



Standard Specification for Condition 2 Bicycle Frames¹

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INTRODUCTION

This specification standard 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.

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, and the Impact Strength 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.

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.

5.1.3 *Impact Strength Test*—The frame shall be tested with a drop height of 180 mm, 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.

¹ This test method 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.