



CHC

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Test Report



Contract No : 18100304B
 Issue Date : Oct. 5, 2018
 Applicant : SUNKISS DEVELOPMENT CO., LTD.
 Address : 1F., No.172-3, Zengfu Ln., Xiushui Township,
 Changhua County 504, Taiwan (R.O.C.)
 Product : Brake Disk (Mountain bicycle)
 Model No : ABS-160A-2
 Test Standard : As shown in the test report
 Test results : Details as in the test report



- Note : (1)The product is supplied by the applicant which has been tested by CHC and the test result is shown in this test report.
 (2)This test report is responsible only for the tested product, not for the suit.
 (3)Total 5 pages in this report which shall not be abstracted and partial copied.
 (4)There is only one test report for the applicant.

Approved by : Ren-Heng Chao Tested by : Chih-Yu Chang





1. Test sample :

The sample is shown in Fig. 1. Specification of the sample is shown in Tab. 1 .



Fig. 1 Test sample

Tab. 1 Specification of the sample

Sample	Specification		Comments
	Brake Disk (Model No : ABS-160A-2)	Material	
Weight		125 g	

2. Test item : As shown in Tab. 2.

Tab. 2 Test item summary

No.	Test item	Requirement	Test method
1	Braking performance (Machine test method)	Dry condition	ISO 4210:2014 -Part 4 : Sec. 4.6.5.7 c) 1)
		Wet condition	ISO 4210:2014 -Part 4 : Sec. 4.6.5.7 c) 2)
		Ratio between wet and dry braking	ISO 4210:2014 -Part 4 : Sec. 4.6.5.7 g)
		Linearity	ISO 4210:2014 -Part 4 : Sec. 4.6.5.3
2	Brakes- Heat-resistance test	ISO 4210:2015 -Part 2 : Sec. 4.6.9	ISO 4210:2014 -Part 2 : Sec. 4.7
3	Mechanical endurance test	In house	DIN 79100:2000 Sec. 5.6.5.2

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3. Test equipment : As shown in Tab. 3.

Tab. 3 Test equipment

Equipment	Serial number	Comments
Brake test machine	DE-01	---

4. Test result : As shown in Tab. 4.

Tab. 4 Test result

No.	Test item	Requirement	Condition	Result
1	Braking performance	Dry condition	Front : ≥ 425 N	Pass, Fig. 2, Tab. 5.
		Wet condition	Front : ≥ 220 N	Pass, Fig. 2, Tab. 5.
		Linearity	Between $\pm 20\%$	Pass, Fig. 3.
		Ratio between wet and dry	> 0.4	Pass, Tab. 5.
2	Brakes- Heat-resistance test	$\geq 60\%$	E= 75wh 10 interruptions per test cycle is permitted, each with a maximum duration of 10 s. 2 test cycle.	Pass, Tab. 6, Fig. 4.
3	Mechanical endurance test	3,000 cycles tests completed, there are no any fractures or visible cracks in the sample.	V: 12.5 km/hr, Loading: 100 kg. Braking 3 sec and release 3 sec for 3,000 cycles. Deceleration efficiency could not over 2.20 m/s^2	Pass, Fig. 5.

中華民國 108 年 10 月 10 日





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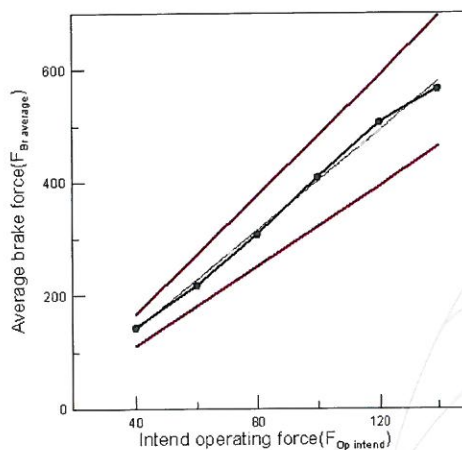
Tab. 5 Measured braking force under different braking operate-force Unit : N

Braking operate-force ($F_{Op} / F_{Op\ intend}$)		40	60	80	100	120	140	160	180
Front	$F_{Br\ average}^D$	144.3	219.0	308.2	408.6	507.4	567.0	---	---
	$F_{Br\ average}^W$	94.5	151.5	205.8	253.2	324.3	357.9	---	---
	$F_{Br\ average}^W : F_{Br\ average}^D$	NA	0.69	0.67	0.62	0.64	0.63	NA	NA

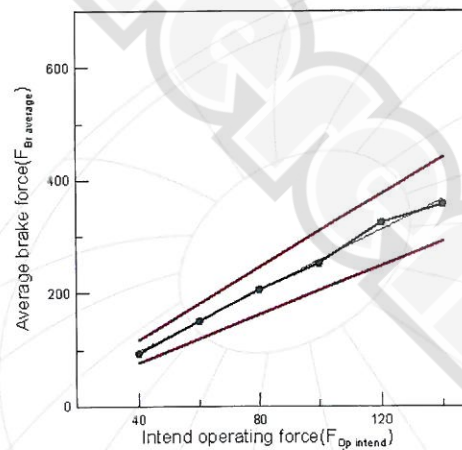
Note : (---)It is unable to continue and test for tire to skid.



Fig 2 Braking performance test



3(a) Front brake - Dry condition



3(b) Front brake - Wet condition

Fig 3 Braking performance - Linearity curve





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Tab. 6 Braking performance after the heat resistance test

Brake condition		Before	After	Ratio	Requirement
Front	F_{Br}^D average ($F_{op} : 140\text{ N}$)	567.0	534.6	94.3 %	>60 %
	F_{Br}^W average ($F_{op} : 140\text{ N}$)	357.9	372.9	104.2 %	

The 38 mm gap between the hand-brake lever and the handlebar-grip after the test.



Fig. 4 Brakes - Heat resistance test



Fig. 5 Mechanical endurance test

End of this report.

