




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	DESCRIPTION	STATION	CAR TYPE						WORK INSTRUCTION	SAFETY ? 
			TC1	M4	M1	M2	M3	TC2		
<input type="checkbox"/>	DTR3-PROCE-14	LEVELLING, WEIGHTING AND BALANCING M CAR	FT1140	1	1	✓	1		PRA.FT1140.04	YES
<input type="checkbox"/>	DTR3-PROCE-14	LEVELLING, WEIGHTING AND BALANCING TC CAR	FT1140	1				1	PRA.FT1140.05	YES
<input type="checkbox"/>	DTR3-PROCE-17	LEVELLING, WEIGHTING AND BALANCING TC CAR	FT1140	1	1	1	1	1	PRA.FT1140.05	YES
<input type="checkbox"/>	DTR3-PROCE-17	LEVELLING, WEIGHTING AND BALANCING TC CAR	FT1140	1	1	1	1	1	PRA.FT1140.05	YES
<input type="checkbox"/>										
<input type="checkbox"/>										
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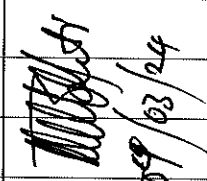
REV	DATE	MODIFICATION CONTENT	RESPONSIBLE	NAME	DATE
7	2/11/2020	UPDATE OF AIR TIGHTNESS TEST TIME FROM 4 MIN TO 5 MIN. ADD PANTOGRAPH AIR TIGHTNESS.	APPROVER	GIVEN SILOWA	2/11/2020
			CHECKER	SIMON MOKOENA	2/11/2020
			COMPILER	COMFORT MALATJI	2/11/2020
8	9/13/2021	ADDING GAUGE MEASUREMENT CHECK ON THE SI.	APPROVER	MAKOFANE LUCY	9/13/2021
			CHECKER	RATAU EDISON	9/13/2021
			COMPILER	TSAKANI KHOSA	9/13/2021
9	5/31/2022	pressure valve (APV) Isolation	APPROVER	MAKHURUPETJI THABANG	5/31/2022
			CHECKER	HAZEL MGIBA	5/31/2022
			COMPILER	RATAU EDISON	5/31/2021

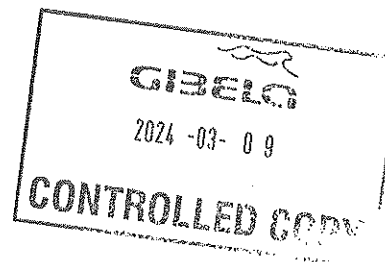
TUE	CAR	OPERATOR NAME	DATE	SELF INSPECTION NUMBER	PAGES
TS 212	M2	P. Komo	09/03/24	SI.FT1140.52	01/08






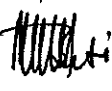



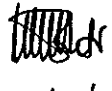

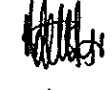



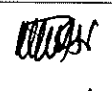



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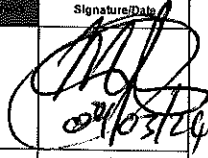
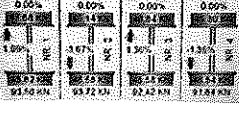

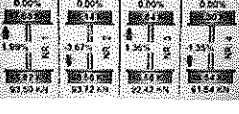


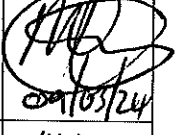


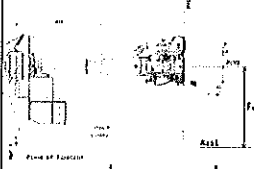
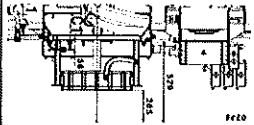
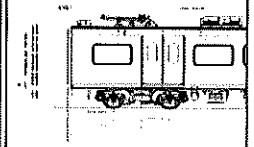
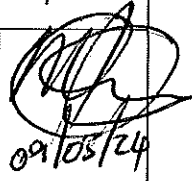
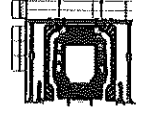


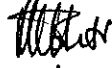
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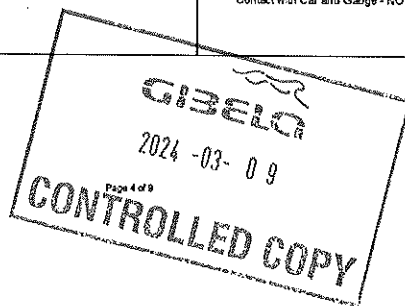
	<h1 style="margin: 0;">SELF INSPECTION INDUSTRIAL QUALITY</h1>										Rev:09	Project: PRASA	SI.FT1140.52
											Date:		
											5/31/2022		
Car:		NCR:				Work Station						FT1140	
 Safety Related													
I - Document and Instrument Control													
I.1 - Documents control													
Document	T01	M1	M2	M3	M4	T02	Revision	Remark	OK	NOK	Signature/Date		
PRA.FT1140.04													
PRA.FT1140.05			✓						✓		 09/03/24		
PRA.FT1140.05													
I.2 - Instruments Control - Monitoring and Measuring Instrument Control (Used for all instrument with calibration needed)													
Instruments description	Serial number					Calibration or Verification Validation Date		OK	NOK	Signature/Date			
Measuring tape	U1BTA 0276					26/10/23 - 26/10/24		✓					
Vernier Calliper	U1BVK 0056					06/06/23 - 06/06/24		✓					
Torque wrench 320N.M	D9650027					21/12/23 - 21/12/24		✓		 09/03/24			
Torque wrench 150N.M	D28622009					19/12/23 - 19/12/24		✓					
Torque wrench 35N.M	D2511623					19/12/23 - 19/12/24		✓					



	<h1>SELF INSPECTION INDUSTRIAL QUALITY</h1>		Rev:09	Project: PRASA	SI.FT1140.52									
			Date:											
			5/31/2022											
II - Self Inspection - Items to Check														
II.1 - Items to Check														
Item	Picture/Sketch	Description	Criteria/Record	OK	NOT OK	Signature/Date								
01		Ensure that the average pressure valve (APV) is isolated by capping the two input pipes at the fittings installing the blanking fitting on the pipes highlighted		✓		 08/03/24								
02		Check underframe pipe system Air tightness. Test performance according to WI PRAFT1130.15.	The test was performed and no leak was observed Initial pressure (IP): 10.04 bar Final pressure (FP): 9.85 bar FP - IP = 0.17 bar APPROVAL CRITERIA: After 5 minutes the pressure cannot drops more than 0.2 bar	✓		 08/03/24								
03		Movement performed at least 50m to shudder the car. And position on the leveled load cell, with wheels on the center.		✓		 07/03/24								
04		Measurement inspection was done with car on condition AW0 and the rail leveled. (The load cells system must be leveled and calibrated)	Calibration Validation Date 19/12/2023	✓		 09/03/24								
05		In case of the equipments not installed, equivalent weight of the item should be added in the same place to simulate the equipment (Any simulated weight, add on pending list)	<table border="1"> <thead> <tr> <th>EQUIPMENT DESCRIPTION</th> <th>WEIGHT (kg)</th> </tr> </thead> <tbody> <tr> <td>Carrying way</td> <td>260</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	EQUIPMENT DESCRIPTION	WEIGHT (kg)	Carrying way	260					✓		 09/03/24
EQUIPMENT DESCRIPTION	WEIGHT (kg)													
Carrying way	260													
06		The pressure difference between air spring on each bogie when raise the pressure was maintained < 0.3 bar.		✓		 09/03/24								
07		Measuremet recorded with empty suspension and loaded are on conformity with tolerances of the project.		✓		 09/03/24								
08		All leveling measurements are according to the reference. (Values out of reference must be recorded on "Description of defects")		✓		 09/03/24								


 2024 -03- 09
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		SELF INSPECTION INDUSTRIAL QUALITY		Rev:09	Project: PRASA	SI.FT1140.52
				Date: 5/31/2022		
Item	Picture/Sketch	Description	Criteria/Record	✓		Signature/Date
09		Check that the leveling rods are torqued and have torque marker.		✓		 09/03/24
10		The difference of weight between the left and right wheels of each axis, must be $\leq 4\%$. (Verify on the T&C equipment if all arrows are in green).		✓		 09/03/24
11		Remove the car, move back onto the load cells and repeat the step 09. Confirm if both are in the tolerance of $\leq 4\%$.		✓		 09/03/24
12		1 - Record shims thickness used on rod 2 - All screws were torqued and have torque marker.	THICKNESS (mm) I 0 II 0 III 0 IV 0	✓		 09/03/24
13		Pivot fixation	1- M20 x 90 screws with application of torque according to PRA.FT1140.04 / 05	✓		 09/03/24
14		FOR TC CARS F= Height of the center of Automatic coupler F = 895mm (+5/-10mm) (Using levelled rail)	TC CAB #1= _____ mm			N/A
15		FOR TC CARS Height of Eurobase Antenna = 205mm(+/-10mm) (Using levelled rail)	TC CAB #1= _____ mm			N/A
16		Check pantograph piping air tightness Test performance according to WI.PRA.FT1140.17.	The test was performed and no leak was observed. -Roof piping connection fittings. -Roof piping connection fittings(Roof arch and door trimming)	✓		 09/03/24
17		Pantograph does not come in contact with the higher height gauge when passing through.	No Contact with Pantograph and Gauge -GO Contact with Pantograph and Gauge - NO GO	✓		 09/03/24
18		Car does not come into contact with the gauge.	No Contact with Car and Gauge -GO Contact with Car and Gauge - NO GO	✓		 09/03/24





SELF INSPECTION INDUSTRIAL QUALITY

Rev:09

Date:

5/31/2022

Project:
PRASA

SI.FT1140.52

DRAFT TO MEASUREMENTS DURING LEVELLING (ALL UNITS MUST BE IN mm/bar/kg)

		END#1												
DESCRIPTION	TOLERANCE	LEFT SIDE						RIGHT SIDE						
		6	5	4	3	2	1	1	2	3	4	5	6	
AIR SPRING HEIGHT (EMPTY)	N/A	A`II												A`I
AIR SPRING HEIGHT (FULL)	min 254 max 261	AII				256	255	253	253	254	258			AI
FLOOR COVERING HEIGHT	min 1096 max 1116	EII				1100	1099	1097	1106	1107	1110			EI
AIR SPRING PRESSURE	≤ 0.3 (CI - CI)	CII				2.91	2.92	2.97	2.87	2.89	2.99			CI
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D3												D1
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D4												D2
PIVOT VERTICAL GAP	min 25 max 32	KII												KI
PIVOT LATERAL STOP GAPS DIFFERENCE	≤ 4 (AI - AI)	JII												JI
QTY OF TURNS OF LEVELLING ROD	N/A	XII												XI
SHIMS OF ANTI-ROLL BAR	N/A	YII												YI
DESCRIPTION	TOLERANCE		6	5	4	3	2	1	1	2	3	4	5	6
AIR SPRING HEIGHT (EMPTY)	N/A	A`III												A`IV
AIR SPRING HEIGHT (FULL)	min 254 max 261	AIII				257	255	256	256	255	256			AIV
FLOOR COVERING HEIGHT	min 1096 max 1116	EIII				1101	1098	1099	1107	1107	1108			EIV
AIR SPRING PRESSURE	≤ 0.3 (Ov - CI)	CIII				2.81	2.79	2.79	2.67	2.66	2.64			CIV
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D5												D7
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D6												D8
PIVOT VERTICAL GAP	min 25 max 32	KIII												KIV
PIVOT LATERAL STOP GAPS DIFFERENCE	≤ 4 (AIV - AIV)	JIII												JIV
QTY OF TURNS OF LEVELLING ROD	N/A	XIII												XIV
SHIMS OF ANTI-ROLL BAR	N/A	YIII												YIV
			LEFT SIDE						RIGHT SIDE					

COMPARE EACH TENTATIVE WITH THE TOLERANCE AND IDENTIFY EACH MEASURE AS BELOW

GOOD

✓

LOWER

↓

HIGHER

↑

WEIGHT COMPENSATION

EQUIPMENT

WEIGHT

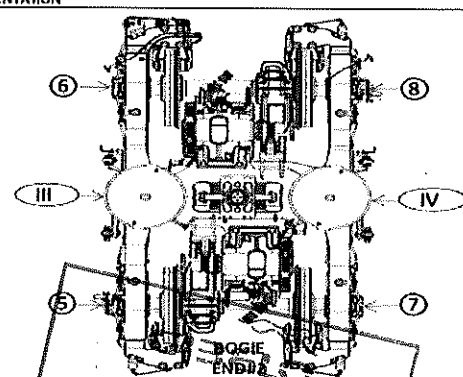
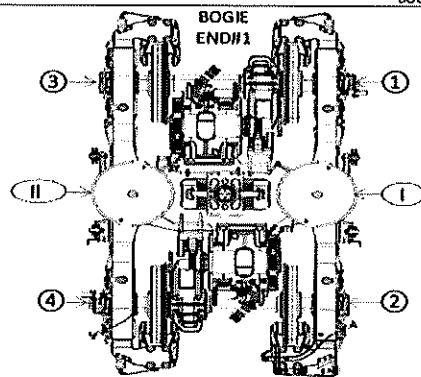
EQUIPMENT

WEIGHT

SECONDARY MEASUREMENTS (ONLY TC CARS)

AUTOMATIC COUPLER HEIGHT

ANTENNA HEIGHT

2024-03-09
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SELF INSPECTION INDUSTRIAL QUALITY

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PRASA

SI.FT1140.52

DRAFT TO MEASUREMENTS DURING LEVELLING (ALL UNITS MUST BE IN mm/bar/kg)

DESCRIPTION	TOLERANCE	LEFT SIDE						RIGHT SIDE					
		6	5	4	3	2	1	1	2	3	4	5	6
AIR SPRING HEIGHT (EMPTY)	N/A	A'II											A'I
AIR SPRING HEIGHT (FULL)	min 254 max 261	AII											AI
FLOOR COVERING HEIGHT	min 1096 max 1116	EII											EI
AIR SPRING PRESSURE	≤ 0.3 (QI - Q)	CII											CI
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D3											D1
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D4											D2
PIVOT VERTICAL GAP	min 25 max 32	KII											KI
PIVOT LATERAL STOP GAPS DIFFERENCE	≤ 4 (A1 - A)	JII											JI
QTY OF TURNS OF LEVELLING ROD	N/A	XII											XI
SHIMS OF ANTI-ROLL BAR	N/A	YII											YI
DESCRIPTION	TOLERANCE	6	5	4	3	2	1	1	2	3	4	5	6
AIR SPRING HEIGHT (EMPTY)	N/A	A'III											A'IV
AIR SPRING HEIGHT (FULL)	min 254 max 261	AIII											AIV
FLOOR COVERING HEIGHT	min 1096 max 1116	EIII											EIV
AIR SPRING PRESSURE	≤ 0.3 (QIV - QH)	CIII											CIV
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D5											D7
PRIMARY SUSPENSION	SEE TABLE (ONLY REF)	D6											D8
PIVOT VERTICAL GAP	min 25 max 32	KIII											KIV
PIVOT LATERAL STOP GAPS DIFFERENCE	≤ 4 (AIV - AV)	JIII											JIV
QTY OF TURNS OF LEVELLING ROD	N/A	XIII											XIV
SHIMS OF ANTI-ROLL BAR	N/A	YIII											YIV

COMPARE EACH TENTATIVE WITH
THE TOLERANCE AND IDENTIFY
EACH MEASURE AS BELOW

GOOD	LOWER	HIGHER
✓	↓	↑

WEIGHT
COMPENSATION

EQUIPMENT

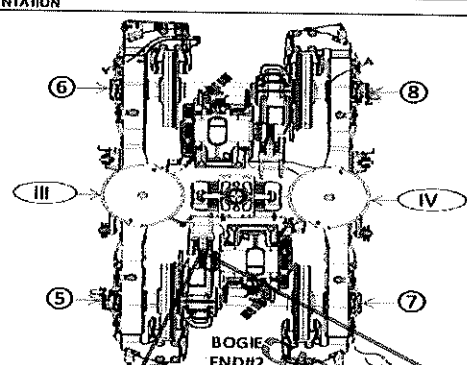
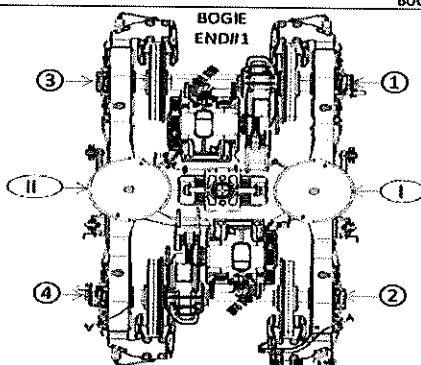
WEIGHT

EQUIPMENT

WEIGHT

SECONDARY MEASUREMENTS
(ONLY TO CARS)AUTOMATIC COUPLER
HEIGHT

ANTENNA HEIGHT

2024-03-09
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Rev:09
Date:
5/31/2022

Projct:
PRASA

SI.FT1140.52

Table 1 - Reference Values and Measurement Tolerances for the Car Levelling.

ITEM	THEORETICAL VALUES													
	TCL CAR		M4 CAR		M1 CAR		M2 CAR		M3 CAR		TCL CAR		TCL CAR	
	TBent	TBint	MB1	MB2	MB1	MB2	MB2	MB1	MB1	MB1	TBent	TBint	MB1	TBent
Pivot lateral stop gap difference [mm]	Fig. 4	Fig. 4	Fig. 4	Fig. 4	Fig. 4	Fig. 4	Fig. 4	Fig. 4	Fig. 4	Fig. 4	Fig. 4	Fig. 4	Fig. 4	Fig. 4
Air Spring height [mm]	3,76	2,82	2,87	2,83	3,02	2,91	3,07	2,85	2,83	2,87	2,83	2,83	2,87	2,83
Air spring pressure at 4WD [Bar]	0,3 Mbar	0,3 Mbar	0,3 Mbar	0,3 Mbar	0,3 Mbar	0,3 Mbar	0,3 Mbar	0,3 Mbar	0,3 Mbar	0,3 Mbar	0,3 Mbar	0,3 Mbar	0,3 Mbar	0,3 Mbar
Primary Suspension gap [mm]	Fig. 5	Fig. 5	Fig. 5	Fig. 5	Fig. 5	Fig. 5	Fig. 5	Fig. 5	Fig. 5	Fig. 5	Fig. 5	Fig. 5	Fig. 5	Fig. 5
Carbody Floor height [mm]	Fig. 6	Fig. 6	Fig. 6	Fig. 6	Fig. 6	Fig. 6	Fig. 6	Fig. 6	Fig. 6	Fig. 6	Fig. 6	Fig. 6	Fig. 6	Fig. 6
Boiler height [mm]	Fig. 7	Fig. 7	Fig. 7	Fig. 7	Fig. 7	Fig. 7	Fig. 7	Fig. 7	Fig. 7	Fig. 7	Fig. 7	Fig. 7	Fig. 7	Fig. 7
Coupling End height [mm]	Fig. 8	Fig. 8	Fig. 8	Fig. 8	Fig. 8	Fig. 8	Fig. 8	Fig. 8	Fig. 8	Fig. 8	Fig. 8	Fig. 8	Fig. 8	Fig. 8
Pivot Vertical gap [mm]	Fig. 10	Fig. 10	Fig. 10	Fig. 10	Fig. 10	Fig. 10	Fig. 10	Fig. 10	Fig. 10	Fig. 10	Fig. 10	Fig. 10	Fig. 10	Fig. 10

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Projct:
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SI.FT1140.52

Leveling report from Production (Final measurements after Levelling and Weighting fine)

References for secondary suspension empty

A'n Air spring height empty

References for secondary suspension full

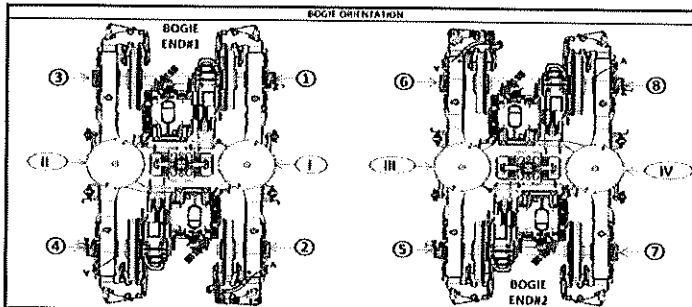
A'n Air spring height
B'n Difference between measurement A'n and An
En Floor covering height
C'n Air spring pressure
D'n Primary suspension
K'n Pivot Vertical gap
J'n Pivot Lateral stop gaps difference

Item	Reference [mm]	END#1		END#2	
		Right Side	Left Side	Left Side	Right Side
A'n	N/A	A'n 242	A'n 239	A'n 242	A'n 243
An	254 to 261	An 258	An 256	An 257	An 256
Bn = An - A'n	N/A	Bn 16	Bn 17	Bn 15	Bn 13
En	1106 ±10 mm	En 1110	En 1100	En 1101	En 1108
Item	Reference [bar]	END#1		END#2	
		Right Side	Left Side	Left Side	Right Side
Cn	Table 02 (*)	Cn 2.99	Cn 2.91	Cn 2.81	Cn 2.64
Cn - Cn+1	Difference ≤ 0,3	0,08		0,17	
Gauge serial number	N/A	51805871	51805871	51805871	51805871
Item	Reference [mm]	END#1		END#2	
		Right Side	Left Side	Left Side	Right Side
Dn	Table 01 (*)	D1 44.19	D1 45.03	D1 46.59	D1 47.67
		D2 44.85	D2 45.27	D2 46.02	D2 47.16
Kn	25 to 45	37.22		37.56	
Jn	Difference ≤ 4	Jn 25.20	Jn 25.77	Jn 25.30	Jn 24.72

(*) Reference, only include values, isn't approval criteria.

Table 01 D Theoretical Values	TC1		M4		M1		M2		M3		TC2	
	Tbex	TBin	Mb1	Mb1	Mb1	Mb2	Mb1	Mb1	Mb1	Mb1	Tbin	Tbex
D=	35 ⁺¹² ₋₅	35 ⁺¹² ₋₅	35 ⁺¹² ₋₅	35 ⁺¹² ₋₅	35 ⁺¹² ₋₅	35 ⁺¹² ₋₅	35 ⁺¹² ₋₅	35 ⁺¹² ₋₅	35 ⁺¹² ₋₅	35 ⁺¹² ₋₅	35 ⁺¹² ₋₅	35 ⁺¹² ₋₅

Table 02 C Theoretical Values	TC1		M4		M1		M2		M3		TC2	
	Tbex	TBin	Mb1	Mb1	Mb1	Mb2	Mb1	Mb1	Mb1	Mb1	Tbin	Tbex
C=	3.76	2.82	2.87	2.83	3.02	2.91	3.07	2.85	2.83	2.87	2.83	3.76



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Weighting report from Test and Commissioning (Final measurements after Levelling and Weighting fine)

GIBELG
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Gibela Rail Transport Consortium RF (Pty)
Ltd
2 Shosholoza Avenue
Dunnettar X7
Ekurhuleni, 1590, South Africa
Reception: +27 (0)10 600 0651

TRAIN SET 222	REF: GIB0000001672_JO PRASA WEIGHT BALANCE EN
	PC09 WEIGHING REPORT

M2	Balance across front and rear bogies	Front Bogie [Tons]	Rear Bogie [Tons]	Longitudinal Imbalance [%]	Criteria Longitudinal Imbalance ≤ 3%
	Weight Measured vs Predicted	18.74	18.05	1.88%	PASS
		Weight Measured [Tons]	Weight Predicted [Tons]	Weight Difference [%]	Tolerance [%]
		36.79	37.06	0.74%	1.37%
					Criteria Min≤Diff≤Max
					PASS

Test Participants			
Name	Company	Department	Date
<i>[Signature]</i>	GIBELA	EOC	09/03/2024

DEROGATION REQUEST

Company GIBELA	Name of the requester Joshua NEMANASHE	Function PME	Date 12 February 2024	Visa 	Request N° PRASA-DERSU-1006 extension	
Plant	Dunnottar 0302		Plant Country	South Africa		
Project	PRASA		Customer	PRASA		
Product name Reference			Drawing number and Revision			
Temporary <input checked="" type="checkbox"/> From TS200	Quantity: 30 Trainsets	Serial numbers / Batch: TS201: Bogle end#1 and Bogle end#2 to TS230: Bogle end#1 and Bogle end#2		Permanent <input type="checkbox"/>		
Requirement: The specification for Dn values of primary suspension requires the value for all cars to be Dn=35+/- (12/5)			Anteriority:			
Non-conformity description: Several cars are found to have primary suspension gap which is out of specification. The cars are out of specification on the upper limit with Dn values ranging between 0.1 mm to 2 mm above the maximum Tolerance.			Impact on: Environment..... <input type="checkbox"/> Safety (people)..... <input type="checkbox"/> Contract clauses..... <input type="checkbox"/> Economic Development..... <input type="checkbox"/> Product..... <input type="checkbox"/> Safety..... <input checked="" type="checkbox"/> Reliability..... <input type="checkbox"/> Performances..... <input checked="" type="checkbox"/> Delivery..... <input checked="" type="checkbox"/> Cost..... <input type="checkbox"/> Documentation..... <input type="checkbox"/> Resources..... <input type="checkbox"/> Others..... <input type="checkbox"/>			
Cause of the non-conformity / reasons for request: 1. Reason for request: Primary Suspension gaps are measured after weighing and levelling. The are currently no means of adjusting these gaps at Gibela. 2. Cause of the non-conformity: To be Confirmed - Target date: 30/04/2024						
Attached documents: See self-inspection database from IQ						
Containment action: Evaluate and if no risk approve derogation. Get Wolmerton to do measurement after the primary suspensions have settled. Allow cars found to be out of tolerance with Dn value of 49 mm and less, to be covered by this derogation.			Use or assignment limitations of the non-conforming product:			
Corrective & Preventive action: TBD						
Function	Entity	Name	Date	Visa	Observations / Conditions	Decision
PME Manager	GIB	Junior MAGADA	22 February 2024			<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
Train System Engineering	GIB	Mmakwena RAMATSHELA	22/02/2024			<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
Project Engineering Manager	GIB	Tshepo NKODI	22/02/24			<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
Quality Manager	GIB	Lucy MAKOFANE	22/02/2024			<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
Project Quality Manager	GIB	Malibongwe SOLANI	23/02/2024	R.M.C. pp. Relumele Mphuthi		<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
Project Warranty Manager	GIB	Noko MABUTLA	13/03/2024			<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK
Project Manager	GIB	Devendran GOVENDER	13/03/2024		50km/h speed restriction when operating with defalted suspension. Dn settling to be checked at the depot.	<input checked="" type="checkbox"/> OK <input type="checkbox"/> NOK

long term solution to be defined by Engineering

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