RHS</div> Boiler maker (Name & Sign): <u><i>Lebogang Mphahlele</i></u>	<div style="text-align: center; margin-bottom: 5px;">Welder</div> Welder (Name & Sign): <u><i>WILSON</i></u>

END 1  
16/02/24

<div style="text-align: center; margin-bottom: 5px;">LHS</div> Boiler maker (Name & Sign): <u><i>Lebogang Mphahlele</i></u>	<div style="text-align: center; margin-bottom: 5px;">Welder</div> Welder (Name & Sign): <u><i>MTHOKOZISI</i></u>
<div style="text-align: center; margin-bottom: 5px;">RHS</div> Boiler maker (Name & Sign): <u><i>Lebogang Mphahlele</i></u>	<div style="text-align: center; margin-bottom: 5px;">Welder</div> Welder (Name & Sign): <u><i>WILSON</i></u>

END 2  
19/02/24



LHS


Boiler maker (Name & Sign): *GERARD*

Welder (Name & Sign): *MTHOKOZISI*

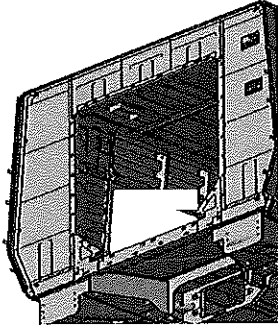
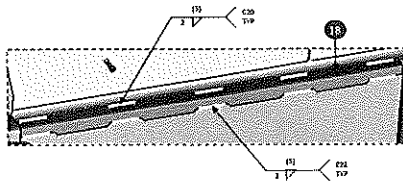
RHS

Boiler maker (Name & Sign): *Lebogang Mphahlele*

Welder (Name & Sign): *MTHOKOZISI*

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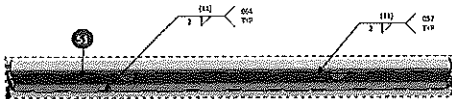
EUF Reinforcement Plates



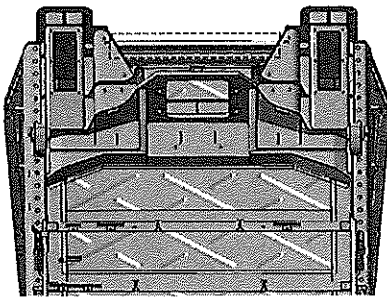
#### END 1

Boiler maker (Name & Sign): LAURENCE *Lawrence*

Welder (Name & Sign): MITOKOJIS *MITOKOJIS*



#### END 2

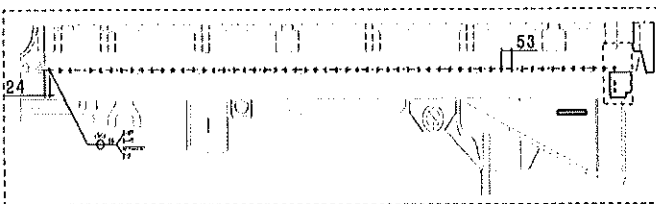


Underneath the CAR

#### END 2


Boiler maker (Name & Sign): GERALD *GERALD*

Welder (Name & Sign): WILSON *WILSON* 19/02/24

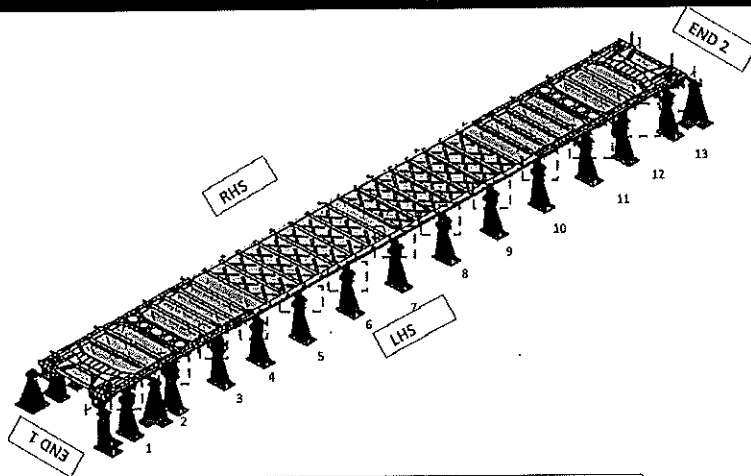


#### FEDOLI

Operator: LAURENCE *Lawrence*

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

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 found on each jig pillars / chair and underframe should be 0mm.

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

Signature Operations:

Date:

After Welding.

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

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

Signature Industrial Quality:

Date:



CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3

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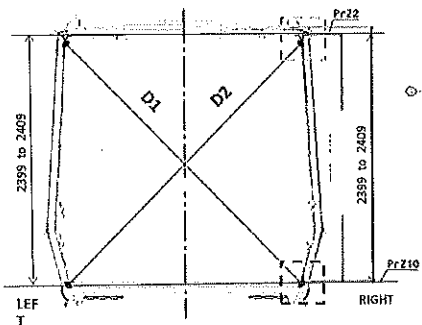
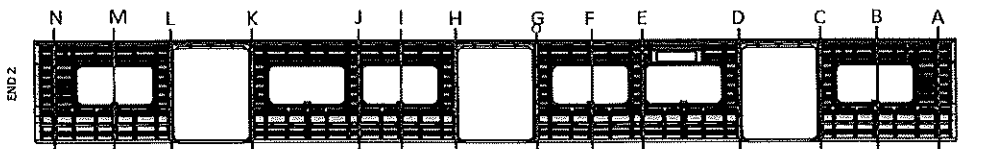
Date

07/11/2023

Project: PRASA

SI.CB2210.254.V30

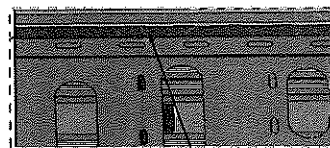
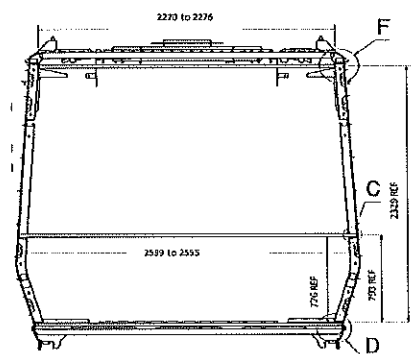
### Specifications of Details for CBS measurement



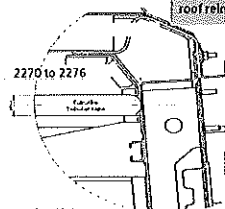
Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.



Reinforcement area measurement positions on roof reinforcement area.



Detail 2

Don't consider the reinforcement



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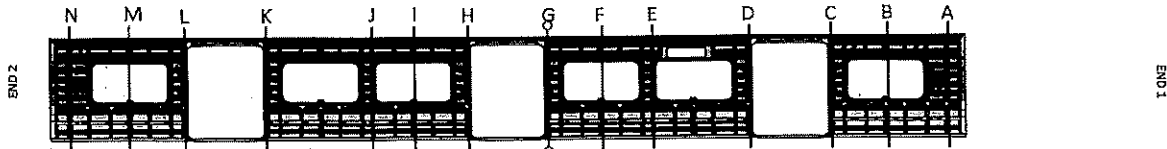
Project: PRASA

SI.CB2210.254.V30

Date

07/11/2023

## 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 $\leq 2$
A	3270	3268	2	2406	2407	1
B	3266	3269	3	2405	2405	0
C	3269	3269	0	2406	2405	1
D	3269	3267	2	2406	2406	2
E	3266	3266	0	2405	2407	2
F	3266	3265	1	2406	2406	0
G	3270	3268	2	2407	2405	1
H	3269	3267	2	2405	2407	2
I	3266	3265	1	2406	2405	1
J	3265	3266	1	2404	2404	0
K	3268	3268	0	2406	2405	1
L	3268	3269	1	2405	2404	1
M	3265	3268	3	2405	2405	0
N	3269	3270	1	2406	2406	0

14/02/24





CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3

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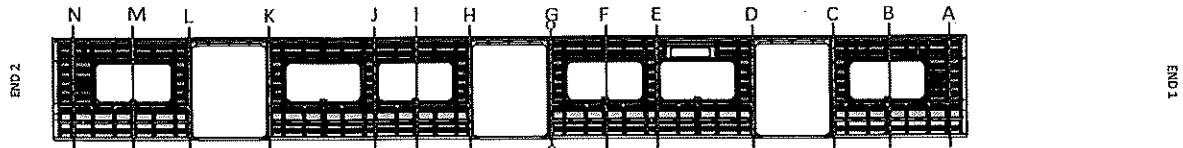
Project: PRASA

SI.CB2210.254.V30

Date

07/11/2023


## Specifications of Details for CBS measurement

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

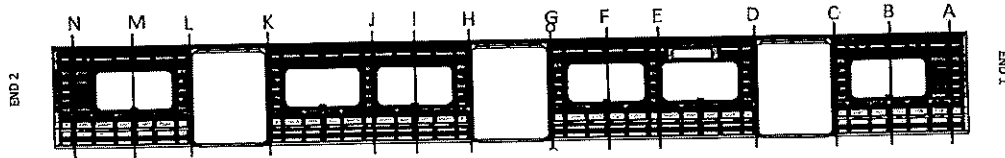
## AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 $\leq 5\text{mm}$	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS $\leq 2$
A	3291	3295	2	2406	2408	2
B	3264	3266	2	2405	2406	1
C	3298	3297	1	2404	2405	1
D	3296	3294	2	2405	2406	1
E	3265	3266	1	2405	2405	0
F	3264	3265	1	2406	2404	2
G	3296	3295	1	2404	2405	1
H	3297	3297	0	2407	2406	1
I	3265	3266	1	2405	2404	1
J	3265	3266	1	2406	2406	0
K	3295	3297	2	2405	2404	1
L	3296	3295	1	2406	2406	0
M	3268	3264	4	2404	2405	1
N	3294	3295	1	2407	2406	1

19/02/24

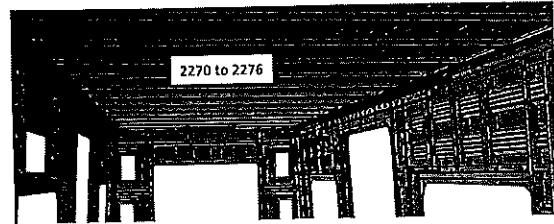
	CARBODYSHELL M3,M4 ASSEMBLY DTR302254B7/3	Rev. 31 Date 07/11/2023	Project: PRASA SI.CB2210.254.V30
<b>CBS measurement</b>			

BEFORE WELDING

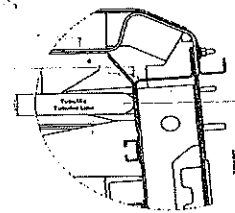
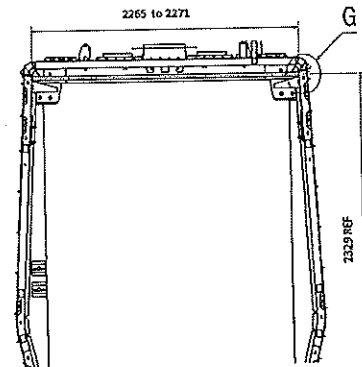


2270 to 2276

A	2270
B	2275
C	2272
D	2273
E	2276
F	2274
G	2275
H	2274
I	2276
J	2277
K	2273
L	2274
M	2275
N	2273




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



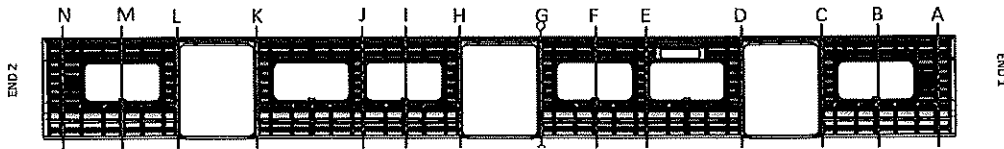
2265 to 2271

Detail G  
Considering the  
refill is more plate

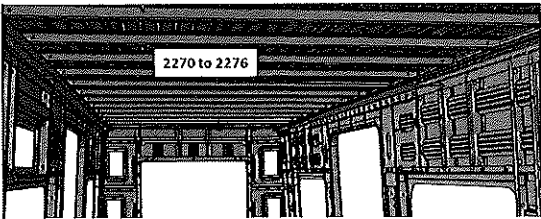
19/02/24

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

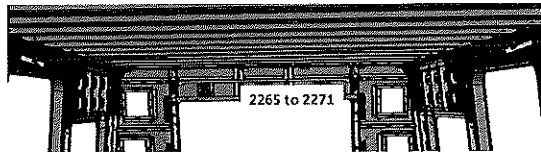
AFTER WELDING



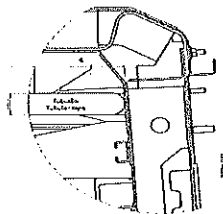
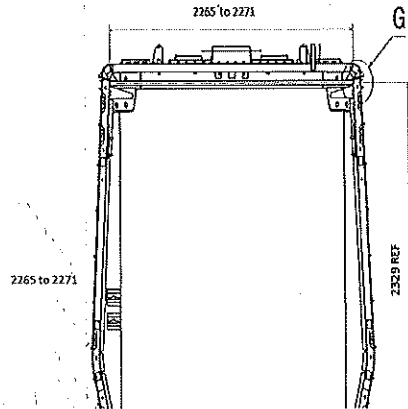
	2265 to 2271	2270 to 2276
A	2269	
B		2273
C	2269	
D	2266	
E		2276
F		2274
G	2268	
H	2270	
I		2276
J		2276
K	2266	
L	2269	
M		2273
N	2268	



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



Take measurement close to radius ( considering reinforcement)



Detail 9  
Considering the radius of the profile

19/02/24



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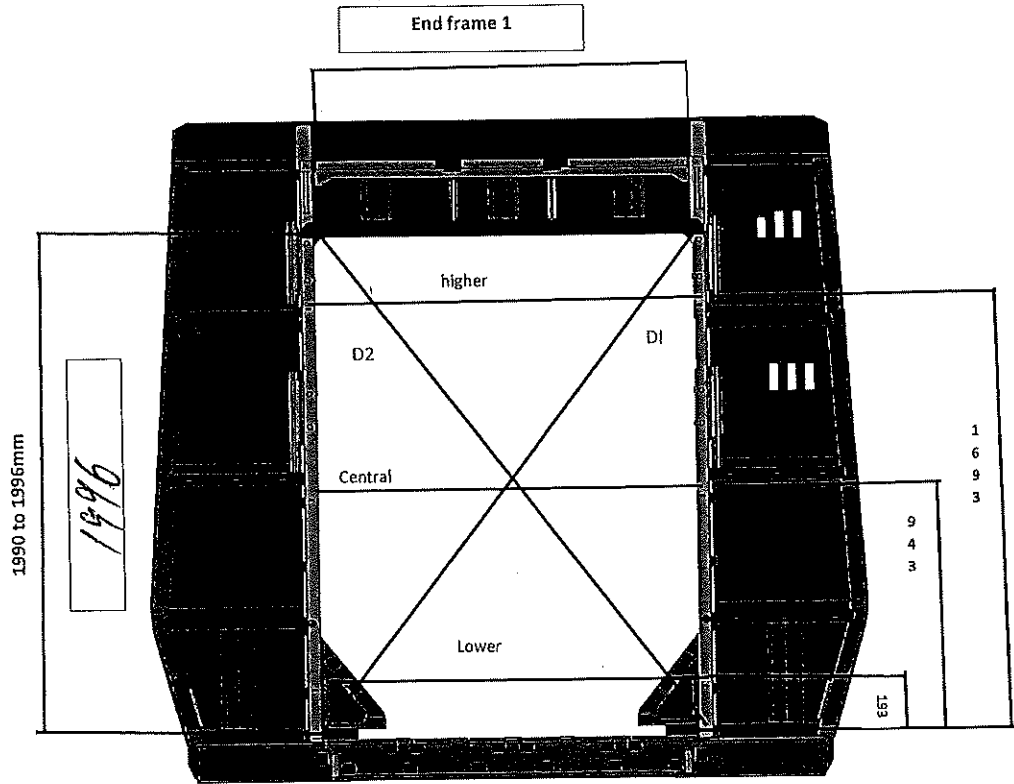
Project: PRASA

SI.CB2210.254.V30

Date

07/11/2023

## Specifications of Details for CBS measurement



1380 to 1382 mm

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

Higher Dimension

1382

D1

2413

Central Dimension

1382

D2

2415

Lower Dimension

1381

D1-D2

2

  
19/02/24



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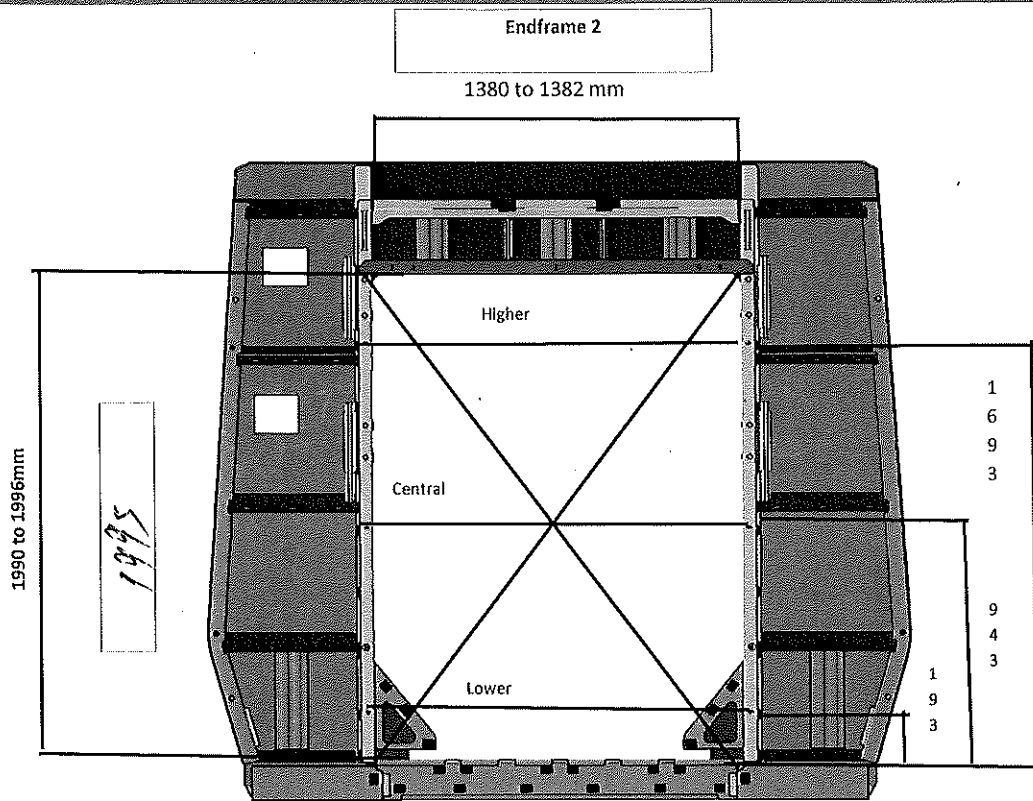
Date

07/11/2023

Project: PRA5A

SI.CB2210.254.V30

Specifications of Details for CBS measurement



1380 to 1382 mm

DIAGONAL DIFFERENCE  $D1-D2 \leq 3mm$

Higher Dimension

1381

D1

2414

Central Dimension

1381

D2

2414

Lower Dimension

1380

D1-D2

0

19/02/24

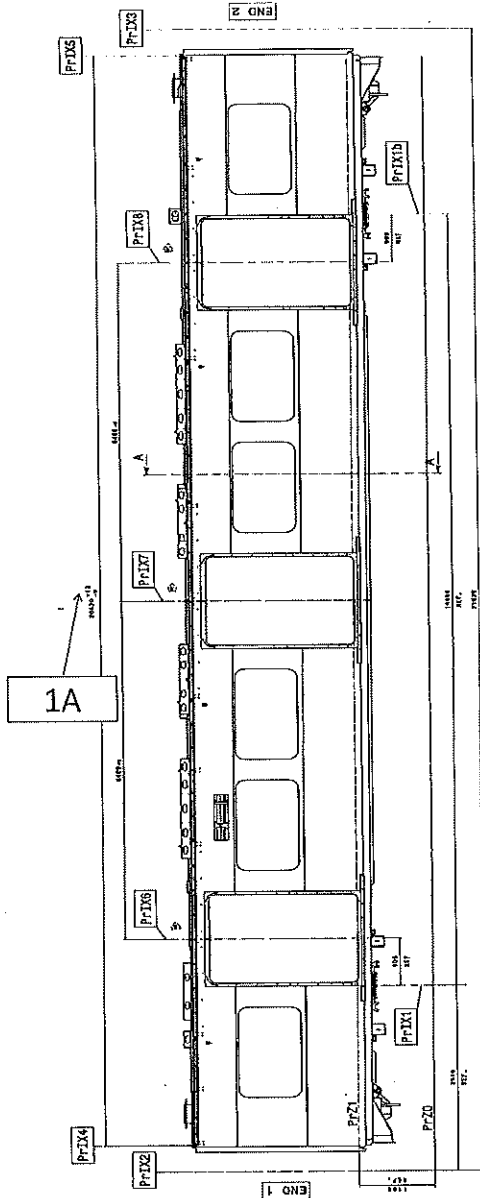


CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3

Rev.  
31  
Date  
07/11/2023

Project: PRASA  
SI.CB2210.254.V30

### Specifications of Details for CBS measurement




LEFT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20615


RIGHT SIDE		
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20615

### Dye penetrant test



Dye-penetration test to be performed by quality personnel



		CARBODYSHELL M3,M4 ASSEMBLY DTR30226487/3		Rev. 31	Project: PRASA			
				Date 07/11/2023	SI.CB2210.254.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. 31	Project: PRASA SI.CB2210.254.V30
		Date 07/11/2023	

Self Inspection - Final Result

			DATE	NAME	SIGNATURE
HOLD POINT		(If activities are not complete, the missing activities must not impact the next stage)	19/02/24	LUNGA <small>Operations</small>	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	19/02/24	Stokero <small>Industrial Quality</small>	
		There are activities pendings 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

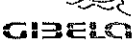






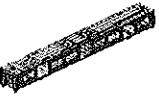


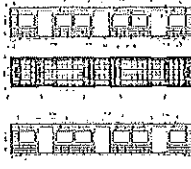


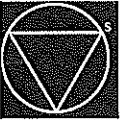









Operations


Quality







	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DTR30225487/2	Rev.	<b>Project: PRASA</b>  <b>SI.CB2220.250.V29</b>														
		29															
		Date															
		28/10/2023															
Car: M5,M3&M4	NCR:	Work station:		CB2220													
Safety Related																	
<b>I - Documentation and Instruments Control</b>																	
<b>I.1 - Documentation Control</b>																	
Document	Type of car	Revision	Observation	Signature/Date (Manufacturing)	Signature/Date (Quality)												
DTR30225487/2	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Type of car</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> </tr> <tr> <td style="text-align: center;">X</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>	Type of car	1	2	3	4	X					29	20/02/24	✓	N/A	 20/07/24	 20/02/24
Type of car	1	2	3	4													
X																	
<b>I.2 - Instruments Control</b>																	
Monitoring and Measuring instrument Control - Used for Special Process																	
Instruments	Serial number	Calibration or Verification Validation Date	Signature/Date (Manufacturing)	Signature/Date (Quality)													
Turbular measuring tape	22713	03/08/2024	✓	 20/02/24	 20/02/24												
	GIBTA039	05/04/2024	✓	 20/02/24	 20/02/24												
<b>1.3 Consumables</b>																	
Welding Consumable Control - Used for Special Process																	
Filler Material	Heat Number	Welding Process	Signature/Date (Manufacturing)	Signature/Date (Quality)													
Welding Wire	B231067	Mig Welding	✓	 20/02/24	 20/02/24												

	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DTR30226487/2	Rev.	Project: PRASA					
		29						
		Date	SI.CB2220.250.V29					
		28/10/2023						
<b>II - Self Inspection - Items to Check</b>								
<b>II.1 - Items to check</b>								
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK			Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB2210.DTR30225487/2 Verification of flange for all reinforcement brackets.	PRA.CB2220.DTR30225487/2	✓			 20/02/24	 20/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓			 20/02/24	 20/02/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓			 20/02/24	 20/02/2024
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓			 20/02/24	 20/02/24
05		Functional dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓			 20/02/24	 20/02/24
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.	✓			 20/02/24	 20/02/24
07	N/A	Before application of sealant record the expiry date and make sure that the room temperature and humidity are within specified values as per Works Instructions Specified: Temperature Min - Max (°) Min-Max 10°C - 35°C Relative humidity Min - Max (%) Min-Max 25% - 60%	Sealant Batch No: <u>13K 2203</u> Exp Date: <u>1/03/24</u> Actuals Temperature: <u>25°C</u> Humidity: <u>45%</u>	✓			 20/02/24	 20/02/24
08	NA	Verification of sealant application in certain regions in the drawing.	AAD0001278566	✓			 20/02/24	 20/02/24
09		Verification of safety welds	Approved according to DTD000210658 reference and Self inspection	✓			 20/02/24	 20/02/24

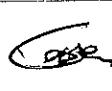
	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30226487/2	Rev.	Project: PRASA
		29	
		Date	
		28/10/2023	SI.CB2220.250.V29


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


SEALANT APPLICATION

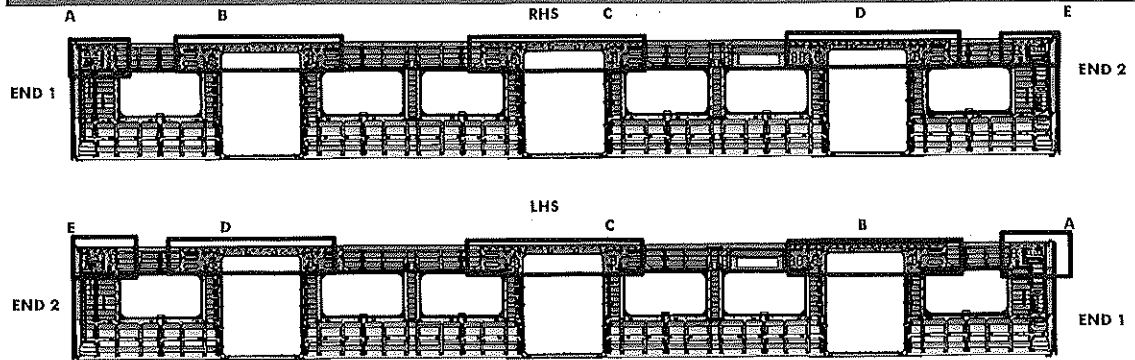


AREA 1 & 2 END 1

Operator (Name & sign): *Pascilla* 


Operator (Name & sign): *Pascilla* 

	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			

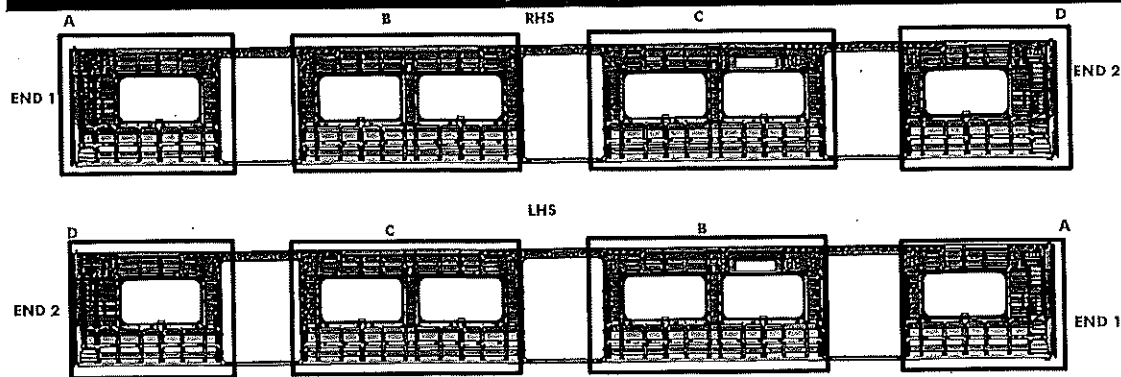


### REINFORCEMENT WELDING

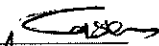







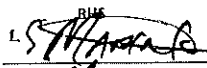





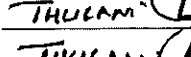
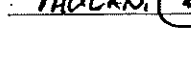
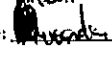


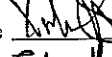
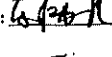
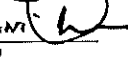

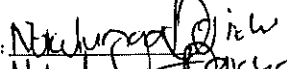
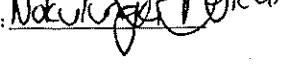
AREA	LHS	RHS
A	Operator (Name&sign): <u>[Signature]</u>	<u>Mmasuero Mkh</u>
B	Operator (Name&sign): <u>[Signature]</u>	<u>Mmasuero Mkh</u>
C	Operator (Name&sign): <u>[Signature]</u>	<u>K.Mont Keiru / Mmasuero Mkh</u>
D	Operator (Name&sign): <u>[Signature]</u>	<u>K.Mont Keiru</u>
E	Operator (Name&sign): <u>[Signature]</u>	<u>K.Mont Keiru</u>


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

## II - Self Inspection - Items to Check

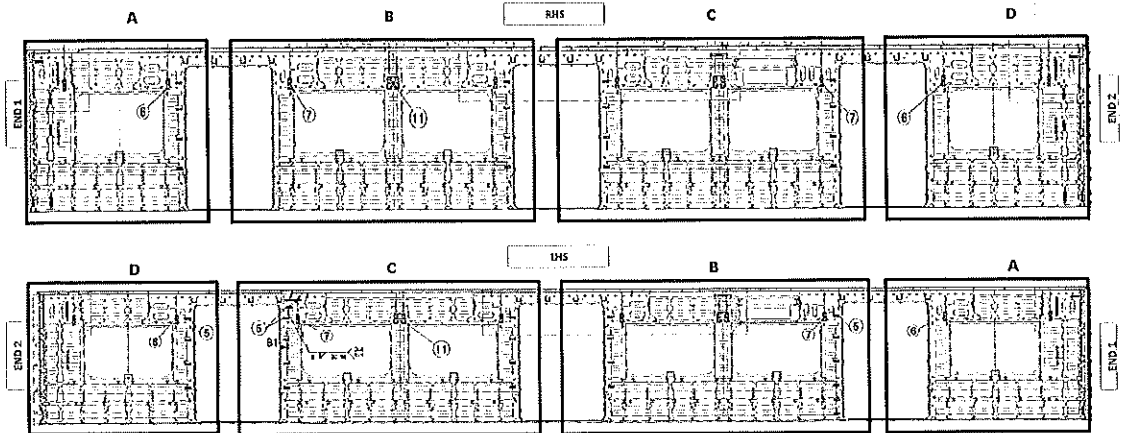


### BRACKETING

		INSTALLATION	
C-RAILS:	Operator:	Priscilla	
	Operator:	Zeni	
DOOR MECHANISMS:	Operator:	Tetelo	
	Operator:		
TAPPING PADS	Operator:	Tetelo	
	Operator:	Tetelo	
		INSTALLATION & VERIFICATION	
SEAT & LUGGAGE BRACKETS:	Operator:	Yehohozisi	
	Operator:		
SEAT BRACKETS VERIFICATION:	Operator:	Yehohozisi	
	Operator:		
WELDING			
AREA	LHS		
A (Seat brackets)	: Operator (Name&sign):		       
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):		
B (Seat brackets)	: Operator (Name&sign):		
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):		
C (Seat brackets)	: Operator (Name&sign):		
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):		
D (Seat brackets)	: Operator (Name&sign):	THULANI 	
(C-rails, Luggage and earth bushes)	: Operator (Name&sign):		
ENDS			
END 1 TAPPING PADS WELDING:	Operator (Name&sign):	Nkomo	
END 1 TAPPING PADS WELDING:	Operator (Name&sign):	Nkomo	

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

M1/M3/M4 BRACKET INSTALLATION



QUANTITIES (M3/M4)

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

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

VERIFICATION BY: Tebelo

LHS				
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	2	✓	
	B	6	✓	
	C	11	✓	
	D	6	✓	
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: Tebelo

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

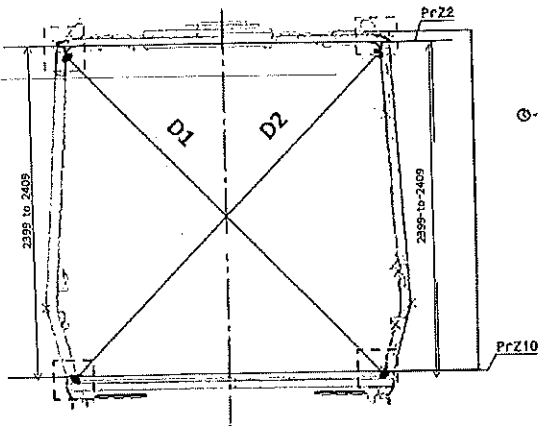
VERIFICATION BY: N/A

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

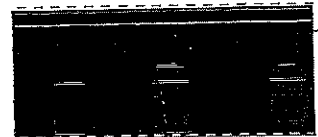
ROOF ENDS:  
 C-RAILS 2 OFF EACH END  
 EARTH BUSH 6 OFF EACH END

VERIFICATION BY: N/A

**Specifications of Details for CBS measurement**



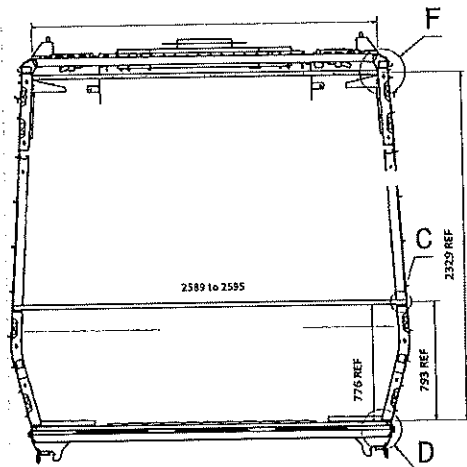
Measurement positions on roof rail and sidewall omega corner.



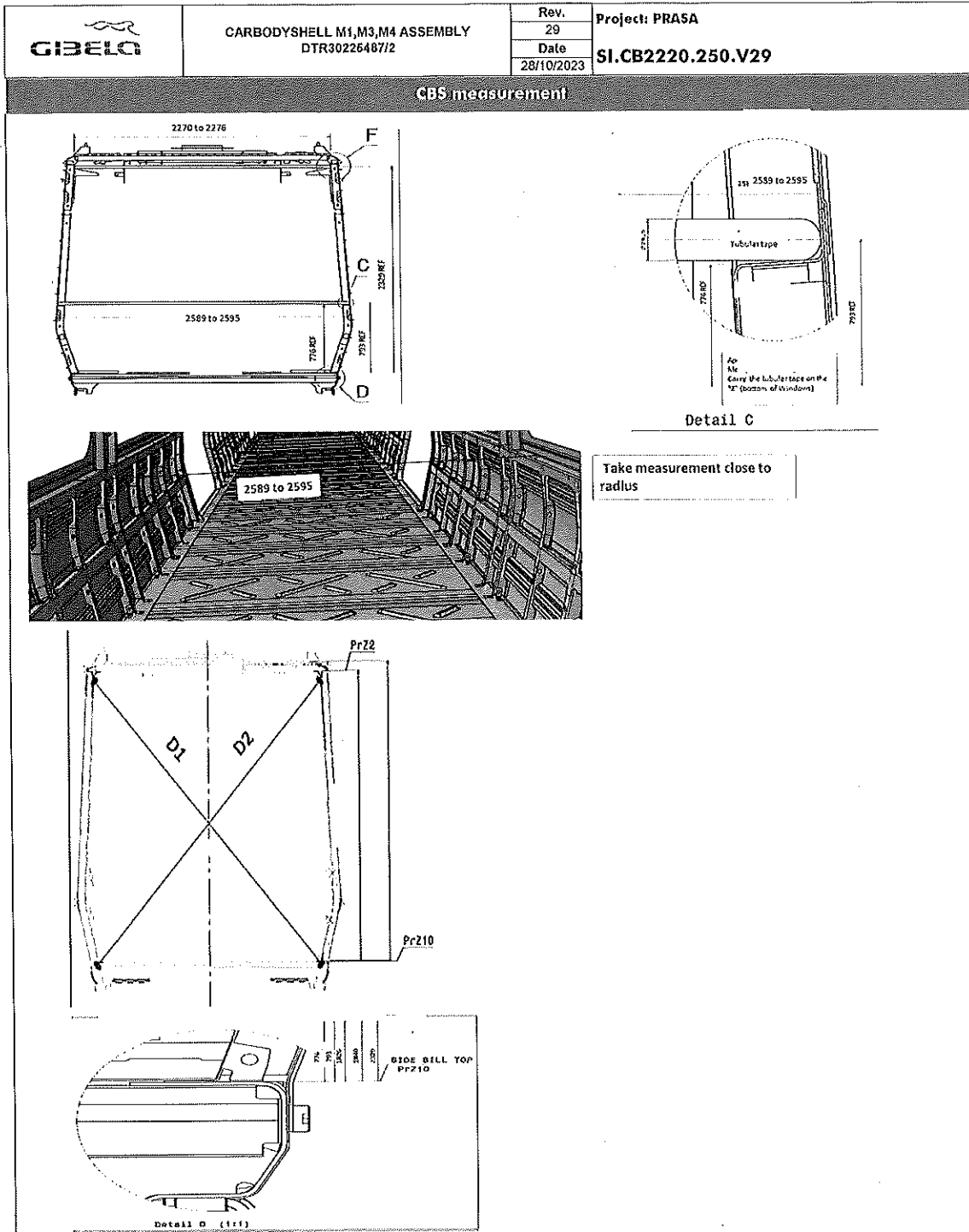
Reinforcement area measurement positions on roof reinforcement area.




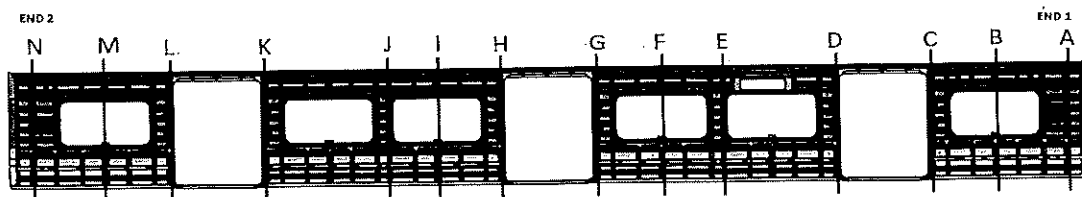
Measurement positions on sidewall and side sill corner.








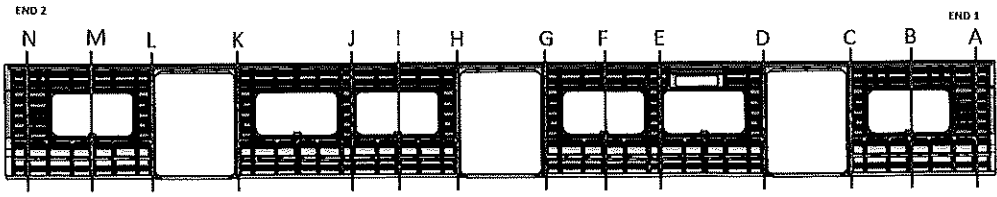
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		29	
		Date	
		28/10/2023	
CBS measurement			



BEFORE WELDING


	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3295	3297	2	
B	3265	3268	3	
C	3296	3294	2	
D	3295	3297	2	
E	3265	3268	3	
F	3267	3270	3	
G	3295	3297	2	
H	3299	3296	3	
I	3267	3270	3	
J	3270	3265	5	
K	3295	3297	2	
L	3297	3294	3	
M	3265	3267	2	
N	3295	3297	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

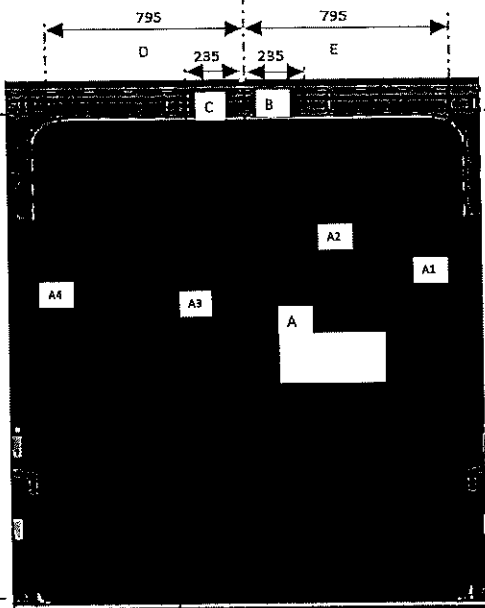
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3299	3217	2	2595
B	3267	3270	3	2595
C	3216	3297	1	2592
D	3297	3295	2	2593
E	3267	3270	3	2595
F	3268	3265	3	2592
G	3297	3295	2	2593
H	3298	3295	3	2594
I	3265	3268	3	2593
J	3267	3270	3	2592
K	3297	3298	1	2594
L	3298	3295	3	2593
M	3268	3270	3	2592
N	3217	3298	1	2592

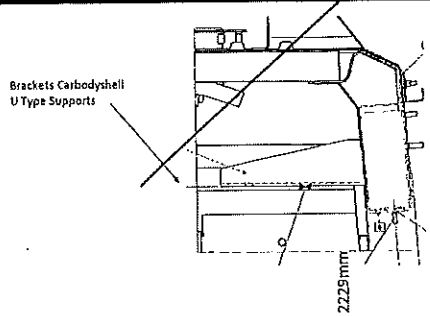
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		29	
		Date	SI.CB2220.250.V29
		28/10/2023	

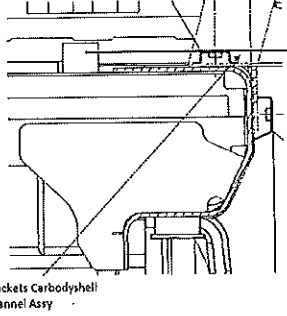
  

**Specifications of Details for CBS measurement CB1220**







DOOR 1 - LHS

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

DOOR 2 - LHS

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

DOOR 1 - RHS

	VALUE	ACTUAL
A1	2230 to 2232	2231
A2	2230 to 2232	2230
A3	2230 to 2232	2230
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

DOOR 2 - RHS

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

DOOR 3 - 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



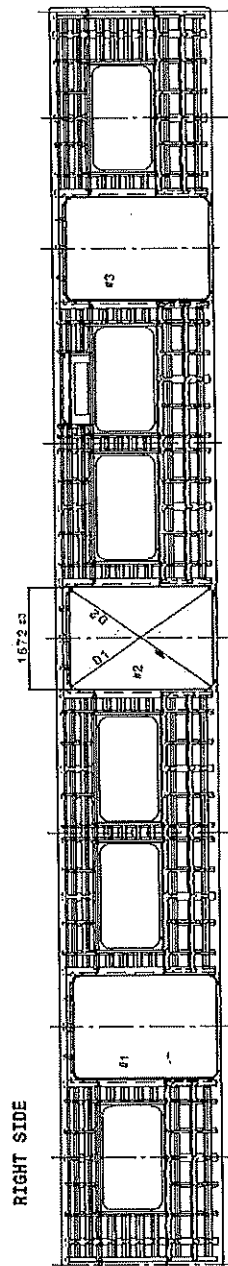
CARBODYSHELL M1,M3,M4 ASSEMBLY  
DTR30225487/2

Rev.  
29  
Date  
28/10/2023

Project: PRASA  
SI.CB2220.250.V29

Specifications of Details for CBS measurement CB1220

End #2



End #1

Doors diagonal D1-D2 maximum difference ≤ 4mm

#1	#2	#3
D1 2750	2748	2748
D2 2751	2747	2751
D1-D2 1	1	3

HIGHER DIMENSION

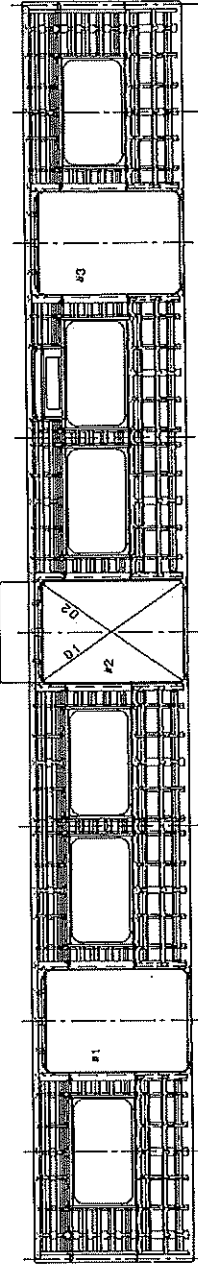
CENTRAL DIMENSION

LOWER DIMENSION

Doors Length - 1672 mm

#1	#2	#3
1672	1672	1672
1672	1672	1672
1672	1672	1672

End #1



End #2

Doors diagonal D1-D2 maximum difference ≤ 4mm

#1	#2	#3
D1 2750	2748	2750
D2 2749	2750	2748
D1-D2 1	2	4

HIGHER DIMENSION





CENTRAL DIMENSION

LOWER DIMENSION

Doors Length - 1672 mm

#1	#2	#3
1672	1672	1672
1672	1672	1672
1672	1672	1672



	<b>CARBODYSHELL M1,M3,M4 ASSEMBLY</b> DTR30226487/2	Rev.	Project: PRA5A SI.CB2220.250.V29		
		29			
		Date			
		28/10/2023			
<b>Self Inspection - Final Result</b>					
<b>Is the car good to advance to the next workstation/process?</b> (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> 20/02/24	Tetelo <small>Operations</small>	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.) 21/02/24	Armo <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 <b>END 1 TOP COAT NOT APPLIED - DONE - 21/02/24</b>					
In case of "NO GO", the operations manager must define below action plan to ensure "GO":					
Item	Description	Responsible	Due date	Status	

Operations

Quality

GIBELA

PRASA PROJECT

APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

## SELF INSPECTION SHEET


## CONFIDENTIAL INFORMATION

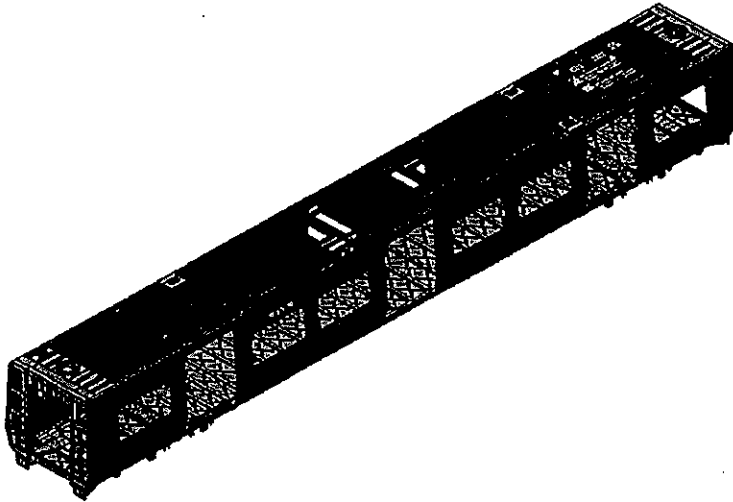
This document and the information contemplated therein have to be considered as Confidential Information pursuant to the provisions of Clause 25 of the MSA, and treated as such.

## APPLICATION REFERENCE

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ?	
				TC1	M4	M1	M2	M3	TC2			
<input type="checkbox"/>	DT00000225487	AAD0001278566	CARBODYSHELL M1, M3, M4 ASSEMBLY	CB2230		X	X		X		PRA.CB2230.DT000002 25487.V20	YES
<input type="checkbox"/>												
<input type="checkbox"/>												
REV	DATE	MODIFICATION CONTENT			RESPONSIBLE		NAME		DATE			
0	2018/08/02	GIBELA NEW CREATION			APPROVER	Philipe 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						
21	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 Mbhomphi	20/02/2022					
					CHECKER	Andani Muthelo						
					REVISED BY	Andani Muthelo						
26	14/06/2022	Update minimum temperature requirement for sealant application			APPROVER	Collins Mbhomphi	14/06/2022					
					CHECKER	Andani Muthelo						
					REVISED BY	Andani Muthelo						
27	26/07/2022	Threshold measurements addition			APPROVER	Collins Mbhomphi	26/07/2022					
					CHECKER	Andani Muthelo						
					REVISED BY	Andani Muthelo						
28	17/10/2022	Added traceability of sealant application			APPROVER	Collins Mbhomphi	17/10/2022					
					CHECKER	Ntokoza Zwane						
					REVISED BY	Amogelang Mohlampe						
29	14/04/2023	Added sealant batch number & welding consumables traceability			APPROVER	Vanessa Ntuli	14/04/2023					
					CHECKER	Ntokoza Zwane						
					REVISED BY	Amogelang Mohlampe						
30	06/11/2023	Added threshold traceability for boiler makers and welders			APPROVER	Ngobeni Tyson	06/11/2023					
					CHECKER	Andani Muthelo						
					REVISED BY	Ntokoza Zwane						
TRAINSET	CAR	OPERATOR NAME & ALPS NO		DATE	SELF INSPECTION NUMBER		PAGES					
212	M3	15 Shenolo		20/02/24	SI.CB2230.256.V29		12					



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		Date 08/11/2023	
Car:	NCR:	Work station: CB2230	



### 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	Other					
PRA.CB2230.DT00000225487		X				30		OK	N/A 11/11/2023	<i>[Signature]</i>

#### 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)
Ubular	22713-1	29/11/2024	OK	11/11/2023	<i>[Signature]</i>
Combination Square	GIB50098	27/07/2024	OK	11/11/2023	<i>[Signature]</i>
Measuring tape.	GIB1A0230	2024/03/30	OK	11/11/2023	<i>[Signature]</i>







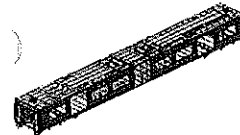


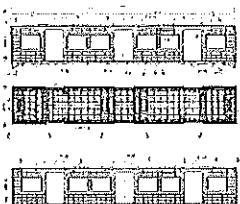











#### 1.3 Consumables

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

Filler Material	Heat Number	Welding Process	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308LSi 1.0mm	344012-744097	Mig welding	OK	11/11/2023	<i>[Signature]</i>

## 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	OK	 20/02/24	 20/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	OK	 20/02/24	 20/02/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	OK	 20/02/24	 20/02/24
04		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	OK	 20/02/24	 20/02/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	OK	 20/02/24	 20/02/24
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.	OK	 20/02/24	 20/02/24
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 Relative humidity Min - Max (I) Min-Max 10°C - 35°C 25% - 80%	Sealant Batch No: <u>ISRA 65-03</u> Exp Date: <u>65</u> / <u>24</u>  Actuals Temperature: <u>18°C</u> Humidity: <u>55%</u>	OK	 20/02/24	 20/02/24
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	OK	 20/02/24	 20/02/24
09	N/A	Verification of sealant application in certain regions in the drawing.	AAD0001278566	OK	 20/02/24	 20/02/24



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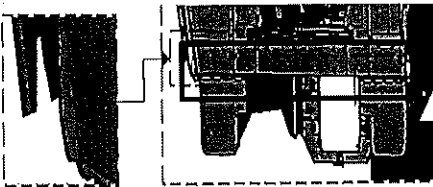
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30  
Date  
06/11/2023

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## II - Self Inspection - Items to Check

AREA 1



### END 2 SEALANT

OPERATOR  
(Name & sign):

Leroy

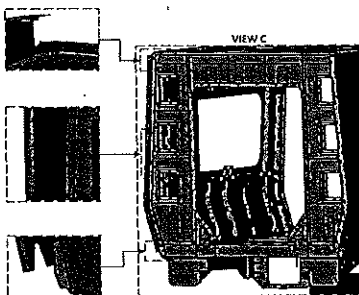
OPERATOR  
(Name & sign):

Leroy

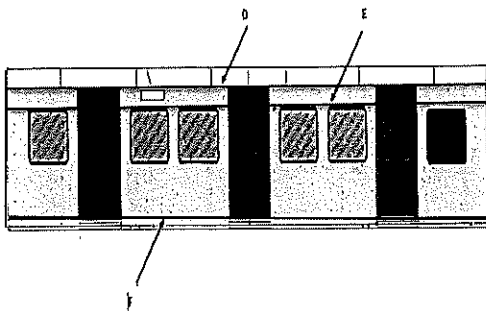
OPERATOR  
(Name & sign):

Leroy

AREA 2 (VIEW C)



H



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

Operator (Name & sign):

LHS

D,E,F,G,H,I

RHS

D,E,F,G,H,I

Operator (Name & sign):

Ishendo

Ishendo

Operator (Name & sign):

Sihle

Sihle

Operator (Name & sign):

Sihle

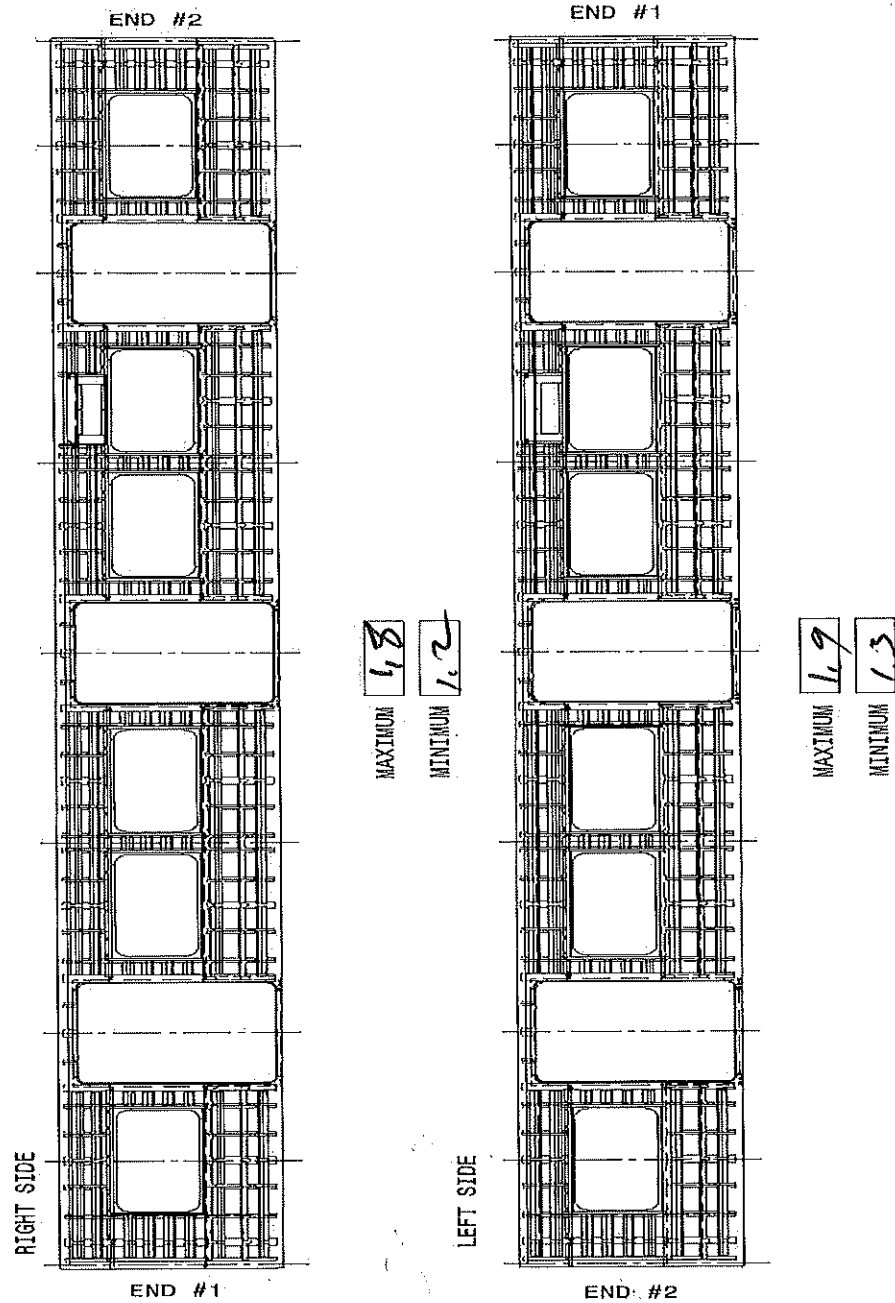
Sihle

Operator (Name & sign):

Operator (Name & sign):

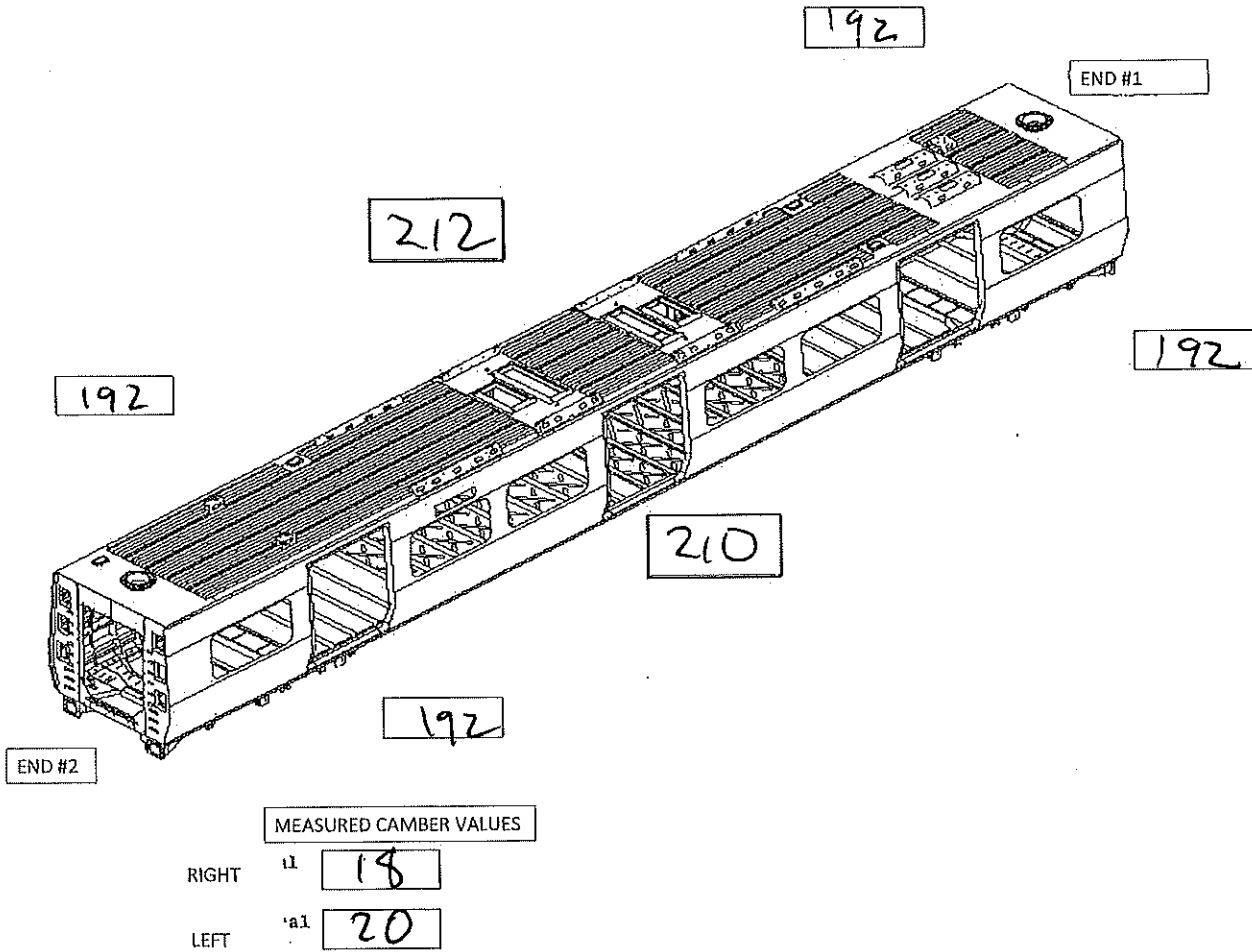
Specifications of Details for CBS measurement CB1230

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.



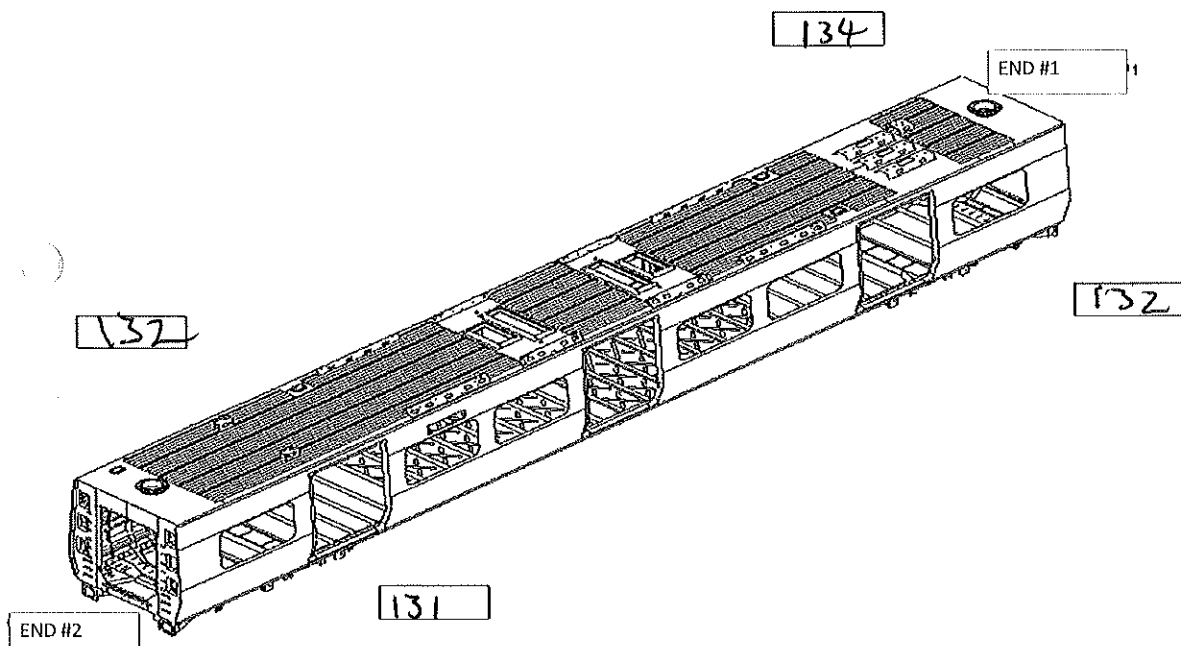
Specifications of Details for CBS measurement CB1230

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



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

2

TWIST FOUND ON END 2

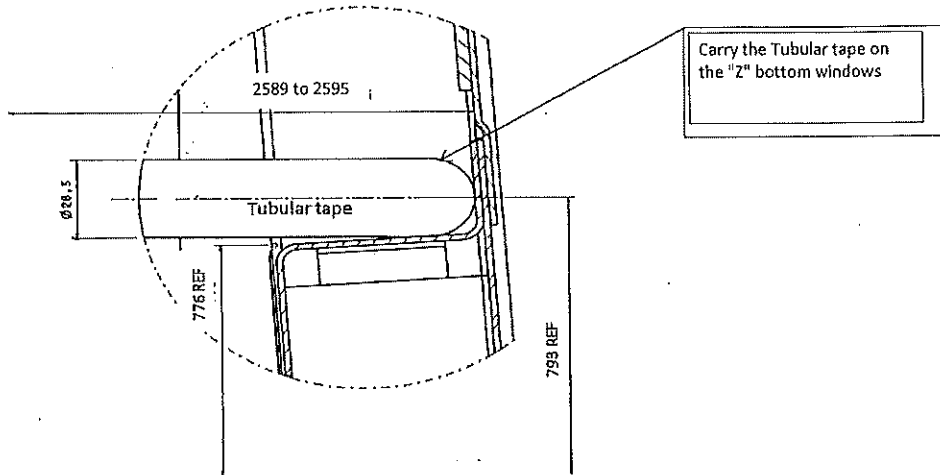
TRANVERSE

2

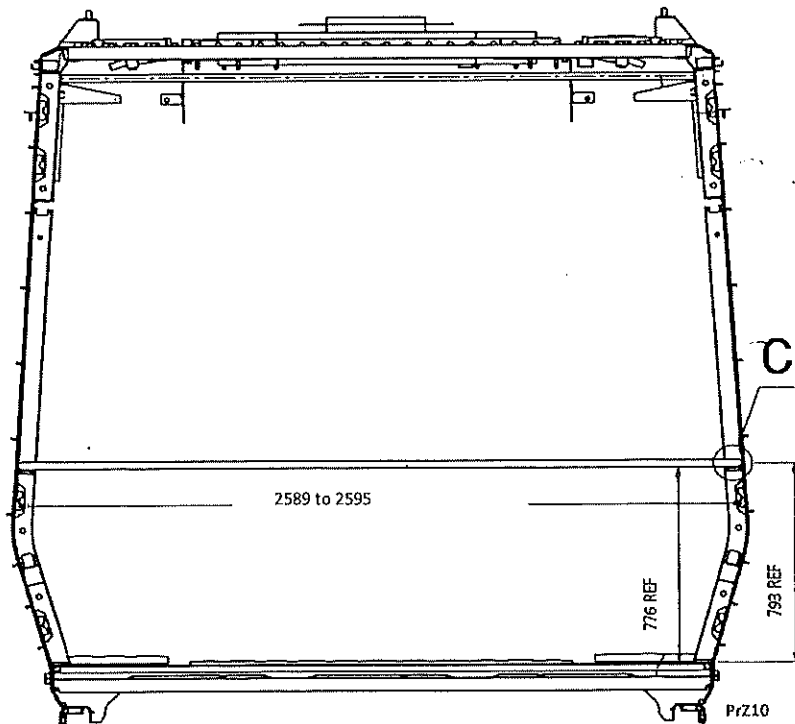
LONGITUDINAL

1

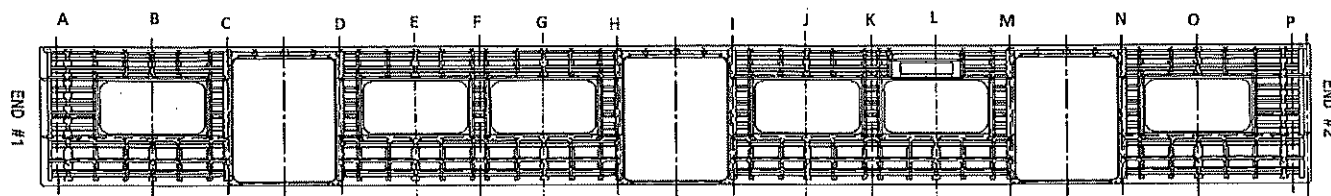
**Specifications of Details for CBS measurement CB1230**



Detail C

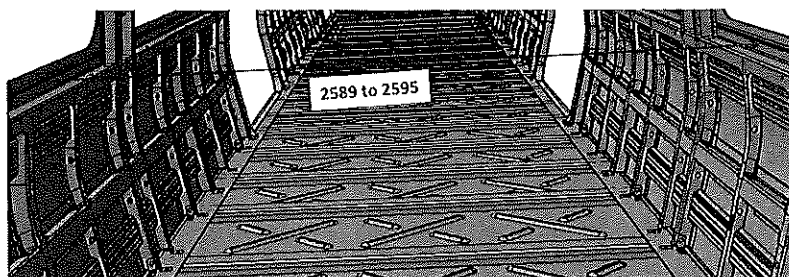


Specifications of Details for CBS measurement CB1230



2589 to 2595mm

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



Threshold verification

Nominal value :38

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

BOILER MAKER:

Bobbert

WELDER:

Zanele

Dye penetrant test

Dye-penetration test to be performed by quality personnel







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Date

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### Specifications of Details for CBS measurement

Item	Description of the Issue	REX	Signature/Date (Operations)	Signature/Date (Quality)



### II.2 - Check List REX

#### Check List Items

Item	Picture/Drawing	Description	Criteria/Record	REX	Signature/Date (Operations)	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	
		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)	20/02/24	Ishekololo Operations	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	20/02/24	Ntokozo Industrial Quality	
			There are activities pending that impact/stop the activities of the next process Obs: (To describe problems below)			
			There are non-conformities Impact the quality of the product and there is no corrective action defined yet)			

In case of "NO GO", describe blocking problems

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

Operations

Quality