

1.0 Scope

This test method determines specific load values to establish a performance duty level of the drawer front tension test specimen (henceforth referred to as “test specimen”). These load values do not suggest service loads nor shall they be construed as suggesting normal casework usage loads.

2.0 Applicable Documents

- 2.1 ANSI/AWI 0641 - Architectural Wood Casework (latest edition)
- 2.2 AWI Standard for Manufactured Wood Casework (latest edition)
- 2.3 AWI Standard for Specialty Casework (latest edition)

3.0 Significance and Use

This test method will not determine the useful life of drawer front systems resulting from the test data obtained. It will, however, indicate drawer front system performance outcomes from test stress levels.

Test data will provide useful information for architects, design professionals, and manufacturers in making judgments on the ability of a drawer system to maintain serviceability under actual loads and operating conditions.

4.0 Test Fixture

4.1 Main Testing Machine

The main testing machine is an MTS Alliance RF/100 Tension and Compression Testing Machine as illustrated in Figure 79. The test machine is manufactured by MTS. The test machine is calibrated and certified by a third-party.

*Equivalent testing equipment is permitted.

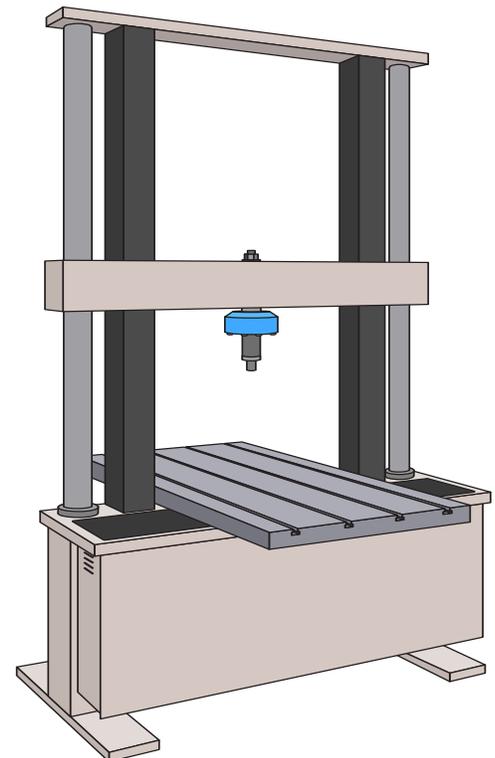


Figure 64

5.0 Test Specimen

Three specimens shall be tested for each individual construction methodology.

5.1 Test Specimen Technical Drawings

5.1.1 Drawing Requirements

Drawings shall be submitted as A3 [297 mm × 420 mm] or Tabloid [11" × 17"] size documents, formatted in landscape orientation.

All drawings shall be rendered in black and white.

Text markings shall be an easily legible font in uppercase text and appropriately scaled to viewport.

Line weight in drawings shall be plotted in a clear and legible line weight.

All measurement dimensions shall be expressed in both Metric and U.S. Customary System units of measure.

5.1.2 Drawing Formats

All information in the submittal's title block must be complete and in accordance with specimen submittal drawing instructions.

One set of digital test specimen drawings in PDF file format shall be attached to each test application form submitted.

One set of printed drawings on A3 [297 mm × 420 mm] or Tabloid [11" × 17"] size paper shall be attached to each test specimen. Paper drawings shall be inserted into a clear plastic document protector sleeve and secured with adhesive tape to the specimen's face.

5.1.3 Drawing Information Conveyance

Drawings shall convey joinery means and methods of intersecting drawer box system components, as well as relevant machining dimensions.

Drawing shall include plan view, front elevation, side elevation, rear elevation, vertical section at each change in elevation, horizontal section at each change in elevation, auxiliary sections as required indicating faster locations, full scale details as required indicating construction method and fasteners.

For clarity, full scale details shall be included as supplemental illustrations of joinery, machining, fasteners, and hardware.

The location of all hardware, connectors, fasteners, and spacing shall be illustrated. Identification notes for each hardware item shall include nomenclature type, size, material, model number, and manufacturer, as applicable.

The location of each type of adhesive application shall be illustrated in the drawing details. Identification notes for each adhesive item type shall include the name of the manufacturer, adhesive nomenclature type, and trade brand name, as applicable.

5.2 Test Specimen Assembly

5.2.1 Specimen Materials

The test specimen may be constructed of any core material and joinery combination, provided that the material(s), fasteners, spacing, and machining operation(s) are fully documented in test specimen technical drawings. Product core requiring additional face or back material/overlay, that exceeds the tested material as required by a project's contract documents, are subject to duty level findings of this test specimen.

5.2.2 Specimen Size Requirements

The test specimen shall include, at minimum, the following assembly components:

- Drawer box to be tested (400 mm [15.750"] width × 558.8 mm [22"] depth × 108 mm [4.250"] height) with attached drawer face (4159 mm [6.250"] width × 454 mm [17.874"] length) constructed of M-2 particleboard.
- Thickness of drawer components may vary.

6.0 Conditioning

6.1 Pre-Test Acclimation

Test specimens shall be acclimated in the test facility environment for no less than 72 hours after date of arrival and under conditions in compliance with requirements as established in AWI 200 - Care and Storage Standard.

6.2 Test Environment

The test facility shall maintain continuous monitoring and an archival record of the facility's indoor environmental conditions at a minimum of one hour intervals, including:

- Temperature
- Relative humidity

6.2.1 Environmental Condition Log

The official date and time of the Environmental Condition Log (ECL) begins upon receipt of the test specimen and is continuous throughout the acclimation and testing procedures. At the conclusion of the final test procedures, the test specimen's ECL shall cease and be closed with a final environmental close-out log entry.

7.0 Testing Procedure

7.1 Anchoring Test Specimen to the Test Fixture

The drawer front test fixture shall consist of (See Figure 81):

- An approved jig assembly, consisting of a 6.4 mm [.250"] thick steel plate measuring 152.4 mm [6"] × 101.6 mm [4"] with a pair of 19.1 mm [.750"] × 19.1 mm [.750"] steel hollow rod protruding through the bottom of plate 12.7 mm [.500"] from

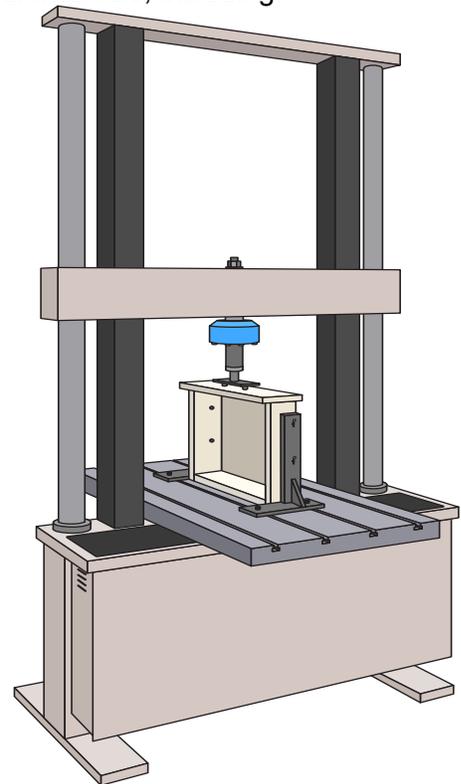


Figure 81

Testing Methods, DF-1 Drawer Front Tension Test

each outer edge. The plate is be mounted onto a 101.6 mm [4"] length of 31.8 mm [1.25"] threaded steel to facilitate attachment to the testing machine.

- Two 101.6 mm [4"] × 6.4 mm [.250"] bolts and two 12.7 mm [.500"] washers used to secure the jig to the drawer front.
- A test specimen mounting fixture consisting of two 404.6 mm [16"] lengths of 25.4 mm [1"] × 50.8 mm [2"] lengths of steel square tubing attached to a 266.7 mm [10.5"] × 101.6 mm [4"] base. Each length of square tubing has holes drilled through the material at heights of 187.3 mm [7.375"] and 374.7 mm [14.750"] from the base for attachment of the test specimen.

Attach specimen to be tested to the square tubing, which is bolted to the Tension and Compression Testing Machine. Attach material to be tested using 44.5 mm [1.750"] 1/4-20 bolts.

Ensure that test assembly is square and level, and adjust as necessary.

7.2 Test Specimen Tolerance Verification/ Measurement Devices

Tension and Compression Testing Machine

7.3 Load Testing Process

7.3.1 AWI Casework Load Table

Performance Duty Level	Functional Load	Typical Application
Duty Level 1	200-400 lb.	Light Commercial
Duty Level 2	200-400 lb.	Commercial
Duty Level 3	401 lb. and over	Institutional
Duty Level 4	401 lb. and over	Laboratory

CLT-1

7.3.2 Test Steps and Test Process Step 1

Engage Tension and Compression Testing Machine. Rate of travel for testing procedure is 6.4mm [.250"] per minute.

Test is automatically stopped when Tension and Compression Testing Machine ceases to record resistance from test specimen.

8.0 Record of Test Result

8.1 Measurement Devices

Data is recorded on Admet MTEST Quattro Materials Testing Software.

8.2 Nonconformities

All nonconformities shall be identified and deviations recorded.

Deviation measurements greater than the tolerances allowed in the referenced standard shall be deemed as a failure to meet the structural performance requirements of this test.

9.0 Test Report

The AWI Performance Quality Test Report is the official test report for standard compliance. The results of these findings will be valid for one (1) calendar year from date of report. Conformance to tested methodology is subject to verification to ensure integrity of the product is maintained. Noncompliant verification may result in a suspension of the Test Report. The following information must be submitted to complete the Performance Quality Test Report:

9.1 Test Applicant

- Legal Business Name, Street Address, City, State, ZIP Code and Phone Number

9.2 Independent Testing Laboratory (ITL)

- Legal Business Name, Street Address, City, State, ZIP Code
- Authorizing Signee's Name, Title, Phone, Email
- Testing Laboratory Service Order #, Testing Laboratory Customer ID, Testing Laboratory Battery #, Specimen #
- Date of Specimen Receipt
- Date of Test Performed

9.3 Target Duty Level Declaration

9.4 Test Documentation

- All information required for this test methodology

9.5 Material

- Documentation of component material, thickness and grade

9.6 Specimen Dimensions

9.7 Actual Test Load Weight

9.8 Notes, Observations, and Photographs of Specimen

- Before, during, and after test

9.9 Equipment Used to Execute Test

- Calibration documentation (when required)

9.10 Signed Statement of Specimen Affirmation

9.11 Signed Statement of Test Process Verification

9.12 Specimen Drawings

- Plan View 3"=1'-0"
- Front Elevation 3"=1'-0"
- Side Elevation 3"=1'-0"
- Back Elevation 3"=1'-0"
- Vertical Section 3"=1'-0"
- Joinery details/spacing Half or Full Scale
- Adhesives used

9.13 Test Specimen's Installation Instructions

9.14 Test Specimen's Moisture Humidity Log Record

- Acclimation
- Pre-Test
- Post-Test

9.15 Declaration of Test Methodology Used for This Test

9.16 Signed Statement of Results

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