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

TRAIN SET 223	REF: GIB0000001672_KD PRASA WEIGHT BALANCE EN PC10 WEIGHING REPORT

TC2	Balance across front and rear bogies	Front Bogie [Tons]	Rear Bogie [Tons]	Longitudinal Imbalance [%]	Criteria Longitudinal Imbalance ≤ 10%	
		18.49	15.61	8.45%	PASS	
	Weight Mesured vs Predicted	Weight Mesured [Tons]	Weight Predicted [Tons]	Weight Difference [%]	Tolerance [%]	Criteria MinsDiffsMax
		34.10	34.42	0.94%	1.62%	PASS
M3	Balance across front and rear bogies	Front Bogie [Tons]	Rear Bogie [Tons]	Longitudinal Imbalance [%]	Criteria Longitudinal Imbalance ≤ 3%	
		17.88	17.90	0.06%	PASS	
	Weight Mesured vs Predicted	Weight Mesure+E30:J32d [Tons]	Weight Predicted [Tons]	Weight Difference [%]	Tolerance [%]	Criteria MinsDiffsMax
		35.78	35.90	0.33%	1.36%	PASS
M2	Balance across front and rear bogies	Front Bogie [Tons]	Rear Bogie [Tons]	Longitudinal Imbalance [%]	Criteria Longitudinal Imbalance ≤ 3%	
		18.63	17.89	2.03%	PASS	
	Weight Mesured vs Predicted	Weight Mesured [Tons]	Weight Predicted [Tons]	Weight Difference [%]	Tolerance [%]	Criteria MinsDiffsMax
		36.52	37.06	1.47%	1.37%	
M1	Balance across front and rear bogies	Front Bogie [Tons]	Rear Bogie [Tons]	Longitudinal Imbalance [%]	Criteria Longitudinal Imbalance ≤ 3%	
		18.59	17.96	1.72%	PASS	
	Weight Mesured vs Predicted	Weight Mesured [Tons]	Weight Predicted [Tons]	Weight Difference [%]	Tolerance [%]	
		36.55	36.87	0.85%	1.37%	PASS
M4	Balance across front and rear bogies	Front Bogie [Tons]	Rear Bogie [Tons]	Longitudinal Imbalance [%]	Criteria Longitudinal Imbalance ≤ 3%	
		17.89	17.88	0.03%	PASS	
	Weight Mesured vs Predicted	Weight Mesured [Tons]	Weight Predicted [Tons]	Weight Difference [%]	Tolerance [%]	Criteria MinsDiffsMax
		35.77	35.95	0.50%	1.36%	PASS
TC1	Balance across front and rear bogies	Front Bogie [Tons]	Rear Bogie [Tons]	Longitudinal Imbalance [%]	Criteria Longitudinal Imbalance ≤ 10%	
		18.58	15.57	8.81%	PASS	
	Weight Mesured vs Predicted	Weight Mesured [Tons]	Weight Predicted [Tons]	Weight Difference [%]	Tolerance [%]	Criteria MinsDiffsMax
		34.15	34.42	0.80%	1.62%	PASS

18

TOTAL TRAIN	Measured Weight	Predicted Weight	Criteria Measured Weight – Predicted Weight
	212.87	215.9726	Pass

Test Approval				
Name	Department	Designation	Signature	Date
Theodo M	End of cycle	End of cycle EPU manager		23/05/24

ALSTOM

GIBELA

Company	Name of the requester	Function	Date	Visa	Request N°
Gibela	Joshua Nemanashe	PME	7 May 2024		PRASA-DERSU-1096
			Plant Country	Gibela South Africa	
Project	PRASA PROJECT		Customer	PRASA	
Product name Reference	TS161 to TS210 TC1,M4,M1,M2,M3,TC2		Drawing number and Revision	DT00000207673	
Temporary ☒ Until : TS161 to TS210	Quantity : 80 Train sets	Serial Numbers / Batch: TS211 to TS290			Permanent ☐

Requirement:

According to GIB0000001672 prasa weight balance EN .

TC1/TC2:The weighing report specification requires the weight difference (weight measured vs predicted weight) tolerance to be 1.62%.

M1/M2:The weighing report specification requires the weight difference (weight measured vs predicted weight) tolerance to be 1.37%.

M3/M4:The weighing report specification requires the weight difference (weight measured vs predicted weight) tolerance to be 1.36%.

Non-conformity description:

The average weights measured from TS120 up to 162 has shown a deviation from the acceptance criteria. However, after discussions with BARRABES-PRADAL Daniel an additional 0.5% deviation from the acceptance criteria will not have an impact. Should we had this to the acceptance tolerance then all the cars will pass.

"these trains are equivalent in terms of mass (we have seen a gap around 0,5)"

See below min and max weight measured for TS120-162 and the average tolerances (We expect the same deviation for the next 80 train sets):

	Min	Max
TC2	33.9	34.6
M3	35.4	35.9
M2	36	37.1
M1	36.6	37
M4	35.3	36.6
TC1	33.9	34.4

TC2	Weight Measured vs Predicted	34.12	34.46	0.99%	1.62%
M3	Weight Measured vs Predicted	35.67	35.90	0.65%	1.36%
M2	Weight Measured vs Predicted	36.53	37.06	1.42%	1.37%
M1	Weight Measured vs Predicted	36.68	36.87	0.50%	1.36%
M4	Weight Measured vs Predicted	35.69	35.95	0.75%	1.36%
TC1	Weight Measured vs Predicted	34.08	34.42	0.98%	1.62%

Anteriority:

Impact on:

- Environment..... ☐
- Safety (people)..... ☐
- Contract clauses..... ☐
- Economic ☐
- Development.. ☐
- Product Safety..... ☐
- Reliability..... ☐
- Performances..... ☒
- Delivery..... ☐
- Cost..... ☐
- Documentation..... ☐
- Resources..... ☐
- Others..... ☐

ALSTOM

GIBELA

Cause of the non-conformity / reasons for request:	
Weight balance document was revised from J to K by engineering and the following was removed from the weight calculations: -Main Reservoir Tank Removal -Brake Reservoir Resizing -CPU bloc is combined with the screen - Closure of Air Extractor Opening	
Attached documents: REF: GIB0000001672_K0 PRASA WEIGHT BALANCE EN report RE TS Weight is failing .msg	

Containment action:	Use or assignment limitations of the non-conforming product:
Each train is evaluated by engineering and based on risk it will be approved or declined. A new version of GIB000001672 will be created to align the sub system actual weight with the theoretical weight which will reduce the error percentage.	

Corrective & Preventive action.
Engineering to revise car weights per baseline.

Function	Entity	Name	Date	Visa	Observations / Conditions	Decision
Process Manufacturing Engineering	GIB	Junior MAGADA	14/05/2024			☑ OK ☐ NOK
Train System Engineering	GIB	Mpho LELALA-MNGUNI				☒ OK ☐ NOK
Industrial Quality	GIB	Lucy MAKOFANE	14/05/2024			☒ OK ☐ NOK
Project Engineering Manager	GIB	Tshepo NKODI	15/05/2024			☒ OK ☐ NOK
Project Quality Safety Manager	GIB	Solani MALIBONGWE	16/05/2024	pp. Reitumetse Mphuthi		☒ OK ☐ NOK
Project Manager	GIB	Devendran GOVENDER	17/05/2024		Enineering to update the test procedure with new targets	☒ OK ☐ NOK