



Standard Safety Specification for Stationary Exercise Bicycles¹

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1. Scope

1.1 This safety specification covers the safety design features of stationary exercise bicycles. The device shall be assembled in accordance with the manufacturer's instructions for safe use.

1.2 This standard is limited to exercise bicycles of:

1.2.1 *Class A*—Non-free-wheeling exercise bicycles with a directly driven flywheel.

1.2.2 *Class B*—Free-wheeling exercise bicycles.

1.2.3 *Class C*—Ergometer bicycles, or, those bicycles used to precisely measure work.

1.2.4 *Class D*—Units designed to convert road bicycles to stationary exercise bicycles.

1.3 This specification is intended to reduce the demonstrated hazards associated with the use of stationary exercise bicycles.

1.4 This specification is written to provide reasonable safety standards for the user of stationary exercise bicycles during storage, movement, entry, use, and exit from the product.

1.5 *This standard does not purport to address all the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*²

F1749 Specification for Fitness Equipment and Fitness Facility Safety Signage and Labels

3. Terminology

3.1 *Definitions:*

¹ This safety specification is under the jurisdiction of ASTM Committee F08 on Sports Equipment, Playing Surfaces, and Facilities and is the direct responsibility of Subcommittee F08.30 on Fitness Products.

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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.

3.1.1 *consumer exercise bicycle, n*—stationary exercise bicycle intended for use by one person or family unit in a home environment.

3.1.2 *flywheel, n*—a heavy wheel for opposing and moderating, by its inertia, fluctuations of speed in the exercise bicycle on which it revolves.

3.1.3 *freewheel, n*—a device that allows the driver bicycle wheel to run on, free from the drive sprocket when motion of the pedals is stopped.

3.1.4 *institutional exercise bicycle, n*—stationary exercise bicycle intended for use by numerous persons in a commercial or institutional, as opposed to a home, environment.

3.1.5 *stationary exercise bicycle, n*—a “bicycle-like” fixed device, on which performance is achieved by means of a pedaling motion applied by the user. Depending on the class, the pedaling motion can be braked, whereby the load is modified.

4. General Requirements

4.1 *Stability:*

4.1.1 The bicycle shall be stable in a statically loaded condition and shall not tip forward, backward or sideward.

4.1.2 The bicycle base of support shall not tilt when force is applied.

4.1.3 The bicycle structure to which the horizontal force is applied shall not break or be permanently deformed.

4.1.4 The tests for stability shall be conducted in accordance with 7.1.

4.2 *Exterior Design:*

4.2.1 All edges of parts accessible to the user or to bystanders shall be burr-free, rounded, or otherwise guarded.

4.2.2 The design of rotating and moving parts which are accessible to the user shall avoid shear, pinch, or catch points.

4.2.3 Spokes must not be accessible.

4.2.4 Dangerous points of drive train components shall be guarded.

4.2.5 Adjustment devices such as knobs and pins and frame components, and so forth, (for example, handlebars) shall not be within the range of normal leg movements.

4.2.6 The tests for the safety of exterior design shall be conducted in accordance with 7.2.

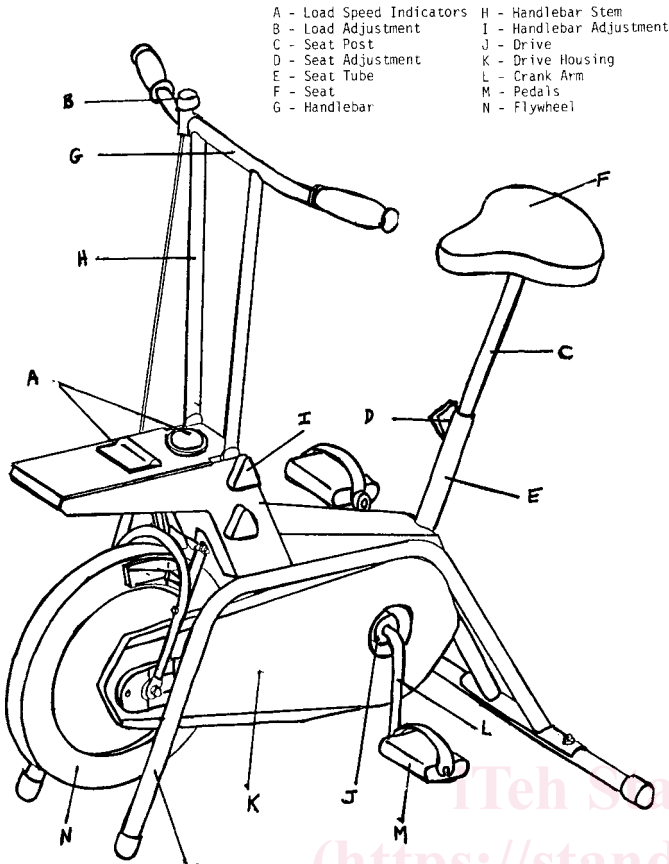


FIG. 1 Illustration of Bicycle Terms

5. Performance Requirements

5.1 Overheating:

5.1.1 No accessible metallic part shall have a temperature of more than 140°F (60°C). No accessible nonmetallic part shall have a temperature greater than 185°F (85°C).

5.1.2 The test for overheating shall be conducted in accordance with 7.3.

5.2 *Frame and Seat Post Retention Assembly*—The test for frame and seat post clamp assembly shall be conducted in accordance with 7.4.

5.3 Seat Post and Seat:

5.3.1 The seat shall be adjustable as prescribed by the manufacturer’s specifications.

5.3.1.1 The seat post shall have a permanent visual mark indicating a maximum extension. At maximum extension, no less than 2.0 in. (5.1 cm) of the seat post shall be engaged in the support structure. No mark is required if the minimum insertion depth is already provided by the design. The seat shall be mounted onto the post with a steel seat pan, shouldered seat post, capped seat bracket, or any other device that protects the user from impalement in case of failure of the seat or seat post.

5.3.2 When properly adjusted according to the manufacturer’s specifications, the seat shall not tilt.

5.3.3 The test for seats shall be conducted in accordance with 7.5.

5.4 Handlebars:

5.4.1 If a vertical shaft adjustment is used, a visual permanent mark of 2.5 in. (6.35 cm) above the end of the handlebar support shall indicate the minimum insertion depth. No mark is required if the minimum insertion depth is already provided by the design.

5.4.2 The handlebars shall not rotate around its horizontal axis when a moment of 45 ft-lb (61.00 N-m) is applied (excepting when the handle is purposely in motion as part of the exercise).

5.4.3 The handlebar stem shall not rotate around its vertical axis when a moment of 35 ft-lb (47.00 N-m) is applied (excepting when the handle is purposely in motion as part of the exercise).

5.4.4 The test for handlebars shall be conducted in accordance with 7.6.

5.5 Pedals:

5.5.1 Pedals shall have right hand/left hand symmetry. A nonslip tread surface shall be present on the surface presented to the rider’s foot. A minimum clearance of 1.5-in. (3.81-cm) shall be provided below the pedals when they are in a horizontal position at the lowest level. The pedals shall not permanently deform under use.

5.5.2 The test of the pedals shall be conducted in accordance with 7.7.

6. Documentation

6.1 *Owner’s/User’s Manual*—An owner’s/user’s manual shall be provided with the exercise bicycle. Paragraphs 6.2-6.8 set forth the sections to be covered in this manual. The first topic of the manual shall be a comprehensive listing of the safety precautions applicable to the exercise bicycle. This listing shall alert the reader to the following:

- 6.1.1 Read all warnings posted on the exercise bicycle.
- 6.1.2 Read the owner’s/user’s manual and follow it carefully before using the exercise bicycle.
- 6.1.3 Keep children away from the exercise bicycle.
- 6.1.4 Set up and operate the exercise bicycle on a solid level surface.
- 6.1.5 Inspect the exercise bicycle for worn or loose components prior to use. Tighten/replace any loose or worn components prior to using.
- 6.1.6 Consult a physician prior to commencing an exercise program. If, at any time during exercise, you feel faint, dizzy, or experience pain, stop and consult your physician.
- 6.1.7 Do not wear loose or dangling clothing while using the exercise bicycle.
- 6.1.8 Care should be taken in mounting or dismounting the exercise bicycle.
- 6.1.9 Consumer exercise bicycles shall contain notification that the exercise bicycle is for consumer use only.

6.2 *Assembly Instructions*—If the exercise bicycle requires assembly, a manual shall be supplied detailing the assembly procedures for the bicycle.

6.2.1 Exercise bicycles requiring assembly shall include a listing of the tools required for assembly, even if the tools are provided by the manufacturer.

6.2.2 Exercise bicycles shall include the parts listing for the given model, including specific part references.