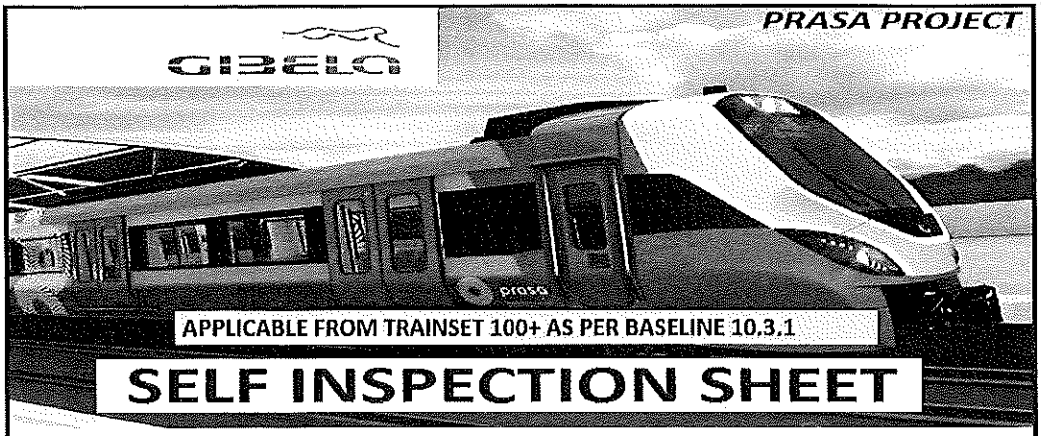
GIBELA

PRASA PROJECT



APPLICABLE FROM TRAINSET 100+ AS PER BASELINE 10.3.1

SELF INSPECTION SHEET

APPLICATION REFERENCE

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE TC1	M4	M1	M2	M3	TC2	WORK INSTRUCTION	SAFETY ?
☐ DTR30225487/3	AAD0001278566	CARBODYSHELL M1 ASSEMBLY	CB2210			(X)				PRA.CB2210.DTR30225 487/3.V25	YES
☐											

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	
27	27/07/2023	Added verification of loaded parts	APPROVER	Ngobeni Tyson	27/07/2023
			CHECKER	Zwane Ntokozo	
			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 NO	DATE	SELF INSPECTION NUMBER	PAGES
T5030	M1	P. MALATJI 409760	25/05/24	SI.CB2210.254.V28	17

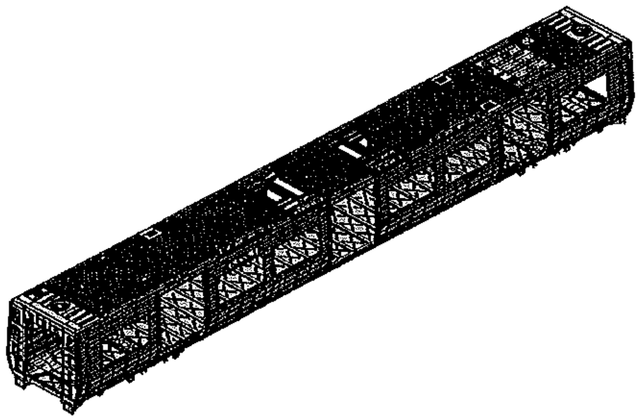
GIBELA	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28 Date 07/11/2023	Project: PRASA SI.CB2210.254.V28

Car: M1

NCR:

Work station: CB2210

Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car: TC1	M1	M2	M3	M4	TC2	Revision	Observation	OK	NOK	Reject	Signature/Date (Manufacturing)	Signature/Date (Quality)
DTR30225487/3		X					1/28		✓			[signature]	[signature] 25/05/24

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial number	Calibration or Verification Validation Date	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
TUBULAR	32825-Q	15/08/25	✓		[signature]	[signature] 25/05/24
LASER TAPE	1254025924	08/01/25	✓		[signature]	[signature]
30M TAPE	G1BTP0102	18/11/24	✓		[signature]	[signature]

GIBELA 2024-05-23

1.3 Consumables

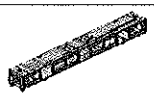
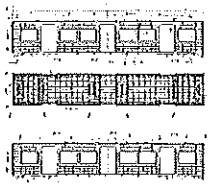
Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK	NOK	Signature/Date (Manufacturing)	Signature/Date (Quality)
ER 308 LSI	S14018-740097	MIG	✓		[signature]	[signature] 25/05/24
ER 308 L	299687-70502	TIG	✓		[signature]	[signature]

GIBELA	CARBODYSHELL M1 ASSEMBLY DTR30226487/3	Rev. 28 / Date 07/11/2023	Project: PRASA SI.CB2210.254.V28

II - Self Inspection - Items to Check

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	NOK	N/A	Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Verification of correct parts loaded (Sidewalls,Endframes,Roof and Underframe)	DT00000311225	✓			25/05/24	25/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓			25/05/24	25/05/24
03	REFER TO ANNEXURE A	Spot welding inspected and approved according to procedure	IND-SAL-WMS-016 e DTD0000210675	✓			25/05/24	25/05/24
04	REFER TO ANNEXURE B	Arc welding inspected and approved according to procedure	IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000	✓			25/05/24	25/05/24
05		Cleaning of all Stainless Steel Surface	According TO GIB-WEL - PROC-0002	✓			25/05/24	25/05/24
06		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document	Approved according specified on pages below.	✓			25/05/24	25/05/24
07	N/A	Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	✓			25/05/24	25/05/24

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INDUSTRIAL QUALITY
MAINLINE

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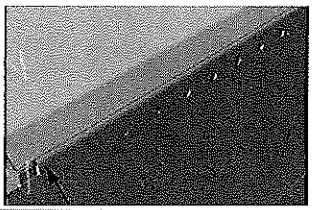
		Date 07/11/2023	

Welder Traceability

Roof ring welds



END 1

LHS

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

RHS

Boiler maker (Name & Sign): MOJELA Welder (Name & Sign): MTHOKOZISI

END 2

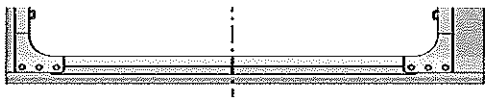
LHS

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

RHS

Boiler maker (Name & Sign): MOJELA Welder (Name & Sign): MTHOKOZISI

Door ring welds



LHS

Boiler maker (Name & Sign): JUSTICE

Welder (Name & Sign): MTHOKOZISI

RHS

Boiler maker (Name & Sign): SEAN

Welder (Name & Sign): MTHOKOZISI

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QUALITY

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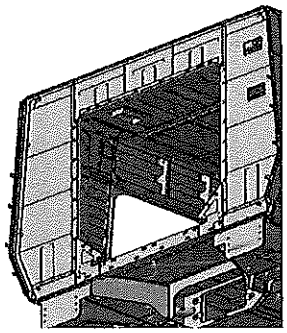
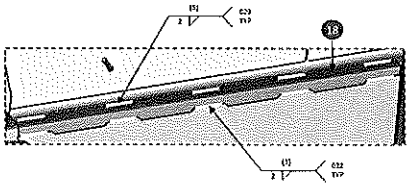
EUF Reinforcement Plates



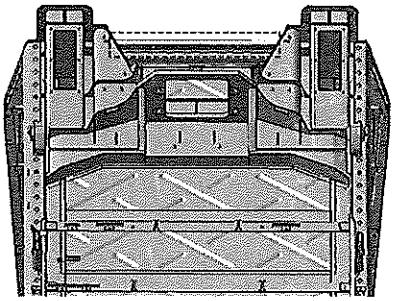


END 1

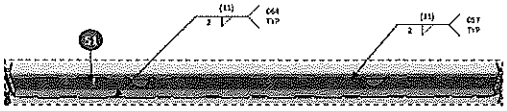
Boiler maker (Name & Sign): SEAN

Welder (Name & Sign): Kanu K.M

END 2



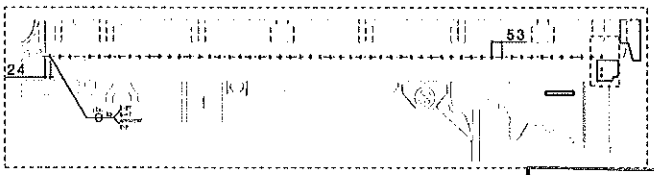
Underneath the CAR



END 2

Boiler maker (Name & Sign): INNO

Welder (Name & Sign): SIPHOKAZI



FEDOLI

Operator: CUNEA

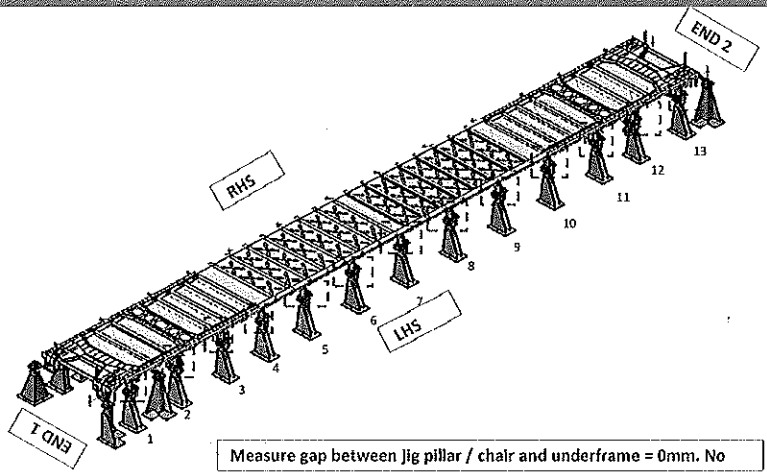
GIBELA

2024 -05- 23

INDUSTRIAL QUALITY
MAINLINE

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

Specifications of Details for CBS measurement



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

After loading and clamping

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

	1	2	3	4	5	6	7	8	9	10	11	12	13
Left Hand Side	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Hand Side	0	0	0	0	0	0	0	0	0	0	0	0	0

Signature Operations: Date: 25/05/24

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INDUSTRIAL QUALITY
MAIBLINE

After Welding.

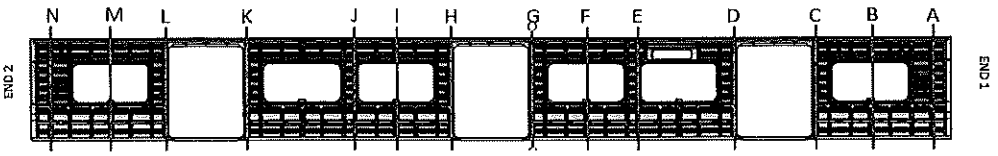
Fill in the gap found each jig pillars / chair and underframe should be 0mm.

	1	2	3	4	5	6	7	8	9	10	11	12	13
Left Hand Side	0	0	0	0	0	0	0	0	0	0	0	0	0
Right Hand Side	0	0	0	0	0	0	0	0	0	0	0	0	0

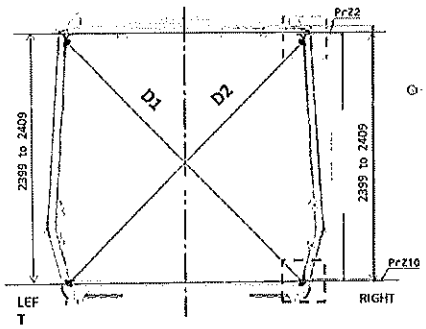
Signature Industrial Quality: Date: 25/05/24

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

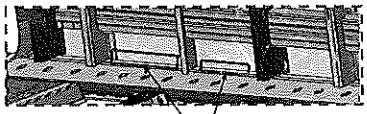
Specifications of Details for CBS measurement



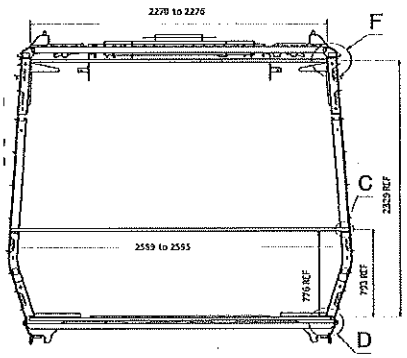
9

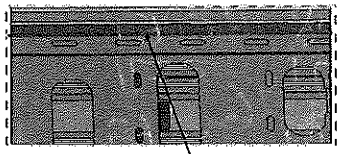


Measurement positions on roof rail and sidewall omega corner.

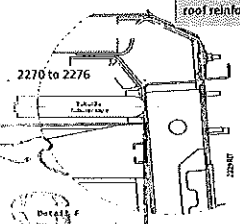


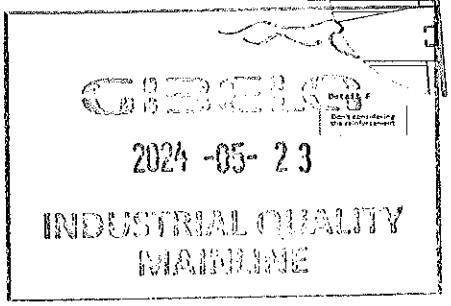
Measurement positions on sidewall and side sill corner.





Reinforcement area measurement positions on roof reinforcement area.





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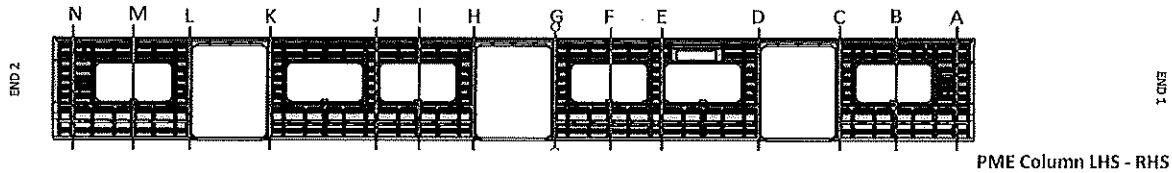
Specifications of Details for CBS measurement



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

BEFORE WELDING

	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3069	3067	0	2404	2404	0
B	3067	3069	2	2405	2404	1
C	3070	3071	1	2406	2405	1
D	3071	3067	2	2404	2404	0
E	3070	3070	0	2404	2405	1
F	3069	3071	2	2404	2406	2
G	3068	3069	1	2406	2404	2
H	3071	3071	0	2405	2404	1
I	3069	3067	2	2406	2404	2
J	3069	3068	1	2404	2405	1
K	3067	3067	0	2406	2405	1
L	3068	3069	1	2404	2404	0
M	3067	3069	0	2405	2405	0
N	3067	3066	1	2404	2404	0

GIBELA
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QUALITY
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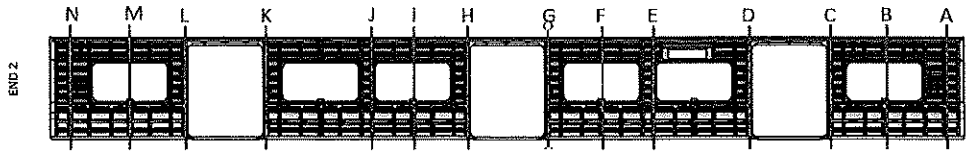
		Date 07/11/2023	

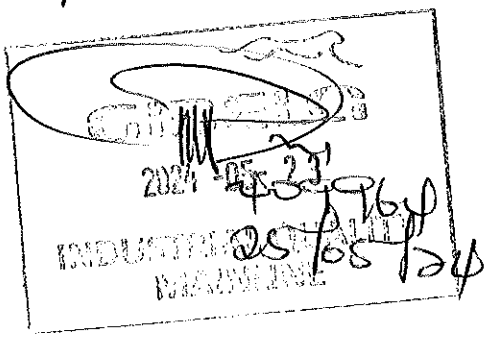
Specifications of Details for CBS measurement



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

AFTER WELDING

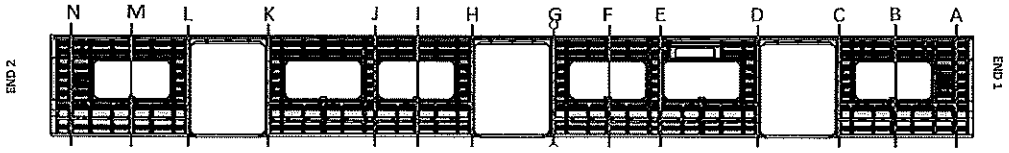
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2399 to 2409	2399 to 2409 (RHS)	LHS-RHS ≤ 2
A	3796	3796	0	2404	2404	0
B	3769	3768	1	2406	2404	2
C	3798	3797	1	2405	2405	0
D	3796	3796	0	2404	2406	2
E	3771	3771	0	2404	2404	0
F	3770	3771	1	2404	2405	1
G	3798	3797	1	2406	2404	2
H	3797	3798	1	2405	2404	1
I	3769	3768	1	2406	2404	2
J	3770	3771	1	2405	2406	1
K	3798	3797	1	2404	2405	1
L	3796	3796	0	2404	2404	0
M	3769	3768	1	2404	2403	1
N	3798	3797	1	2404	2406	2

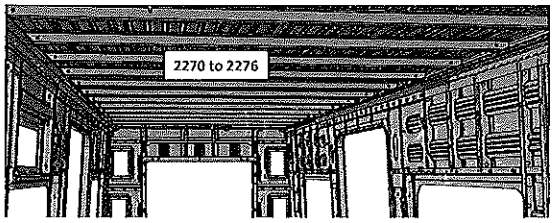


GIBELA	CARBODYSHELL M1 ASSEMBLY DTR30226487/3	Rev. 28	Project: PRASA SI.CB2210.254.V28
		Date 07/11/2023	

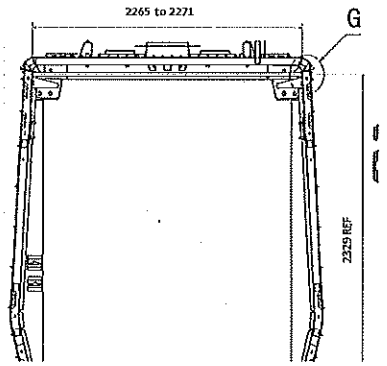
CBS measurement

BEFORE WELDING



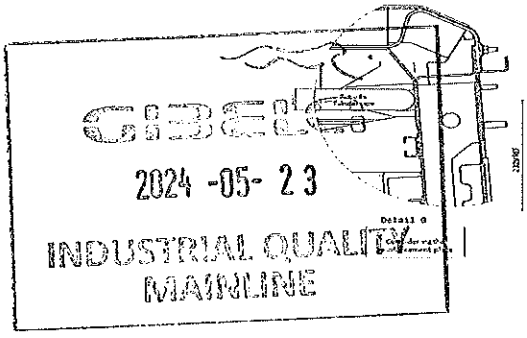


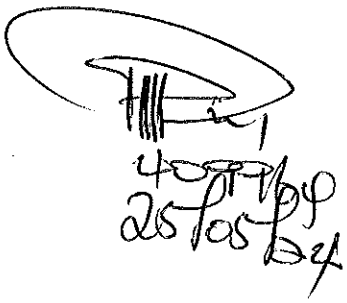
Do not consider reinforcement (Take measurements top area of zee profile



1990 to

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

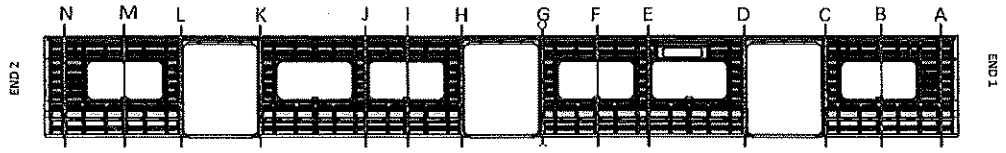




GIBELA	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28	Project: PRASA SI.CB2210.254.V28
		Date 07/11/2023	

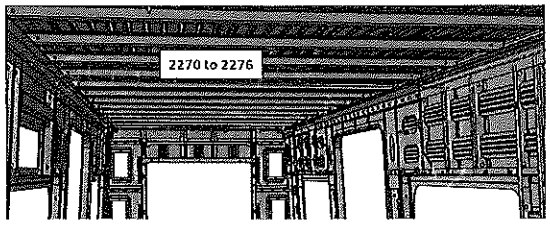
CBS measurement

AFTER WELDING

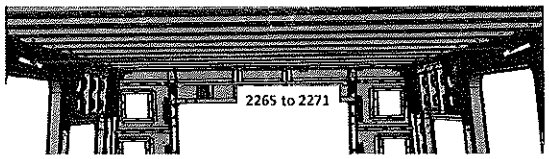


	2265 to 2271	2270 to 2276
A	2269	
B		2270
C	2268	
D	2266	
E		2271
F		2275
G	2269	
H	2267	
I		2270
J		2276
K	2270	
L	2269	
M		2274
N	2269	

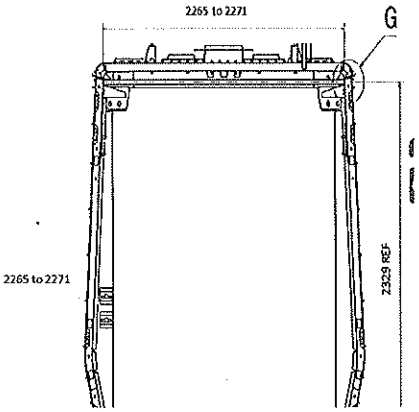
END 2

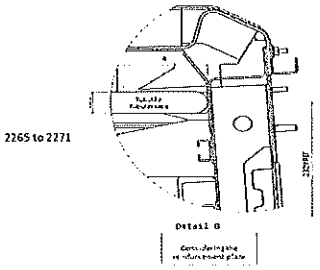


Do not consider reinforcement (Take measurements top area of zee profile



Take measurement close to radius (considering reinforcement)

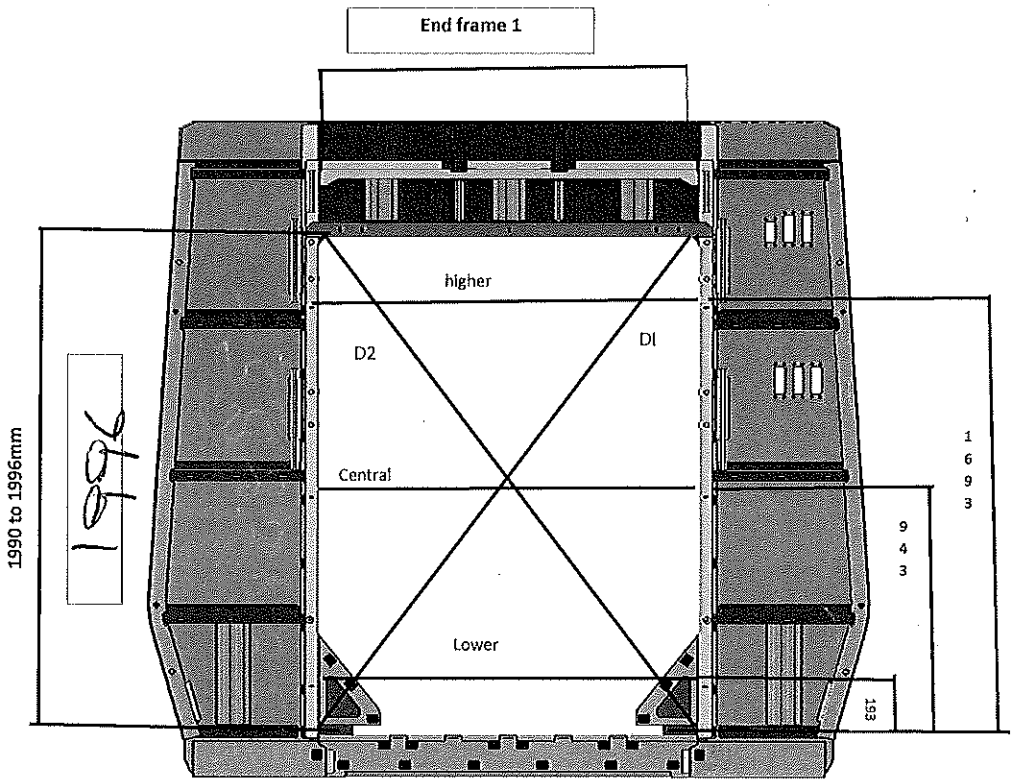




GIBELA
2024 -05- 23
INDUSTRIAL QUALITY
PRAESA

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

Specifications of Details for CBS measurement



1380 to 1382 mm

DIAGONAL DIFFERENCE **D1-D2** ≤ 3mm

Higher Dimension	1381	D1	2416
Central Dimension	1382	D2	2415
Lower Dimension	1382	D1-D2	1

2024 -05- 23

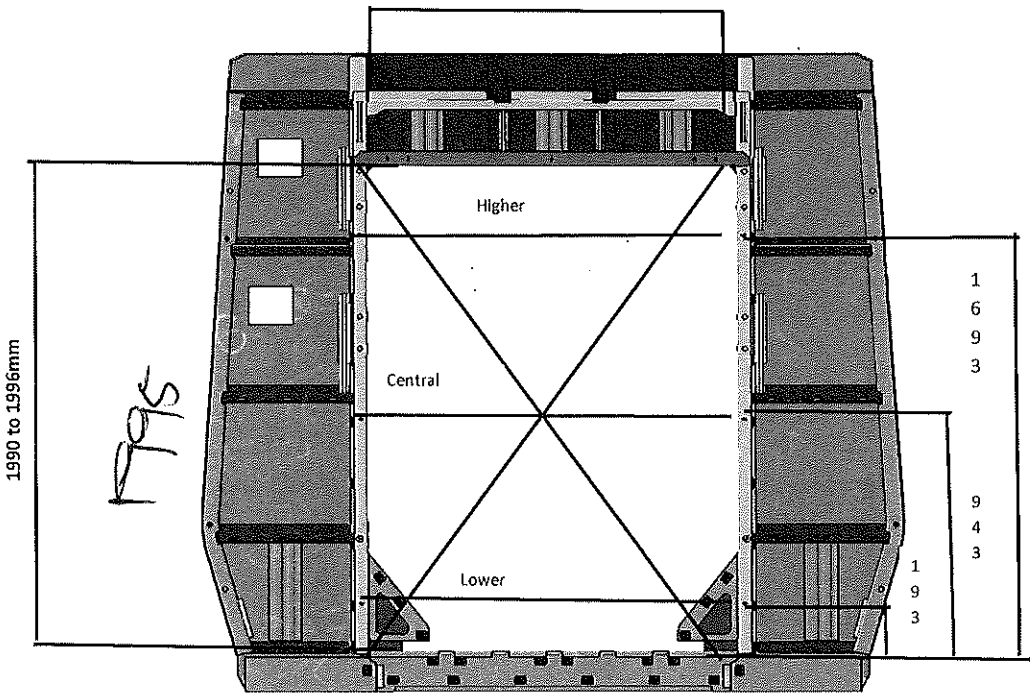
INDUSTRIAL QUALITY ONLINE

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

Specifications of Details for CBS measurement

Endframe 2

1380 to 1382 mm



1380 to 1382 mm

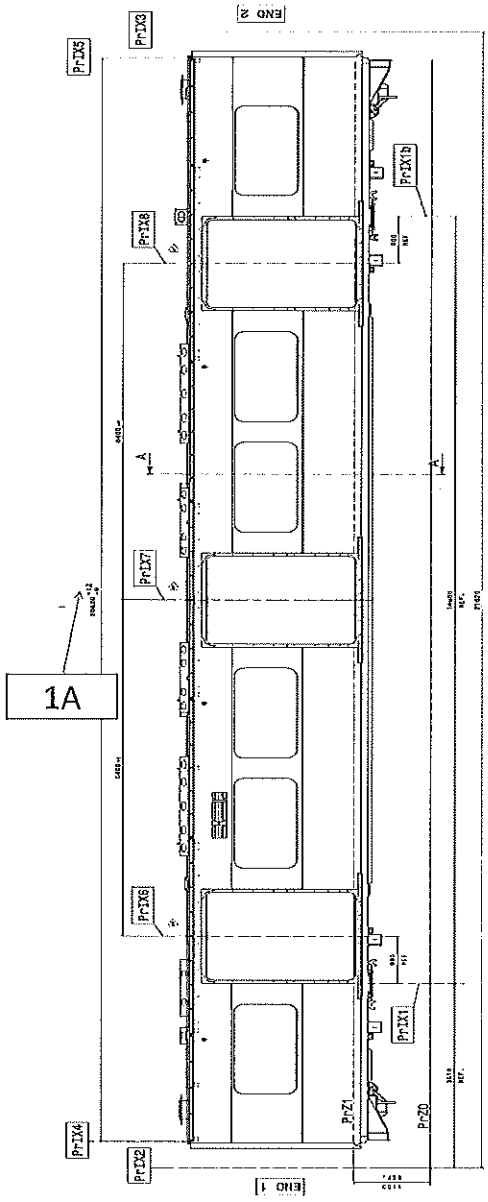
DIAGONAL DIFFERENCE **D1-D2** ≤ 3mm

Higher Dimension	1381	D1	2414
Central Dimension	1380	D2	2415
Lower Dimension	1381	D1-D2	1

MAINLINE

GIBELA	CARBODYSHELL M1 ASSEMBLY DTR302254B7/3	Rev. 28	Project: PRASA SI.CB2210.254.V28
		Date 07/11/2023	

Specifications of Details for CBS measurement



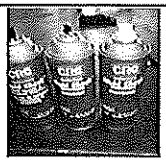
	LEFT SIDE	
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20616

	RIGHT SIDE	
	SPECIFICATION SIZE	ACTUAL SIZE
1A	20632 - 20614	20616

GIBELA
2024-05-23
INDUSTRIAL QUALITY
MANAGER
23 May 24

Dye penetrant test

Dye-penetration test to be performed by quality personnel



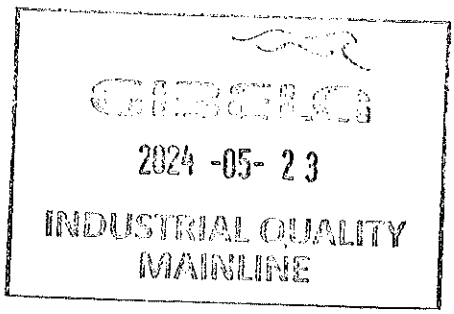
GIBELA	CARBODYSHELL M1 ASSEMBLY DTR30225487/3	Rev. 28 Date 07/11/2023	Project: PRASA SI.CB2210.254.V28

Item	Description of the Issue	OK	Signature/Date (Manufacturing)	Signature/Date (Quality)

II.2 - Check List REX

Check List Items

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



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

Self Inspection - Final Result

				DATE	NAME	SIGNATURE
HOLD POINT		GO	(If activities are not complete, the missing activities must not impact the next stage)	25/05/24	Pontso Operations	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	25/05/24	Amogelang Industrial Quality	
		NO GO	There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)		Operations	
			There are non-conformities impact the quality of the product and there is no corrective action defined yet)		Industrial Quality	

In case of "NO GO", describe blocking problems

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

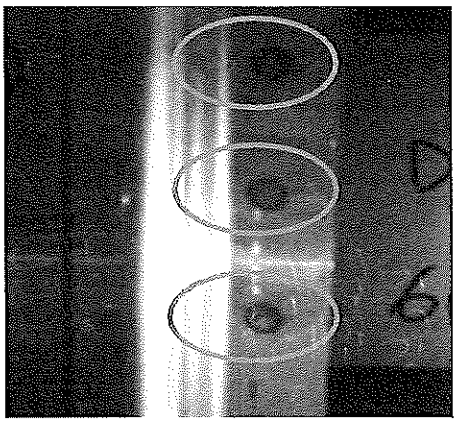
Item	Description		Responsible	Due date	Status

Operations

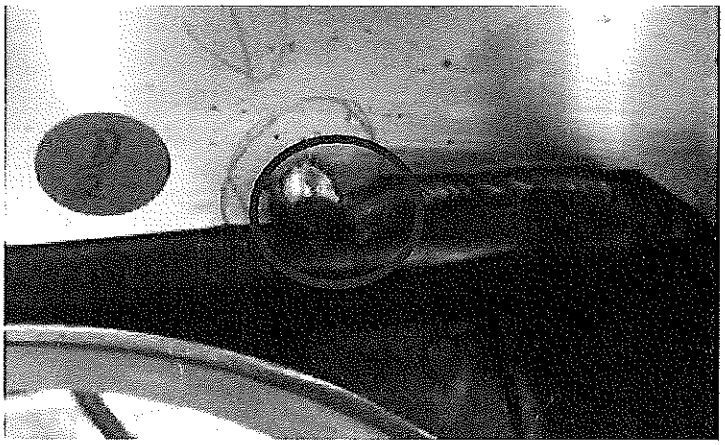
Quality

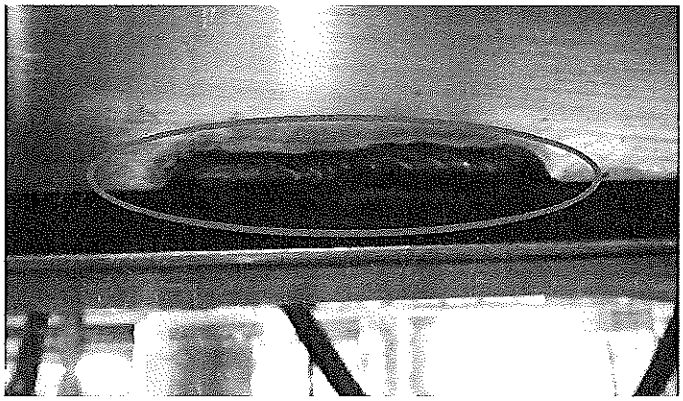
GIBELA
2024 -05- 23
INDUSTRIAL QUALITY
MAINLINE

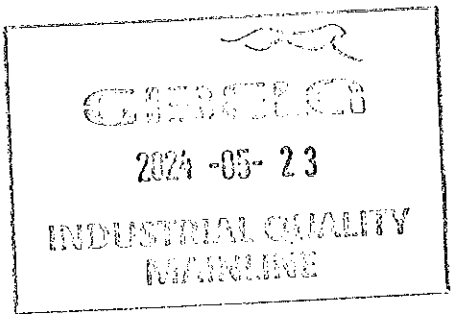
ANNEXURE A: Spot Welding Quality Acceptance Standard



ANNEXURE B: Arc Welding Quality Acceptance Standard

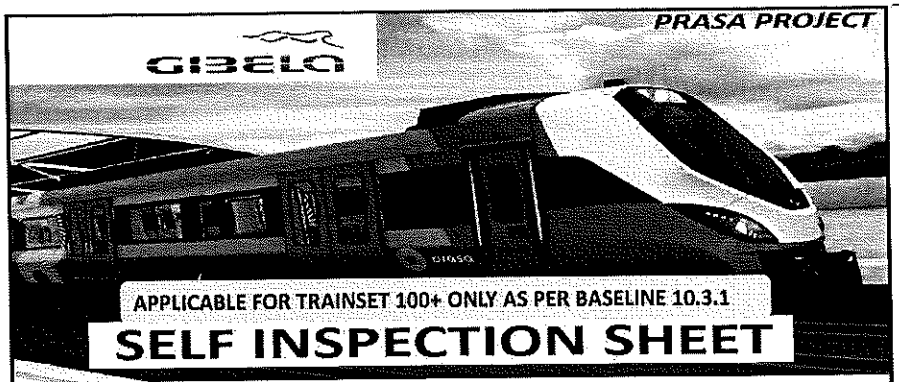






GIBELA

PRASA PROJECT



APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

SELF INSPECTION SHEET

APPLICATION REFERENCE

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE TC1	M1	M2	M3	TC2	WORK INSTRUCTION	SAFETY ?
☐ DTR3000152648	AAD0001278566	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB2220			X				PRA.CB2220.DTR3022548 7/2.V21	YES
☐ DTR3000152649	AAD0001278566	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB2210		X	X		X		PRA.CB2220.DTR3022548 7/2.V21	YES
☐											
☐											
☐											
☐											
☐											

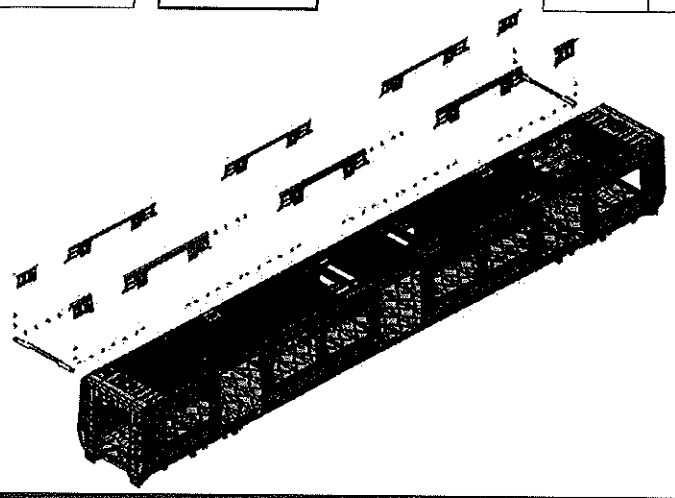
REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	01/02/2018	GIBELA NEW CREATION	APPROVER	Itumeleng Modiba	01/02/2018
			CHECKER	Nosizo Pindela	01/02/2018
			COMPILER	Thanyani Mathegu	01/02/2018
1	18/05/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	APPROVER	Itumeleng Modiba	18/05/2018
			CHECKER	Nosizo Pindela	18/05/2018
			REVISED BY	Ramokone Motama	18/05/2018
2	2018/07/05	Certain dimensional checks added and others moved to CB1210	APPROVER	Itumeleng Modiba	2018/07/05
			CHECKER	Nosizo Pindela	2018/07/05
			REVISED BY	Ramokone Motama	2018/07/05
3	2018/06/12	Width tolerance as per DT0000336600	APPROVER	Itumeleng Modiba	2018/06/12
			CHECKER	Nosizo Pindela	2018/06/12
			REVISED BY	Nosizo Pindela	2018/06/12
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 D1 and D2 on Self - Inspection Remove length measurements	APPROVER	Itumeleng Modiba	13/03/2019
			CHECKER	Nosizo Pindela	13/03/2019
			REVISED BY	Nosizo Pindela	13/03/2019
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	06/08/2020
			REVISED BY	Bongane Masina	06/08/2020
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	19/04/2021
			CHECKER	Bongane Masina	
			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	20/02/2022	New Baseline change 10.3.1	APPROVER	Collins Mbhombhi	19/02/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Collins Mbhombhi	14/06/2022
			CHECKER	Andani Muthelo	
			REVISED BY	Andani Muthelo	
27	19/10/2022	Addition of traceability for sealant application & welding	APPROVER	Collins Mbhombhi	19/10/2022
			CHECKER	Ntokozo Zwane	
			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	
29	28/10/2023	Addition of bracket quantity	APPROVER	Ngobeni Tyson	28/10/2023
			CHECKER	Ntokozo Zwane	
			REVISED BY	Amogelang Mohlampe	

TRAINSET	CAR	OPERATOR NAME& ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES
230	M01	Tetelo 471781	21/05/24	SI.CB2220.250.V29	13

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

Car: M1,M3&M4	NCR:	Work station:	CB2220

Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car TC	M1	M2	M3	M4	TC2	Revision	Observation	OK			Signature/Date (Manufacturing)	Signature/Date (Quality)
DTR30225487/2		✓					29	27/05/24	✓		N/A	27/05/24	27/05/24

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial Number	Calibration or Verification Validation Date	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Turbular	328232	15/03/25	✓		27/05/24	27/05/24
measuring Tape	GTBT10594	12/04/25	✓			

1.3 Consumables

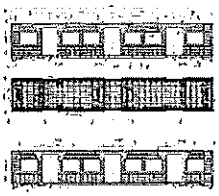
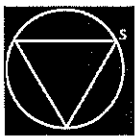
Welding Consumable Control - Used for Special Process

Filler Material	Heat Number	Welding Process	OK		Signature/Date (Manufacturing)	Signature/Date (Quality)
Welding Wire	E231067	Mig Welding	✓		27/05/24	27/05/24

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

II - Self Inspection - Items to Check

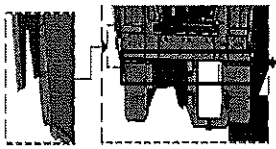
II.1 - Items to check

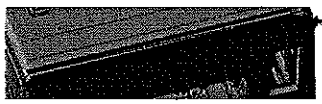
Item	Picture/Drawing	Description	Acceptance criteria / Record	OK			Signature/Date (Manufacturing)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering n° PRA.CB2220.DTR30225487/2 Verification of fitment for all reinforcement brackets.	PRA.CB2220.DTR30225487/2	✓			27/05/24	27/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓			27/05/24	27/05/24
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	**IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000**	✓			27/05/24	27/05/24
04		Cleaning of all Stainless Steel Surface	**According TO GIB-WEL - PROC-0002**	✓			27/05/24	27/05/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓			27/05/24	27/05/2024
06		Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	✓			27/05/24	27/05/2024
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 (1) Min-Max 10°C - 35°C Relative humidity Min – Max (1) Min-Max 25% - 80%	Sealant Batch No: B347.kit41 Exp Date: 04 / 08 / 24 Actuals Temperature: 25°C Humidity: 35%	✓			27/05/24	27/05/24
08	NA	Verification of sealant application in certain regions in the drawing.	AAD0001278565	✓			27/05/24	
09		Verfication of safety welds	Approved according to DTD000210658 reference and Self inspection	✓			27/05/24	27/05/24

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

II - Self Inspection - Items to Check

SEALANT APPLICATION





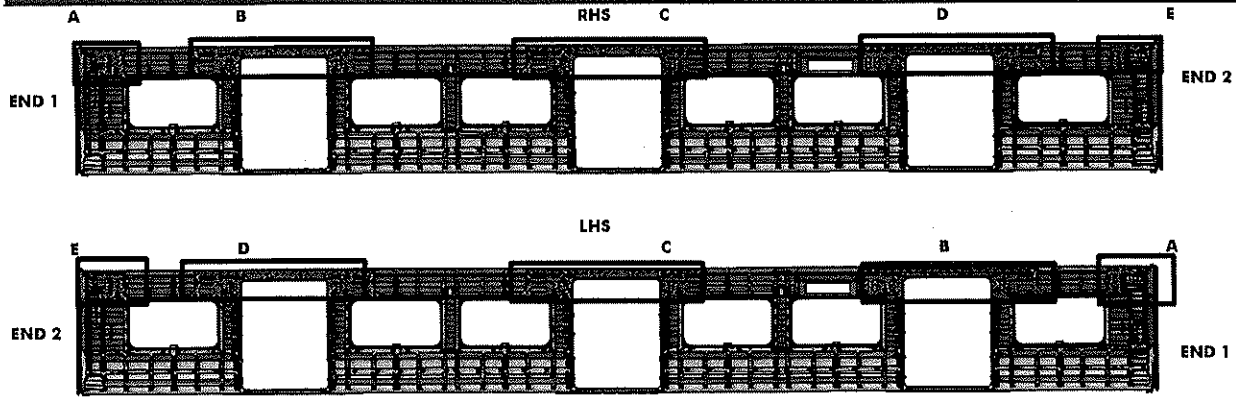
AREA 1 & 2 END 1

Operator (Name & sign): Priscilla

Operator (Name & sign): Priscilla

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

II - Self Inspection - Items to Check

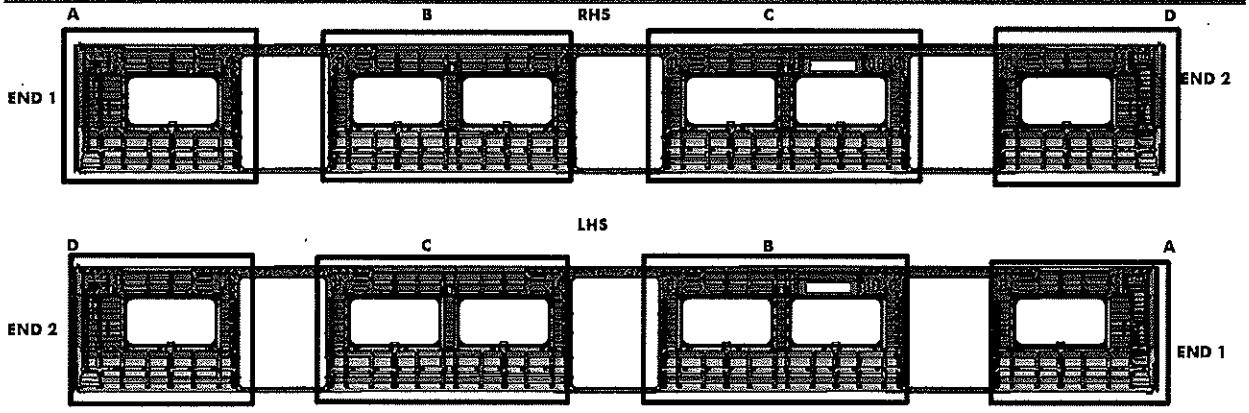


REINFORCEMENT WELDING

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

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

II - Self Inspection - Items to Check



BRACKETING

INSTALLATION

C-RAILS: Operator: Asanda

Operator:

DOOR MECHANISMS: Operator: Tetelo

Operator:

TAPPING PADS Operator:

Operator:

INSTALLATION & VERIFICATION

SEAT & LUGGAGE BRACKETS: Operator: Priscilla

Operator:

SEAT BRACKETS VERIFICATION: Operator: Mthoko

Operator:

WELDING

AREA		LHS	RHS
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):	THULANI	THULANI
	(C-rails, Luggage and earth bushes) : Operator (Name&sign):	THULANI	
D	(Seat brackets) Operator (Name&sign):	THULANI	THULANI
	(C-rails, Luggage and earth bushes) : Operator (Name&sign):	THULANI	THULANI

ENDS

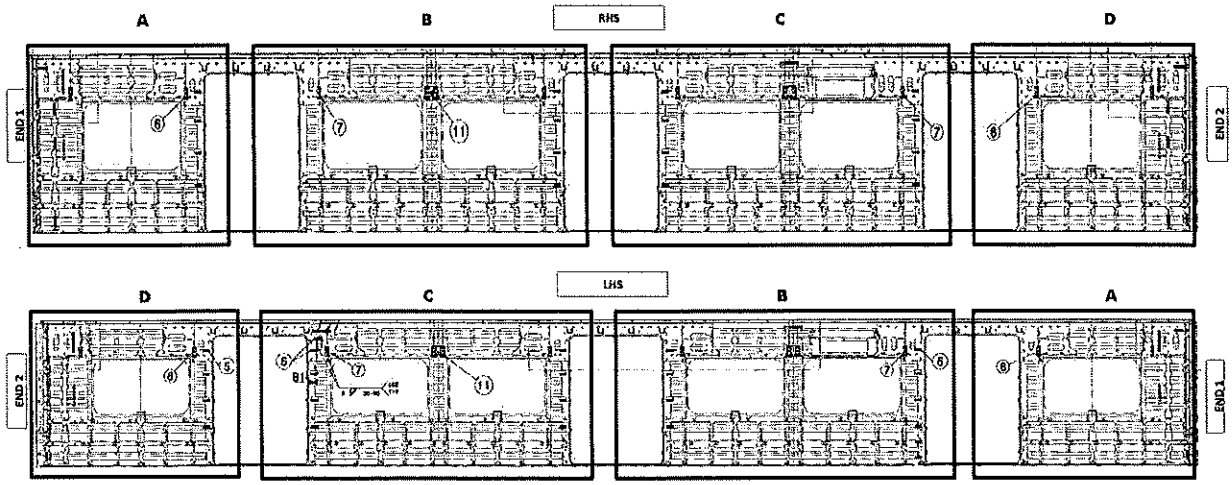
END 1 TAPPING PADS WELDING: Operator (Name&sign):

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

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

II - Self Inspection - Items to Check

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:

CRAILS 2 OFF EACH END
EARTH BUSH 6 OFF EACH END

VERIFICATION BY: _____

LHS

	SECTION	QUANTITY	OK	NOK
C-RAILS	A	2		
	B	9		
	C	11		
	D	8		
SEAT BRACKETS	A	13		
	B	21		
	C	21		
	D	13		
EARTH BUSH	A	3		
	B	5		
	C	6		
	D	2		

ROOF ENDS:

CRAILS 2 OFF EACH END
EARTH BUSH 6 OFF EACH END

VERIFICATION BY: _____

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:

CRAILS 2 OFF EACH END
EARTH BUSH 6 OFF EACH END

VERIFICATION BY: Tetelo

LHS

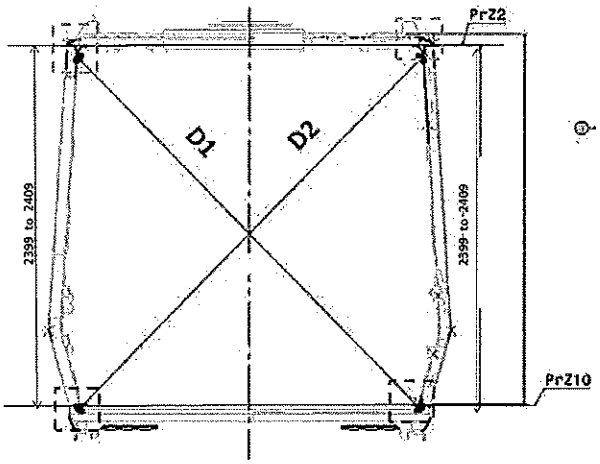
	SECTION	QUANTITY	OK	NOK
C-RAILS	A	2	✓	
	B	10	✓	
	C	11	✓	
	D	6	✓	
SEAT BRACKETS	A	13	✓	
	B	21	✓	
	C	21	✓	
	D	13	✓	
EARTH BUSH	A	3	✓	
	B	7	✓	
	C	6	✓	
	D	2	✓	

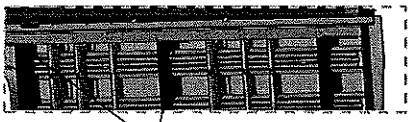
ROOF ENDS:

CRAILS 2 OFF EACH END
EARTH BUSH 6 OFF EACH END

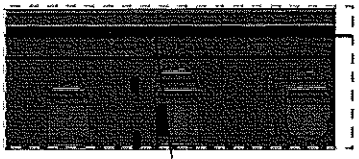
VERIFICATION BY: Tetelo

Specifications of Details for CBS measurement



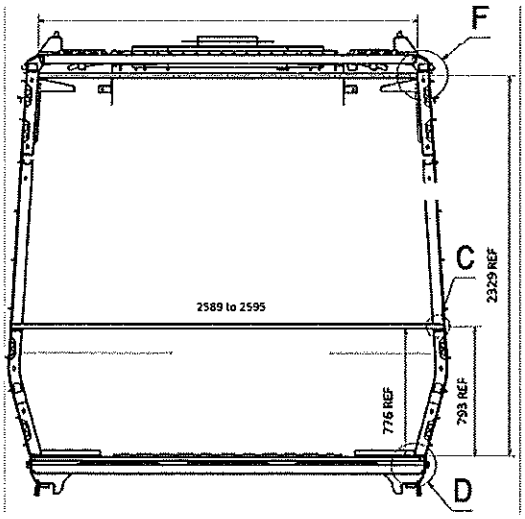


Measurement positions on roof rail and sidewall omega corner



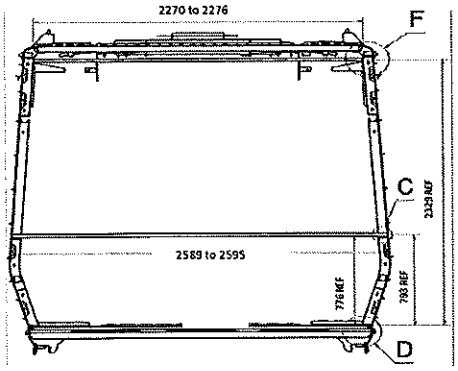
Reinforcement area measurement positions on roof reinforcement area

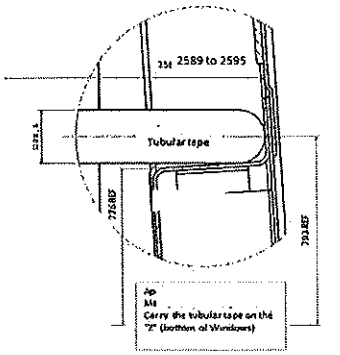
Measurement positions on sidewall and side sill corner



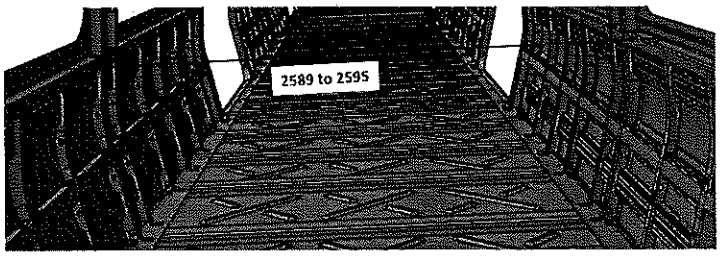
GIBELA	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev. 29 Date 28/10/2023	Project: PRASA SI.CB2220.250.V29

CBS measurement

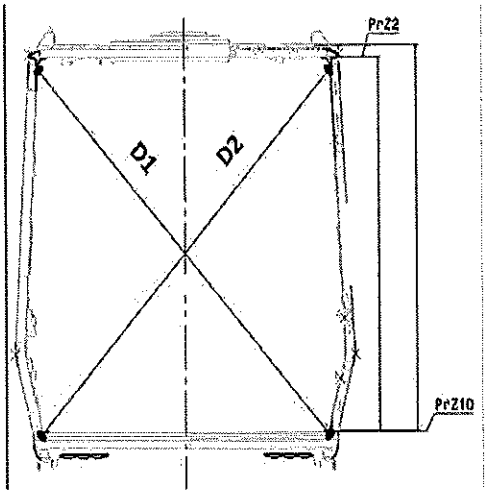


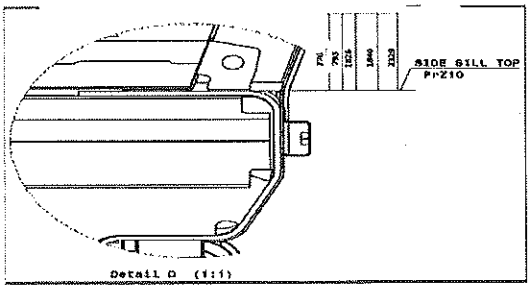


Detail C



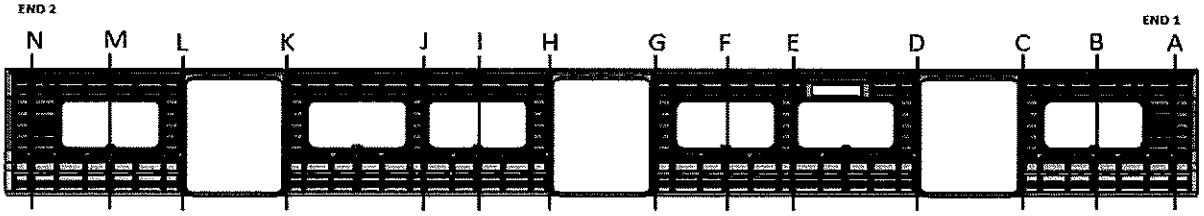
Take measurement close to radlus





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

CBS measurement

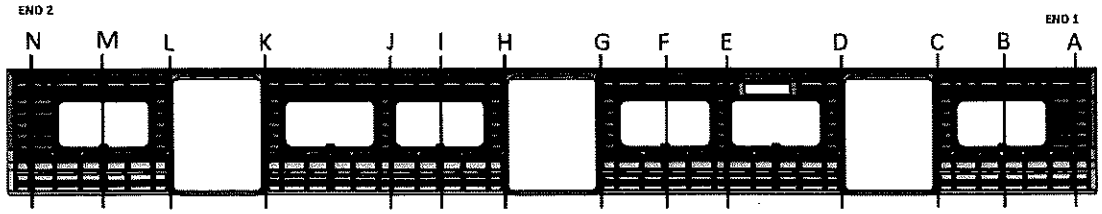


BEFORE WELDING

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

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

CBS measurement

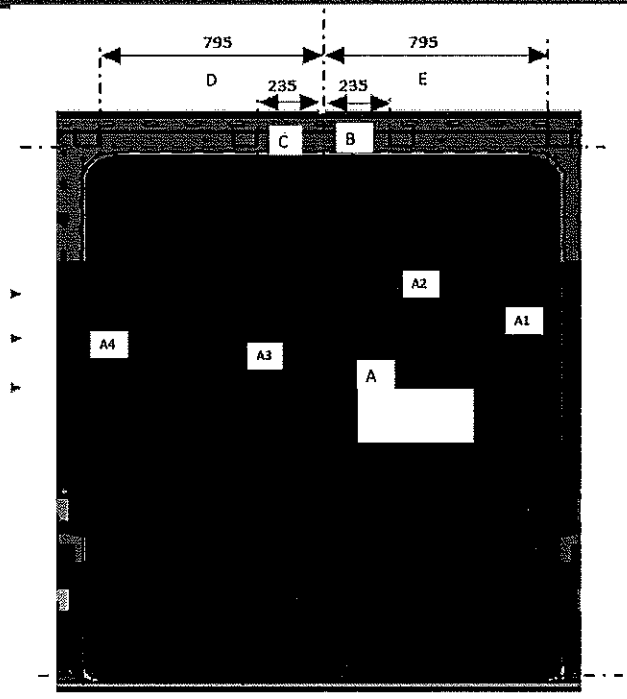


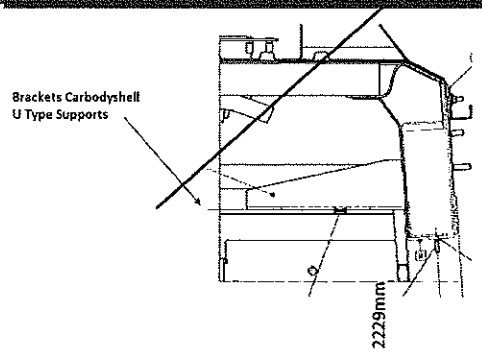
AFTER WELDING

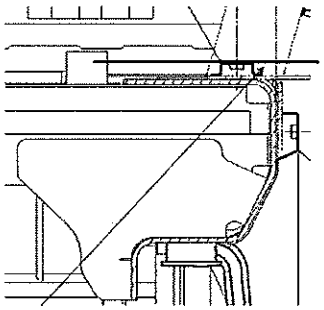
	Record D1 values	Record D2 values	D1-D2 ≤ 5mm	2589 to 2595
A	3299	3297	2	2589
B	3266	3267	1	2590
C	3297	3298	1	2591
D	3299	3300	1	2592
E	3267	3266	1	2590
F	3268	3267	1	2591
G	3299	3300	1	2590
H	3297	3298	1	2598
I	3267	3268	1	2591
J	3268	3265	3	2591
K	3300	3297	3	2590
L	3297	3295	2	2591
M	3265	3267	2	2591
N	3300	3297	3	2590

GIBELA	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







DOOR 1 - LHS

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

DOOR 2 - LHS

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

DOOR 2 - LHS

	VALUE	ACTUAL
A1	2230 to 2232	2232
A2	2230 to 2232	2232
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	794

DOOR 1 - 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	235
C	234 to 236	234
D	794 to 796	795
E	794 to 796	794

DOOR 2 - RHS

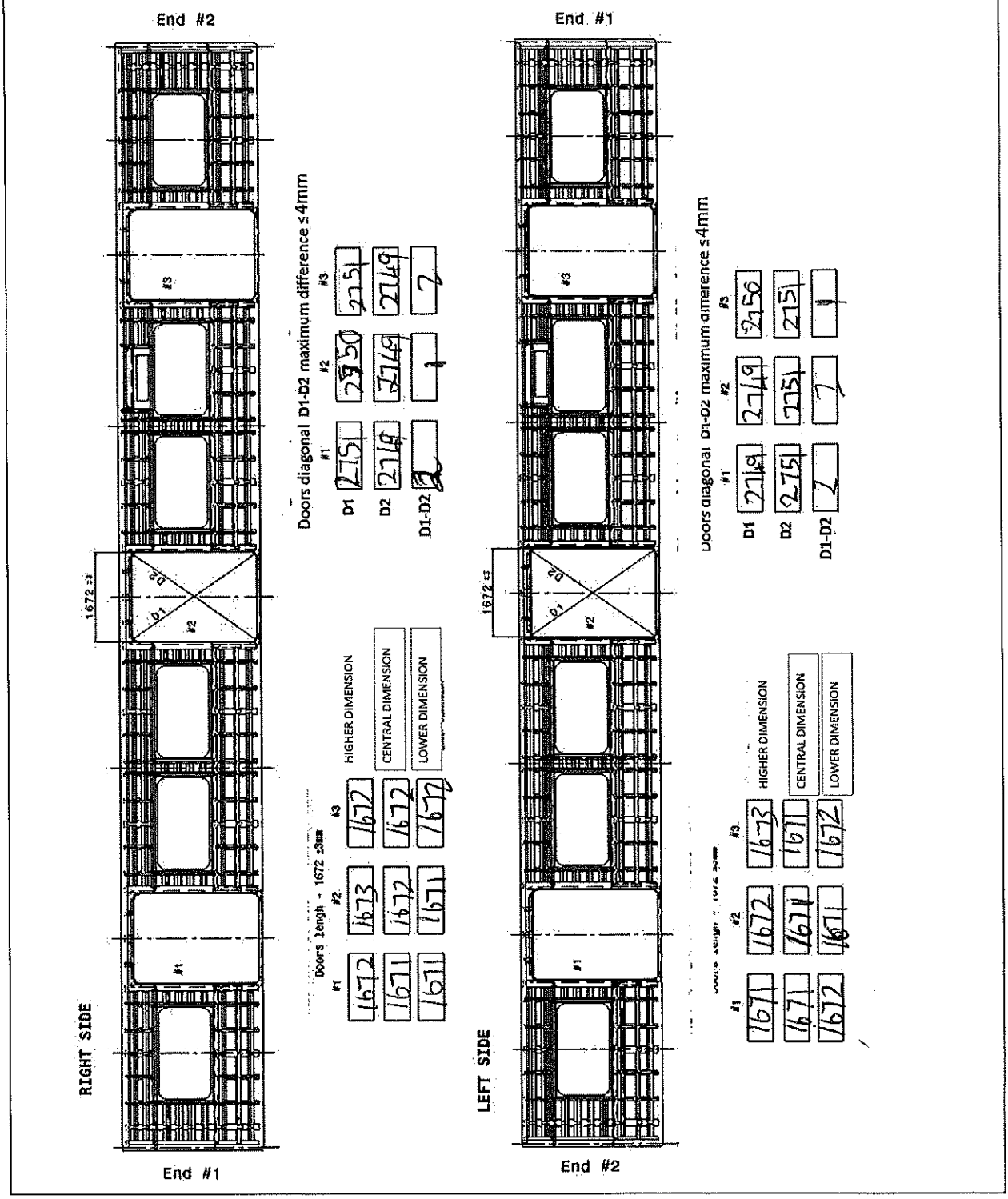
	VALUE	ACTUAL
A1	2230 to 2232	2231
A2	2230 to 2232	2232
A3	2230 to 2232	2232
A4	2230 to 2232	2230
B	234 to 236	234
C	234 to 236	235
D	794 to 796	795
E	794 to 796	795

DOOR 3 - RHS

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

GIBELA	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



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

CBS measurement (Manufacturing)

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	CARBODYSHELL M1,M3,M4 ASSEMBLY DTR30225487/2	Rev. 29 Date 28/10/2023	Project: PRASA SI.CB2220.250.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)	27/05/24	Tetelo Operations	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	27/05/24	Nhokero Industrial Quality	
			There are activities pendinge that impact/stop the activities of the next process Obs: (To describe problems below)		Operations	
			There are non-conformities impact the quality of the product and there is no corrective action defined yet)		Industrial Quality	

In case of "NO GO", describe blocking problems

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

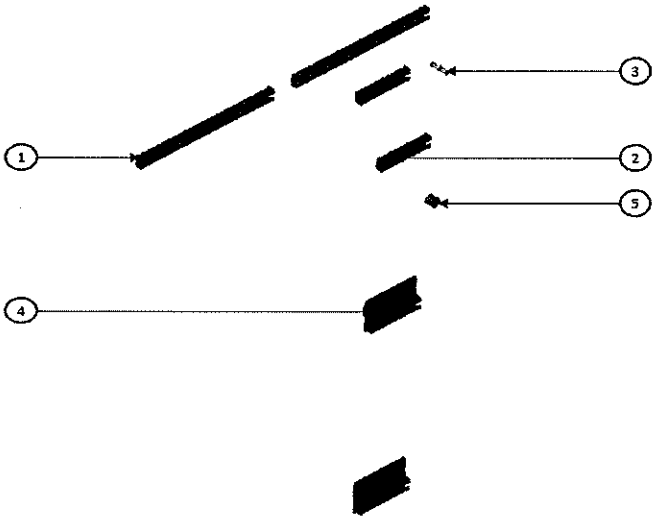
Item	Description		Responsible	Due date	Status

Operations

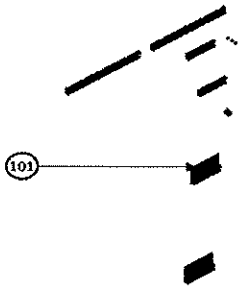
Quality

ANNEXURE A: Arc Welding Quality Acceptance Standard

Station: CB1220-004- U108 & U107



PART NO.	ITEM NO.	QTY	DESCRIPTION	MASS (KG)
DTR0020074088	5	6	EARTH STUD 6	0.036
AA00001201648	4	6	ASSEMBLY SUPPORT	0.271
DTR0000348305	3	12	WELDING STUD ISO13918 FT – M8X20 - SST	0.007
AA00001180424	2	12	ASSEMBLY SUPPORT	0.193
AA00001184418	1	14	ASSEMBLY SUPPORT	0.522
AA00001161080	101	6	CARBODYSHELL BRACKETS CARBODYSHELL M1/M3/M4 CAR[SIDE FRAME MODULE END – OPP]	12.132



GIBELA

PRASA PROJECT

APPLICABLE FOR TRAINSET 100+ ONLY AS PER BASELINE 10.3.1

SELF INSPECTION SHEET

APPLICATION REFERENCE

MOUNTING	DRAWING	DESCRIPTION	STATION	CAR TYPE TC1	M4	M1	M2	M3	TC2	WORK INSTRUCTION	SAFETY ?
☐ DTR3000152669	AAD0001278566	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB1230			X				PRA.CB1230.DT000002 25487.V20	YES
☐ DTR3000152673	AAD0001278566	CARBODYSHELL M1,M3,M4 ASSEMBLY	CB1230		X			X		PRA.CB1230.DT000002 25487.V20	YES
☐											

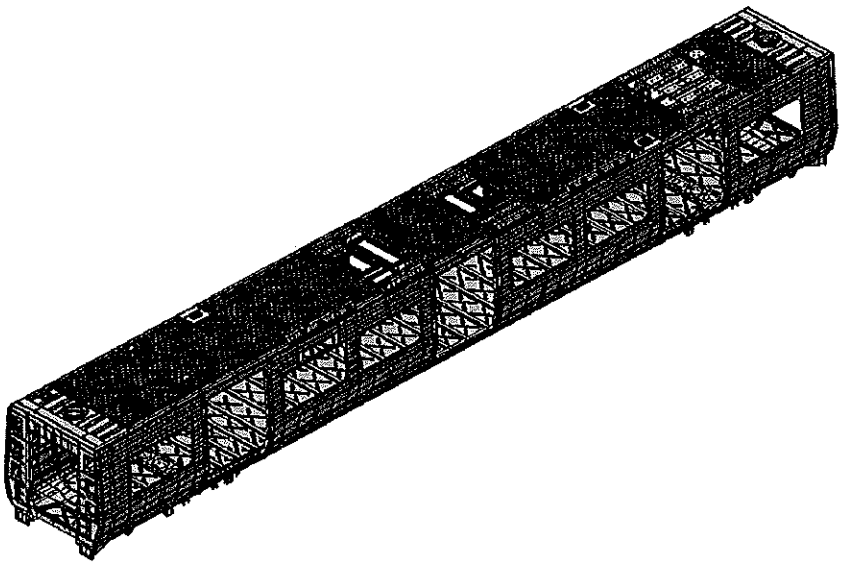
	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
0	2018/08/02	GIBELA NEW CREATION	APPROVER	Philipe Marques	2018/08/02
			CHECKER	Nosizo Pindela	2018/08/02
			COMPILER	Nosizo Pindela	2018/08/02
1	30/5/2018	Team leader and Quality Technician to sign Change final signature from PME Manager to Quality manager	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
	06/08/2020	New Baseline 10.2.6	APPROVER	Timothy Maimela	
			CHECKER	Bongane Masina	06/08/2020
			REVISED BY	Bongane Masina	
20	19/04/2021	New Baseline change 10.3	APPROVER	Timothy Maimela	
			CHECKER	Bongane Masina	19/04/2021
			REVISED BY	Bongane Masina	
25	20/02/2022	New Baseline change 10.3.1	APPROVER	Collins Mbhombhi	
			CHECKER	Andani Muthelo	20/02/2022
			REVISED BY	Andani Muthelo	
26	14/06/2022	Update minimum temperature requirement for sealant application	APPROVER	Collins Mbhombhi	
			CHECKER	Andani Muthelo	14/06/2022
			REVISED BY	Andani Muthelo	
27	19/10/2022	Addition of traceability for sealant application	APPROVER	Collins Mbhombhi	
			CHECKER	Ntokozo Zwane	19/10/2022
			REVISED BY	Amogelang Mohlampe	
28	14/04/2023	Added sealant batch number & welding consumables traceability	APPROVER	Vanessa Ntuli	
			CHECKER	Ntokozo Zwane	14/04/2023
			REVISED BY	Amogelang Mohlampe	
29	06/11/2023	Added thresholds traceability for boiler makers and welders	APPROVER	Tyson Ngobeni	
			CHECKER	Andani Muthelo	06/11/2023
			REVISED BY	Ntokozo Zwane	

TRAINSET	CAR	OPERATOR NAME& ALPS NO	DATE	SELF INSPECTION NUMBER	PAGES
230	M1	Buhle A29615	05/05/24	SI.CB1230.256.V28	11

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

Car:	NCR:	Work station: CB1230

Safety Related



I - Documentation and Instruments Control

I.1 - Documentation Control

Document	Type of car M1	M2	M3	M4	TC2	Revision	Obsevation	OK	N/A	Remark	Signature/Date (Operations)	Signature/Date (Quality)
PRA.CB1230.DT00000225487	X					28		✓		N/A	28/05/24	

I.2 - Instruments Control

Monitoring and Measuring Instrument Control - Used for Special Process

Instruments	Serial number	Calibration or Verification Validation Date	OK	N/A	Signature/Date (Operations)	Signature/Date (Quality)
Tubular	30893-3	15/03/2025	✓		28/05/24	
Measuring Tape	GIBTAP00	23/07/2024	✓		28/05/24	
Ruler	GIBSTB035	20/02/2025	✓		28/05/24	
Combination Square	GIBCS0140	26/06/2024	✓		28/05/24	

1.3 Consumables

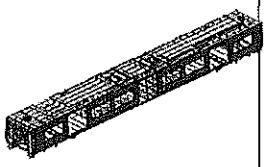
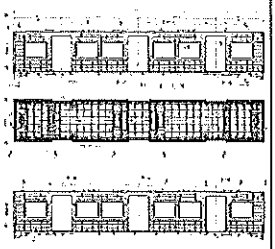
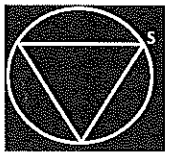
Welding Consumable Control - Used for Special Process

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

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

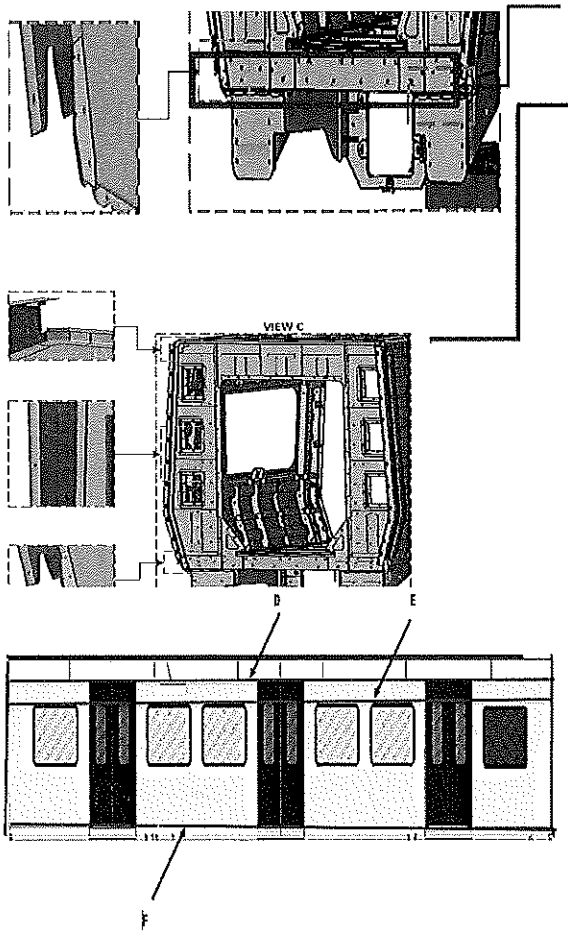
II - Self Inspection - Items to Check

II.1 - Items to check

Item	Picture/Drawing	Description	Acceptance criteria / Record	OK	NOK	N.A. with	Signature/Date (Operations)	Signature/Date (Quality)
01	N/A	Assembly according to Instruction Engineering nº PRA.CB1230.DT00000225487 Verification of fitment for all brackets.	PRA.CB1230.DT00000225487	✓			28/05/24	28/05/24
02	N/A	Carshell free of significant flaws which compromise the appearance or functionality	DTD0000210675	✓			28/05/24	
03	REFER TO ANNEXURE A	Arc Welding inspected and approved according procedure.	**IND-SAL-WMS-016 REFER TO GIB - TYPDEF - ARC - 0000**	✓			28/05/24	28/05/24
04		Cleaning of all Stainless Steel Surface	**According TO GIB-WEL - PROC-0002**	✓			28/05/24	28/05/24
05		Functionals dimensions approved according drawing or complementary document approved by Alstom engineering and registered in this document.	Approved according specified on pages below.	✓			28/05/24	28/05/24
06		Perform visual inspection of welds in 100% of the project. Run by penetrant testing in electric arc welding (weld ring) as IND-SAL-WMS-018. Run by penetrant testing welds (weld ring) and fillet sampling as described in DTD0000210658.	As the welding procedure IND-SAL-WMS-018 and DTD0000210658.	✓			28/05/24	28/05/24
07	N/A	Before 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: B3491-E03 Exp Date: 15 / 06 / 2024 Actuals Temparature: 16°C Humidity: 68 %	✓			28/05/24	28/05/24
08	N/A	Verification of sealant application in regions of roof and sideframe.	Sealant applied in regions of roof and sideframe.	✓			28/05/24	28/05/24

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

AREA 1



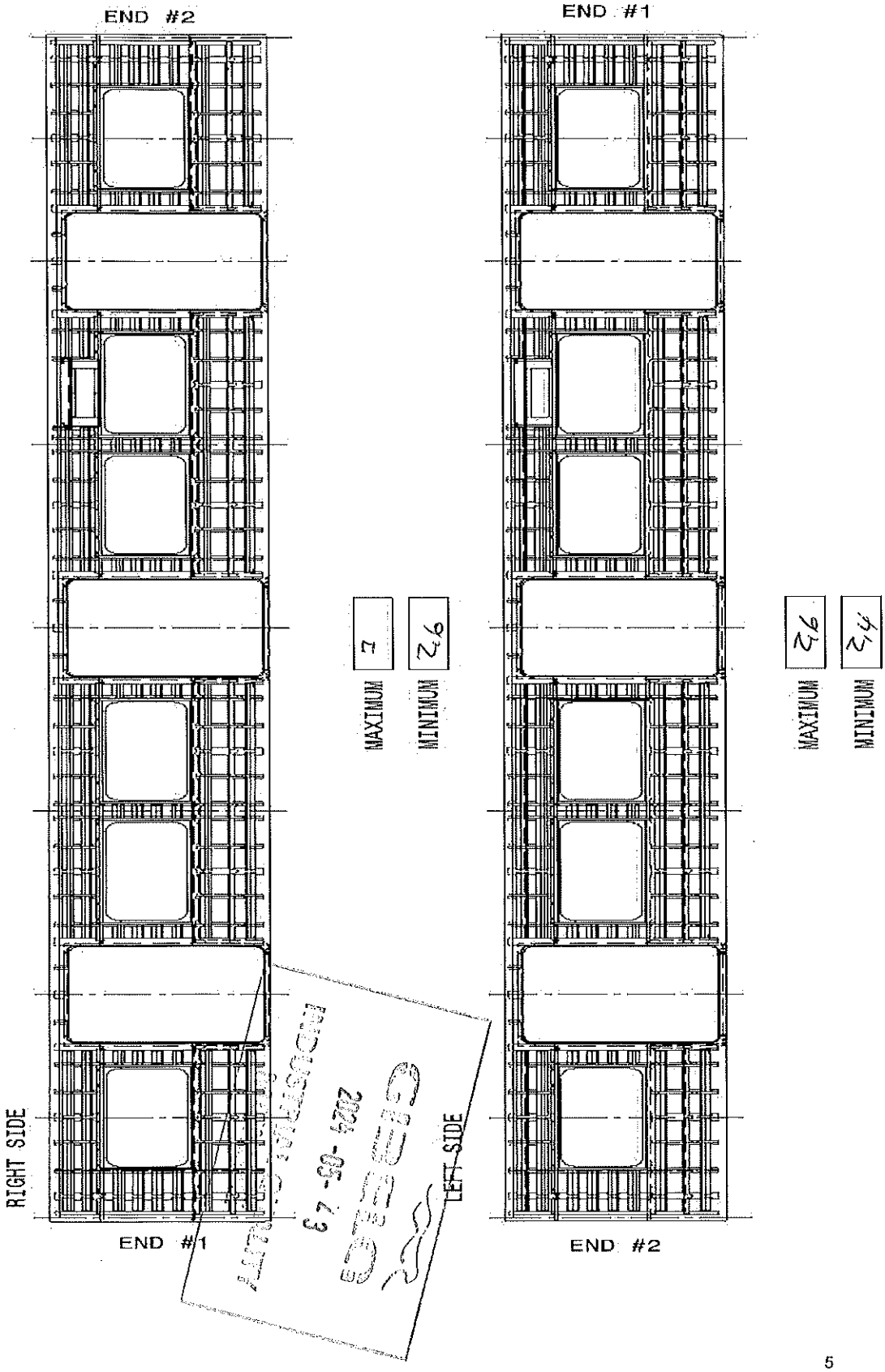
END 2 SEALANT

OPERATOR (Name & sign):	Levoy
OPERATOR (Name & sign):	Levoy
OPERATOR (Name & sign):	Levoy

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) :	Sihle	Sihle
Operator (Name & sign) :		
Operator (Name & sign) :	Mbhenolo	Mbhenolo
Operator (Name & sign) :		
Operator (Name & sign) :		

GIBELA
2024 -05- 13
INDUSTRIAL QUALITY
RAMLINE

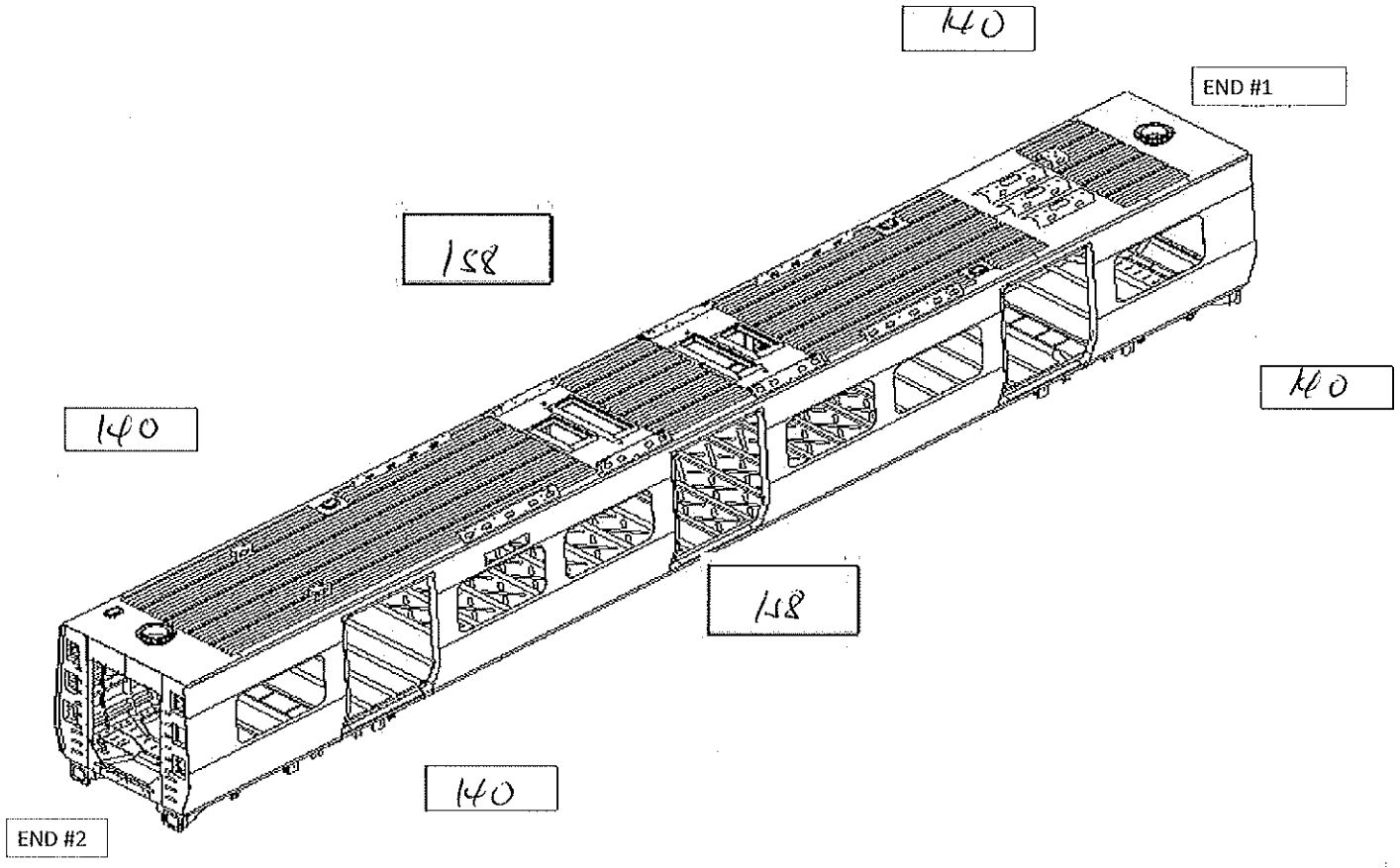
Flatness side left and right maximum of 2mm in the valley to peak measured in 900mm. Recod the maximum and minimum value foundand indicate the corresponding region.



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

Specifications of Details for CBS measurement CB1230

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

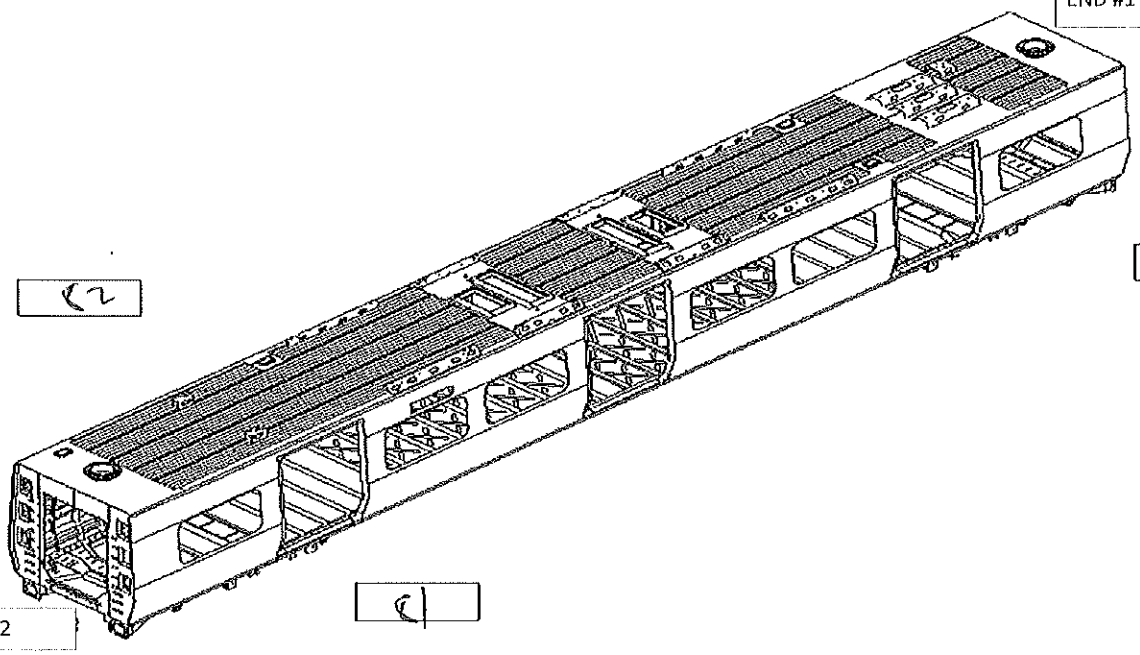


MEASURED CAMBER VALUES	
RIGHT	18
LEFT	18

GIBELA
2024 -05- 23
INDUSTRIAL QUALITY
MARINHA

Specifications of Details for CBS measurement CB1230

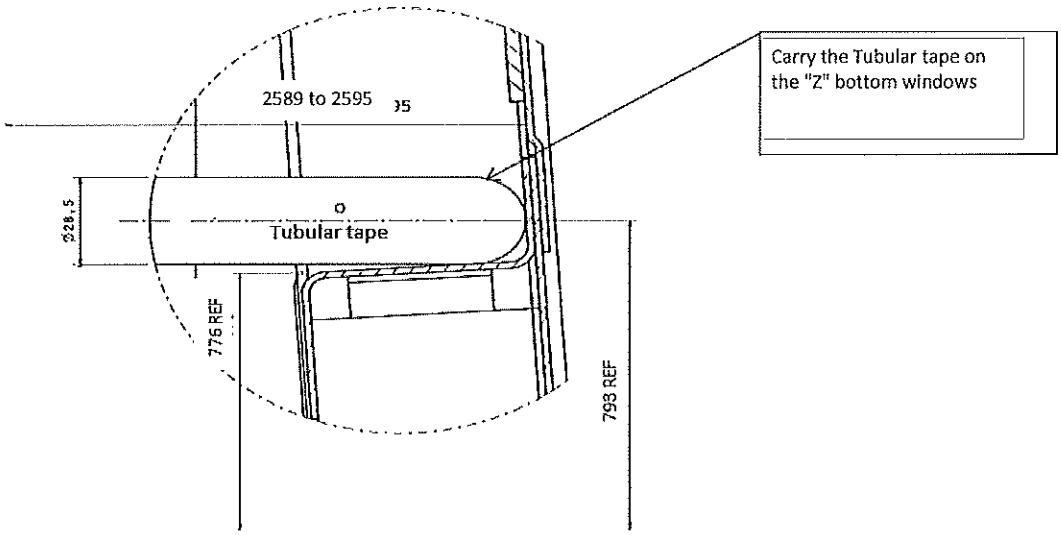
Twist measured in transversal and longitudinal = Maximum 3mm. Measure twist on air spring plates (LHS and RHS), both End 1 and End 2 folllowing twist measurement document.



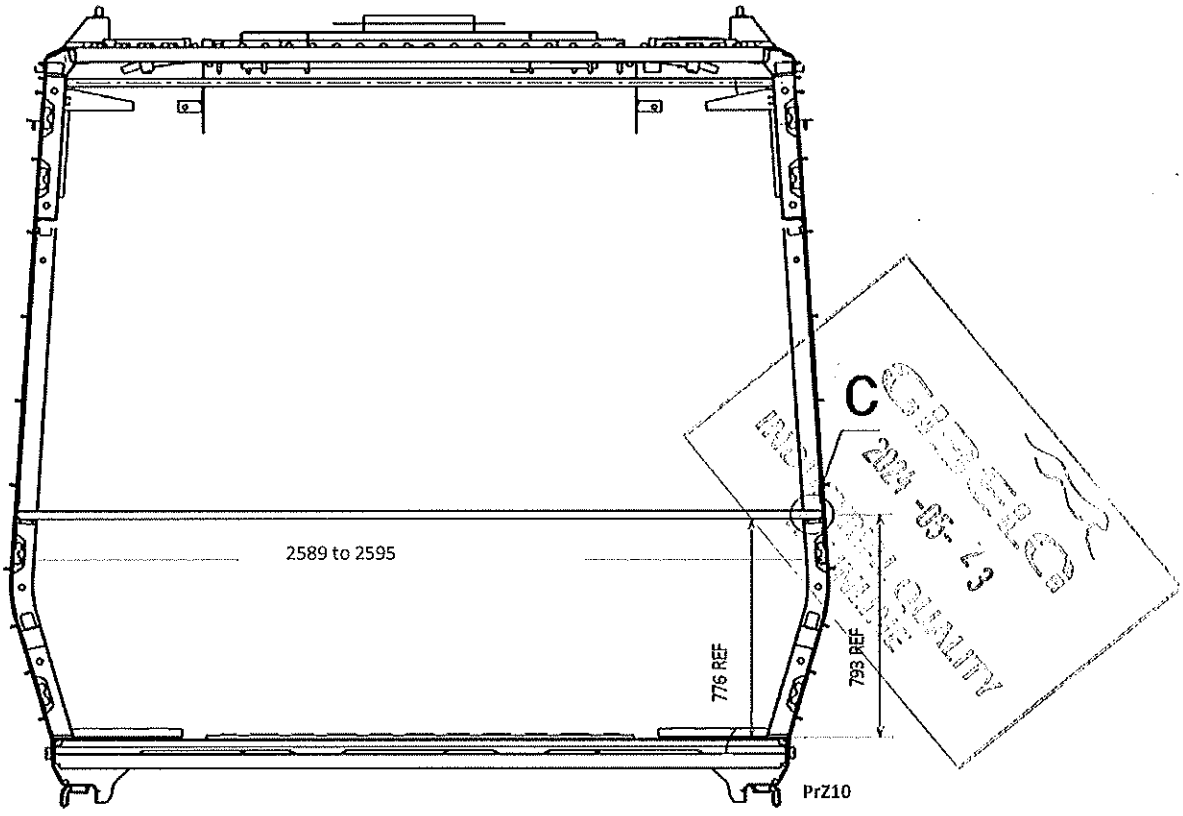
TWIST FOUND ON END 1	
TRANVERS	1
LONGITUDIN	0

TWIST FOUND ON END 2	
TRANVERSE	1
LONGITUDINAL	0

Specifications of Details for CBS measurement CB1230

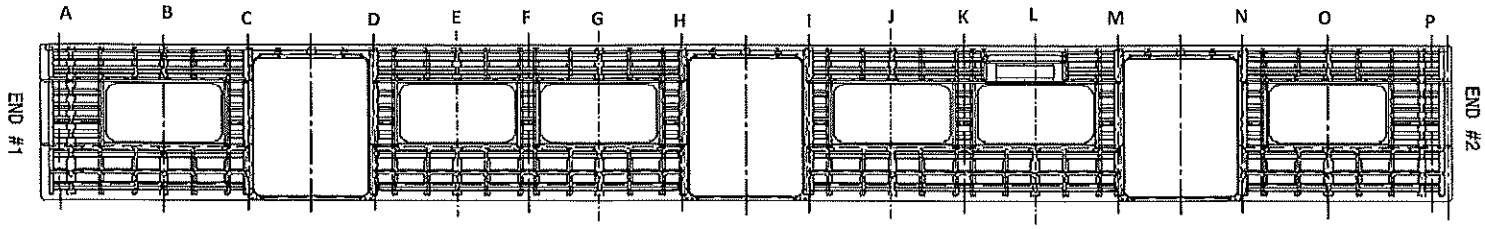


Detail C



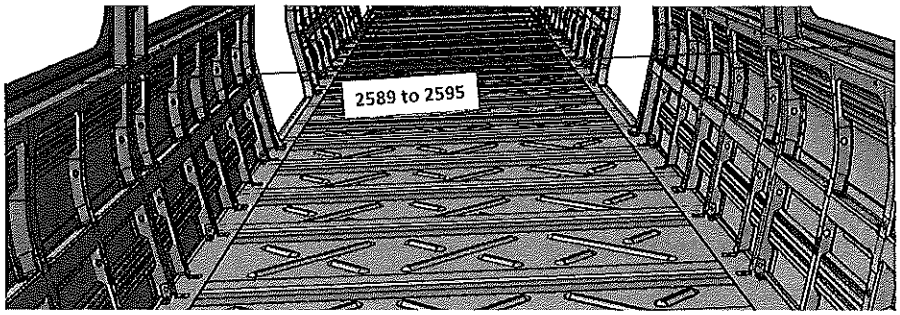
GIBELA	CARBODYSHELL M1,M3,M4 ASSEMBLY DT00000225487	Rev. 29 Date 06/11/2023	Project: PRASA SI.CB1230.256.V28

Specifications of Details for CBS measurement CB1230



2589 to 2595mm

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



Threashold verification

Nominal value :38

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

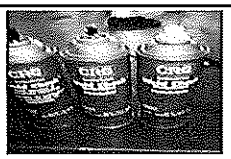
BOILER MAKER: Emmanuel

Welder: MTholozisi

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

Dye penetrant test

Dye-penetration test to be performed by quality personnel



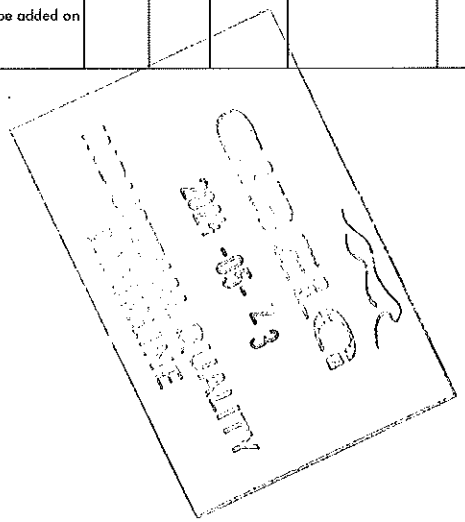
Specifications of Details for CBS measurement

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

II.2 - Check List REX

Check List Items

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



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

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 f activities are not complete, the missing activities must not impact the next stage!	28/05/24	Operations	
			Every auto inspection performed conforms to specification or in case of discrepancy the same is approved by the competent party.)	28/05/24	Richmond Industrial Quality	
		NO GO	There are activities pendings that impact/stop the activities of the next process Obs: (To describe problems below)		Operations	
			There are non-conformities impact the quality of the product and there is no corrective action defined yet)		Industrial Quality	

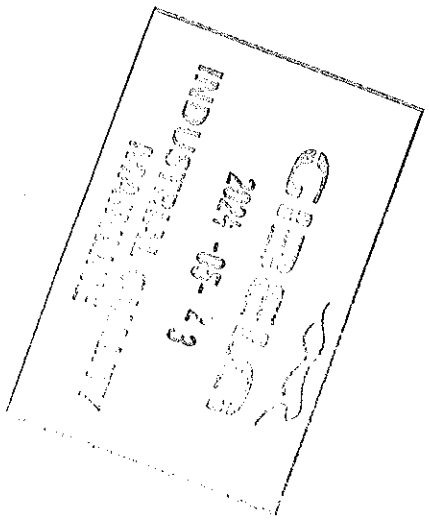
In case of "NO GO", describe blocking problems

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

Item	Description		Responsible	Due date	Status

Operations

Quality



ANNEXURE A: Arc Welding Quality Acceptance Standard