



Standard Specification for Condition 2 Bicycle Frames¹

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 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.

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.

Current edition approved Oct. 1, 2015. Published December 2015. Originally approved in 2010 as F2868 – 10. DOI: 10.1520/F2868-10R15.

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.

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.

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.

8. Keywords

8.1 bicycle; bike; city; comfort; commuting; hybrid

 **F2868 – 10 (2015)**

ASTM International takes no position respecting the validity of any patent rights asserted in connection with any item mentioned in this standard. Users of this standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, are entirely their own responsibility.

This standard is subject to revision at any time by the responsible technical committee and must be reviewed every five years and if not revised, either reapproved or withdrawn. Your comments are invited either for revision of this standard or for additional standards and should be addressed to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend. If you feel that your comments have not received a fair hearing you should make your views known to the ASTM Committee on Standards, at the address shown below.

This standard is copyrighted by ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959, United States. Individual reprints (single or multiple copies) of this standard may be obtained by contacting ASTM at the above address or at 610-832-9585 (phone), 610-832-9555 (fax), or service@astm.org (e-mail); or through the ASTM website (www.astm.org). Permission rights to photocopy the standard may also be secured from the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, Tel: (978) 646-2600; <http://www.copyright.com/>