

Hardline Laboratory Report No.: TH80094A/2019

> Page: of Date: OCT. 02, 2019

Ribisu. LTD

Bitschibielstrasse 7 3938 Ausserberg Switzerland

The following merchandise was submitted and identified by the applicant as:

Product Description: Carbon suspension frame

FM599 rocket Style/Item No.:

Country of Origin: **CHINA**

Sample Quantity: 1 pc of frame

We have tested the submitted sample(s) as requested and the following results were obtained:

Test Requested: For compliance with Clause 4.8.2, Clause 4.8.3, Clause 4.8.4, Clause 4.8.5 and Clause

> 4.8.6 of ISO 4210-2:2015 Cycles - Safety requirements for bicycles - Part 2 Requirements for city and trekking, young adult, mountain and racing bicycles.

Test Method: According to Clause 4.1, Clause 4.2, Clause 4.3, Clause 4.4 and Clause 4.5 of ISO

4210-6:2015 Cycles - Safety requirements for bicycles - Part 6: Frame and fork test

methods.

Bicycle type: ☐ City and trekking ☐ Young adult ☐ Mountain

Sequence of Testing: Sample No. 1: Clause 4.3 of ISO 4210-6.

Sample No. 2: Clause 4.5, Clause 4.4, Clause 4.1 and Clause 4.2 of ISO 4210-6).

Test Result: --See following sheet(s)--

AUG. 15, 2019; SEP. 25, 2019 Date of Receipt:

Testing Period: AUG. 16, 2019 ~ SEP. 30, 2019

--- See Next Page ---

Signed for and on behalf of SGS Taiwan Ltd.

Member of SGS Group

Luke Lee

Asst. Supervisor Testing Place: No. 9, 14th Rd., Taichung Ind. Park, Taichung City 40755, Taiwan

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Test Result:

Bicycle type: ☐ City and trekking ☐ Young adult ☐ Mountain ☐ Racing

Clauses:

Result

Pass

Clause 4.8.2 (ISO 4210-2) Frame - Impact test (falling mass)

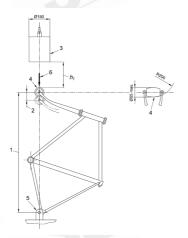
When tested by the method described in ISO 4210-6:2015, 4.1, there shall be no visible cracks or fractures of the frame.

The permanent deformation measured between the axis of the wheel axles (the wheelbase, see ISO 4210-6:2015, 4.1 and ISO 4210-6:2015, Figure 1) shall not exceed the following values:

- a) 30 mm where a fork is fitted;
- b) where a dummy fork is fitted in place of a fork, the values are given in Table 5.

Clause 4.1.2 (ISO 4210-6) Test Method

Figure:



Actual Finding:

Test clause	Test condition Drop height, h ₁ (mm)	Requirement	Test Result
Clause 4.1.2 (ISO 4210-6)	360	< 10 mm (Dummy fork)	1.9 mm
Remark	There was no visible crack on the sample after testing.		

Note:

- 1. Information of sample: Material (Carbon), Frame (460 mm), Mass (3,483 g).
- 2. The rigid fork which is needed to conduct the test was provided by SGS Taiwan.
- 3. The rigid fork is 599 mm in length and the offset is 44 mm.
- 4. The rigid suspension which is needed to conduct the test was provided by SGS Taiwan and the length of rigid suspension is 233 mm.
- 5. Sample No. : 2.
- --- See Next Page ---

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Test Result:

Bicycle type:

City and trekking

Young adult Mountain ☐ Racing

Clauses:

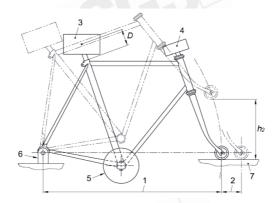
Result **Pass**

Clause 4.8.3 (ISO 4210-2) Frame and front fork assembly - Impact test (falling frame)

When tested by the method described in ISO 4210-6:2015, 4.2, there shall be no visible cracks or fractures in the assembly and after the second impact there shall be no separation of any parts of any suspension system. The permanent deformation measured between the axis of the wheel axles shall not exceed the values specified in Table 6.

Clause 4.2.2 (ISO 4210-6) Test Method

Figure:



Actual Finding:

ricum i mams.					
Test clause	Test condition		Requirement	Test Result	
	Seat post,	\mathbf{M}_1	30 kg		
Clause 4.2.2 (ISO 4210-6)	Steering head,	M_2	10 kg	< 60 mm	6.5 mm
	Bottom bracket,	M_3	50 kg	< 60 mm	6.5 mm
	Drop height,	h_2	300 mm		
Remark	There was no visible crack on the sample after testing.				

Note:

- 1. Information of sample: Material (Carbon), Frame (460 mm), Mass (3,483 g).
- 2. The rigid fork which is needed to conduct the test was provided by SGS Taiwan.
- 3. The rigid fork is 599 mm in length and the offset is 44 mm.
- 4. The rigid suspension which is needed to conduct the test was provided by SGS Taiwan and the length of rigid suspension is 233 mm.
- 5. Sample No. : 2.

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Test Result:

Bicycle type: ☐ City and trekking ☐ Young adult ☐ Mountain ☐ Racing

Clauses:

Result Pass

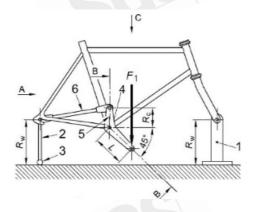
Clause 4.8.4 (ISO 4210-2) Frame - Fatigue test with pedalling forces

When tested by the method described in ISO 4210-6:2015, 4.3, there shall be no visible cracks or fractures in any part of the frame, and there shall be no separation of any parts of the suspension system.

For composite frames, the running displacements (peak-to-peak values) at the points where the test forces are applied shall not increase by more than 20 % of the initial values.

Clause 4.3.2 (ISO 4210-6) Test Method

Figure:



Actual Finding:

Toot alongo		Test Result		
Test clause	Force (F ₁)	Frequency	Cycles	(Cycles)
Clause 4.3.2 (ISO 4210-6)	1,200 N	3 Hz	100,000	100,000
Remark	There was no visible crack on the sample after testing.			

Note:

- 1. Information of sample: Material (Carbon), Frame (460 mm), Mass (3,443 g).
- 2. The rigid fork which is needed to conduct the test was provided by SGS Taiwan.
- 3. The rigid fork is 599 mm in length and the offset is 44 mm.
- 4. The rigid suspension which is needed to conduct the test was provided by SGS Taiwan and the length of rigid suspension is 241 mm.
- 5. Sample No. : 1.
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Test Result:

Bicycle type: ☐ City and trekking ☐ Young adult ☐ Mountain ☐ Racing

Clauses:

J Kacing

Result Pass

Clause 4.8.5 (ISO 4210-2) Frame - Fatigue test with horizontal forces

When tested by the method described in ISO 4210-6:2015, 4.4, there shall be no visible cracks or fractures in the frame and there shall be no separation of any parts of any suspension system. For composite frames, the running displacement (peak-to-peak value) at the point where the test forces are applied shall not increase by more than 20 % of the initial values (see ISO 4210-3:2014, 4.6).

Clause 4.4.2 (ISO 4210-6) Test Method

Figure:



Actual Finding:

Test clause		Test Result		
Test clause	Force	Frequency	Cycles	(Cycles)
Clause 4.4.2	1,200 N (F ₂)	3 Hz	50,000	50,000
(ISO 4210-6)	600 N (F ₃)	3 ПZ	30,000	30,000
Remark	There was no visible crack on the sample after testing.			

Note:

- 1. Information of sample: Material (Carbon), Frame (460 mm), Mass (3,483 g).
- 2. The rigid fork which is needed to conduct the test was provided by SGS Taiwan.
- 3. The rigid fork is 554 mm in length and the offset is 44 mm.
- 4. The rigid suspension which is needed to conduct the test was provided by SGS Taiwan and the length of rigid suspension is 233 mm.
- 5. Sample No. : 2.

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Test Result:

Clauses:

Bicycle type: ☐ City and trekking ☐ Young adult ☐ Mou

■ Mountain □ Racing

Result

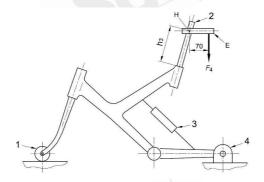
Pass

Clause 4.8.6 (ISO 4210-2) Frame - Fatigue test with a vertical force

When tested by the method described in ISO 4210-6:2015, 4.5, there shall be no visible cracks or fractures in the frame and there shall be no separation of any parts of the suspension system. For composite frames, the running displacement (peak-to-peak value) at the point where the test forces are applied shall not increase by more than 20 % of the initial value (see ISO 4210-3:2014, 4.6).

Clause 4.5.2 (ISO 4210-6) Test Method

Figure:



Actual Finding:

Test clause		Test Result		
	Force (F ₄)	Frequency	Cycles	(Cycles)
Clause 4.5.2 (ISO 4210-6)	1,200 N	3 Hz	50,000	50,000
Remark	There was no visible crack on the sample after testing.			

Note:

- 1. Information of sample: Material (Carbon), Frame (460 mm), Mass (3,483 g).
- 2. The rigid fork which is needed to conduct the test was provided by SGS Taiwan.
- 3. The rigid fork is 554 mm in length and the offset is 44 mm.
- 4. The rigid suspension which is needed to conduct the test was provided by SGS Taiwan and the length of rigid suspension is 241 mm.
- 5. Sample No. : 2.

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- Picture(s) -



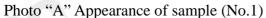




Photo "B" Appearance of sample (No.1)



Photo "C" Appearance of sample (No.2)



Photo "D" Appearance of sample (No.2)

--- End of Report ---

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