



March 14, 2008

TO: PARTIES INTERESTED IN EVALUATION REPORTS ON FIBER-REINFORCED CEMENT SHEET STRUCTURAL FLOOR SHEATHING

SUBJECT: Acceptance Criteria for Fiber-reinforced Cement Sheet Structural Floor Sheathing, Subject AC367-0208-R1 (IY/BG)

Dear Madam or Sir:

Enclosed is a copy of the subject revised acceptance criteria approved by the ICC-ES Evaluation Committee on February 5, 2007, effective March 1, 2008.

Revisions were approved throughout the criteria permitting qualification of the sheathing as a component of a horizontal floor diaphragm on wood framing for resisting wind or seismic loads.

ICC-ES evaluation reports issued on or after the effective date noted above, both new reports and conversions of legacy reports, must comply with this criteria if they fall within its scope.

If you have any questions, please contact Irni Yani, evaluation specialist, at (800) 423-6587, extension 3289. You may also reach us by e-mail at es@icc-es.org.

Yours very truly,

A handwritten signature in black ink that reads 'Kurt Stochlia'.

Kurt Stochlia, P.E.
Vice President

KS/IY/II

Enclosure

cc: Evaluation Committee



ACCEPTANCE CRITERIA FOR FIBER-REINFORCED CEMENT SHEET STRUCTURAL FLOOR SHEATHING

AC367

Approved February 2008

Effective March 1, 2008

Previously approved October 2007, June 2007

PREFACE

Evaluation reports issued by ICC Evaluation Service, Inc. (ICC-ES), are based upon performance features of the International family of codes and other widely adopted code families, including the Uniform Codes, the BOCA National Codes, and the SBCCI Standard Codes. Section 104.11 of the *International Building Code*® reads as follows:

The provisions of this code are not intended to prevent the installation of any materials or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been approved. An alternative material, design or method of construction shall be approved where the building official finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, fire resistance, durability and safety.

Similar provisions are contained in the Uniform Codes, the National Codes, and the Standard Codes.

This acceptance criteria has been issued to provide all interested parties with guidelines for demonstrating compliance with performance features of the applicable code(s) referenced in the acceptance criteria. The criteria was developed and adopted following public hearings conducted by the ICC-ES Evaluation Committee, and is effective on the date shown above. All reports issued or reissued on or after the effective date must comply with this criteria, while reports issued prior to this date may be in compliance with this criteria or with the previous edition. If the criteria is an updated version from the previous edition, a solid vertical line (|) in the margin within the criteria indicates a technical change, addition, or deletion from the previous edition. A deletion indicator (→) is provided in the margin where a paragraph has been deleted if the deletion involved a technical change. This criteria may be further revised as the need dictates.

ICC-ES may consider alternate criteria, provided the report applicant submits valid data demonstrating that the alternate criteria are at least equivalent to the criteria set forth in this document, and otherwise demonstrate compliance with the performance features of the codes. Notwithstanding that a product, material, or type or method of construction meets the requirements of the criteria set forth in this document, or that it can be demonstrated that valid alternate criteria are equivalent to the criteria in this document and otherwise demonstrate compliance with the performance features of the codes, ICC-ES retains the right to refuse to issue or renew an evaluation report, if the product, material, or type or method of construction is such that either unusual care with its installation or use must be exercised for satisfactory performance, or if malfunctioning is apt to cause unreasonable property damage or personal injury or sickness relative to the benefits to be achieved by the use of the product, material, or type or method of construction.

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ACCEPTANCE CRITERIA FOR FIBER-REINFORCED CEMENT SHEET STRUCTURAL FLOOR SHEATHING

1.0 INTRODUCTION

1.1 Purpose: The purpose of this acceptance criteria is to establish requirements for fiber-reinforced cement sheet structural floor sheathing to be recognized in an ICC Evaluation Service, Inc. (ICC-ES), evaluation report under the 2006 *International Building Code*[®] (IBC), the 2006 *International Residential Code*[®] (IRC) and the 1997 *Uniform Building Code*[™] (UBC). The bases of recognition are IBC Section 104.11, IRC Section 104.11, and UBC Section 104.2.8.

The reason for the development of this criteria is to provide guidelines for qualifying the fiber-reinforced cement sheet structural floor sheathing, because the codes do not provide guidance for fiber-reinforced cement sheets used as an alternative structural floor sheathing.

1.2 Scope: This criteria provides bases for evaluating fiber-reinforced cement sheets used as floor sheathing to support gravity loads and as a component of horizontal diaphragms used to resist wind or seismic loads. This scope of this criteria includes the fiber-reinforced cement sheets used in assemblies in combustible construction and in fire-resistance-rated and/or non fire-resistance rated construction. The criteria is applicable to sheathing grade and single floor grade structural floor sheathing that are fiber-reinforced cement sheets complying with either ASTM C 1288 or ASTM C 1325 and this acceptance criteria. The sheets shall be installed over, and mechanically attached to, wood floor framing. The span rating determined based on Tables 1 and 3 or Tables 2 and 3 is based on an allowable uniform total load of 60 psf (2,873 Pa) at a deflection of $1/360$ of the span. The sheets shall be limited to interior residential use.

1.3 Codes and Reference Standards:

1.3.1 2006 *International Building Code*[®] (IBC), International Code Council.

1.3.2 2006 *International Residential Code*[®] (IRC), International Code Council.

1.3.3 1997 *Uniform Building Code*[™] (UBC).

1.3.4 PS 2-92, Performance Standards for Wood-based Structural-use Panels, U.S. Department of Commerce, National Institute of Standards and Technology.

1.3.5 ANSI/AF&PA SDPWS-2005, Special Design Provisions for Wind and Seismic, American Forest and Paper Association.

1.3.6 ASTM C 1185-03, Standard Test Methods for Sampling and Testing Non-Asbestos Fiber-Cement Flat Sheet Roofing and Siding Shingles, and Clapboards.

1.3.7 ASTM C 1288-99 (reapproved 2004), Standard Specification for Discrete Non-Asbestos Fiber-Cement Interior Substrate Sheets, ASTM International.

1.3.8 ASTM C 1325-04, Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cement Substrate Sheets, ASTM International.

1.3.9 ASTM D 1037-99, Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials, ASTM International.

1.3.10 ASTM D 1761-88 (2000)e01, Standard Test Methods for Mechanical Fasteners in Wood.

1.3.11 ASTM D 2395-02, Standard Test Methods for Specific Gravity of Wood and Wood-Base Materials, ASTM International.

1.3.12 ASTM D 4442-92 (2003) Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials, ASTM International.

1.3.13 ASTM E 119-00, Standard Test Methods for Fire Tests of Building Construction and Materials, ASTM International.

1.3.14 ASTM E 455-04, Standard Method for Static Load Testing of Framed Floor or Roof Diaphragm Constructions for Buildings, ASTM International.

1.3.15 ASTM E 661-88 (reapproved 1997), Standard Test Method for Performance Standard of Wood and Wood-Based Floor and Roof Sheathing under Concentrated Static and Impact Loads, ASTM International.

1.3.16 ICC-ES Acceptance Criteria for Nails and Spikes (AC116).

1.3.17 MIL-STD-1916, DOD Preferred Methods for Acceptance of Product, 1996, Department of Defense.

1.3.18 UL 263-03, UL Standard for Fire Tests of Building Construction and Materials, 13th edition, Underwriters Laboratories Inc.

1.4 Definitions:

1.4.1 Fastening System: A fastening system is defined as a method to mechanically attach the sheathing grade or single floor grade sheets to framing.

1.4.2 Span Rating: The recommended maximum center-to-center spacing in inches (mm) of floor framing used to support the sheets for the specified end use under normal use conditions.

1.4.3 Single Floor Grade: Sheets used as a combination subfloor and underlayment installed with edge treatment, blocking or covered with one of the materials described in footnote d of IBC Table 2304.7(3), footnote j of IRC Table R503.2.1.1(1) or footnote 4 of UBC Table 23-II-E-1, as applicable.

1.4.4 Sheathing Grade: Sheets used as sheathing that require a separate underlayment installed on top of the sheets.

2.0 BASIC INFORMATION

2.1 General: The following information shall be submitted:

2.1.1 Product Description:

2.1.1.1 Fiber-reinforced Cement Sheets: Complete information concerning product specifications, product composition, nominal dimensions, and the manufacturing process. The sheets shall comply with either ASTM C 1288 or ASTM C 1325 and this acceptance criteria.

2.1.1.2 Nails: The following information shall be provided for the fasteners used to attach the sheets to the floor framing:

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- a. Generic or trade name.
- b. Manufacturer's catalog number.
- c. Fastener head shape, diameter and thickness.
- d. Nominal fastener shank diameter and length.
- e. Permitted manufacturing tolerances.
- f. Thread type, pattern and length.

g. Fastener material specifications, including physical and mechanical properties, e.g., tensile strength, bending yield strength, hardness and protective coatings.

h. Appropriate national standards for the materials. Reports of material properties shall be submitted for the fastener. The reports shall be generated by a mill or independent testing laboratory, and shall verify compliance of the fastener material with the appropriate national standard. Where the actual material strength exceeds the specified strength, test results shall be adjusted, when failure is attributed to the subject fastener, by the ratio $F_u(\text{specified})/F_u(\text{actual})$.

- i. ICC-ES evaluation report number (if applicable).

2.1.1.3 Wood Framing Members: The minimum standards and quality of the wood framing members shall be acceptable under a current ICC-ES evaluation report or a recognized product standard in the IBC, IRC or UBC. The material shall be clearly identified to determine compliance.

2.1.2 Installation Instructions: Installation details and limitations, fastening methods, joint treatments, and face treatments. The installation instructions for a diaphragm assembly shall describe the diaphragm components, diaphragm configurations, installation pattern of the floor sheathing (sheets), fastener type, fastener size, minimum fastener end and edge distances, and fastener location.

2.1.3 Packaging and Identification: A description of the method of packaging and field identification of the sheets. Identification shall include the report holder's name, the product name, the span rating, the thickness, the evaluation report number, and the name or logo of the inspection agency. In addition, the label for fiber-reinforced cement sheets shall include product markings as described in ASTM C 1288 or ASTM C 1325, as applicable.

2.1.4 Field Preparation: A description of the methods of field-cutting, application and finishing.

2.2 Testing Laboratories: Testing laboratories shall comply with Section 2.0 of the ICC-ES Acceptance Criteria for Test Reports (AC85) and Section 4.2 of the ICC-ES Rules of Procedure for Evaluation Reports.

2.3 Test Reports: Test reports shall comply with AC85. Diaphragm test reports shall include descriptions including specifications of each diaphragm component; diaphragm configuration; installation pattern of the floor sheathing; test apparatus; descriptions of the test setup; sufficient details illustrating the installation of diaphragm assemblies; horizontal diaphragm length-width ratios; fastener edge and end distances; fastener penetrations; fastener spacing; test procedure; rate and method of loading; loading directions; loading conditions; load-deformation measurements; maximum load applied; total time under load at the various load levels; modes of failures; discussions of overall performance; and photographs of tested specimens before, during and after testing.

2.4 Product Sampling: Sampling of fiber-reinforced cement sheets for tests under this criteria shall comply with Sections 3.1, 3.3 and 3.4 of AC85. All sheet samples shall be representative of the product to be evaluated.

3.0 TEST AND PERFORMANCE REQUIREMENTS

3.1 Fiber-reinforced Cement Sheets: Reports of tests and other information that demonstrate compliance with either ASTM C 1288 or ASTM C 1325, including supplementary requirements stated in the standards, shall be submitted. Sheet samples shall be selected in sufficient quantity to enable statistical analysis in accordance with MIL-STD-1916. Specimens selected for testing from panel sheet samples shall be sufficient in number to enable statistical analysis. No more than two pairs of specimens for any individual test shall be selected from a single sheet.

3.2 Concentrated Static and Impact Load Tests: Reports shall be submitted of concentrated static and impact load tests in accordance with Section 4.1 and Table 1 or Section 4.1 and Table 2 of this criteria, as applicable. The test reports shall include tabulation and graphical representation of load-deflection readings. The species, grade and specific gravity of the wood framing shall be reported. The wood framing shall be representative of the end use condition with a minimum nominal width of 2 inches (50.8 mm).

3.3 Transverse Uniform Load Tests: Reports shall be submitted of transverse uniform load tests in accordance with Section 4.2 and Table 3 of this criteria. The test reports shall include tabulation and graphical representation of load-deflection readings. The species, grade and specific gravity of the wood framing shall be reported. The wood framing shall be representative of the end use condition with a minimum nominal width of 2 inches (50.8 mm).

3.4 Fastener Holding: For each fastener intended for use, reports shall be submitted of fastener lateral load, pull-through load and withdrawal load tests in accordance with Section 4.3 and Table 4 of this criteria. The specifications of the fastener and connected material shall be representative of the report applicant's end use recommendations. The testing shall verify minimum end and edge distances for fasteners in the sheets.

3.5 Fire-resistance-rated Construction (Optional): For use in fire-resistance-rated construction, tests shall be conducted in accordance with ASTM E 119 or UL 263.

3.6 Diaphragm (Optional):

3.6.1 General: The shear strength and shear stiffness of fiber-reinforced cement sheathing used as the web of a horizontal wood-framed floor diaphragm shall be based on tests conducted in accordance with Section 4.4 of this criteria. Prior to the testing, the test plan shall be submitted to ICC-ES for review. The plan shall include sufficient test details for each diaphragm assembly; such as: descriptions of each diaphragm assembly; specifications of diaphragm components for each diaphragm assembly; diaphragm configuration; diaphragm sizes; installation pattern of the floor sheathing; fastener location and spacing; test setup; descriptions of the test procedure; the means of determining the expected maximum diaphragm test load and all details pertinent to the test. If the test plan contains several diaphragm configurations and not all diaphragm configurations will be tested, the bases for selecting different

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diaphragm configurations shall be provided for ICC-ES consideration. The test plan shall include the test matrix showing the minimum and maximum fastener spacing intended for recognition for each combination of sheathing density and thickness, wood framing species and thickness and fastener type and size.

The expected maximum diaphragm assembly test load shall be estimated for the purpose of determining the appropriate test load increments and test load rate for full-scale diaphragm tests. The results of the connection tests noted in Section 3.6.4 of this criteria, or other alternative methods, are permitted to be used to estimate the expected maximum diaphragm assembly test load. Regardless of estimation method used, full-scale diaphragm assembly tests shall be conducted using the minimum specified load rate specified in Section 9.0 of ASTM E 455.

Diaphragm tests shall be conducted on a minimum of three specimens of each assembly that is to be recognized in the evaluation report. For unblocked diaphragms, there shall be at least three additional assemblies for each configuration so the test may be conducted with the load applied in two orthogonal directions.

3.6.2 Density of Fiber-Reinforced Sheets: Density tests shall be performed in accordance with ASTM C 1185 on fiber-reinforced sheets used in the connection (Section 3.6.4) and diaphragm tests. The density test results shall be reported.

3.6.3 Wood Framing: Specific gravity and moisture content shall be measured and reported of wood framing members used in connection (Section 3.6.4) and diaphragm tests. The specific gravity and moisture content tests may be performed in accordance with ASTM D 2395 and ASTM D 4442, respectively. The wood framing shall be representative of the end use condition with a minimum nominal width of 2 inches (50.8 mm).

3.6.4 Fasteners: Data in accordance with Sections 3.1, 3.7, 3.8 and 3.9 of the ICC-ES Acceptance Criteria for Nails and Spikes (AC116) shall be submitted.

Tests performed in accordance with applicable sections of AC116 are to determine the expected allowable lateral strength of the combinations of sheathing density and thickness(es), wood species and thickness, and fastener type and size. The specifications of the fastener and connected material shall be reported and shall be representative of the report applicant's end use recommendations.

The load applied during the lap shear connection tests, as well as the slip, shall be measured. Allowable lateral loads shall be calculated in accordance with Section 4.3 of AC116, and expected diaphragm assembly allowable loads shall be derived. The derivation of the fastener slip equation shall be based on ASTM D 1761 connection test results.

3.6.5 Analysis: Analysis of diaphragm assembly test results, sealed by a registered design professional, shall be provided to determine/verify the following:

3.6.5.1 The equation used to determine diaphragm deflection. Analysis for diaphragm deflection shall account for the bending deflection, diaphragm web shear deflection, as well as any other factors, such as fastener slip, which will contribute to deflection of the diaphragm.

3.6.5.2 The allowable shear values, in pounds per linear foot, for the diaphragm assembly/assemblies (blocked and unblocked) to be recognized. Each combination of fastener type and spacing, sheathing density and thickness, and wood species and thickness shall be addressed. The allowable shear for fiber-reinforced cement sheet diaphragm with wood framing for wind and seismic loading, shall be derived from the lowest value of ASTM E 455 tests divided by a factor of safety of 2.8 for Allowable Stress Design (ASD), or multiplied by 0.57 for Lateral Resistance Factor Design (LRFD) load. The diaphragm allowable strength will be based on analysis utilizing the fasteners capacity provided the diaphragm test results are equal to or greater than the calculated capacity for the tested diaphragm configurations.

3.6.5.3 For wind resistance only, the factor of safety in Section 3.6.5.2 may be reduced for ASD or increased for LRFD by a factor no greater than 1.4, provided the test data is analyzed for strength and stiffness and compares favorably with the values in Table 4.2a of ANSI/AF&PA SDPWS-2005.

3.6.5.4 The allowable lateral strength of the fastener determined from Section 3.6.4.

3.6.5.5 The minimum edge and end distances of the fasteners installed in the sheathing and the wood framing as tested in the lap shear connection tests in Section 3.6.4, the fastener holding tests in Section 4.3 and diaphragm tests in Section 4.4. When the diaphragm test requires staggered fasteners, the staggered pattern shall be specified. The fastener end and edge distances shall be representative of the end use conditions.

4.0 TEST METHODS

4.1 Concentrated Static and Impact Load Tests: Section 6 of ASTM E 661 shall be followed with regard to the number, size, conditioning and fabrication of test specimens. The test procedures shall be as specified in Sections 4.1.1 and 4.1.2 of this criteria.

4.1.1 Concentrated Static Load: Testing shall be conducted in accordance with ASTM E 661. For sheathing grade, tests shall be performed using 3-inch-diameter (76 mm) loading disk. For single floor grade, tests shall be performed using 1-inch-diameter (25 mm) loading disk.

4.1.2 Concentrated Impact Load: Impact tests shall be conducted in accordance with ASTM E 661, Procedure A. The width of individual test pieces shall be 24 inches (610 mm) for span ratings up to 24 inches (610 mm).

4.2 Transverse Uniform Load Tests: A minimum of ten specimens for each exposure condition shall be used. The test equipment and specimen preparation shall be in accordance with Sections 6.4.2.2 and 6.4.2.3 of PS 2. The specimens shall be tested in accordance with the test procedure noted in Section 6.4.2.4 of PS 2, modified as follows: The specimens shall be loaded at a uniform rate of 50 lb/ft² (2.4 kPa) per minute, recording deflections at increments of 20 lb/ft² (0.958 kPa).

4.3 Fastener Holding: Testing shall be in accordance with ASTM D 1037 and ASTM D 1761, as applicable, to evaluate the lateral load, withdrawal load, and pull-through load. The test procedure selected will vary depending on the fastener type and connected material. A minimum of 20

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specimens for each environmental exposure condition shall be used. The test specimen shall be loaded continuously throughout the tests at a rate in accordance with the test procedure specified in this section.

4.4 Diaphragm Test Method: Diaphragm testing shall be performed in accordance with ASTM E 455. The diaphragm assembly shall consist of at least five panels or five support spacings (i.e., sheathing spans), including sheathing end and side joints, with the cantilever beam diaphragm assembly size not less than 8 feet (2.44 m) in either length or width, and the size of the simple beam diaphragm tested assembly 8 feet (2.4 m) wide by 24 feet (7.31 m) long. The installation and support conditions of the sheathing shall reflect field installation and support conditions for which recognition is sought. The loading method and rate chosen shall be consistent for each diaphragm assembly.

5.0 QUALITY CONTROL

5.1 The fiber-reinforced cement sheets shall be manufactured under an approved quality control program with inspections by an inspection agency accredited by International Accreditation Service (IAS) or otherwise acceptable to ICC-ES.

5.2 Quality documentation for the sheets complying with the ICC-ES Acceptance Criteria for Quality Documentation (AC10) shall be submitted. The quality documentation shall describe sheet composition, manufacture, workmanship, finish and appearance, including method of packaging and storage, as applicable, for conformance to either ASTM C 1288 or ASTM C 1325.

5.3 A policy shall be documented by the sheets manufacturer to assure ongoing product quality by detecting changes in sheet properties that may adversely affect sheet performance. Testing for quality assurance on fiber-cement sheets shall be conducted in accordance with either ASTM C 1288 or ASTM C 1325 (i.e., flexural strength, density, dimensional and modulus elasticity tests). The test results of ongoing qualification tests on the sheets shall match the test results established in the original qualifying tests, and shall comply with their respective specifications (i.e., ASTM C 1288 or ASTM C 1325).

6.0 EVALUATION REPORT RECOGNITION

The evaluation report shall include:

1. Basic information referenced in Section 2.1 of the criteria.
2. Allowable uniform total load of 60 psf (2,873 Pa) and uniform live load of 40 psf (1,915 Pa), including span ratings and fastening method for the sheets.
3. End use limitations of the sheet (i.e., sheathing grade or single floor grade). Sheathing grade sheets shall require separate underlayment installed on top of the sheets. Single floor grade sheets shall either have tongue-and-groove edges or shall be installed with edges supported by blocking or covered with one of the materials described in footnote d of IBC Table 2304.7(3), footnote j of IRC Table R503.2.1.1(1) or footnote 4 of UBC Table 23-II-E-1, as applicable.
4. A statement indicating that the use of fiber-cement sheets as a horizontal diaphragm component is outside the scope of the evaluation report, unless data and test reports in compliance with Section 3.6 are provided.
5. Applicable information with regard to the use of the sheets as a horizontal diaphragm component:
 - a. Design (ASD or LRFD) shear loads for each diaphragm assembly configuration, based on analysis of data as described in Section 3.6.5 of this criteria.
 - b. Descriptions and specifications of each diaphragm components, such as: fastener type and dimensions, sheathing thickness, and framing member minimum width and wood species.
 - c. Diaphragm deflection equation, including a term for diaphragm deflection due to fastener slip.
 - d. Horizontal diaphragm length-width ratios based on the diaphragm load tests. The horizontal diaphragm ratios shall be limited to values set forth in Section 2305.2.3 of the IBC.
6. Descriptions of floor sheathing installations.
7. If the fiber-reinforced cement sheets are to be used with other sheathing types in the same diaphragm assembly, the design shall be subject to the approval of the code official. ■

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TABLE 1—CONCENTRATED STATIC AND IMPACT TEST PERFORMANCE CRITERIA FOR SHEATHING GRADE SHEETS

SPAN RATING (in.)	CONDITIONS AT TEST ¹	PERFORMANCE REQUIREMENTS		
		Minimum Peak Load (lbs)		Maximum Deflection (in) under 200-pound Load ³
		Static	Following Impact ²	
16	Dry	400	400	0.188
	Wet/redry	400	400	0.188
20	Dry	400	400	0.219
	Wet/redry	400	400	0.219
24	Dry	400	400	0.250
	Wet/redry	400	400	0.250

For **SI**: 1 inch = 25.4 mm, 1 lbf = 4.45 N, 1ft-lbf = 1.355 N-m.

¹Wet/Redry shall be exposure to three days of continuous wetting, followed by testing dry. Dry shall be conditioned in accordance with ASTM E 661.

²Impact testing shall be conducted in accordance with Section 7.5 of ASTM E 661, using a 75 ft-lbf impact for span ratings up to 24 inches on center.

³Criteria apply under static concentrated load. They do not apply following impact.

TABLE 2—CONCENTRATED STATIC AND IMPACT LOAD TEST PERFORMANCE CRITERIA FOR SINGLE FLOOR GRADE SHEETS

SPAN RATING (in.)	CONDITIONS AT TEST ¹	PERFORMANCE REQUIREMENTS		
		Minimum Peak Load (lbs)		Maximum Deflection (in) under 200-pound Load
		Static	Following Impact ²	
16	Dry	550	400	0.078 ³
	Wet/redry	550	400	0.078 ³
20	Dry	550	400	0.094 ³
	Wet/redry	550	400	0.094 ³
24	Dry	550	400	0.108 ³
	Wet/redry	550	400	0.108 ³

For **SI**: 1 inch = 25.4 mm, 1 lbf = 0.0045 kN, 1ft-lbf = 1.355 N-m.

¹Wet/redry shall be exposure to three days of continuous wetting, followed by testing dry. Dry shall be conditioned in accordance with ASTM E 661.

²Impact testing shall be conducted in accordance with Section 7.5 of ASTM E 661, using a 75 ft-lbf impact for span ratings up to 24 inches on center.

³Criteria shall apply under static concentrated load and following impact.

TABLE 3—UNIFORM LOAD PERFORMANCE CRITERIA FOR SHEATHING GRADE AND SINGLE FLOOR GRADE SHEETS

SPAN RATING (in.)	CONDITIONS AT TESTS ¹	PERFORMANCE REQUIREMENTS	
		Average Deflection Under Load ^{2,3}	Minimum Peak Load (psf)
16	Dry Wet/redry	0.044" at 60 psf	200
20	Dry Wet/redry	0.053" at 60 psf	200
24	Dry Wet/redry	0.067" at 60 psf	200

For **SI**: 1 inch = 25.4 mm, 1 lbf = 0.0045 kN, 1 psf = 0.0479 kN/m².

¹Wet/redry shall be exposure to three days of continuous wetting, followed by testing dry. Dry shall be conditioned in accordance with ASTM E 661.

²Maximum deflection of sheathing shall be measured relative to framing. The average value of all specimens shall be or below the tabulated requirements.

³Specimens shall be tested in a two-span condition.

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TABLE 4—FASTENER HOLDING PERFORMANCE CRITERIA FOR PANELS

PANEL THICKNESS (inch)	CONDITION AT TEST ¹	MINIMUM PEAK LOAD (pounds)	
		Lateral ²	Pull-through and Withdrawal
Greater than 1/2 inch	Dry	210	20
	Wet/redry	160	15

For **SI**: 1 inch = 25.4 mm, 1 lbf = 0.0045 kN.

¹Wet/redry shall be exposure to three days of continuous wetting, followed by testing dry. Dry shall be conditioned in accordance with ASTM E 661.

²Lateral tests shall be loaded toward the free edge.