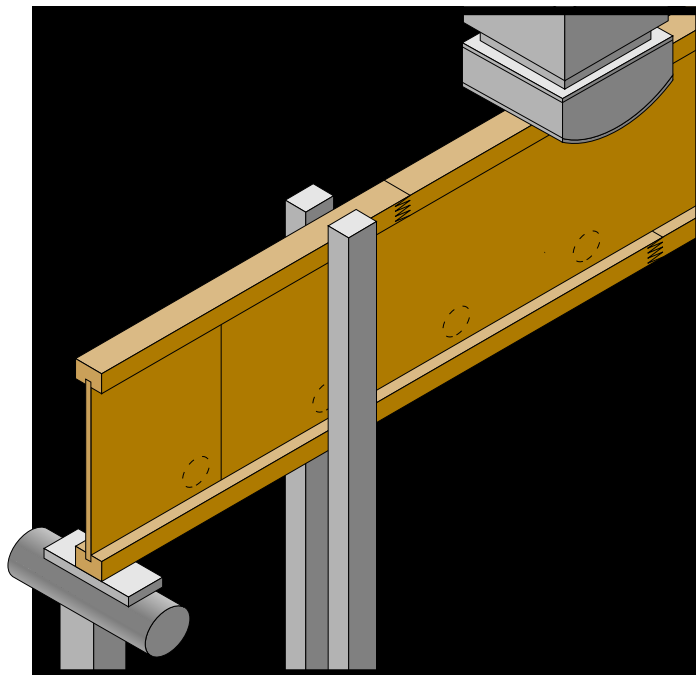


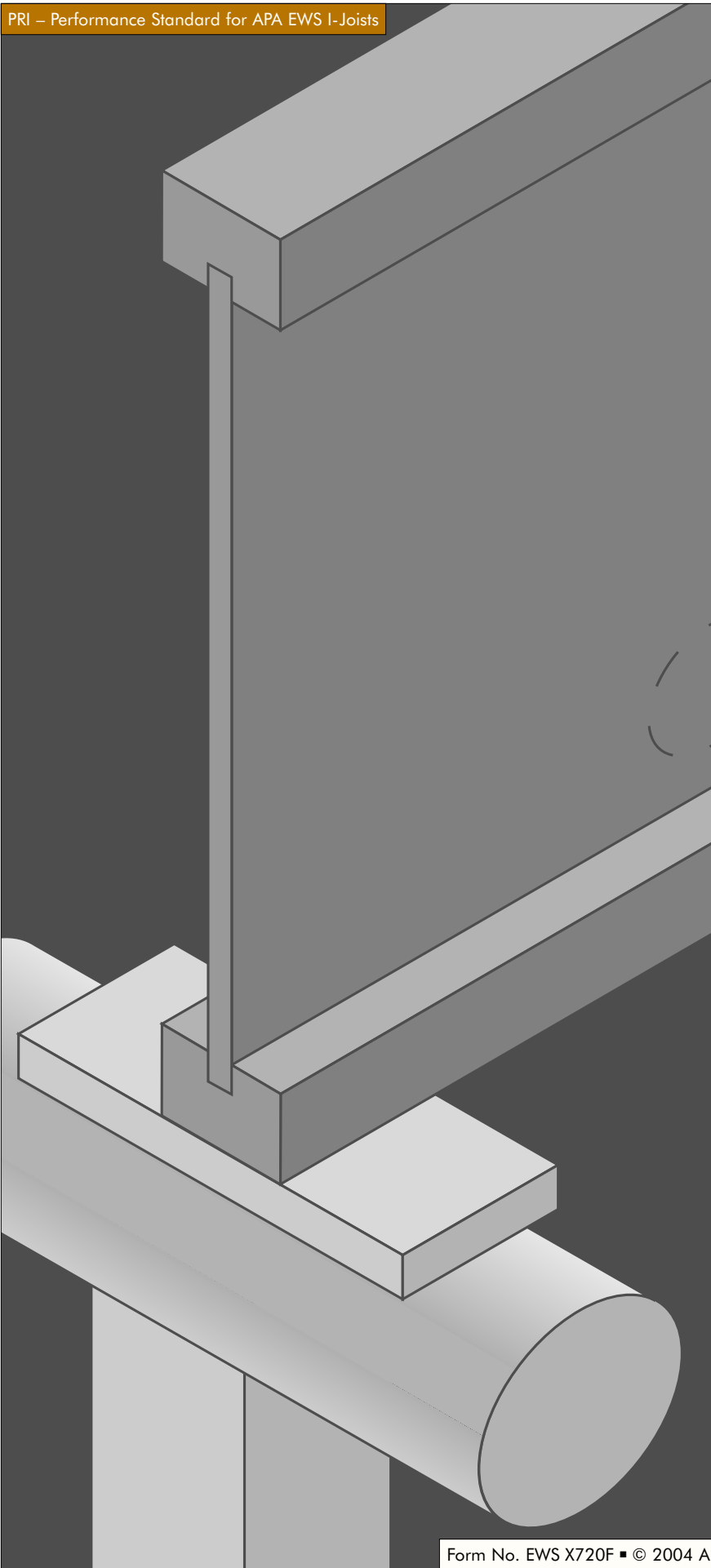
A P A E W S S T A N D A R D

PRI-400 PERFORMANCE STANDARD FOR APA EWS I-JOISTS

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ENGINEERED WOOD SYSTEMS
APA EWS



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PRI-400 PERFORMANCE STANDARD FOR APA EWS I-JOISTS USED IN RESIDENTIAL FLOORS

January, 2004

1. Scope

- 1.1** The APA EWS Performance-Rated I-Joist is an “I”-shaped structural member prefabricated using sawn or structural composite lumber flanges and structural-use panel webs bonded together with exterior adhesives.
- 1.2** To be classified as an APA EWS Performance-Rated I-Joist, the joist shall meet an L/480 live load deflection criterion for residential floor applications, in addition to meeting all other requirements of this standard.
- 1.3** APA EWS Performance-Rated I-Joists are intended for use as joists in residential floor construction. Products carrying the APA EWS Performance-Rated I-Joist trademark are to be installed in accordance with recommendations published by APA – The Engineered Wood Association.
- 1.4** APA EWS Performance-Rated I-Joists can be used for applications other than residential floor construction provided that appropriate design properties of the I-joists are used in design.
- 1.5** APA EWS Performance-Rated I-Joists are intended for use in dry-service conditions where the average moisture content is less than 16%.
- 1.6** This standard provides an allowable span system for a series of APA EWS Performance-Rated I-Joists used in residential floor construction. To qualify for trademarking as an APA EWS Performance-Rated I-Joist, the I-joist shall demonstrate conformance to the performance requirements for the allowable span as well as the design properties set forth in this standard.

2. Referenced Documents

2.1 ASTM Standards:

- D 9 Terminology Relating to Wood
- D 198 Methods of Static Tests of Lumber in Structural Sizes
- D 245 Practice for Establishing Structural Grades and Related Allowable Properties for Visually Graded Lumber
- D 1037 Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials
- D 2555 Test Methods for Establishing Clear Wood Strength Values
- D 2559 Specification for Adhesives for Structural Laminated Wood Products for Use Under Exterior (Wet-Use) Exposure Conditions
- D 3498 Specification for Adhesives for Field-Glued Plywood to Lumber Framing for Floor Systems
- D 5055 Specification for Establishing and Monitoring Structural Capacities of Prefabricated Wood I-Joists
- D 5456 Specification for Evaluation of Structural Composite Lumber Products

2.2 Other Standards:

Voluntary Product Standard PS 1 – Construction and Industrial Plywood

Voluntary Product Standard PS 2 – Performance Standard for Wood-Based Structural-Use Panels

ANSI A190.1 – Structural Glued Laminated Timber

CSA O112 – Canadian Standards for Wood Adhesives

2.3 APA Publications:

APA PRP-108 Performance Standards and Qualification Policy for Structural-Use Panels

APA Quality Assurance Policies for Structural-Use Panels Qualified to PRP-108

Quality Assurance Policy for APA EWS Performance-Rated I-Joists

AFG-01 Adhesives for Field-Gluing Plywood to Wood Framing

3. Terminology

3.1 Definitions -- See the referenced documents for definitions of terms used in this standard.

3.2 Description of terms specific to this standard:

Bending EI: A measure of flexural stiffness without the influence of shear deflection.

Characteristic value: A value determined from test data for derivation of a design property. For the mechanical properties referenced in this standard, the characteristic values represent the 5th percentile estimates with 75% confidence, except for the stiffness (EI), which is based on the mean value. In addition, the coefficient of shear deflection (K) is determined based on theoretical calculations.

Clear span: The distance between the faces of two adjacent supports, which is the basis for the allowable spans given in this standard.

Design span (test span): The distance between the centerlines of two adjacent supports, which is typically referenced in full-scale beam tests or used in a structural design.

Prefabricated Wood I-Joist: A structural member manufactured using sawn lumber or structural composite lumber flanges and structural panel webs, bonded together with exterior adhesives, forming an “I” cross-sectional shape.

4. Performance Criteria and Requirements

This section provides performance criteria and requirements for APA EWS Performance-Rated I-Joists. APA EWS Performance-Rated I-Joists shall be qualified in accordance with Section 5 by demonstrating conformance to the performance requirements given in this section.

4.1 Sizes and Tolerances

4.1.1 Flanges – APA EWS Performance-Rated I-Joists are produced using either structural composite lumber or sawn lumber as flange materials.

4.1.2 Webs – APA EWS Performance-Rated I-Joists are produced using structural-use panels, including plywood and oriented strand board (OSB) meeting PS 1, PS 2, or APA PRP-108, as web materials.

4.1.3 Depth – APA EWS Performance-Rated I-Joists shall have a net depth of 9-1/2 inches, 11-7/8 inches, 14 inches, and 16 inches.

4.1.4 Flange dimension – The net flange width for APA EWS Performance-Rated I-Joists depends on the flange materials used, but shall have a minimum net width of 1-1/2 inches and minimum net thickness of 1-5/16 inches.

4.1.5 Tolerances – The tolerances permitted at the time of manufacture shall be as follows:

Flange Width – Plus or minus 1/32 inch

Flange Thickness – Minus 1/16 inch

I-Joist Depth – Plus 0 or minus 1/8 inch

4.2 Allowable Span

4.2.1 The allowable spans, as shown in Tables 1a and 1b, indicate the allowable **clear** span for various joist spacings under typical residential floor loads (10 psf dead load and 40 psf live load).

4.3 Design Properties

4.3.1 APA EWS Performance-Rated I-Joists shall be designed based on the tabulated values provided in Table 2.

4.4 Characteristic Test Values

4.4.1 APA EWS Performance-Rated I-Joists shall have characteristic test values that are equal to or greater than the values given in Table 3.

TABLE 1a.

ALLOWABLE SPANS FOR APA EWS PERFORMANCE-RATED I-JOISTS – SIMPLE SPAN ONLY(a,b,c,d)

Depth	Joist Designation	Simple Spans			
		On Center Spacing			
		12"	16"	19.2"	24"
9'-1/2"	PRI-20	16'-7"	15'-2"	14'-4"	13'-5"
	PRI-30	17'-1"	15'-8"	14'-10"	13'-10"
	PRI-40	18'-0"	16'-5"	15'-6"	14'-6"
	PRI-50	17'-10"	16'-4"	15'-5"	14'-5"
	PRI-60	18'-11"	17'-4"	16'-4"	15'-3"
11'-7/8"	PRI-20	19'-10"	18'-2"	17'-2"	16'-0"
	PRI-30	20'-6"	18'-9"	17'-8"	16'-6"
	PRI-40	21'-5"	19'-7"	18'-6"	16'-8"
	PRI-50	21'-4"	19'-6"	18'-5"	17'-2"
	PRI-60	22'-7"	20'-8"	19'-6"	18'-2"
	PRI-70	23'-0"	21'-0"	19'-10"	18'-6"
	PRI-80	24'-11"	22'-8"	21'-4"	19'-10"
	PRI-90	25'-8"	23'-4"	22'-0"	20'-5"
14"	PRI-40	24'-4"	22'-3"	20'-6"	18'-4"
	PRI-50	24'-4"	22'-2"	21'-0"	19'-7"
	PRI-60	25'-9"	23'-6"	22'-2"	20'-8"
	PRI-70	26'-1"	23'-10"	22'-6"	20'-11"
	PRI-80	28'-3"	25'-9"	24'-3"	22'-7"
	PRI-90	29'-1"	26'-5"	24'-11"	23'-2"
16"	PRI-40	26'-11"	24'-3"	22'-1"	19'-9"
	PRI-50	27'-0"	24'-8"	23'-4"	20'-2"
	PRI-60	28'-6"	26'-0"	24'-7"	22'-10"
	PRI-70	29'-0"	26'-5"	24'-11"	23'-1"
	PRI-80	31'-4"	28'-6"	26'-10"	25'-0"
PRI-90	32'-2"	29'-3"	27'-7"	25'-7"	

(a) Allowable **clear** span applicable to simple-span residential floor construction with a design dead load of 10 psf and live load of 40 psf. The live load deflection is limited to span/480.

(b) Spans are based on a composite floor with glued-nailed sheathing meeting the requirements for APA Rated Sheathing or APA Rated STURD-I-FLOOR conforming to PRP-108, PS 1, or PS 2 with a minimum thickness of 19/32 inch (40/20 or 20 oc) for a joist spacing of 19.2 inches or less, or 23/32 inch (48/24 or 24 oc) for a joist spacing of 24 inches. Adhesive shall meet APA Specification AFG-01 or ASTM D 3498. Spans shall be reduced 12 inches when the floor sheathing is nailed only.

(c) Minimum bearing length shall be 1-3/4 inches for the end bearings.

(d) Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required by hanger manufacturers.

TABLE 1b.

ALLOWABLE SPANS FOR APA EWS PERFORMANCE-RATED I-JOISTS – MULTIPLE SPAN ONLY^(a,b,c,d)

Depth	Joist Designation	Multiple Spans			
		On Center Spacing			
		12"	16"	19.2"	24"
9'-1/2"	PRI-20	18'-1"	16'-6"	15'-7"	13'-5"
	PRI-30	18'-7"	17'-0"	16'-1"	15'-0"
	PRI-40	19'-7"	17'-11"	16'-4"	14'-7"
	PRI-50	19'-5"	17'-9"	16'-9"	15'-7"
	PRI-60	20'-8"	18'-10"	17'-9"	16'-6"
11'-7/8"	PRI-20	21'-8"	19'-7"	16'-9"	13'-5"
	PRI-30	22'-4"	20'-5"	18'-10"	15'-0"
	PRI-40	23'-5"	20'-5"	18'-7"	16'-7"
	PRI-50	23'-3"	21'-2"	20'-0"	16'-1"
	PRI-60	24'-8"	22'-6"	21'-2"	19'-7"
	PRI-70	25'-1"	22'-10"	21'-7"	18'-6"
	PRI-80	27'-1"	24'-8"	23'-3"	21'-7"
14"	PRI-90	27'-11"	25'-5"	23'-11"	22'-2"
	PRI-40	25'-11"	22'-5"	20'-5"	18'-3"
	PRI-50	26'-6"	24'-2"	20'-2"	16'-1"
	PRI-60	28'-0"	25'-7"	24'-1"	19'-9"
	PRI-70	28'-5"	25'-11"	23'-2"	18'-6"
	PRI-80	30'-10"	28'-0"	26'-5"	23'-11"
16"	PRI-90	31'-8"	28'-10"	27'-1"	25'-2"
	PRI-40	27'-11"	24'-2"	22'-0"	19'-8"
	PRI-50	29'-6"	24'-3"	20'-2"	16'-1"
	PRI-60	31'-1"	28'-4"	24'-9"	19'-9"
	PRI-70	31'-7"	27'-10"	23'-2"	18'-6"
	PRI-80	34'-2"	31'-1"	29'-3"	23'-11"
	PRI-90	35'-1"	31'-10"	30'-0"	26'-7"

(a) Allowable **clear** span applicable to multiple-span residential floor construction with a design dead load of 10 psf and live load of 40 psf. The end spans shall be 40% or more of the adjacent span. The live load deflection is limited to span/480.

(b) Spans are based on a composite floor with glued-nailed sheathing meeting the requirements for APA Rated Sheathing or APA Rated STURD-I-FLOOR conforming to PRP-108, PS 1, or PS 2 with a minimum thickness of 19/32 inch (40/20 or 20 oc) for a joist spacing of 19.2 inches or less, or 23/32 inch (48/24 or 24 oc) for a joist spacing of 24 inches. Adhesive shall meet APA Specification AFG-01 or ASTM D 3498. Spans shall be reduced 12 inches when the floor sheathing is nailed only.

(c) Minimum bearing length shall be 1-3/4 inches for the end bearings, and 3-1/2 inches for the intermediate bearings.

(d) Bearing stiffeners are not required when I-joists are used with the spans and spacings given in this table, except as required by hanger manufacturers.

TABLE 2.

DESIGN PROPERTIES FOR APA EWS PERFORMANCE-RATED I-JOISTS^(a)

Depth	Joist Designation	EI ^(b) 10 ⁶ lbf-in. ²	M ^(c) lbf-ft	V ^(d) lbf	IR ^(e) lbf	ER ^(f) lbf	K ^(g) 10 ⁶ lbf
9-1/2"	PRI-20	145	2,520	1,120	1,700	830	4.94
	PRI-30	161	3,225	1,120	1,905	945	4.94
	PRI-40	193	2,735	1,120	2,160	1,080	4.94
	PRI-50	186	3,800	1,120	2,040	1,015	4.94
	PRI-60	231	3,780	1,120	2,160	1,080	4.94
11-7/8"	PRI-20	253	3,265	1,420	1,700	830	6.18
	PRI-30	280	4,170	1,420	1,905	945	6.18
	PRI-40	330	3,545	1,420	2,500	1,200	6.18
	PRI-50	322	4,915	1,420	2,040	1,015	6.18
	PRI-60	396	4,900	1,420	2,500	1,200	6.18
	PRI-70	420	6,595	1,420	2,335	1,160	6.18
	PRI-80	547	6,940	1,420	2,760	1,280	6.18
	PRI-90	604	8,770	1,925	3,355	1,400	6.18
	14"	PRI-40	482	4,270	1,710	2,500	1,200
PRI-50		480	5,860	1,710	2,040	1,015	7.28
PRI-60		584	5,895	1,710	2,500	1,200	7.28
PRI-70		613	7,865	1,710	2,335	1,160	7.28
PRI-80		802	8,360	1,710	3,020	1,280	7.28
PRI-90		881	10,460	2,125	3,355	1,400	7.28
16"	PRI-40	657	4,950	1,970	2,500	1,200	8.32
	PRI-50	663	6,715	1,970	2,040	1,015	8.32
	PRI-60	799	6,835	1,970	2,500	1,200	8.32
	PRI-70	841	9,010	1,970	2,335	1,160	8.32
	PRI-80	1,092	9,690	1,970	3,020	1,280	8.32
	PRI-90	1,192	11,985	2,330	3,355	1,400	8.32

(a) The tabulated values are design values for normal duration of load. All values, except for EI and K, shall be permitted to be adjusted for other load durations as permitted by the code.

(b) Bending stiffness (EI) of the I-joist.

(c) Moment capacity (M) of I-joists, which shall **not** be increased by any code-allowed repetitive member use factor.

(d) Shear capacity (V) of the I-joist.

(e) Intermediate reaction (IR) of the I-joist with a minimum bearing length of 3-1/2 inches without bearing stiffeners.

(f) End reaction (ER) of the I-joist with a minimum bearing length of 1-3/4 inches without bearing stiffeners. Higher end reactions are permitted. For a bearing length of 4 inches (5 inches for 14" and 16" PRI-50s), the end reaction may be set equal to the tabulated shear value. Interpolation of the end reaction between 1-3/4 and 4-inch (5-inch for 14" and 16" PRI-50s) bearing is permitted. For end reaction values over 1,550 lbf, bearing stiffeners are required with the exception of PRI-90, which requires bearing stiffeners when end reaction values exceed 1,885 lbf.

(g) Coefficient of shear deflection (K). For calculating uniform load and center-point load deflections of the I-joist in a simple-span application, use Eqs. 1 and 2.

$$\text{Uniform Load: } \delta = \frac{5\omega\ell^4}{384EI} + \frac{\omega\ell^2}{K} \quad [1]$$

$$\text{Center-Point Load: } \delta = \frac{P\ell^3}{48EI} + \frac{2P\ell}{K} \quad [2]$$

Where: δ = calculated deflection (in.),
 ω = uniform load (lbf/in.),
 ℓ = design span (in.),
P = concentrated load (lbf),
EI = bending stiffness of the I-joist (lbf-in.²), and
K = coefficient of shear deflection (lbf).

TABLE 3.

CHARACTERISTIC TEST VALUES FOR APA EWS PERFORMANCE-RATED I-JOISTS^(a)

Depth	Joist Designation	EI ^(b) 10 ⁶ lbf-in. ²	M ^(c) lbf-ft	V ^(d) lbf	IR ^(e) lbf	ER ^(f) lbf	K ^(g) 10 ⁶ lbf
9-1/2"	PRI-20	145	5,290	2,655	4,030	1,970	4.94
	PRI-30	161	6,775	2,655	4,515	2,240	4.94
	PRI-40	193	5,745	2,655	5,120	2,560	4.94
	PRI-50	186	7,980	2,655	4,835	2,410	4.94
	PRI-60	231	7,940	2,655	5,120	2,560	4.94
11-7/8"	PRI-20	253	6,855	3,370	4,030	1,970	6.18
	PRI-30	280	8,755	3,370	4,515	2,240	6.18
	PRI-40	330	7,445	3,370	5,925	2,845	6.18
	PRI-50	322	10,320	3,370	4,835	2,410	6.18
	PRI-60	396	10,290	3,370	5,925	2,845	6.18
	PRI-70	420	13,850	3,370	5,535	2,750	6.18
	PRI-80	547	14,575	3,370	6,545	3,035	6.18
14"	PRI-90	604	18,415	4,565	7,955	3,320	6.18
	PRI-40	482	8,965	4,055	5,925	2,845	7.28
	PRI-50	480	12,305	4,055	4,835	2,410	7.28
	PRI-60	584	12,380	4,055	5,925	2,845	7.28
	PRI-70	613	16,515	4,055	5,535	2,750	7.28
	PRI-80	802	17,555	4,055	7,160	3,035	7.28
16"	PRI-90	881	21,965	5,040	7,955	3,320	7.28
	PRI-40	657	10,395	4,670	5,925	2,845	8.32
	PRI-50	663	14,100	4,670	4,835	2,410	8.32
	PRI-60	799	14,355	4,670	5,925	2,845	8.32
	PRI-70	841	18,920	4,670	5,535	2,750	8.32
	PRI-80	1,092	20,350	4,670	7,160	3,035	8.32
	PRI-90	1,192	25,170	5,525	7,955	3,320	8.32

(a) The tabulated values are test values. Use the values given in Table 2 for design.

(b) Bending stiffness (EI) of the I-joist.

(c) Moment capacity (M) of a single I-joist.

(d) Shear capacity (V) of the I-joist.

(e) Intermediate reaction (IR) of the I-joist with a minimum bearing length of 3-1/2 inches without bearing stiffeners. An adjustment factor of 2.37 has been used to derive the design values given in Table 2.

(f) End reaction (ER) of the I-joist with a minimum bearing length of 1-3/4 inches without bearing stiffeners. Higher end reactions are permitted. For a bearing length of 4 inches (5 inches for 14" and 16" PRI-50s), the end reaction may be set equal to the tabulated shear value. Interpolation of the end reaction between 1-3/4 and 4-inch (5-inch for 14" and 16" PRI-50s) bearing is permitted. For end reaction values over 3,670 lbf, bearing stiffeners are required, with the exception of PRI-90, which requires bearing stiffeners when end reaction values exceed 4,465 lbf. An adjustment factor of 2.37 has been used to derive the design values given in Table 2.

(g) Coefficient of shear deflection (K).

5. Qualification Requirements

5.1 All APA EWS Performance-Rated I-Joists shall be qualified based on the requirements specified in this section. Qualification tests shall be conducted in accordance with the principles set forth in ASTM D 5055 with exceptions specifically noted in this standard.

5.2 Flange Materials

5.2.1 Flanges can be sawn lumber or structural composite lumber with a net dimension in conformance with Section 4.1.4.

5.2.2 End joints are permitted for flange materials provided that such joints conform to the strength requirements of Section 5.2.4 and glue bond durability requirements of ANSI A190.1.

5.2.3 Flange materials used for the top of the I-joist shall be the same grade/type as those used for the bottom (balanced construction).

5.2.4 All flange materials, regardless of the dimension, shall have adequate strength and stiffness to provide the I-joist with the required moment and stiffness characteristic test values as specified in Table 3.

5.2.5 Qualification for flange materials shall be in accordance with ASTM D 5055 and *Quality Assurance Policy for APA EWS Performance-Rated I-Joists*.

5.3 Web Materials

5.3.1 Structural-use panels in conformance with PS 1, PS 2, or APA PRP-108 shall be used as web materials provided that the glue bond characteristics meet the requirements of EXPOSURE 1 or EXTERIOR, and *Quality Assurance Policy for APA EWS Performance-Rated I-Joists*.

5.4 Adhesives

5.4.1 Adhesives for flange-to-web and web-to-web joints shall conform to the requirements of ASTM D 2559 for wet-use adhesives.

5.5 I-Joist Products

5.5.1 Sampling procedures, number of samples, test methods, and data analyses for the I-joist qualification shall conform to the principles set forth in ASTM D 5055 with exceptions specifically noted in this section.

5.5.2 Manufacturing parameters, such as web types, thicknesses, and grades; flange types and sizes; web-flange joints; and web joints shall be identified as part of the qualification procedures. Changes in these parameters shall require an engineering evaluation or re-qualification by APA.

5.5.3 Qualification test results for APA EWS Performance-Rated I-Joists shall conform to the characteristic test values given in Table 3.

5.5.4 Moment Capacity Qualification – The I-joist moment capacity shall be determined based on either the analytical method or empirical method given in ASTM D 5055. Tests for moment capacity qualification shall be conducted in accordance with the *Quality Assurance Policy for APA EWS Performance-Rated I-Joists*.

5.5.5 Stiffness Capacity Qualification – The I-joist EI shall be determined based on the transformed thickness of web materials and the gross dimension of flange materials. As an alternative, a constant thickness of 0.11 inch can be used for both plywood and OSB webs. A different transformed web thickness can be used provided that the I-joist EI can be substantiated by full-scale I-joist bending tests. For qualification purposes, the measured mid-span deflection from full-scale tests in accordance with the principles set forth in ASTM D 5055 shall not exceed the calculated I-joist deflection based on the EI and K values given in Table 3.

5.5.6 Shear Capacity Qualification – The I-joist shear capacity shall be determined from qualification tests in accordance with the principles set forth in ASTM D 5055. The shear qualification shall include the evaluation of bearing stiffeners, web holes (round and rectangular), web knockouts, and intermediate bearing. Tests for shear capacity qualification shall be conducted in accordance with the *Quality Assurance Policy for APA EWS Performance-Rated I-Joists*.

6. Quality Assurance

6.1 Qualification Tests

6.1.1 Required qualification tests and criteria are detailed in Sections 4 and 5 of this standard. Retest shall be conducted using a new independent sample set.

6.2 Product Evaluation

6.2.1 Upon satisfactory completion of the requirements in Sections 4 and 5, all manufacturing variables shall be documented in the in-plant quality manual in accordance with the *Quality Assurance Policy for APA EWS Performance-Rated I-Joists*.

6.2.2 Periodic reevaluation of structural capacities shall be conducted in accordance with the requirements given in ASTM D 5055 and the *Quality Assurance Policy for APA EWS Performance-Rated I-Joists*. This reevaluation shall be performed at the end of the first 6 months for any new plant or any new production line and shall not be longer than every 12 months for any existing plant or any existing production line.

6.3 Trademarking

6.3.1 All APA EWS Performance-Rated I-Joists shall be identified with an APA EWS trademark, as shown in Section 7, bearing the net I-joist depth, joist designation, applicable allowable spans for given spacings (optional), and manufacturing plant number.

7. Typical Information Shown on Trademarks (Allowable Spans and Spacings are Optional)

7.1 APA EWS 9-1/2-inch depth

9-1/2" PRI™-40	SPACING	12	16	19.2	24	APA EWS Glued Residential Floors PLANT 0000 • PRI-400
	SIMPLE SPAN	18-0	16-5	15-6	14-6	
	MULTIPLE SPAN	19-7	17-11	16-4	14-7	

7.2 APA EWS 11-7/8-inch depth

11-7/8" PRI™-40	SPACING	12	16	19.2	24	APA EWS Glued Residential Floors PLANT 0000 • PRI-400
	SIMPLE SPAN	21-5	19-7	18-6	16-8	
	MULTIPLE SPAN	23-5	20-5	18-7	16-7	

7.3 APA EWS 14-inch depth

14" PRI™-40	SPACING	12	16	19.2	24	APA EWS Glued Residential Floors PLANT 0000 • PRI-400
	SIMPLE SPAN	24-4	22-3	20-6	18-4	
	MULTIPLE SPAN	25-11	22-5	20-5	18-3	

7.4 APA EWS 16-inch depth

16" PRI™-40	SPACING	12	16	19.2	24	APA EWS Glued Residential Floors PLANT 0000 • PRI-400
	SIMPLE SPAN	26-11	24-3	22-1	19-9	
	MULTIPLE SPAN	27-11	24-2	22-0	19-8	

We have field representatives in many major U.S. cities and in Canada who can help answer questions involving APA and APA EWS trademarked products. For additional assistance in specifying engineered wood products, contact us::

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The product use recommendations in this publication are based on the continuing programs of laboratory testing, product research, and comprehensive field experience of Engineered Wood Systems. However, because EWS has no control over quality of workmanship or the conditions under which engineered wood products are used, it cannot accept responsibility for product performance or designs as actually constructed. Because engineered wood product performance requirements vary geographically, consult your local architect, engineer or design professional to assure compliance with code, construction, and performance requirements.

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