



Standard Test Methods for Evaluating Design and Performance Characteristics of Selectorized Strength Equipment¹

This standard is issued under the fixed designation F2277; 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

The goal of these test methods is to provide reliable and repeatable methods for the evaluation of selectorized strength equipment. Users of these machines must recognize, however, that conformance to a standard will not necessarily prevent injuries. Certain physical conditions or limitations may preclude some persons from using this equipment as intended by the manufacturer, and using this equipment may increase the risk of injury.

1. Scope

1.1 These test methods specify procedures and apparatus used for testing and evaluating selectorized strength equipment for compliance to Specification **F2216**. Both design and operational parameters will be evaluated. Where possible and applicable, accepted test methods from other recognized bodies will be used and referenced.

1.2 *Requirements*—Selectorized strength equipment is to be tested in accordance with these test methods or Test Methods **F2571** for all of the following parameters:

- 1.2.1 Stability,
- 1.2.2 Edge and corner sharpness,
- 1.2.3 Tube ends,
- 1.2.4 Weight stack travel,
- 1.2.5 Weight stack selector pin retention,
- 1.2.6 Function of adjustments and locking mechanisms,
- 1.2.7 Handgrip design and retention,
- 1.2.8 Assist mechanisms,
- 1.2.9 Foot supports,
- 1.2.10 Rope and belt systems:
 - 1.2.10.1 Static load,
 - 1.2.10.2 End fitting design,
- 1.2.11 Chain drive design,
- 1.2.12 Pulley design:
 - 1.2.12.1 Rope pulley design,
 - 1.2.12.2 Belt pulley design,
- 1.2.13 Entrapment zones,
- 1.2.14 Pull in points,

- 1.2.15 Weight stack enclosure design,
- 1.2.16 Loading and deflection:
 - 1.2.16.1 Intrinsic loading and associated deflection,
 - 1.2.16.2 Extrinsic loading and associated deflection,
 - 1.2.16.3 Endurance loading,
- 1.2.17 Documentation and warnings verification, and
- 1.2.18 Additional universal design and construction requirements.

1.3 This test method² contains additional requirements to address the accessibility of the equipment for persons with disabilities.

1.4 The values stated in SI units are to be regarded as the standard. The values in parenthesis are for information only.

1.5 *This standard does not purport to address all of 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.*

1.6 *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*:³

¹ These test methods are under the jurisdiction of ASTM Committee **F08** on Sports Equipment, Playing Surfaces, and Facilities and are the direct responsibility of Subcommittee **F08.30** on Fitness Products.

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³ 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.