

Prüfbericht-Nr.: <i>Test Report No.:</i>	15092860 001	Auftrags-Nr.: <i>Order No.:</i>	1200300795	Seite 1 von 12 <i>Page 1 of 12</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	659718	Auftragsdatum: <i>Order date:</i>	24.03.2017	
Auftraggeber: <i>Client:</i>	Avazu Shanghai Limited Floor3, Building1, Highstreet Loft, No.508 Jiashan Road, Shanghai 200031,P.R. China			
Prüfgegenstand: <i>Test item:</i>	City bicycle			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	OBIKE 26"			
Auftrags-Inhalt: <i>Order content:</i>	Test of selected parameters			
Prüfgrundlage: <i>Test specification:</i>	ISO 4210-2:2015 Cycles - Safety requirements for bicycles - Part 2: Requirements for city and trekking, young adult, mountain and racing bicycles			
Wareneingangsdatum: <i>Date of receipt:</i>	20.03.2017			
Prüfmuster-Nr.: <i>Test sample No.:</i>	A000521976-001; A000521976-002			
Prüfzeitraum: <i>Testing period:</i>	20.03.2017 – 17.04.2017			
Ort der Prüfung: <i>Place of testing:</i>	Bicycle lab			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland Antaeon (Kunshan) Co.,Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von / tested by:	kontrolliert von / reviewed by:			
19.04.2017 <i>Datum</i> Simon Huang / PE <i>Name / Stellung</i>	 <i>Unterschrift</i> Signature	19.04.2017 <i>Datum</i>	Nan Jiang / Reviewer <i>Name / Stellung</i>	 <i>Unterschrift</i> Signature
Sonstiges / Other:	<ol style="list-style-type: none"> City and trekking bicycle requirements were requested; According to client's request, removal torque test in cl 4.10.4.1 and manufacturer's instructions in cl.5 were not request; Test methods were referred to ISO 4210-3 to ISO 4210-9. 			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende:	1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft	P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet	1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor	P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

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Liste der verwendeten Prüfmittel
List of used test equipment

Prüfmittel <i>Test equipment</i>	Prüfmittel-Nr. / ID-Nr. <i>Equipment No. / ID-No.</i>	Nächste Kalibrierung <i>Next calibration</i>
Push-Pull Gauge-500N	KS-P004	22.09.2017
Torque Meter	KS-R001	22.09.2017
Steel Ruler	KS-L003	22.09.2017
Digital Vernier calliper	KS-L006	22.09.2017
Goniometry	KS-L013	22.09.2017
Numerical controller and 4 pneumatical actuator for bicycle benches	KS-E002	14.04.2018
Pedal dynamic tester	KS-Z004	22.09.2017
Crank assembly fatigue tester	KS-Z008	22.09.2017
Falling Frame/Fork Assembly Tester	KS-I002	22.09.2017
Falling Mass Impact Tester	KS-I001	22.09.2017
Wheels retention test machine	KS-Z003	22.09.2017
Wheel static loading and suspension fork strength test machine	KS-Z002	22.09.2017
Rotational accuracy of wheel assembly test stand	KS-Z021	22.09.2017
Driving System Static Loading testing machine	KS-Z016	22.09.2017
Handlebar assembly/Seat assembly clamping performance testing machine	KS-Z001	22.09.2017
Standard Servo Type Universal Testing machine (5T)	KS-Z015	22.09.2017
Handlebar and stem fatigue testing machine	KS-Z028	22.09.2017
Grip dimension gauge 100mm	KS-L018	22.09.2017
Front fork fatigue testing machine	KS-Z029	22.09.2017
Saddle & Seat pillar fatigue testing bench	KS-Z007	22.09.2017
Frame horizontal and vertical fatigue testing bench	KS-Z010	22.09.2017
Frame pedaling fatigue testing machine	KS-Z024	22.09.2017
Impact testing machine	KS-I003	22.09.2017
Wheel/Tyre assembly- fatigue testing machine	KS-Z013	22.09.2017
Braking performance testing machine	KS-Z030	22.09.2017

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Produktbeschreibung
Product description

1	Produktdetails <i>Product details</i>	City bicycle
2	Maße / Gewicht <i>Dimensions / Weight</i>	Weight: 23.10kg. Maximum saddle height: 930mm.
3	Bedienelemente <i>Operating elements</i>	N/A
4	Ausstattung / Zubehör <i>Equipment / Accessories</i>	N/A
5	Verwendete Materialien <i>Used materials</i>	Metal, rubber etc.
6	Sonstiges <i>Other</i>	Wheel size: 47-559 (26*1.75 inches) Speed: single.

1



2



3



4



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Absatz	ISO 4210-2:2015	Messergebnisse - Bemerkungen	Bewertung
Clause	Anforderungen - Prüfungen / Requirements - Tests	Measuring results - Remarks	Evaluation

1	Scope		
2	Normative references		
3	Terms and definitions		
4	Requirements		
4.1	Toxicity	Not children's bicycle.	N/A
4.2	Sharp edges	No sharp edges.	P
4.3	Security and strength of safety-related fasteners		
4.3.1	Security of screws	Checked Ok.	P
4.3.2	Minimum failure torque	Test torques: Handlebar: 20N.m*1.5; Handlebar stem : 25N.m*1.5; Seat pillar: Quick-release type; seat: 17N.m*1.5.	P
4.3.3	Folding bicycles	Not folding bicycle.	N/A
4.4	Crack detection methods		P
4.5	Protrusions	Checked Ok.	P
4.6	Brakes		
4.6.1	Braking-systems	Front: expansion brake; Rear: expansion brake.	P
4.6.2	Hand-operated brakes		
4.6.2.1	Brake lever position	Left lever controls rear brake; Right lever controls front brake.	P
4.6.2.2	Brake lever grip dimensions	Min. Saddle height: 805mm; Brake lever grip dimension is less than 90 mm.	P
4.6.3	Attachment of brake assembly and cable requirements	The cables ends were not removed with 20N.	P
4.6.4	Brake-block and brake-pad assemblies-Security test		P
4.6.5	Brake adjustment	Checked Ok.	P
4.6.6	Hand-operated braking-system- Strength test		P
4.6.7	Back-pedal braking system-- Strength test		
4.6.7.1	General	Not fitted with back-pedal brake.	N/A
4.6.7.2	Requirement		N/A

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Absatz Clause	ISO 4210-2:2015 Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse - Bemerkungen Measuring results - Remarks	Bewertung Evaluation												
4.6.8	Braking performance														
4.6.8.1	General														
4.6.8.1.1	Track test	Not adopted.	N/A												
4.6.8.1.2	Machine test	M=100kg; Bp (Braking performance value) Front in dry : 349.8N; Front in wet : 334.3N; Rear in dry : 244.1N; Rear in wet : 274.7N.	P												
4.6.8.2	Smooth, safe-stop characteristics	See Annex 1.	P												
4.6.8.3	Ratio between wet and dry braking performance	Front brake: <table border="1"> <tr> <th>Applied force</th> <th>Ratio</th> </tr> <tr> <td>100N</td> <td>94%</td> </tr> <tr> <td>120N</td> <td>96%</td> </tr> </table> Rear brake: <table border="1"> <tr> <th>Applied force</th> <th>Ratio</th> </tr> <tr> <td>100N</td> <td>157%</td> </tr> <tr> <td>120N</td> <td>161%</td> </tr> </table>	Applied force	Ratio	100N	94%	120N	96%	Applied force	Ratio	100N	157%	120N	161%	P
Applied force	Ratio														
100N	94%														
120N	96%														
Applied force	Ratio														
100N	157%														
120N	161%														
4.6.9	Brakes - Heat-resistance test Front and rear brakes are identical	Front and rear brakes are identical; Rear brake tested: Dry: 84% Wet: 84%.	P												
4.7	Steering														
4.7.1	Handlebar- Dimensions	Overall width: 670mm; Vertical distance: 260mm.	P												
4.7.2	Handlebar grips and plugs	Ends of the handlebar are fitted with handgrips.	P												
4.7.3	Handlebar stem - Insertion-depth mark or positive stop	<table border="1"> <tr> <td>Diameter</td> <td>25.40 mm</td> </tr> <tr> <td>Length of mark</td> <td>>25.40 mm</td> </tr> <tr> <td>Position of the mark (From bottom of stem)</td> <td>60mm</td> </tr> <tr> <td>Position of the mark (from lowest position with circular cross-section)</td> <td>30mm</td> </tr> </table>	Diameter	25.40 mm	Length of mark	>25.40 mm	Position of the mark (From bottom of stem)	60mm	Position of the mark (from lowest position with circular cross-section)	30mm	P				
Diameter	25.40 mm														
Length of mark	>25.40 mm														
Position of the mark (From bottom of stem)	60mm														
Position of the mark (from lowest position with circular cross-section)	30mm														
4.7.4	Handlebar stem-extension to fork-stem - Clamping requirements	See 4.7.3.	N/A												
4.7.5	Steering stability	Checked Ok; Percentage: 38.9%.	P												

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4.7.6	Steering assembly-Static strength and security tests		
4.7.6.1	Handlebar-stem- Lateral bending test		N/A
4.7.6.2	Handlebar and stem assembly - Lateral bending test	Permanent deformation: 4.27mm.	P
4.7.6.3	Handlebar-stem- Forward bending test		
4.7.6.3.1	General		P
4.7.6.3.2	Requirement for stage 1	Permanent deformation: 0.92mm.	P
4.7.6.3.3	Requirement for stage 2	No visible cracks or fractures occurred.	P
4.7.6.4	Handlebar to handlebar stem - Torsional security test	No relative movement occurred.	P
4.7.6.5	Handlebar stem to fork steer - Torsional security test	No relative movement occurred.	P
4.7.6.6	Bar end to handlebar- Torsional security test	No bar-ends fitted.	N/A
4.7.6.7	Aerodynamic extensions to handlebar — Torsional security test	No aerodynamic extensions fitted.	N/A
4.7.7	Handlebar and stem assembly - Fatigue test		
4.7.7.1	General		P
4.7.7.2	Requirement for stage 1 and stage 2	Test frequency: 1.5Hz. Not composite handlebar/stem.	P
4.8	Frames		
4.8.1	Suspension-frames - Special requirements	Not suspension frame.	N/A
4.8.2	Frame - Impact test (falling mass)	An appropriate fork fitted; Permanent set: 18 mm.	P
4.8.3	Frame and front fork assembly – impact test (falling frame)	An appropriate fork fitted; Permanent set: 3mm.	P
4.8.4	Frame - Fatigue test with pedalling forces	Test frequency: 1.5Hz; Not composite frame.	P
4.8.5	Frame-fatigue test with horizontal forces	Test frequency: 1.5Hz; Not composite frame.	P
4.8.6	Frame - Fatigue test with a vertical force	Test frequency: 1.5Hz; Not composite frame.	P
4.9	Front fork		
4.9.1	General		P
4.9.2	Means of location of the axle and wheel retention	The front wheel remains central within the fork.	P
4.9.3	Suspension-forks - Special requirements		
4.9.3.1	Tyre-clearance test	Not suspension fork.	N/A
4.9.3.2	Tensile test		N/A
4.9.4	Front fork - Static bending test	Permanent set: 0.84 mm.	P

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4.9.5	Front fork - Rearward impact test		
4.9.5.1	Forks made entirely of metal	Permanent set in stage 1: 8mm; No fracture found in stage 2; No movement occurred in stage 3.	P
4.9.5.2	Forks which have composite parts	No composite parts.	N/A
4.9.6	Front fork — Bending fatigue test plus rearward impact test	Test frequency: 1.5Hz; Permanent set: 8mm.	P
4.9.7	Forks intended for use with hub- or disc-brakes		
4.9.7.1	Static brake-torque test	Expansion brake; No fractures or visible cracks in any part of the fork occurred in the fork.	P
4.9.7.2	Fork for hub/disc-brake — Brake mount fatigue test	Expansion brake; Test frequency: 1Hz.	P
4.9.8	Tensile test for a non-welded fork	Welded fork.	N/A
4.10	Wheels and wheel/tyre assembly		
4.10.1	Wheels/tyre assembly — Concentricity tolerance and lateral tolerance	<2mm.	P
4.10.2	Wheel/tyre assembly - Clearance	Checked Ok.	P
4.10.3	Wheel/tyre assembly - Static strength test	Permanent set: 0.85mm.	P
4.10.4	Wheels - Wheel retention		
4.10.4.1	General	Checked Ok. Removal torque test was not requested.	P
4.10.4.2	Wheel retention — Retention devices secured	Checked Ok.	P
4.10.4.3	Front wheel retention-retention devices unsecured	Checked Ok.	P
4.10.5	Wheels - Quick-release devices	Not quick-release device.	N/A
4.11	Rims, tyres and tubes		
4.11.1	General	The front wheel was tested, wheel/tyre assembly fatigue test.	P
4.11.2	Tyre inflation pressure	Non-pneumatic tyres.	N/A
4.11.3	Tyre and rim compatibility	Non-pneumatic tyres.	N/A
4.11.4	Tubular tyres and rims		N/A
4.11.5	Rim-wear	Not for rim-brakes.	N/A
4.11.6	Greenhouse effect test for composite wheels		
4.11.6.1	General	Not composite wheels.	N/A
4.11.6.2	Requirement		N/A

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Absatz Clause	ISO 4210-2:2015 Anforderungen - Prüfungen / Requirements - Tests	Messergebnisse - Bemerkungen Measuring results - Remarks	Bewertung Evaluation
4.12	Front Mudguards		N/A
4.13	Pedals and pedal/crank drive system		
4.13.1	Pedal tread		
4.13.1.1	Tread surface		P
4.13.1.2	Toe Clips	Tread surfaces on the top and bottom surfaces of the pedal.	P
4.13.1.3	Pedals designed to be used only with toe-clips or shoe-retention devices shall have toe-clips or shoe retention devices securely attached and need not comply with the requirements of 4.13.1.2.		N/A
4.13.2	Pedal clearance		
4.13.2.1	Ground clearance	>25°.	P
4.13.2.2	Toe clearance	>100mm, without foot retention.	P
4.13.3	Pedal -- Static strength test		P
4.13.4	Pedal-- Impact test		P
4.13.5	Pedal/--- Dynamic durability test	Two tread surfaces.	P
4.13.6	Drive-system - Static strength test		
4.13.6a	Drive system with chain	Checked Ok.	P
4.13.6b	Drive system with belt		N/A
4.13.7	Crank assembly - Fatigue test		
4.13.7.1	Requirement	Test frequency: 1.0Hz	P
4.13.7.2	Special requirements for mountain bicycles		N/A
4.14	Drive-chain and drive belt		
4.14.1	Drive-chain	Checked Ok, breaking force: 8292N.	P
4.14.2	Drive belt		N/A
4.15	Chain-wheel and belt-drive protective device		
4.15.1	Requirements		P
4.15.2	Chain-wheel disc and drive pulley disc diameter		N/A
4.15.3	Chain and drive belt protective device	Fully covered.	P
4.15.4	Combined front gear-change guide		N/A
4.16	Saddles and seat-posts		
4.16.1	Limiting dimensions	Checked Ok.	P
4.16.2	Seat-post-- Insertion-depth mark or positive stop	2.63 times; Circular cross-section.	P

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4.16.3	Saddle/seat-post — Security test		
4.16.3.1	Saddles with adjustment clamps		P
4.16.3.2	Saddles without adjustment-clamps		N/A
4.16.4	Saddle - Static strength test		
4.16.5	Saddle and seat-post clamp – Fatigue test	Test frequency: 2.0Hz.	P
4.16.6	Seat-post — Fatigue test		
4.16.6.1	Requirement for stage 1		
4.16.6.1.1	Seat-post without suspension system	Test frequency: 1.5Hz.	P
4.16.6.1.2	Seat-post with suspension system		N/A
4.16.6.2	Requirement for stage 2		
4.16.6.2.1	Seat-post without suspension system	No movement occurred.	P
4.16.6.2.2	Seat-post with suspension system		N/A
4.17	Spoke protector	Single speed system.	N/A
4.18	Luggage carriers	The front basket was tested; weight capacity: 5kg, complied with ISO 11243.	P
4.19	Road test of a fully assembled bicycle		
4.20	Lighting systems and reflectors		
4.20.1	General	Not requested; The bicycle shall be equipped with lighting systems and reflectors required by the road regulations of destined countries before it is used on public roads.	N/T
4.20.2	Wiring harness	The front dynamo was tested.	P
4.20.3	Lighting systems	Not requested; See clause 4.20.1.	N/T
4.20.4	Reflectors	Not requested; See clause 4.20.1.	N/T
4.21	Warning device	A bell is fitted. Not tested according to national requirements.	P

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5	Manufacturer's instructions	Not requested.	N/T
6	Marking		
6.1	Requirement		P
6.2	Durability test		P
/	Annex A (informative) Steering geometry		

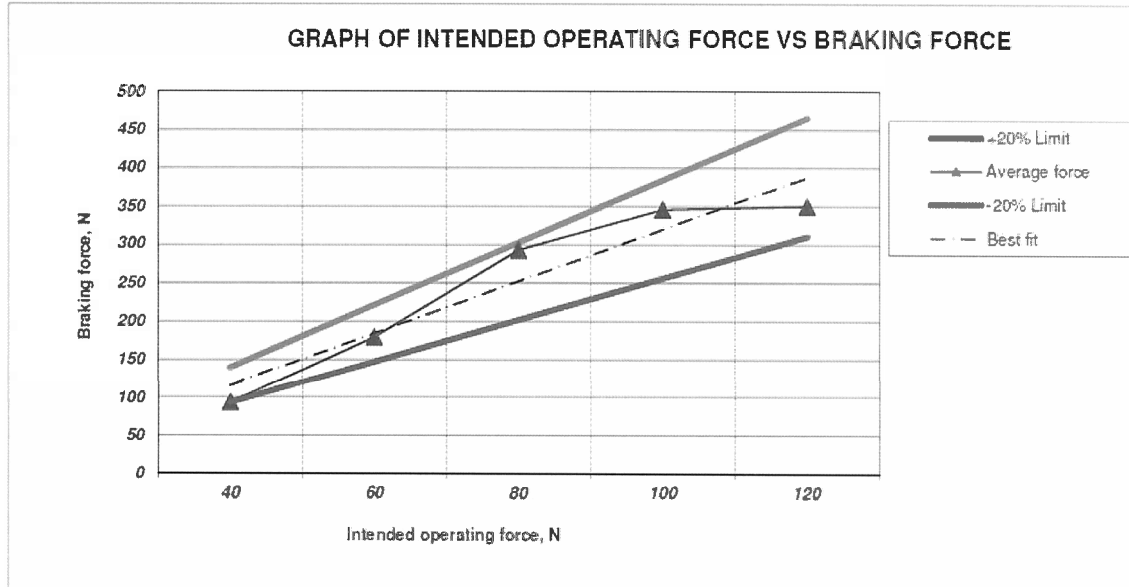
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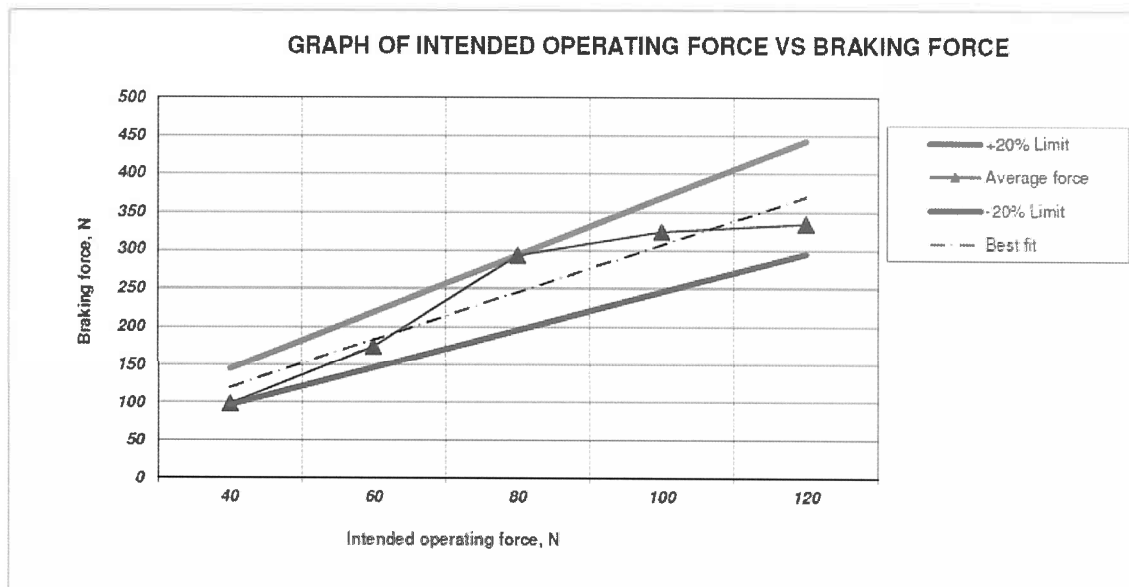
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Annex 1

Front brake in dry



Front brake in wet

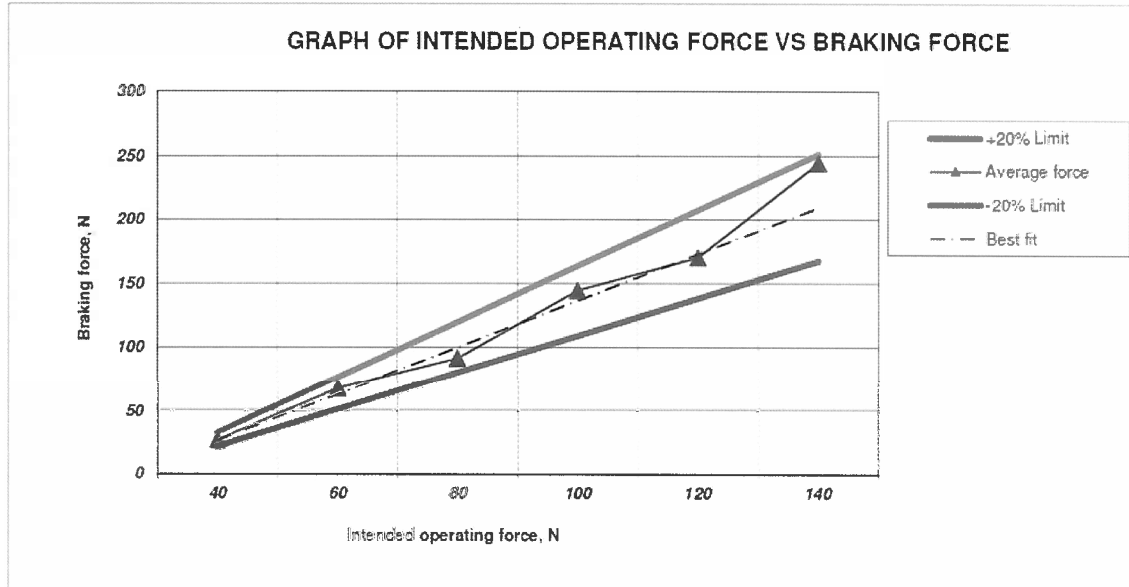


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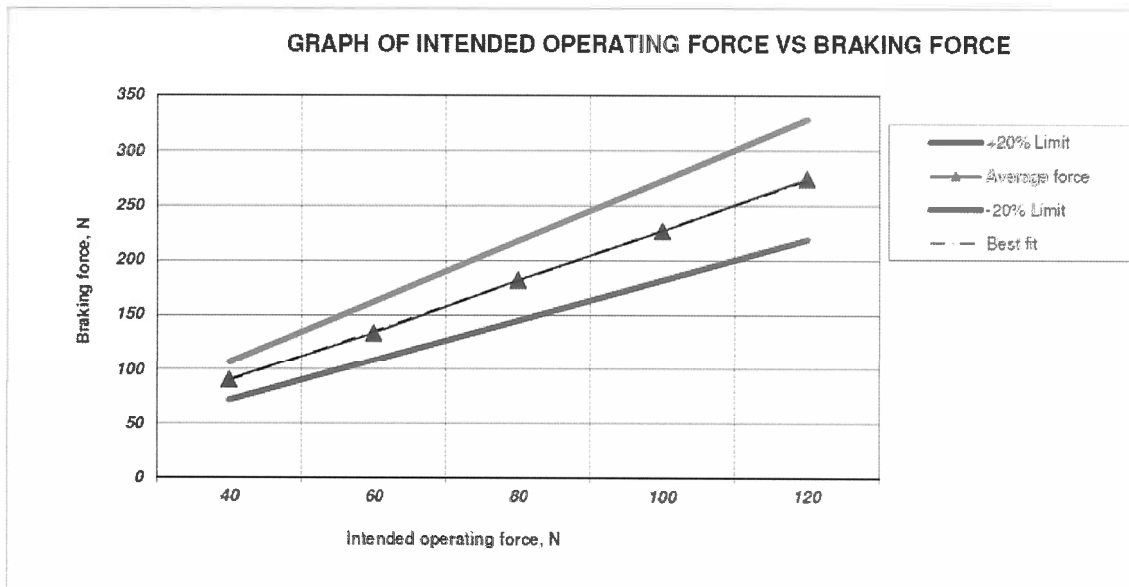
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Rear brake in dry



Rear brake in wet



*** End of test report ***