PRASA PROJECT

GIBELA

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 TC1	M4	M1	M2	M3	TC2	WORK INSTRUCTION	SAFETY ?
DTR30223319/3	AAD0001241033	Carshell Assembly TC	CB2210	(x)					x	PRA.CB2210.DTR30223319/3.V25	YES

REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	09/04/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	09/04/2018
			CHECKER	Nosizo Pindela	09/04/2018
			COMPILER	Thanyani Mathegu	06/04/2018
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	2018/06/18	MODIFICATION CONTENT	APPROVER	Itumeleng Modiba	2018/06/18
			CHECKER	Nosizo Pindela	2018/06/18
			REVISED BY	Ramokone Motama	2018/06/18
3	2018/12/12	Additional checkpoints	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	2019/11/03	Record D1 and D2 on Self - Inspection	APPROVER	Itumeleng Modiba	2019/11/03
			CHECKER	Nosizo Pindela	2019/11/03
			REVISED BY	Nosizo Pindela	2019/11/03
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	19/04/2020	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	21/02/2022	New Baseline change 10.3.1	APPROVER	Mbhombhi Collins	21/02/2022
			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	
27	27/07/2023	Added verification of loaded parts	APPROVER	Ngobeni Tyson	27/07/2023
			CHECKER	Mathapo Kelebone	
			REVISED BY	Mohlampe Amogelang	
28	07/11/2023	Addition of welding traceability	APPROVER	Ngobeni Tyson	07/11/2023
			CHECKER	Andani Muthelo	
			REVISED BY	Ntokozo Zwane	

TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
TS215	TC1	D Malatji, 4077164	26/02/[illegible]	SI.CB2210.322.V28	16

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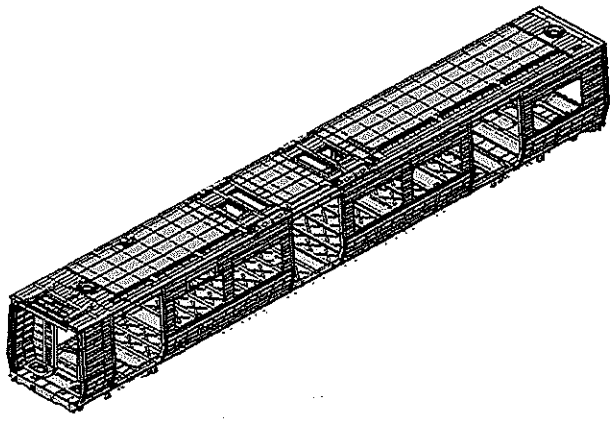
Car: TC1 & TC2	NCR:	Work station: CB2210

Safety Related



1 - Documentation and Instruments

1.1 - Documentation Control

Document	Type of car						Revision	Observation	OK			Signature/Date (Manufacturing)	Signature/Date (Quality)
	TC1	M1	M2	M3	M4	TC2							
DTR30223319/3	X						V28		V		N/A		26/04/24

1.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Validation	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
TUBULAR	22316	07/02/23	V			
LASER TAPE	125425921	01/03/23	V			
SCM TAPE	GIBEP00314	4/05/23	V			26/02/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 LSi	24018-740097	MIG	V			
ER 308 L	2999851-70822	TIG	V			26/02/24

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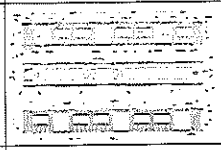
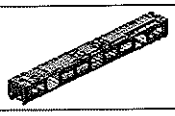
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls,Endframes,Roof and Underframe)	DT00000284980	✓		26/02/24	26/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓		26/02/24	26/02/24
03		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓		26/02/24	26/02/24
04	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	**IND-SAL-WMS-016 e DTD0000210675**	✓		26/02/24	26/02/24
05	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	**IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000**	✓		26/02/24	26/02/24
06		Cleaning of all Stainless Steel Surface	**According TO GIB-WEL - PROC-0002**	✓		26/02/24	26/02/24
07	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658	✓		26/02/24	26/02/24

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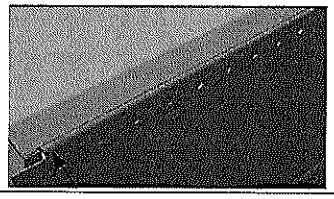
Welder traceability

Roof ring welds



LHS

Boiler maker (Name & Sign): PONTSO Welder (Name & Sign): SIPHOKAZI

END 1

RHS

Boiler maker (Name & Sign): PONTSO Welder (Name & Sign): Thabang

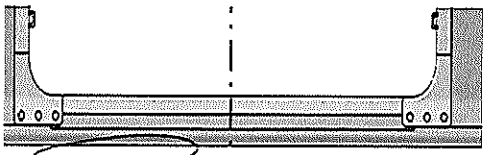
LHS

Boiler maker (Name & Sign): JUSTICE Welder (Name & Sign): SIPHOKAZI

END 2

RHS

Boiler maker (Name & Sign): JUSTICE Welder (Name & Sign): Thabang



LHS

Boiler maker (Name & Sign): Welder (Name & Sign): Thabang

RHS

Boiler maker (Name & Sign) Welder (Name & Sign): Thabang

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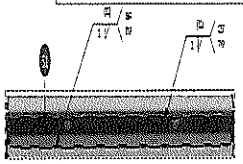
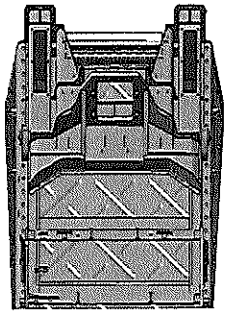
EUF Reinforcement Plates



END 2

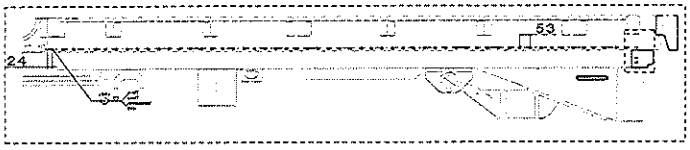


Underneath the CAR

END 2

Boiler maker (Name & Sign): Innocent

Welder (Name & Sign):



FEDOLI

Operator: LAWRENCE

GIBELA	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA
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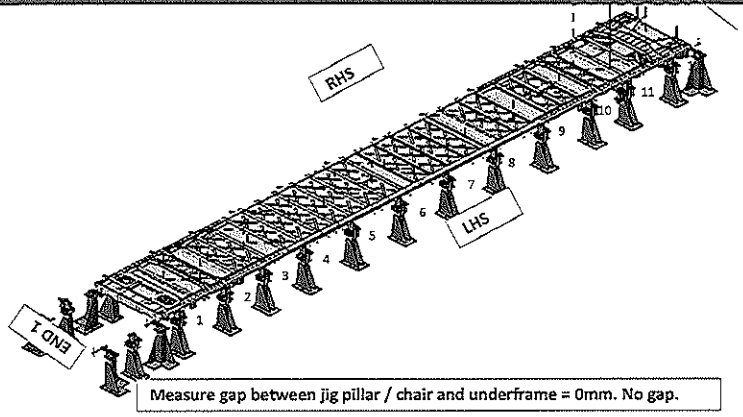
Specifications of Details for CBS measurement



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

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

After Loading Underframe and Clamping.

	1	2	3	4	5	6	7	8	9	10	11	12
Loft Hand Side					N/A							
Right Hand Side												

Signature Operations: Date:

After Welding.

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

Signature Industrial Quality: Date:

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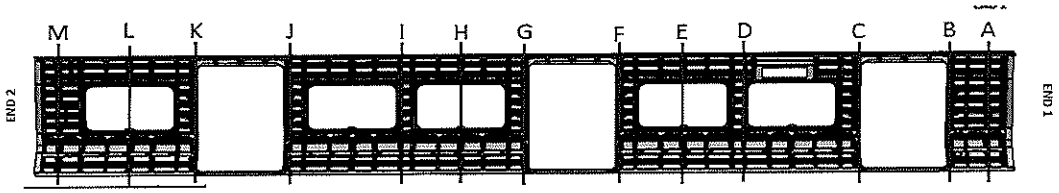
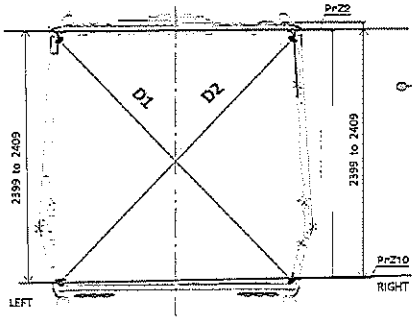
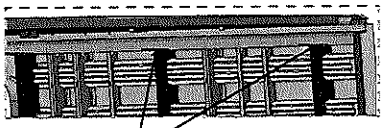
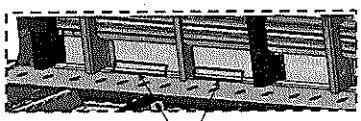
Specifications of Details for CBS measurement



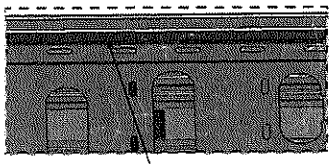




Measurement positions on roof rail and sidewall omega corner.



Measurement positions on sidewall and side sill corner.



Reinforcement area measurement positions on roof reinforcement area.

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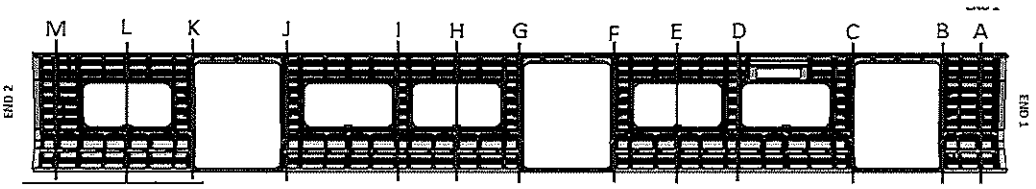
Specifications of Details for CBS measurement

BEFORE WELDING



PME: The difference in Height values measured on the LHS and RHS should be ≤ 2MM on each point.

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3769	3768	1	2404	2404	0
B	3769	3769	0	2406	2404	2
C	3768	3766	2	2405	2404	1
D	3770	3771	1	2404	2404	0
E	3771	3771	0	2404	2405	1
F	3769	3767	2	2404	2406	2
G	3767	3768	1	2405	2404	1
H	3768	3766	2	2405	2405	0
I	3769	3768	1	2406	2404	2
J	3768	3769	1	2404	2405	1
K	3769	3769	0	2404	2406	2
L	3766	3765	1	2404	2404	0
M	3765	3765	0	2406	2406	2

GIBELA	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA
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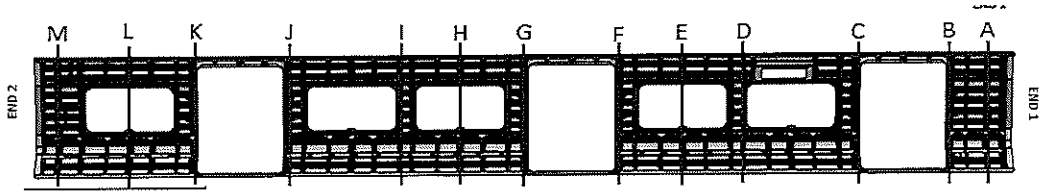
Specifications of Details for CBS measurement

AFTER WELDING



PME: The difference in Height values measured on the LHS and RHS should be ≤ 2MM on each point.

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3769	3769	0	2404	2404	0
B	3796	3798	2	2404	2405	1
C	3798	3798	0	2405	2404	1
D	3769	3770	1	2406	2404	2
E	3771	3770	1	2404	2404	0
F	3796	3797	1	2406	2404	2
G	3798	3798	0	2405	2404	1
H	3769	3768	1	2404	2404	0
I	3769	3770	1	2406	2405	1
J	3796	3798	2	2404	2404	0
K	3798	3798	0	2406	2404	2
L	3769	3768	1	2406	2406	0
M	3796	3796	0	2409	2404	1

26/02/24

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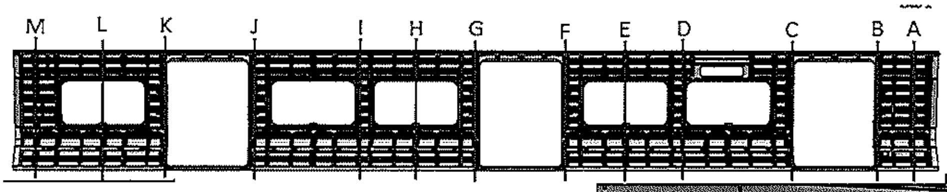
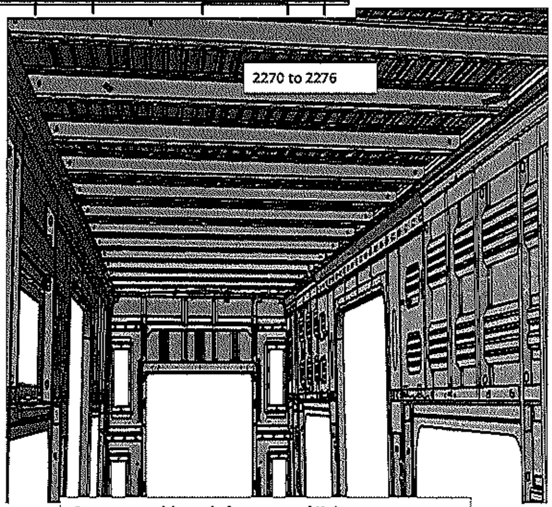
CBS measurement

BEFORE WELDING



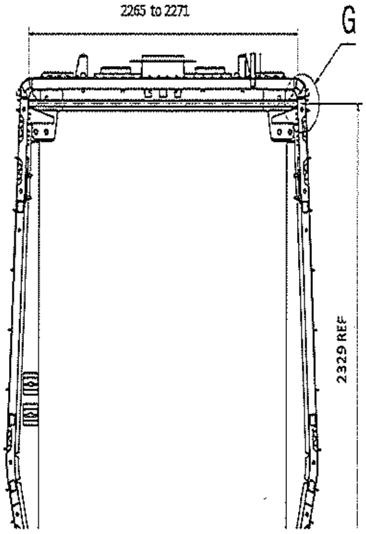


Do not consider reinforcement (Take measurements top area of zee profile

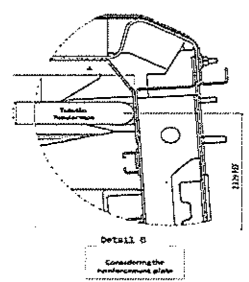
2270 to 2276

2268 a 2274

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



2265 to 2271



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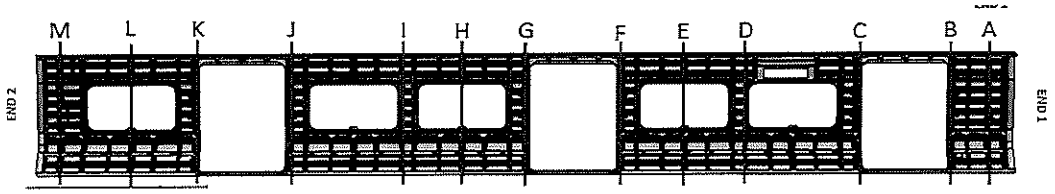
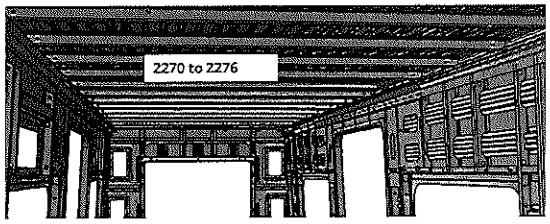
Specifications of Details for CBS measurement

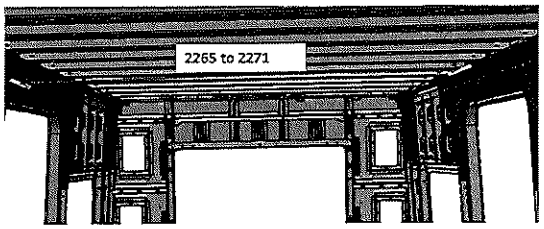
AFTER WELDING



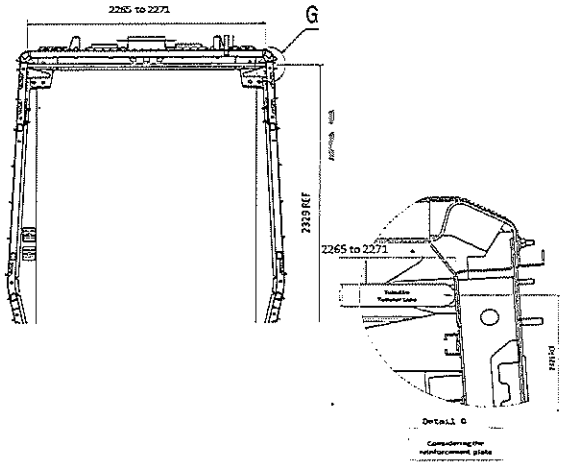
	2265 to 2271	2270 to 2276
A		2270
B	2269	
C	2270	
D		2271
E		2276
F	2265	
G	2269	
H		2270
I		2276
J	2268	
K	2266	
L		2270
M	2269	



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



Take measurement close to radius (considering reinforcement)



26/02/24

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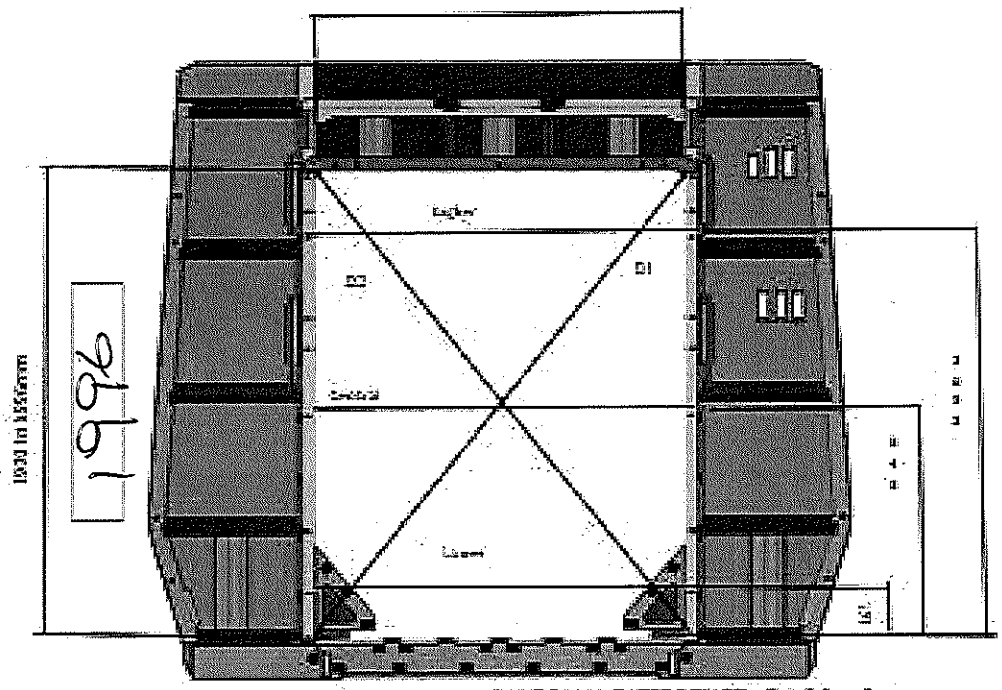
Specifications of Details for CBS measurement

Endframe 2



1180 to 1182 mm

DIAGONAL DIFFERENCE D1-D2 ≤ 3mm

Higher Dimension	1381	D1	2416
Central Dimension	1382	D2	2416
Lower Dimension	1380	D1-D2	0

4099164

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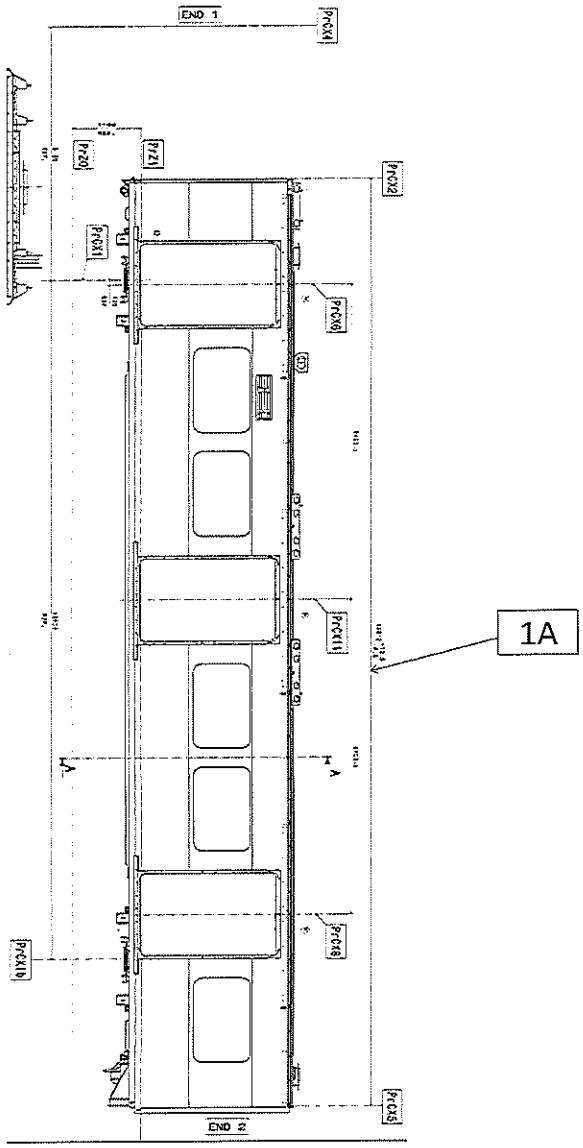
Specifications of Details for CBS measurement



	LEFT SIDE	
	SPECIFICATION SIZE	ACTUAL SIZE
1A	18870 +10.5 -4.5	18870

	RIGHT SIDE	
	SPECIFICATION SIZE	ACTUAL SIZE
1A	18870 +10.5 -4.5	18870

Dye penetrant test

Dye-penetration test to be performed by quality personnel

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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					

GIBELO	DTR30223319/3 Carshell Assembly TC	Rev. V28	Project: PRASA
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Self Inspection - Final Result

	Is the car good to advance to the next workstation/process? (Approval of Operations and Industrial Quality)		DATE	NAME	SIGNATURE
HOLD POINT	GO	If activities are not complete, the missing activities must not impact the next stage!	26/02/24	Operations	
		Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	27/02/24	Quality	
	NO GO	There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)		Operations	
		There are non-conformities impact the quality of the product and there is no corrective action defined yet)	26/02/24	Quality	

In case of "NO GO", describe blocking problems

- Lack of fusion
- Porosity on EUF2 space welds
- Poor weld profile (excess welding, undercuts)

} CLOSED 27/02/2024

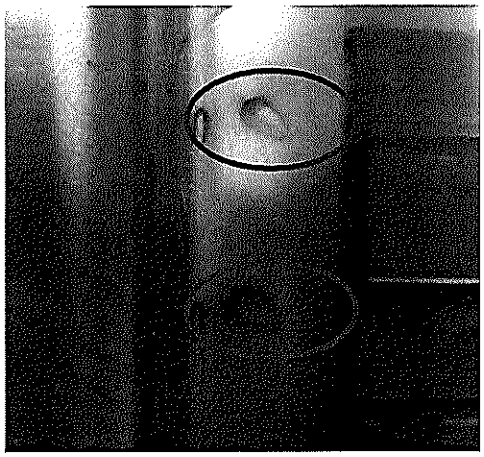
In case of "NO GO", the operations manager must define below action plan to ensure "GO":

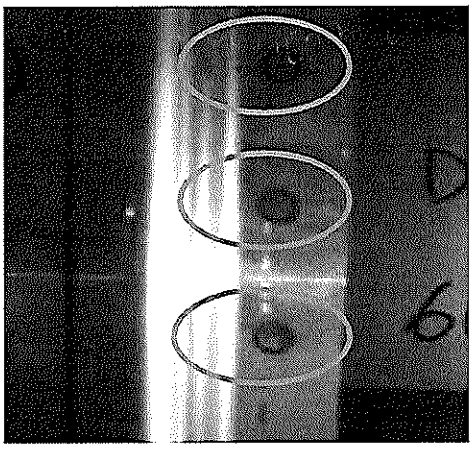
Item	Description	Action	Responsible	Due date	Status

Operations

Quality

ANNEXURE A: Spot Welding Quality Acceptance Standard





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 TC1	M4	M3	M2	M1	TC2	WORK INSTRUCTION	SAFETY ?
☐	DTR30223319/2	AAD0001241030	Carshell Assembly TC	CB2220	X					X	PRA.CB2220.DTR3022 3319/2.V20	YES
☐												
☐												
☐												
☐												
☐												
☐												

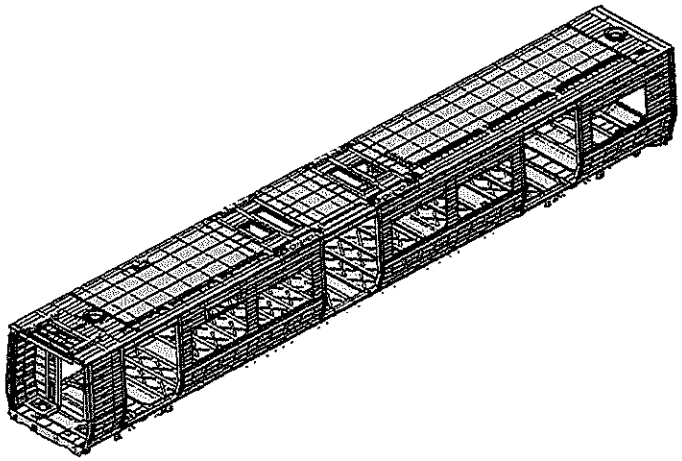
REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	09/04/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	09/04/2018
			CHECKER	Nosizo Pindela	09/04/2018
			COMPILER	Thanyani Mathegu	06/04/2018
1	23/05/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	23/05/2018
			CHECKER	Nosizo Pindela	23/05/2018
			REVISED BY	Ramokone Motama	23/05/2018
2	05/07/2018	Certain dimensional checks added and others moved to CB1210 and CB1230	APPROVER	Itumeleng Modiba	05/07/2018
			CHECKER	Nosizo Pindela	05/07/2018
			COMPILER	Ramokone Motama	05/07/2018
3	2018/06/12	Certain dimensional checks added and others moved to CB1210 and CB1230	APPROVER	Itumeleng Modiba	2018/06/12
			CHECKER	Nosizo Pindela	2018/06/12
			COMPILER	Ramokone Motama	2018/06/12
5	24/01/2019	As per Baseline 10.2	APPROVER	Itumeleng Modiba	24/01/2019
			CHECKER	Nosizo Pindela	24/01/2019
			COMPILER	Vanessa Ntuli	24/01/2019
6	13/03/2019	Added D1 and D2 on Self - Inspection Remove length measurements	APPROVER	Itumeleng Modiba	13/03/2019
			CHECKER	Nosizo Pindela	13/03/2019
			COMPILER	Nosizo Pindela	13/03/2019
7	20/05/2019	Removed roof width	APPROVER	Itumeleng Modiba	20/05/2019
			CHECKER	Nosizo Pindela	20/05/2019
			REVISED BY	Nosizo Pindela	20/05/2019
10	22/08/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	22/08/2019
			CHECKER	Nosizo Pindela	22/08/2019
			REVISED BY	Nosizo Pindela	22/08/2019
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 10.2.6	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	Mulaudzi Mpho	
			REVISED BY	Mulaudzi Mpho	
25	20/02/2022	New Baseline 10.2.6	APPROVER	Mbhombhi Collins	20/02/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Mbhombhi Collins	14/06/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
27	19/10/2022	Addition of traceability for sealant application and welding	APPROVER	Mbhombhi Collins	19/10/2022
			CHECKER	NtokozoZwane	
			REVISED BY	Amogelang Mohlampe	
28	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntokozo Zwane	
			REVISED BY	Amogelang Mohlampe	

TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
215	TC1	Mtkhectsi 426954	26/02/24	SI.CB2220.323.V28	17

GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
		Date- 28/10/2023	SI.CB2220.323.V29

Carro Car: TC1, TC2	NCR:	Work station: CB2220

Safety Related



I - Documentation and Instruments

I.1 - Documentation Control

Document	Type of car: TC1	M1	M2	M3	M4	TC2	Revision	Observation	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
DTR30223319/2	✗						29	26/02/24	✓		N/A	27/02/24

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Validation	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Tubular	12062-2	2025/02/19	✓		27/02/24	
Tape measure	GIB1M0557	2024/04/05	✓		27/02/24	27/02/24

1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
308	F308007	308 MIG	✓		27/02/24	27/02/24

GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
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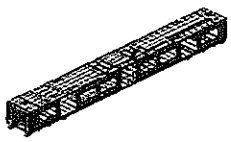
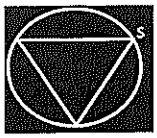
II - Control Activities of Prodution

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.	DTR30223319/2	✓			27/02/24	27/02/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓			27/02/24	27/02/24
03	REFER TO ANNEXURE A	Spot Welding inspected and approved according procedure	**IND-SAL-WMS-016 e DTD0000210675**	✓			27/02/24	27/02/24
04	REFER TO ANNEXURE B	Arc Welding inspected and approved according procedure.	**IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000**	✓			27/02/24	27/02/24
05		Cleaning of all Stainless Steel Surface	**According TO GIB-WEL - PROC-0002**	✓			27/02/24	27/02/24
06	N/A	Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓			27/02/24	27/02/24
07		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	✓			27/02/24	27/02/24
08	N/A	Before appplication of sealant record the expiry date and make sure that the room temperature and humidity are withion specified values as per Works Instructions Specified: Temperature Min - Max (1) Min-Max 10°C - 35°C Relative humidity Min - Max (1) Min-Max 25% - 80%	Sealant Batch No: LV7003 Exp Date: ____ / 02/24 Actuals Temparature: 20 Humidity: 47	✓			27/02/24	27/02/24

GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
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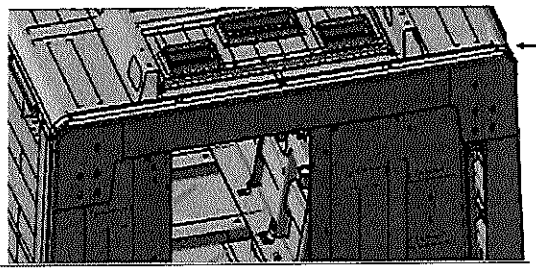
09	NA	Verification of sealant application in certain regions in the drawing.	AAD0001241033	/			27/02/24	27/02/24
10	NA	Verification of sealant application on the roof and sidewall finishers	Sealant must be: -Applied straight and even (1.5mm) -Free of gaps,cracks,damage and debris (flashes, dirt, dust) **Refer to Annexure B**	/			27/02/24	27/02/24

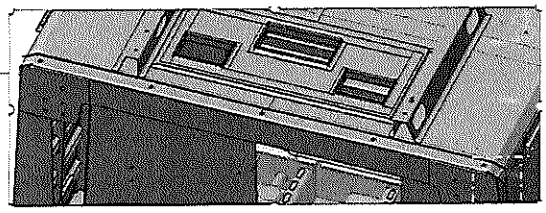
GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
		Date- 28/10/2023	SI.CB2220.323.V29



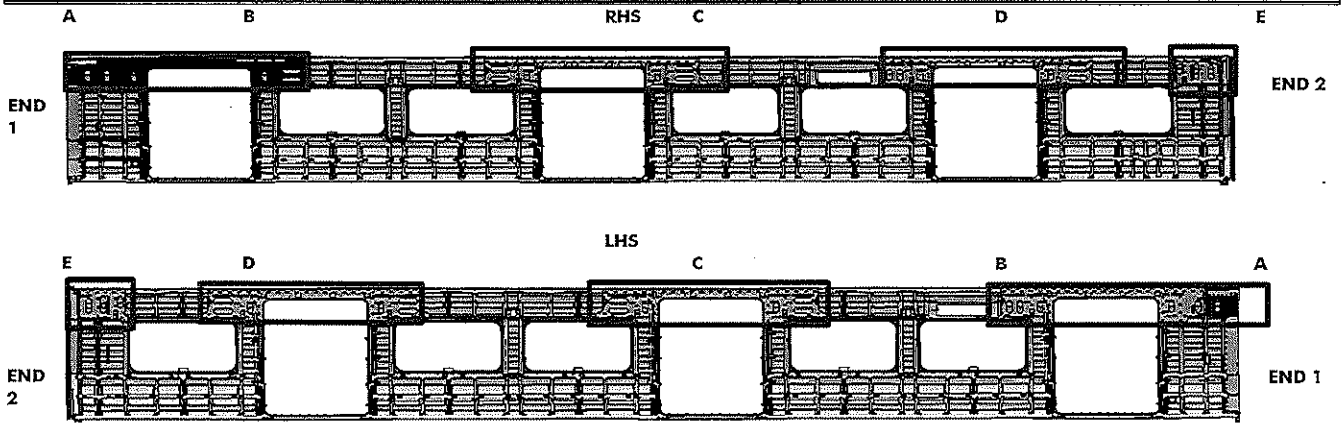
END 1
SEALANT

OPERATOR
(Name & sign): Mthokozisi

OPERATOR
(Name & sign): Mthokozisi



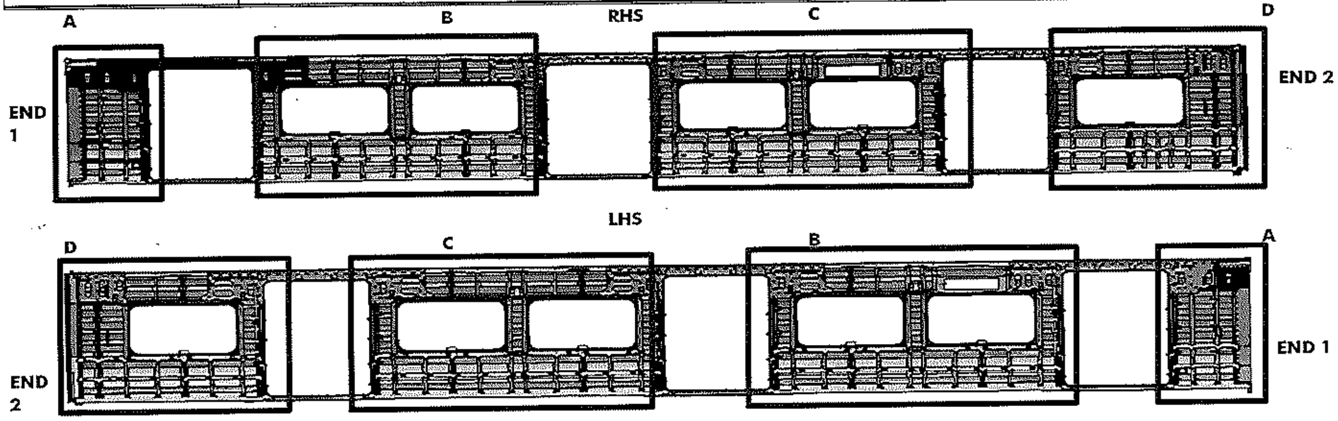
GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
		Date- 28/10/2023	SI.CB2220.323.V29



REINFORCEMENT WELDING

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

GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
		Date- 28/10/2023	SI.CB2220.323.V29



BRACKETING

INSTALLATION

C-RAILS: Operator: Mthokozisi Wilson

Operator:

DOOR MECHANISMS: Operator: Mthokozisi

Operator:

TAPPING PADS Operator: Mthokozisi

Operator:

INSTALLATION & VERIFICATION

SEAT & LUGGAGE BRACKETS: Operator: Mmatsweu Mcaz

Operator:

SEAT BRACKETS VERIFICATION: Operator: Mthokozisi

Operator:

WELDING

AREA — ENDI BRACKETS — LHS — RHS

A (~~Seat brackets~~) : Operator (Name&sign): LINDO / LINDO

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

B (Seat brackets) : Operator (Name&sign): Wilson /

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

C (Seat brackets) : Operator (Name&sign): S. Siya / Mmatsweu Mcaz

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

D (Seat brackets) Operator (Name&sign): Sibiya / Mmatsweu Mcaz

(C-rails, Luggage and earth bushes) : Operator (Name&sign): Sibiya / Mmatsweu Mcaz

ENDS

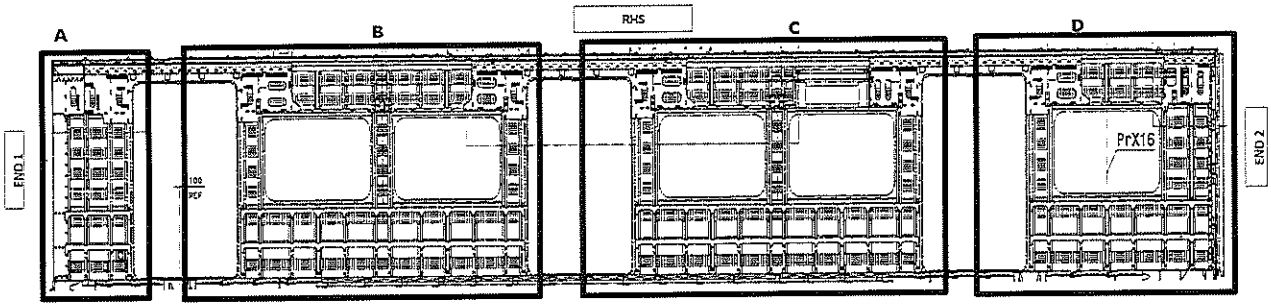
END 1 TAPPING PADS WELDING: Operator (Name&sign): _____

2 END 2 TAPPING PADS WELDING: Operator (Name&sign): _____

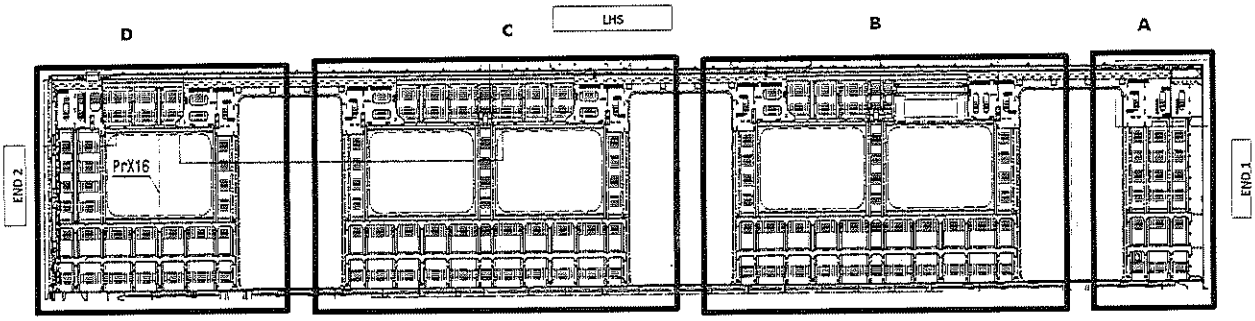
GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
		Date- 28/10/2023	SI.CB2220.323.V29

TC BRACKET INSTALLATION

RHS



LHS



QUANTITIES (TC)

RHS

	SECTION	QUANTITY	OK	NOK
C-RAILS	A	4	✓	
	B	4	✓	
	C	8	✓	
	D	12		✗
SEAT BRACKETS	A	0	✓	
	B	21	✓	
	C	21	✓	
	D	13	✓	
EARTH BUSH	A	1	✓	
	B	4	✓	
	C	5	✓	
	D	4	✓	

ROOF ENDS:

CRAILS 2 OFF END 2 ✓
EARTH BUSH 4 OFF END 2 ✓

VERIFICATION BY: Mthokozisi

LHS

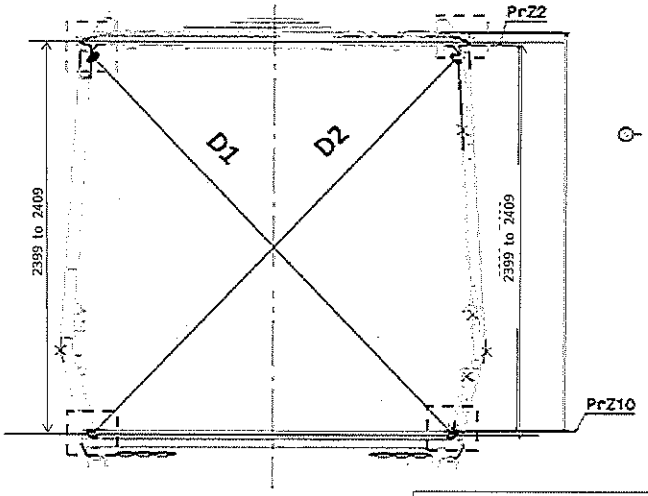
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	4	✓	
	B	8	✓	
	C	4	✓	
	D	6	✓	
SEAT BRACKETS	A	0	✓	
	B	21	✓	
	C	21	✓	
	D	13	✓	
EARTH BUSH	A	1	✓	
	B	4	✓	
	C	4	✓	
	D	2	✓	

ROOF ENDS:

CRAILS 2 OFF END 2 ✓
EARTH BUSH 4 OFF END 2 ✓

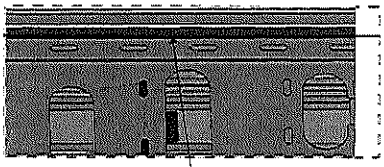
VERIFICATION BY: Mthokozisi

GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
		Date- 28/10/2023	SI.CB2220.323.V29

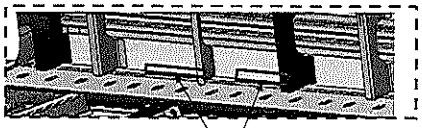


Take measurement close to radius

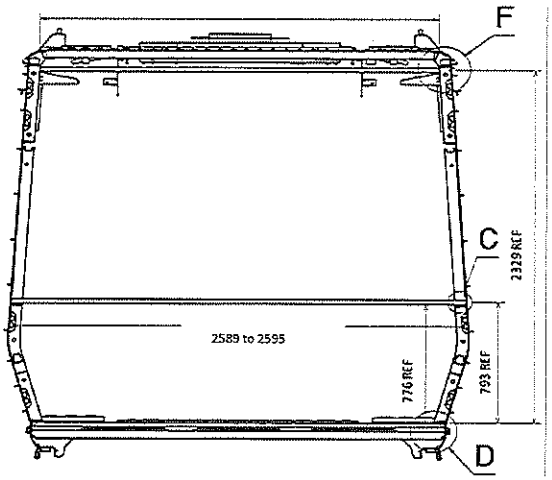
Measurement positions on roof rail and sidewall omega corner.



Reinforcement area measurement positions on roof reinforcement area.

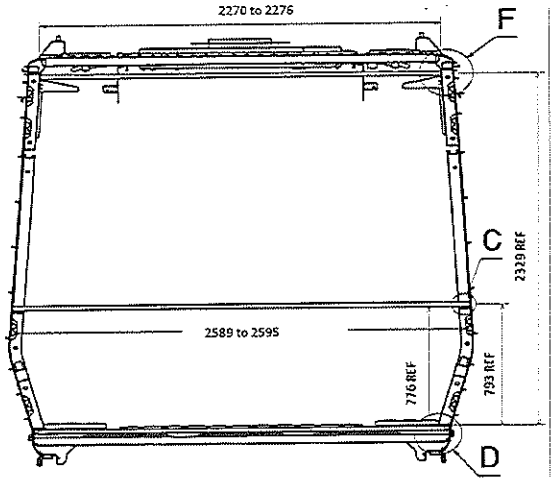


Measurement positions on sidewall and side sill corner.

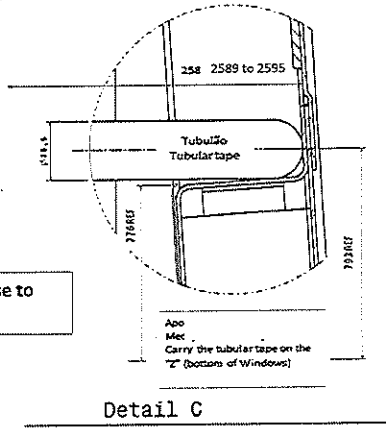


Take measurement close to radius

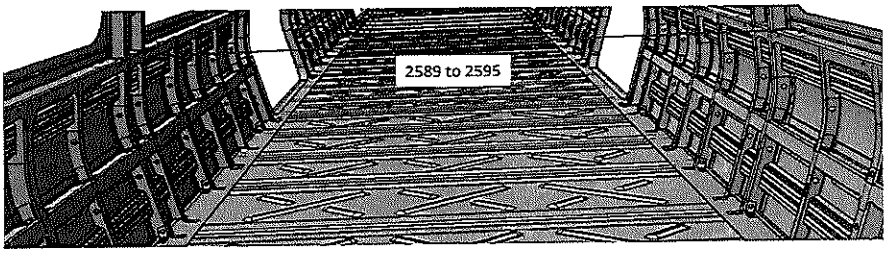
GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
		Date- 28/10/2023	SI.CB2220.323.V29

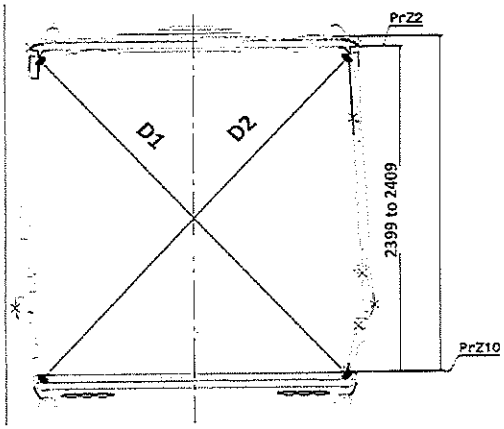


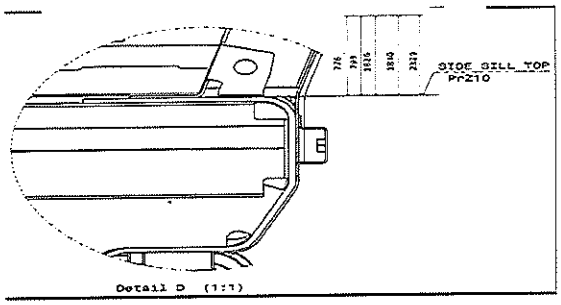
Take measurement close to radius



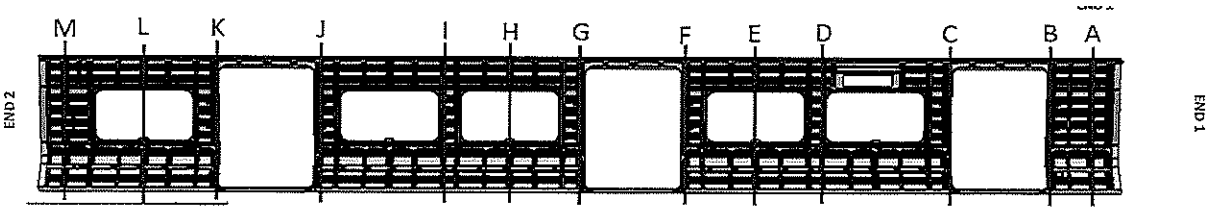
Detail C







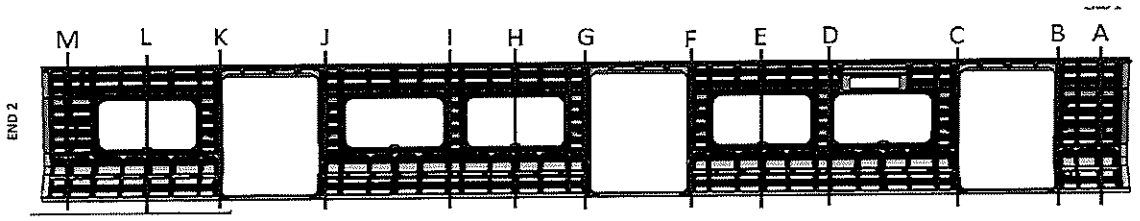
GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
		Date- 28/10/2023	SI.CB2220.323.V29



BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3295	3296	1	–
B	3294	3295	1	–
C	3296	3293	2	–
D	3272	3268	4	–
E	3270	3265	5	–
F	3293	3293	0	–
G	3294	3297	3	–
H	3267	3268	1	–
I	3268	3268	0	–
J	3298	3297	1	–
K	3298	3298	0	–
L	3270	3270	0	–
M	3296	3298	2	–

GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
		Date- 28/10/2023	SI.CB2220.323.V29

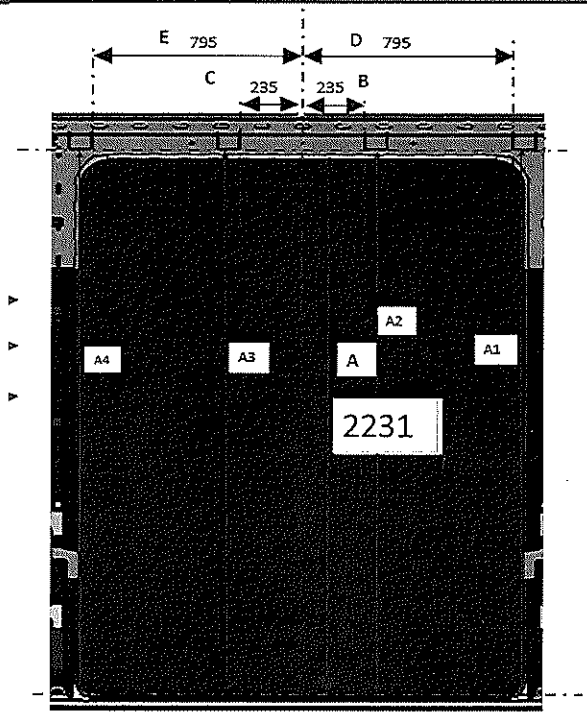


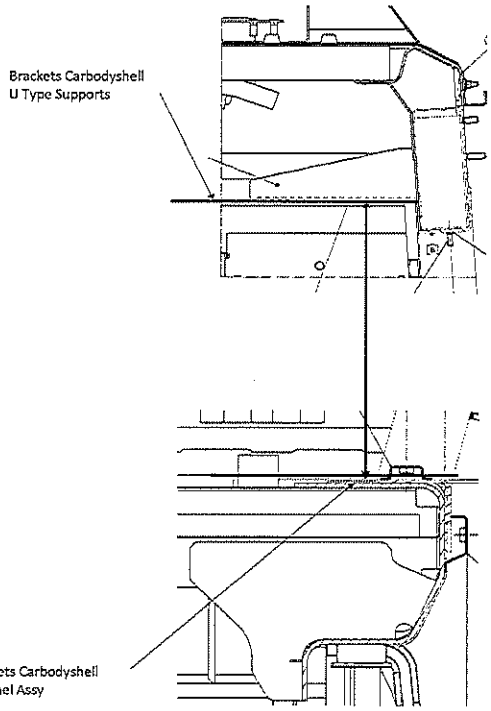
AFTER WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3300	3300	0	2595
B	3295	3304	9	2589
C	3290	3297	7	2591
D	3275	3276	5	2590
E	3264	3268	4	2589
F	3290	3295	5	2591
G	3290	3296	6	2594
H	3262	3265	3	2590
I	3264	3265	1	2590
J	3294	3295	1	2590
K	3293	3299	6	2595
L	3265	3268	3	2593
M	3292	3298	6	2595

GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
		Date- 28/10/2023	SI.CB2220.323.V29

Specifications of Details for CBS measurement





DOOR 1 - LHS

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

DOOR 2 - LHS

	VALUE	ACTUAL
A1	2230 to 2232	2234
A2	2230 to 2232	2234
A3	2230 to 2232	2234
A4	2230 to 2232	2234
B	234 to 236	236
C	234 to 236	236
D	794 to 796	794
E	794 to 796	794

DOOR 3 - LHS

	VALUE	ACTUAL
A1	2230 to 2232	2230
A2	2230 to 2232	2230
A3	2230 to 2232	2230
A4	2230 to 2232	2230
B	234 to 236	239
C	234 to 236	239
D	794 to 796	795
E	794 to 796	795

DOOR 1 - RHS

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

DOOR 2 - RHS

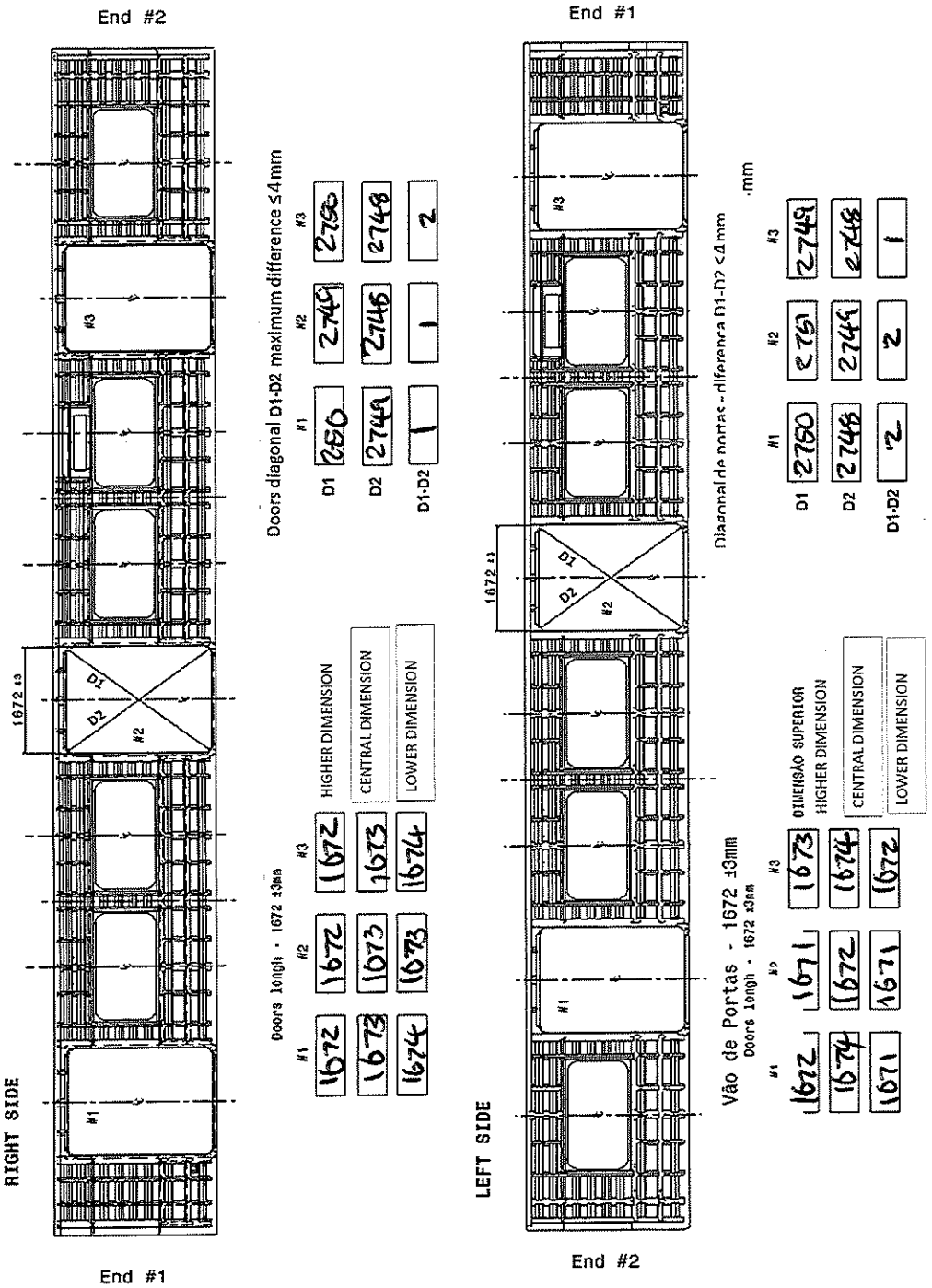
	VALUE	ACTUAL
A1	2230 to 2232	2234
A2	2230 to 2232	2334
A3	2230 to 2232	2234
A4	2230 to 2232	2234
B	234 to 236	236
C	234 to 236	236
D	794 to 796	794
E	794 to 796	794

DOOR 3 - RHS

	VALUE	ACTUAL
A1	2230 to 2232	2233
A2	2230 to 2232	2233
A3	2230 to 2232	2233
A4	2230 to 2232	2233
B	234 to 236	235
C	234 to 236	235
D	794 to 796	795
E	794 to 796	795

GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
		Date- 28/10/2023	SI.CB2220.323.V29

Specifications of Details for CBS measurement



GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29	Project: PRASA
		Date- 28/10/2023	SI.CB2220.323.V29

Specifications of Details for CBS measurement

Dye penetrant test

Dye-penetration test to be performed by quality personnel

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					

GIBELA	DTR30223319/2 Carshell Assembly TC	Rev. 29 Date- 28/10/2023	Project: PRASA SI.CB2220.323.V29

Self Inspection - Final Result

	Is 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!	27/02/24	Operations	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	27/02/24	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 of "NO GO", describe blocking problems

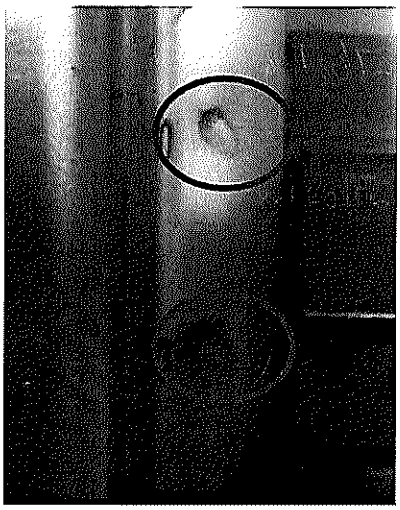
In case of "NO GO", the operations manager must define below action plan to ensure "GO":

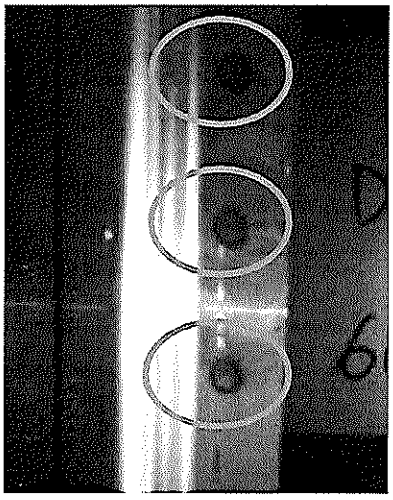
Item	Description	Action	Responsible	Due date	Status

Operations

Quality

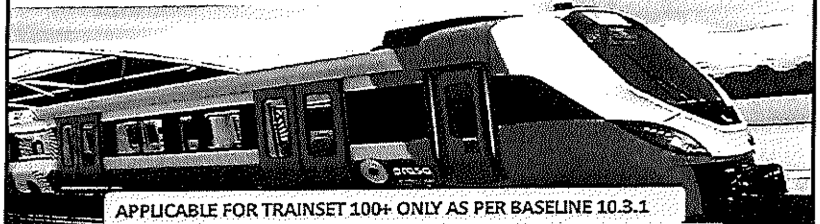
ANNEXURE A: Spot Welding Quality Acceptance Standard





PRASA PROJECT

GIBELA



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 TC1	MA	MC1	MC2	MC3	TC2	WORK INSTRUCTION	SAFETY?
DT0000223313	AAD0001230963	DT0000223319 Carshell Assembly TC	CB2230	(X)					X	PRA.CB2230.DT000001223319.V20	YES

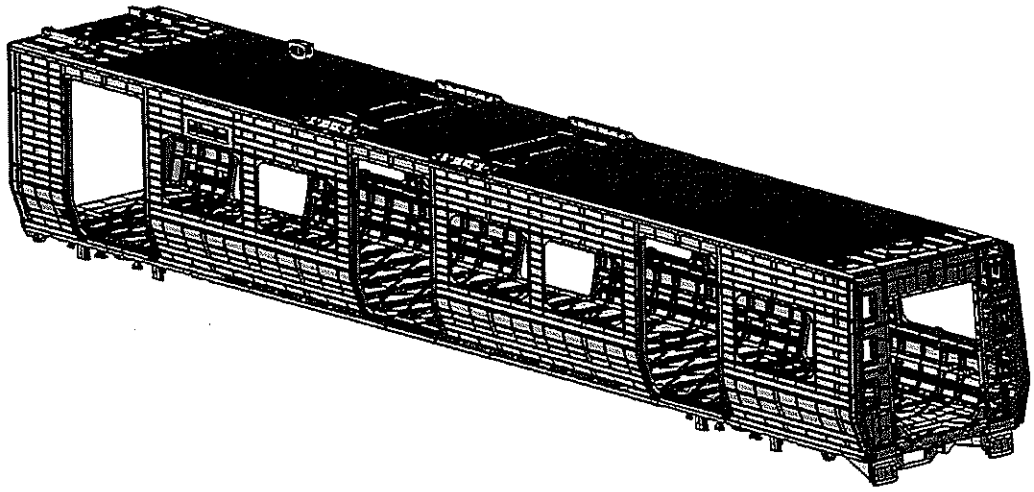
REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	06/04/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	09/04/2018
			CHECKER	Nosizo Pindela	09/04/2018
			COMPILER	Thanyani Mathegu	06/04/2018
1	30/5/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	30/5/2018
			CHECKER	Nosizo Pindela	30/5/2018
			REVISED BY	Nosizo Pindela	30/5/2018
2	05/07/2018	Certain dimensional checks moved to CB1220	APPROVER	Itumeleng Modiba	05/07/2018
			CHECKER	Nosizo Pindela	05/07/2018
			COMPILER	Ramokone Motama	05/07/2018
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
			COMPILER	Nosizo Pindela	13/03/2019
7	17/09/2019	Added Cab Fire Barrier Flatness Measurements	APPROVER	Itumeleng Modiba	17/09/2019
			CHECKER	Nosizo Pindela	17/09/2019
			COMPILER	Nosizo Pindela	17/09/2019
10	20/09/2019	New Baseline 10.2.5	APPROVER	Itumeleng Modiba	20/09/2019
			CHECKER	Nosizo Pindela	20/09/2019
			COMPILER	Nosizo Pindela	20/09/2019
15	28/01/2021	New Baseline 10.2.6	APPROVER	Timothy Maimela	28/01/2021
			CHECKER	Bongane Masina	28/01/2021
			COMPILER	Bongane Masina	28/01/2021
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	19/04/2021
			COMPILER	Bongane Masina	19/04/2021
25	20/04/2022	New Baseline change 10.3.1	APPROVER	Collins Mbhombhi	20/02/2022
			CHECKER	Andani Muthelo	20/02/2022
			COMPILER	Andani Muthelo	20/02/2022
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Collins Mbhombhi	14/06/2022
			CHECKER	Andani Muthelo	
			COMPILER	Andani Muthelo	
27	27/07/2022	Threashold measurements addition	APPROVER	Collins Mbhombhi	26/07/2022
			CHECKER	Andani Muthelo	
			COMPILER	Andani Muthelo	
28	19/10/2022	Addition of traceability for sealant application	APPROVER	Collins Mbhombhi	19/10/2022
			CHECKER	Ntokozo Zwane	
			COMPILER	Amogelang Mohlampe	
29	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	14/04/2023
			CHECKER	Ntokozo Zwane	
			COMPILER	Amogelang Mohlampe	
30	06/11/2023	Added threashold traceability for boiler makers and welders	APPROVER	Tyson Ngobeni	06/11/2023
			CHECKER	Andani Muthelo	
			COMPILER	Ntokozo Zwane	

TRAINSET	CAR	OPERATOR NAME & ALPS NUMBER	DATE	SELF INSPECTION NUMBER	PAGES
215	TC1	Nonhlanhla 427423	27/02/24	SI.CB2230.324.V29	12

GIBELA	DT00000223319 Carshell Assembly TC	Rev. 30	Project: PRASA
		Date- 06/11/2023	SI.CB2230.324.V29

Carro / Car:	NCR:	Work station:	CB2230

Safety Related



1 - Documentation and Instruments

1.1 - Documentation Control

Document	Type of car: TC1	M1	M2	M3	M4	TC2	Revision	Observation	OK	NOK	Rev. ok	Signature/Date (Operations)	Signature/Date (Quality)
DT00000223319	X										N/A	27/02/24	27/02/24

1.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Validation	Calibration or Verification Validation Date	OK	NOK	Signature/Date (Operations)	Signature/Date (Quality)
Combination Square	GIBSQ59	08/04/2024	✓		27/02/24	
Tubular	22316	2024/03/07	✓		27/02/24	27/2/24
Measuring Tape	GIBTP0052	2024/03/31	✓		27/02/24	

1.3 Consumables

Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 LSi 1.00	310180	MIG	✓		27/02/24	27/2/24

GIBELO	DT00000223319 Carshell Assembly TC	Rev. 30	Project: PRASA
		Date- 06/11/2023	SI.CB2230.324.V29

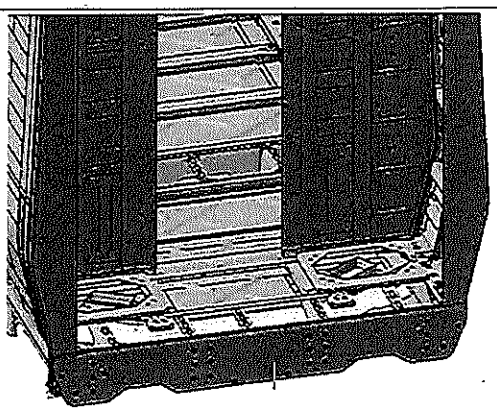
II - Control Activities of Production

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	NOK	Remark	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering nº DT00000223319	DT00000223319	✓			Tham 27/02/24	27/2/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality.	DTD0000210675	✓			Tham 27/02/24	27/2/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	IND-SAL-WMS-016 DTD0000210675	✓			Mmathapelo 27/02/24	27/2/24
04	N/A	Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓			Tham 27/02/24	27/2/24
05	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	✓			Tham 27/02/24	27/2/24
06	N/A	Before appplication of sealant record the expiry date and make sure that the room temperature and humidity are withion specified values as per Works Instructions Specified: Temperature Min - Max (1) Min-Max 10°C - 35°C Relative humidity Min - Max (1) Min-Max 25% - 80%	Sealant Batch No: FA2352U250 Exp Date: ____ / 03 / 2024 Actuals Temparature: 18°C Humidity: 62 %	✓			Bahle 27/02/24	27/2/24
07	N/A	Verification of sealant application in regions of roof and sideframe finishers.	Sealant must be: -Applied straight and even (1.5mm) -Free of gaps,cracks,damage and debris (flashes, dirt, dust) Refer to Annexure B	✓			Bahle 27/02/24	27/2/24

GIBELA	DT00000223319 Carshell Assembly TC	Rev. 30	Project: PRASA
		Date- 06/11/2023	SI.CB2230.324.V29

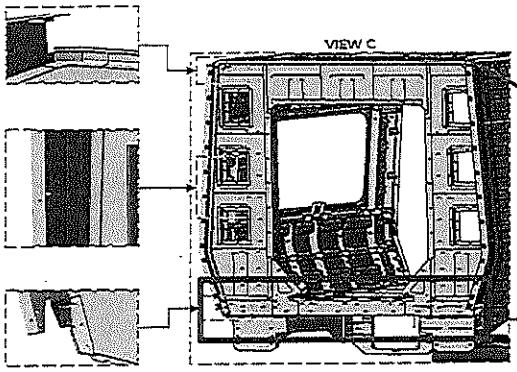
VIEW A



END 1 SEALANT

OPERATOR (Name & sign): Bukie

OPERATOR (Name & sign): Baitumelo

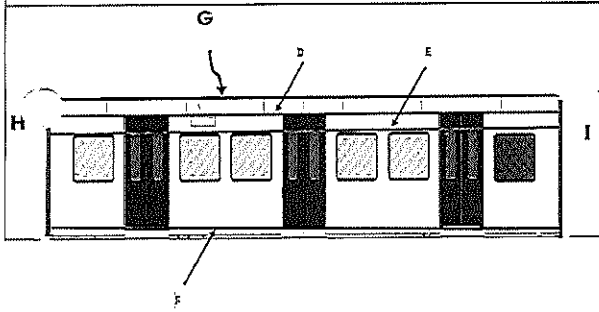


END 2 SEALANT (VIEW C)

OPERATOR (Name & sign): Baitumelo

OPERATOR (Name & sign): Baitumelo

OPERATOR (Name & sign): Baitumelo

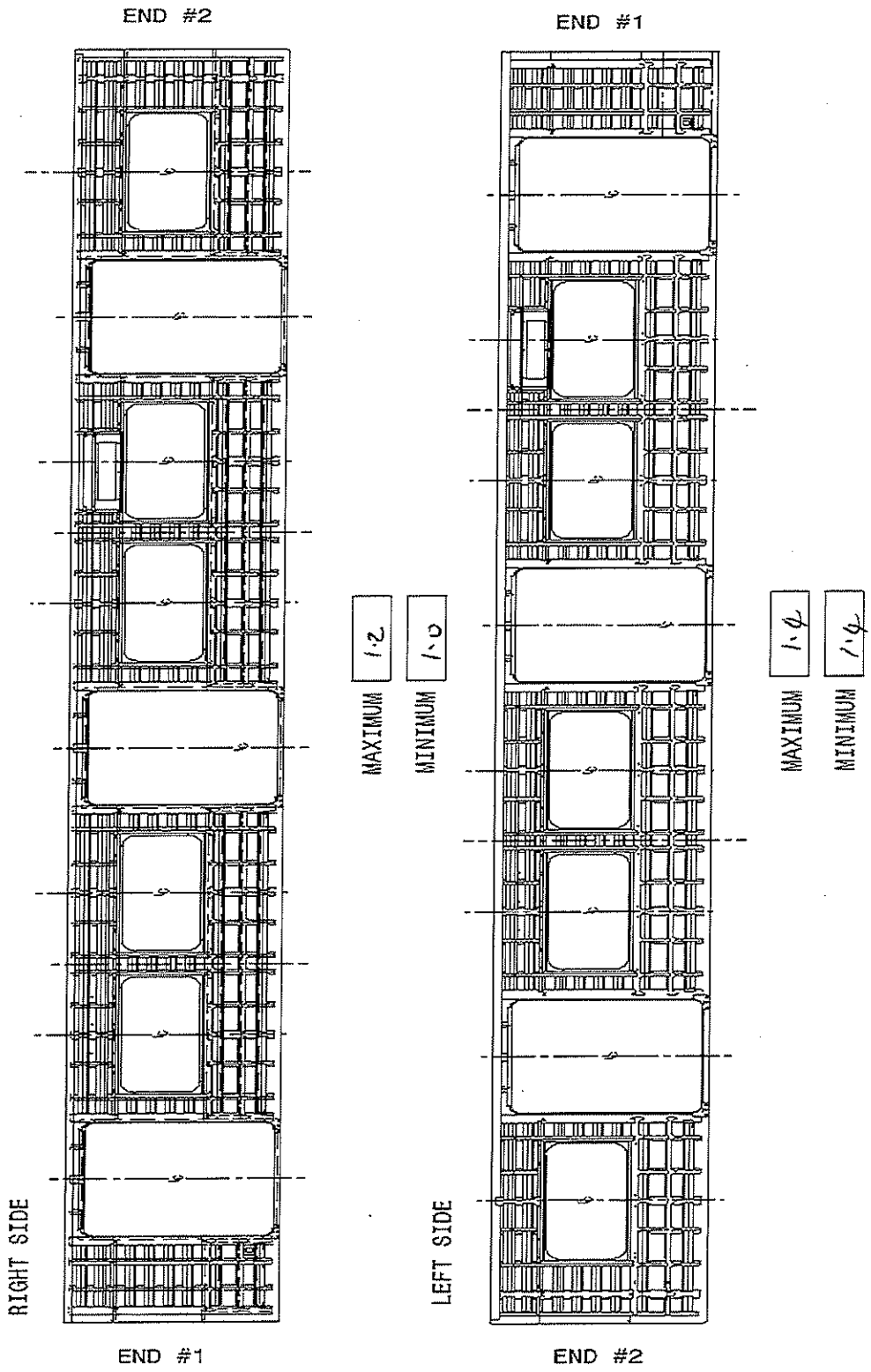


Area D,E,F,G,H,I	LHS	RHS
Operator(Name & sign) :	D,E,F,G,H,I	D,E,F,G,H,I
Operator (Name & sign) :	Bukie	Bukie
Operator (Name & sign) :	Baitumelo	Baitumelo
Operator (Name & sign) :		
Operator (Name & sign) :		
Operator (Name & sign) :		

	DT00000223319 Carshell Assembly TC	Rev. 30	Project: PRASA
		Date- 06/11/2023	SI.CB2230.324.V29

Specifications of Details for CBS measurement CB2230

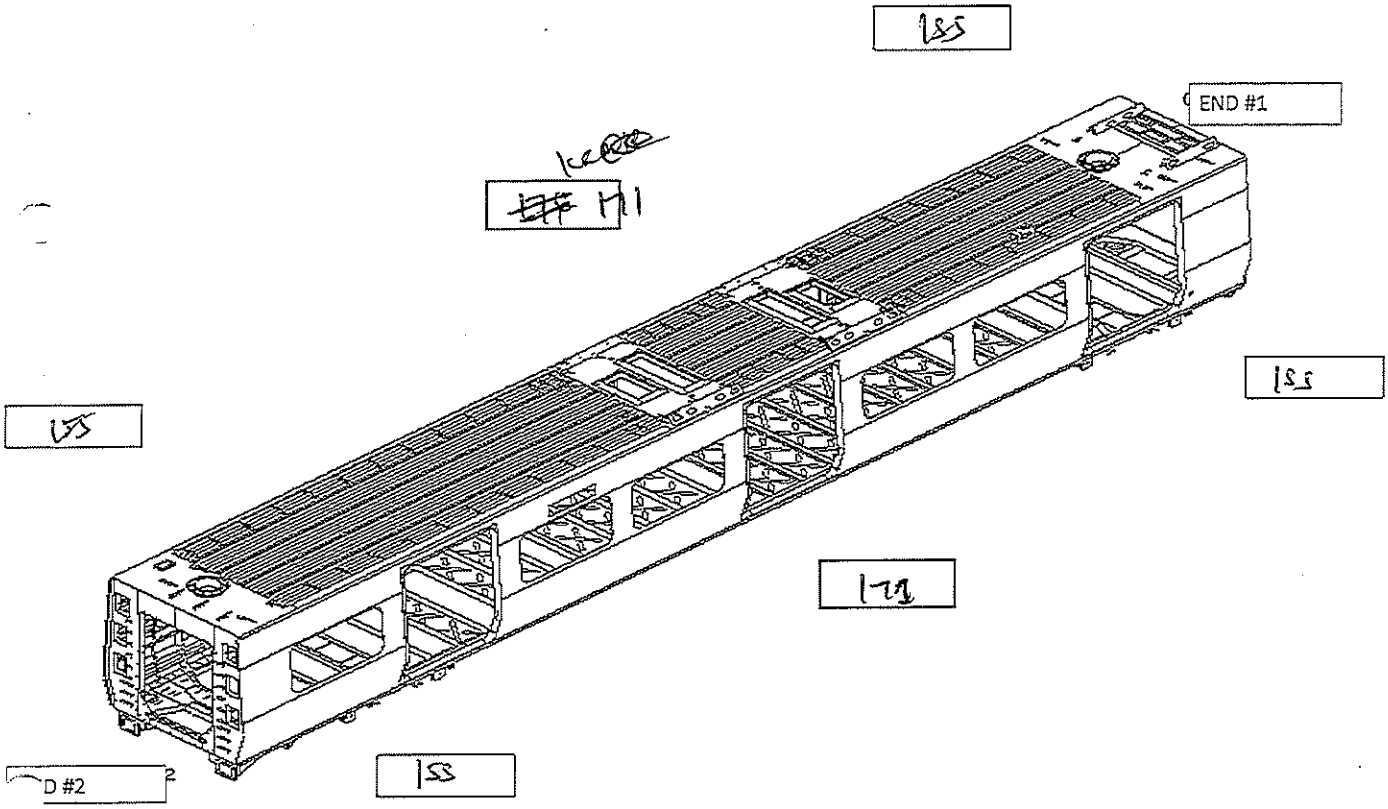
Flatness side left and right maximum of 2mm in the valley to peak measured in 900mm.
Recod the maximum and minimum value foundand indicate the corresponding region.



GIBELA	DT00000223319 Carshell Assembly TC	Rev. 30 Date- 06/11/2023	Project: PRASA SI.CB2230.324.V29

Specifications of Details for CBS measurement CB2230

Specified Camber for car out of jig is 16mm (-0mm + 2mm)

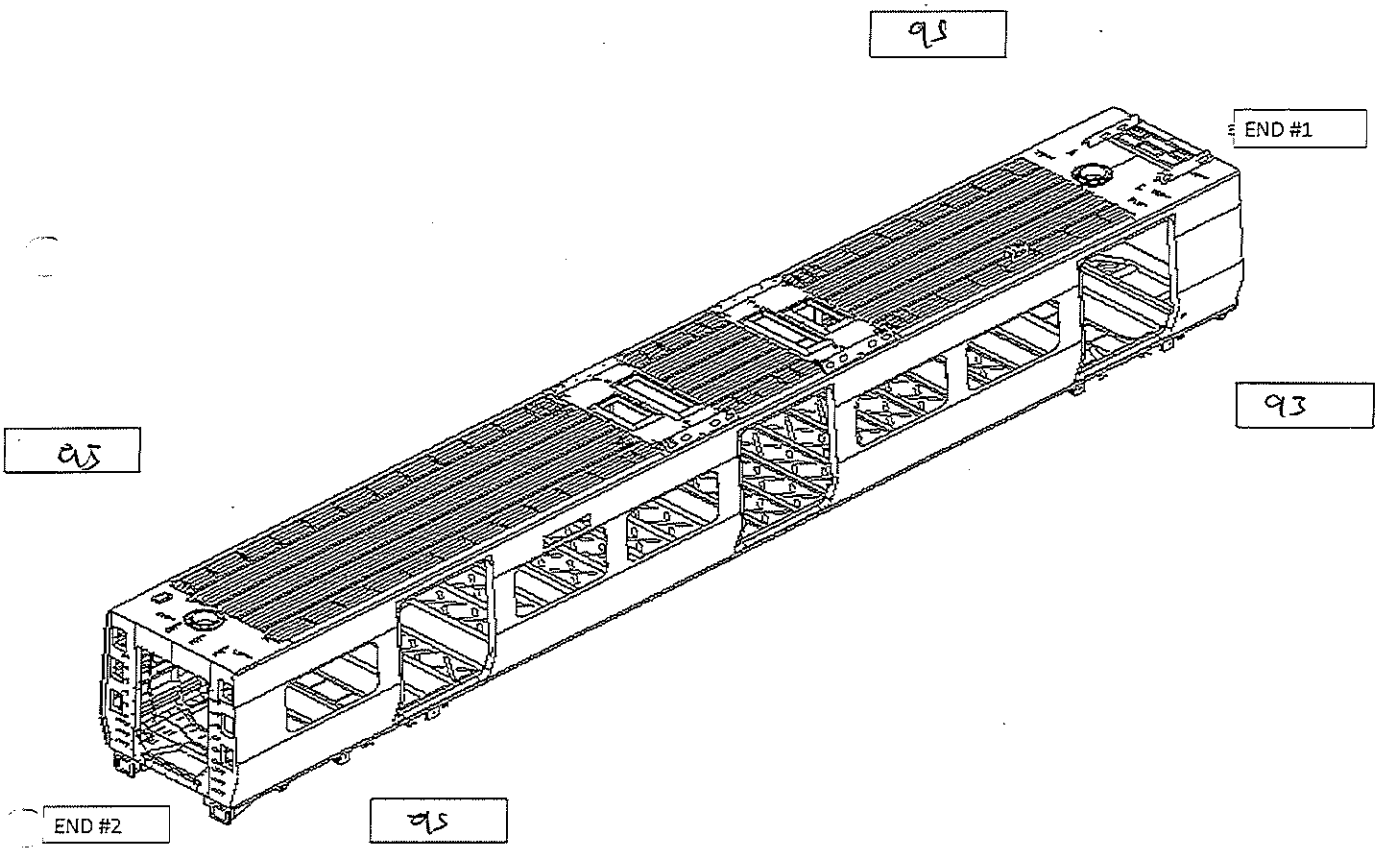


MEASURED CAMBER VALUES	
RIGHT	16
LEFT	19

GIBELA	DT00000223319 Carshell Assembly TC	Rev. 30	Project: PRASA
		Date- 06/11/2023	SI.CB2230.324.V29

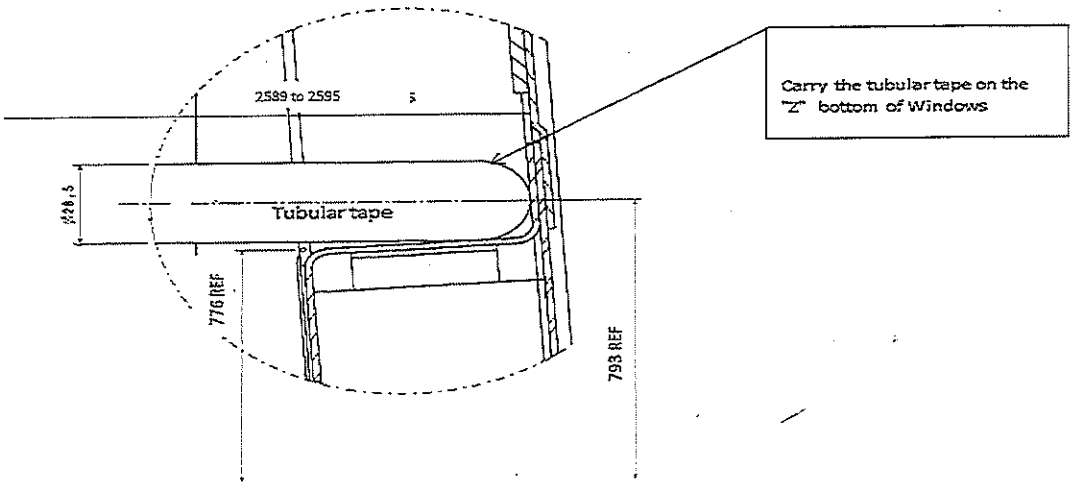
Specifications of Details for CBS measurement CB2230

Twist measured in transversal and longitudinal = Maximum 3mm. Measure twist on air spring plates (LHS and RHS), both End 1 and End 2 folllowing twist measurement document.

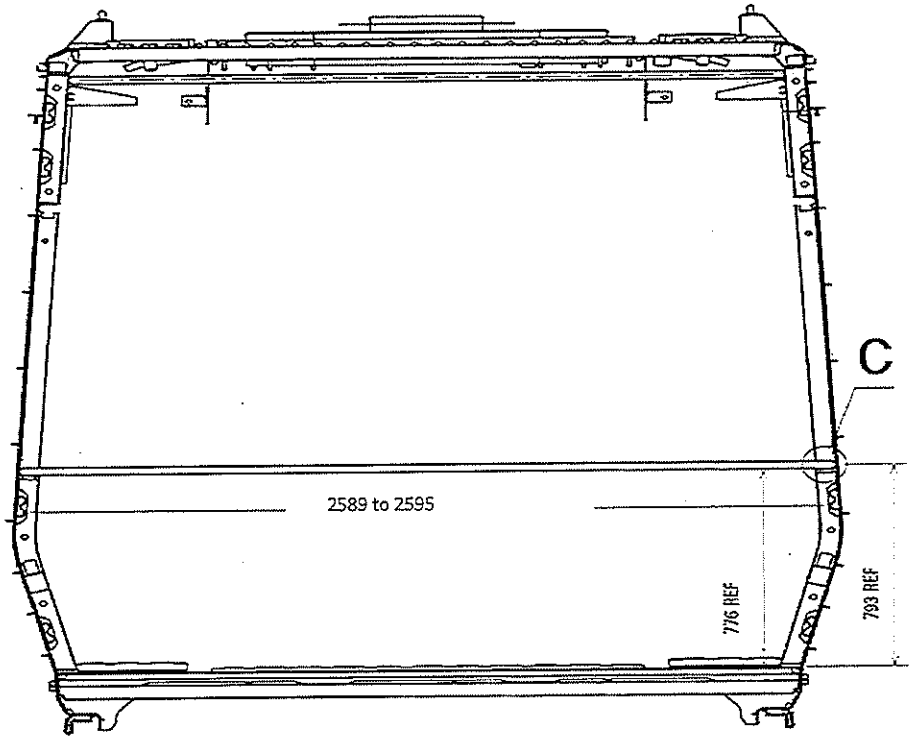


MEASURED TWIST VALUES END 1		MEASURED TWIST VALUES END 2	
LATERAL	2	LATERAL	0
LONGITUDINAL	2	LONGITUDINAL	0

Details for measuring on the CB1230 stage, after completion of activities

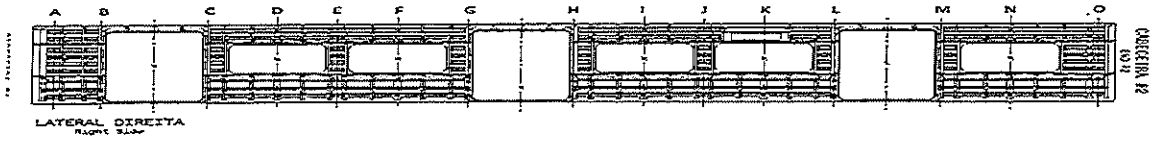


Detail C



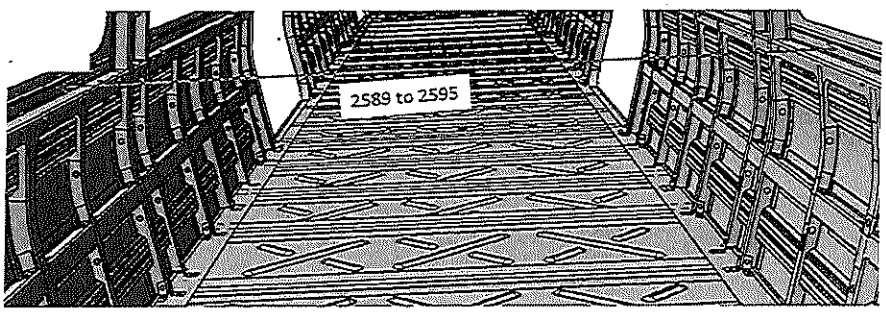
GIBELA	DT00000223319 Carshell Assembly TC	Rev. 30	Project: PRASA
		Date- 06/11/2023	SI.CB2230.324.V29

Specifications of Details for CBS measurement



2589 to 2595mm

A	2594
B	2591
C	2589
D	2592
E	2596
F	2594
G	2596
H	2591
I	2591
J	2592
K	2589
L	2589
M	2592
N	2595
O	2596



Threashold verification

Nominal value :38

Door 1		Door 2		Door 3	
L	R	L	R	L	R
37	39	38	37	37	38

Door 4		Door 5		Door 6	
L	R	L	R	L	R
38	39	37	39	38	39

BOILER MAKER: Lenni

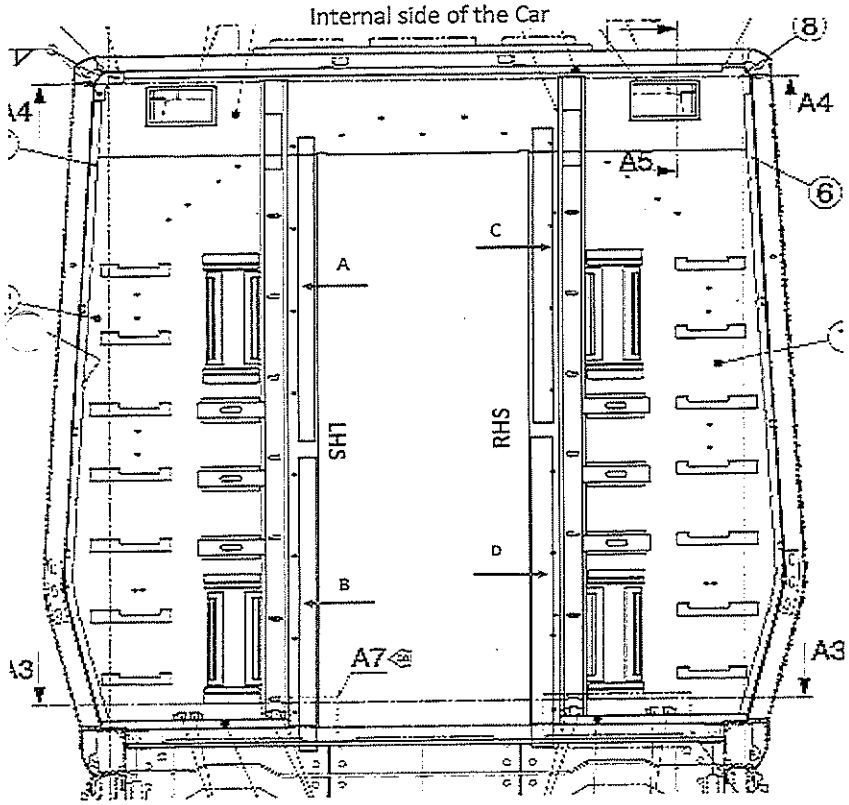
WELDER: Nakulonga

GIBELO	DT00000223319 Carshell Assembly TC	Rev. 30	Project: PRASA
		Date- 06/11/2023	SI.CB2230.324.V29

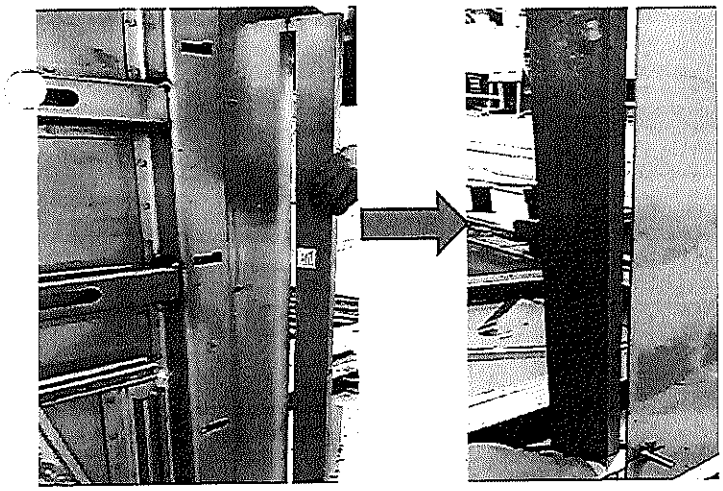
Specifications of Details for CBS measurement

Measure the flatness on the Cab Fire Barrier after installation and welding. Measure positions A, B,C and D using 1000mm flatness ruler and taper gauge.

Specified Maximum Flatness deviation on Cab Fire Barrier = 2mm



Measured Values			
	Minimum	Maximum	Deviation
A	9.3	10	0.7
B	12.6	14.2	1.6
C	10	11.6	1.6
D	11.5	13	1.5



Dye penetrant test

Dye-penetration test to be performed by quality personnel

Item	Description of the issue	OK	Signature/Date (Operations)	Signature/Date (Quality)

II.2 - Check List REX

Check List Items

!	Picture/Drawing	Description	Criteria /Record	OK	NOK	Remark	Signature/Date (Team Leader)	Signature/Date (Quality Technician
01	N/A	To complete REX	Refer to REX. New defects must be added on the REX					

GIBELA	DT00000223319 Carshell Assembly TC	Rev. 30 Date- 06/11/2023	**Project: PRASA** **SI.CB2230.324.V29**

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!	27/02/24	Operations	
			Every auto inspection performed conforms to specification or In case of discrepancy the same is approved by the competent party.)	27/02/24	Industrial Quality	
		NO GO	There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)		Operations	
			There are non-conformities impact the quality of the product and there is no corrective action defined yet)		Industrial Quality	

In case of "NO GO", describe blocking problems

In case of "NO GO", the operations manager must define below action plan to ensure "GO":

Item	Description	Action	Responsible	Due date	Status

Operations

Quality