



Designation: D6643 – 01 (Reapproved 2023)

Standard Test Method for Testing Wood-Base Panel Corner Impact Resistance¹

This standard is issued under the fixed designation D6643; 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

Corner impact resistance may be an important property for wood-base panel applications such as pallets, cargo crates, concrete form boards, fruit and vegetable boxes and furniture. There is a need to have suitable corner impact resistance in such products to ensure satisfactory end-use performance. This test method provides a technique to assess relative corner impact resistance of wood-base panels.

This test method uses a vertical test frame to create corner impact on a panel specimen. The test specimen is held in a fixture that free-falls to the floor. The test specimen is examined for distance of impact damage and for qualitative damage.

1. Scope

1.1 This test method shall be used to measure the relative corner impact resistance and other damage that may occur during the rough handling of wood-base panels or composite materials. This test method is suitable for all wood-base panels such as plywood, oriented strand board, hardboard, particleboard and medium density fiberboard as well as other composite panel products.

1.2 This test method covers determination and evaluation of the effects of panels being dropped from various heights with a predetermined amount of dead load and angle of impact to simulate an equivalent field application.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.4 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.5 *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.*

¹ This test method is under the jurisdiction of ASTM Committee D07 on Wood and is the direct responsibility of Subcommittee D07.03 on Panel Products.

Current edition approved Aug. 15, 2023. Published August 2023. Originally approved in 2001. Last previous edition approved in 2016 as D6643 – 01 (2016). DOI: 10.1520/D6643-01R23.

2. Referenced Documents

2.1 ASTM Standards:²

- D2395 Test Methods for Density and Specific Gravity (Relative Density) of Wood and Wood-Based Materials
- D4442 Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials

3. Terminology

3.1 Definitions:

3.1.1 *actual damage, n*—distance of damage counted from tip to damage line after dropping.

3.1.2 *damage line, n*—the innermost line where crushing occurs.

3.1.3 *dropping head, n*—the part of the machine connected to the quick release mechanism that holds the test specimen and added amount of dead load. The dropping head free-falls to create the impact between the panel specimen and the floor.

3.1.4 *impact tip, n*—the part of the specimen that will make initial contact with the floor after dropping.

3.1.5 *peeling, n*—the furthestmost splintering from the damage line. This provides additional understanding of damage characteristics.

3.1.6 *pull cord, n*—cord that is connected to the quick release mechanism that allows a quick release of the dropping head by pulling.

3.1.7 *quick release mechanism, n*—the equipment that allows for free release of the head when the pull cord is activated.

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.