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An American National Standard

Standard Specification for Condition 2 Bicycle Frames[1]

This standard is issued under the fixed designation F2868; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

INTRODUCTION

This specification defines a set of requirements for Condition 2 bicycle frames. Condition 2 is a vehicle usage classification defined in Classification F2043 indicating the type of riding and surface condition intended by design. Included are specifications for establishing loads and other criteria to be used with the matching test method.

1. Scope

1.1 This standard establishes testing requirements for the structural performance properties of Condition 2 bicycle frames.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.3 This standard is applicable to adult size suspension and non-suspension bicycle frames.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

F2043 Classification for Bicycle Usage

F2711 Test Methods for Bicycle Frames

3. Terminology

3.1 *Definitions:*

3.1.1 *bicycle frame, n*—the structural member that supports the seat with rear connection for the rear wheel, front connection via the head tube for the fork and lower connection for the crank/pedal assembly.

4. Classification

4.1 Condition 2 bicycle frame.

5. Performance Requirements

5.1 The bicycle frame shall be tested in accordance with the methods of Test Methods F2711, the Horizontal Loading Fatigue Test, Vertical Loading Fatigue Test, Falling Mass Test, and Falling Frame Test.

5.1.1 *Horizontal Loading Fatigue Test*—The frame shall be tested and must complete a minimum 50 000 cycles with a cyclic load of 800 N tensile and 600 N compressive with no cracks or fractures.

5.1.2 *Vertical Loading Fatigue Test*—The frame shall be tested and must complete a minimum 50 000 cycles with a cyclic load of 1200 N to 120 N load in the compressive direction with no cracks or fractures.

5.1.3 *Falling Mass Test*—The frame shall be tested with a drop height of 180 mm; the frame shall not fracture and the permanent set of the frame and fork shall be less than 40 mm.

5.1.4 *Falling Frame Test*—The frame shall be tested with **Mass1** of 50 kg, **Mass2** of 10 kg, **Mass3** of 30 kg, and drop height of 200 mm; the frame shall not fracture and the permanent set of the frame and fork shall be less than 40 mm.

6. Rejection and Rehearing

6.1 Frames that fail to meet the requirements of this standard shall be rejected.

7. Certification

7.1 When specified in the purchase order or contract, the purchaser shall be furnished certification that specimens have been either tested or inspected as directed in this specification and the requirements have been met. When specified in the purchase order or contract, a report of the test results shall be furnished.

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[1] This specification is under the jurisdiction of ASTM Committee F08 on Sports Equipment, Playing Surfaces, and Facilities and is the direct responsibility of Subcommittee F08.10 on Bicycles.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.