APA PRODUCT REPORT®

AcuJoist ACJ® Series I-Joists
AcuTruss Industries 1996, Ltd.

PR-L342
Revised May 27, 2026

Products: AcuJoist ACJ® Series I-Joists
AcuTruss Industries 1996 Ltd., 2003 43rd Street, Vernon, BC V1T 6K7, Canada
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1. Basis of the product report:
   - 2024 International Building Code (IBC): Sections 104.2.3 Alternative materials and 2303.1.2 Prefabricated wood I-joists
   - 2021, 2018, and 2015 International Building Code (IBC): Sections 104.11 Alternative materials and 2303.1.2 Prefabricated wood I-joists
   - 2024 International Residential Code (IRC): Sections 104.2.2 Alternative materials, and R502.1.2 and R802.1.7 Prefabricated wood I-joists
   - 2021, 2018, and 2015 International Residential Code (IRC): Sections 104.11 Alternative materials, and R502.1.2 and R802.1.8 (2021 and 2018 IRC only) Prefabricated wood I-joists
   - ASTM D5055-19e1, D5055-16, D5055-13e1, and ASTM D5055-13 recognized in the 2024 IBC and IRC, 2021 IBC and IRC, 2018 IBC and IRC, and 2015 IBC and IRC, respectively
   - APA PRI-400 Performance Standard for Residential I-Joists
   - APA PRI-405 Performance Standard for Commercial I-Joists
   - 2021 and 2015 ANSI/AWC Special Design Provisions for Wind and Seismic (SPDWS) recognized in the 2024 and 2021 IBC, 2018 and 2015 IBC, respectively
   - 2024, 2018, and 2015 ANSI/AWC NDS, National Design Specification for Wood Construction recognized in the 2024 IBC and IRC, 2021 and 2018 IBC and IRC, and 2015 IBC and IRC, respectively
   - APA Reports T2021P-23, T2022P-14, T2023P-25, and T2025P-09, and other qualification data

2. Product description:
   AcuJoist ACJ® I-joists are described in Table 1 in accordance with the in-plant manufacturing standard approved by APA.

3. Design properties:
   Tables 2 and 3 list the allowable design properties for the AcuJoist ACJ I-joists covered by this report. The allowable spans for AcuJoist ACJ I-joists qualified as the PRI series shall be permitted in accordance with the APA *Performance Rated I-Joists*, Form Z725, and APA *PRI-405 Performance Standard for Commercial I-Joists* (www.apawood.org/resource-library).

4. Product installation:
   AcuJoist ACJ I-joists covered by this report shall be installed in accordance with the recommendations provided by the manufacturer (see link above) or the APA *Performance Rated I-Joists*, Form Z725 (see link above) for products qualified as the PRI Series. Permissible web holes and cantilever reinforcements shall be in accordance with the recommendations provided by the manufacturer or with the APA Z725 for products qualified as the PRI Series.

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5. Fire-rated assemblies:
   Fire-rated assemblies shall be constructed in accordance with the recommendations provided by the manufacturer or APA *Fire-Rated Systems*, Form W305 (see link above) for products qualified as the PRI Series.

6. Limitations:
   a) AcuJoist ACJ I-joists shall be designed in accordance with the applicable code and the National Design Specification for Wood Construction using the allowable design properties specified in this report.
   b) AcuJoist ACJ I-joists are limited to dry service conditions where the average equilibrium moisture content of solid-sawn lumber is less than 16%.
   c) AcuJoist ACJ I-joists are produced in Kelowna, BC, Canada under a quality assurance program audited by APA.
   d) This report is subject to re-examination in one year.

7. Identification:
   The AcuJoist ACJ I-joists described in this report are identified by a label bearing the manufacturer's name (AcuTruss Industries 1996, Ltd.) and/or trademark, the APA assigned plant number 1138, the I-joist series designation and depth, the APA logo, the report number PR-L342, and a means of identifying the date of manufacture.

Table 1. Description of AcuJoist ACJ I-Joists[a]

I-Joist Series	Also Qualified for	I-Joist Depths (in.)	Flanges				Web	
			Material	G	Dimension		Material	Thickness (in.)
					Depth (in.)	Width (in.)		
ACJ-40	PRI-40	9-1/2 – 16	Proprietary SPF	0.42	1-1/2	2-1/2	OSB	3/8
ACJ-60	PRI-60	9-1/2 - 16	MSR SPF	0.46	1-1/2	2-1/2	OSB	3/8
ACJ-80	PRI-80	11-7/8 - 16	MSR SPF	0.46	1-1/2	3-1/2	OSB	3/8
	C1	18						

[a] Referenced dimensions are nominal. Tolerances are as specified in the in-plant quality manual.

Table 2. Design Properties (Allowable Stress Design) for AcuJoist ACJ I-Joists[a,b]

I-Joist Depth (in.)	I-Joist Series	EI[c] (10^6 lbf-in.^{2})	M[d] (lbf-ft)	V[e] (lbf)	VLC[f] (lbf/ft)	K[g] (10^6 lbf)
9-1/2	ACJ-40	184	2,735	1,120	2,000	4.94
	ACJ-60	219	3,780	1,120	2,000	4.94
11-7/8	ACJ-40	313	3,545	1,420	2,000	6.18
	ACJ-60	371	4,900	1,420	2,000	6.18
	ACJ-80	518	6,940	1,420	2,000	6.18
14	ACJ-40	459	4,370	1,710	2,000	7.28
	ACJ-60	544	5,895	1,710	2,000	7.28
	ACJ-80	756	8,360	1,710	2,000	7.28
16	ACJ-40	625	5,070	1,970	2,000	8.32
	ACJ-60	739	6,835	1,970	2,000	8.32
	ACJ-80	1,024	9,690	1,970	2,000	8.32
18	ACJ-80	1,329	10,900	2,500	1,750	11.52

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbf = 4.448 N.

[a] The tabulated values are design values for the normal duration of load. All values, except for EI, VLC, and K, shall be adjusted for other load durations in accordance with the code.
[b] Referenced design values must be adjusted, as applicable, in accordance with section 7.3 of the NDS.
[c] Bending stiffness (EI) of the I-joist.
[d] Moment capacity (M) of the I-joist, which shall not be increased by any repetitive member factor.
[e] Shear capacity (V) of the I-joist.
[f] Uniform vertical load capacity of the I-joist.
[g] Coefficient of shear deflection (K). For calculating the uniform load and center-point load deflections of the I-joist in a simple-span application, use Eqs. 1 and 2.

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

Center-Point Load: $$\delta = \frac{PL^3}{48\,EI} + \frac{2PL}{K}$$ [2]

where δ = calculated deflection (in.), ω = uniform load (lbf/in.),
P = concentrated load (lbf), L = design span (in.),
EI = bending stiffness of the I-joist (lbf-in.^{2}), and K = coefficient of shear deflection (lbf-ft/in.).

Table 3. Reaction Capacities (Allowable Stress Design) for AcuJoist ACJ I-Joists[a,b]

I-Joist Depth (in.)	I-Joist Series	Intermediate Reaction (lbf)	End Reaction[b] (lbf)			
		3-1/2 in. Brg. Length	1-3/4 in. Brg. Length		4 in. Brg. Length	
		Without Brg. Stiffeners	With Brg. Stiffeners		With Brg. Stiffeners	
			No	Yes	No	Yes
9-1/2	ACJ-40	2,160	1,080	1,080	1,120	1,120
	ACJ-60	2,160	1,080	1,080	1,120	1,120
11-7/8	ACJ-40	2,500	1,200	1,200	1,420	1,420
	ACJ-60	2,500	1,200	1,200	1,420	1,420
	ACJ-80	2,760	1,280	1,280	1,420	1,420
14	ACJ-40	2,500	1,200	1,200	1,550	1,710
	ACJ-60	2,500	1,200	1,200	1,550	1,710
	ACJ-80	3,020	1,280	1,280	1,550	1,710
16	ACJ-40	2,500	1,200	1,200	1,550	1,970
	ACJ-60	2,500	1,200	1,200	1,550	1,970
	ACJ-80	3,020	1,280	1,280	1,550	1,970
18	ACJ-80	3,355	1,400	2,035	1,625	2,395

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 lbf = 4.448 N, 1 psi =6.895 kPa.

[a] The tabulated values are design values for the normal duration of load. All values shall be permitted to be adjusted for other load durations provided that the adjusted reaction design value is not greater than the value specified below. Bearing stiffeners shall be installed in accordance with the recommendations provided by the manufacturer and APA Z725.

[b] Referenced design values must be adjusted, as applicable, in accordance with section 7.3 of the NDS.

I-Joist Depth	I-Joist Series	Maximum adjusted reaction capacity[c,d] (lbf)					
		1-3/4 in. Brg. Length		3-1/2 in. Brg. Length		4 in. Brg. Length	
		Brg. Stiffeners		Brg. Stiffeners		Brg. Stiffeners	
		No	Yes	No	Yes	No	Yes
All	ACJ-40	1,750		3,495		3,995	
	ACJ-60	2,160		4,320		4,935	
	ACJ-80	3,080		6,155		7,035	

[c] Interpolation between bearing lengths is permitted.

[d] The maximum adjusted reaction capacity shall not be adjusted for load duration.

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