

JoistRite™

TECHNICAL GUIDE

SUPERIOR ENGINEERED FLOOR FRAMING SYSTEM

FrameRite
Building Stronger With Steel



COMPLETE SYSTEM

JoistRite's uniquely engineered components offer many labor-saving advantages over competing products:

1. **JoistRite Track**
 - **Preset spacing for joists** – built in "dimples," located at conventional intervals along the track, surround the joist for easy initial placement.
 - **Predrilled holes** – act as guides that assist in lining up components while eliminating the need to fasten screws through both joist and track.
2. **JoistRite Track**
 - **Exclusive Snap-Lock technology** – allows joists to lock into place with little effort and with less labor.
3. **JoistRite Web Stiffeners**
 - JoistRite web stiffeners are the very first to come with predrilled holes and precut to fit standard joist sizes, allowing for easier installation.

JoistRite Blocking

Unlike traditional blocking, JoistRite blocking comes equipped with unique tabs that eliminate the need for additional accessory clips and fasteners – and additional clamping or fastening. The product is also precut to fit between the joists, resulting in more stability based on less labor.

1.

2.

3.

MARINO WARE

QUALITY AND SERVICE COUNT.

www.marinoware.com • sales@marinoware.com • engineering@marinoware.com

NEW JERSEY FACILITY	GEORGIA FACILITY	INDIANA FACILITY	TEXAS FACILITY	NEW YORK SALES OFFICE	ENGINEERING OFFICE
400 Metuchen Road South Plainfield, NJ 07080	777 Greenbelt Parkway Griffin, GA 30223	4245 Railroad Avenue East Chicago, IN 46312	10101 Bay Area Boulevard Pasadena, TX 77507	137 Broadway, Suite B Amityville York, NY 11701	175 Country Club Drive, Suite 200A Amityville York, NY 11701
(800) 627-4661 Toll-Free (908) 757-9000 Phone (908) 412-1442 FAX	(800) 504-8199 Toll-Free (678) 688-1312 Phone (678) 688-1379 FAX	(866) 636-6002 Toll-Free (219) 378-7100 Phone (219) 378-7106 FAX	(866) 852-9510 Toll-Free (281) 283-8100 Phone (281) 283-8105 FAX	(800) 627-4667 Toll-Free (631) 691-2200 Phone (631) 691-1492 FAX	(800) 627-4667 Toll-Free (631) 691-2200 Phone (631) 691-1492 FAX

SUPERIOR ENGINEERED JOIST SYSTEMS

JoistRite™ is a specially designed, patented, cold-formed steel section that has one of the highest strength-to-mass ratios of any structural material in the market today, due to the lip reinforced triangular cutouts along the length of its web. Its excellent thermal, fire and acoustic properties make it unique.

The JoistRite line of products is specifically engineered to provide the construction industry with an innovative and cost-effective building system. It offers complete versatility and total compatibility, as the JoistRite sections can be used on their own or be integrated with other standard construction materials and building systems.

A Precision Product

JoistRite is supplied as a precision product. Sections are manufactured to length in the plant, minimizing the need for on-site cutting. Another labor-saving feature.

Improved Thermal, Fire and Acoustic Ratings

The "open web" design of JoistRite sections reduces the temperature conductivity, thereby significantly enhancing thermal efficiency. Extensive fire tests have been carried out, and in a direct comparison test, the JoistRite joists proved to have a higher fire rating than standard joists with a conventional design.

Test Data

- UL L580 - 1 Hour Fire Rating
- STC 52 and 59 ITC 45, 68 and 74
- MEA 139-04-M
- WHI Report 3101528 - 1 Hour Fire Rating
- WHI Report 3099463 - 1.5 Hour Fire Rating
- NGC - 2 Hour Fire Rating

JoistRite Identification System (in compliance with SSMA)

1000-JR-200-54

- Member Depth 10" = 1000 1/100 in.
- Style: JR = JoistRite
- Flange Width: 2" = 200" = 200x1/100 in.
- Material Thickness: Minimum Base Metal Thickness: 0.054 in. = 54 mils (1 mil = 1/1000 in.)

Speeds Up Construction and Reduces Labor Costs

The "open web" design created by the cutouts substantially reduces the weight of JoistRite, making handling much easier and safer. The holes also speed up the installation of electrical, plumbing and heating services by virtually eliminating the need to cut or drill holes, resulting in reduced labor costs. Patented plastic grommets are available for the cutouts.

Design Flexibility

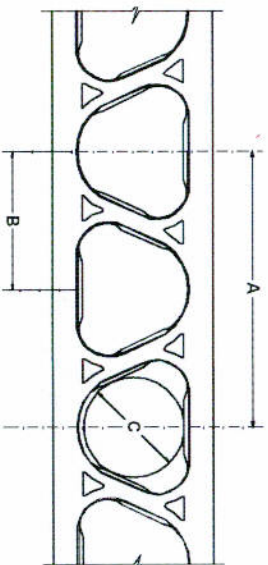
Architects, Engineers and Builders have the option to use stick or frame construction, or a combination of both. With JoistRite almost any structural design is possible. JoistRite is supplied in a complete range of sizes to meet engineering specifications for wind-bearing and load-bearing walls, floor and ceiling joists and roof trusses. It is strong enough to support up to seven stories as a self-supporting load-bearing structure and can be utilized in much higher structures when used as an infill application.

A Durable Building Product

JoistRite will not swell, warp, burn, rot or attract or support insect (termite) infestations. The highest-quality zinc coating (G-90) helps to protect JoistRite from time-dependent deterioration mechanisms involving moisture.

SYMBOLS AND DEFINITIONS

- F_y** Yield point of steel used for design.
- I_{xx}** Moment of inertia of net section about x-axis.
- S_x** Section modulus of net section about x-axis.
- r_x** Radius of gyration of net section about x-axis.
- I_y** Moment of inertia of net section about y-axis.
- r_y** Radius of gyration of net section about y-axis.
- I_{xed}** Effective moment of inertia of net section about x-axis based on a stress of 0.6F_y (deflection determination).
- S_x** Effective section modulus of net section about x-axis based on a stress of F_y (strength determination).
- M_a** Allowable bending moment
- V_a** Allowable shear force.
- J** Saint-Venant torsion constant of net section.
- C_w** Torsional warping constant of net section.
- r_o** Polar radius of gyration of net section about shear center.



Hole Sizes:

Section Depth in.	A Pitch in.	B 1/2 Pitch in.	C Max. Diameter in.
8	14.0	7.00	5.5
10	28.0	14.00	7.2
12	35.0	17.50	9.2
14	35.0	17.50	9.2

Steel Thickness:

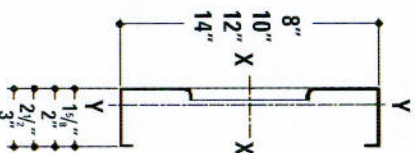
Product	Design (in.)	Design (mm)	Minimum (in.)	Minimum (mm)	ASTM C955 Color Code	
Gauge	Mils	(in.)	(mm)	(mm)		
18	43	0.0451	1.15	0.0428	1.09	Yellow
16	54	0.0566	1.44	0.0538	1.37	Green
14	68	0.0713	1.81	0.0677	1.72	Orange
12	97	0.1017	2.58	0.0966	2.45	Red

Finish:

Galvanized in accordance with ASTM A924. Products will be furnished with a G-90 hot-dipped galvanized coating.

Grades of Steel:

- 18 gauge joists F_y (min) = 33 ksi
- 16, 14 and 12 gauge joists F_y (min) = 50 ksi
- Manufactured to desired lengths.
- Other web sizes available upon request.



PHYSICAL AND STRUCTURAL PROPERTIES

JOISTRITE™

Member Physical Properties							Effective Section Properties					Net Effective Properties			Torsional Properties					
Members	Hole Size (in.)	Web (in.)	Flange (in.)	Lip (in.)	Design Thickness (in.)	Weight (plf)	Area (in. ²)	I _x (in. ⁴)	S _x (in. ³)	r _x (in.)	I _y (in. ⁴)	r _y (in.)	I _{xxd} (in. ⁴)	S _{xxe} (in. ³)	M _a (k-in.)	V _a (k)	Jx1000 (in. ⁴)	C _w (in. ⁶)	r _o (in.)	
8" MEMBERS																				
800JR200-43	5.5	8.00	2.00	0.75	0.0451	1.56	0.380	5.07	1.27	3.65	0.213	0.748	5.07	1.21	24.0	0.840	0.258	3.78	4.14	
800JR200-54	5.5	8.00	2.00	0.75	0.0566	1.94	0.417	6.27	1.57	3.65	0.260	0.742	6.26	1.50	44.9	1.67	0.503	4.58	4.13	
800JR200-68	5.5	8.00	2.00	0.75	0.1017	2.42	0.583	7.73	1.93	3.64	0.315	0.735	7.73	1.93	57.9	3.38	0.987	5.61	4.12	
800JR250-43	5.5	8.00	2.50	0.75	0.1017	3.38	0.800	10.60	2.64	3.63	0.414	0.719	10.6	2.64	79.1	8.71	2.76	7.54	4.10	
800JR250-54	5.5	8.00	2.50	0.75	0.0451	1.71	0.425	5.78	1.45	3.69	0.363	0.924	5.72	1.30	25.7	0.840	0.288	6.25	4.42	
800JR250-68	5.5	8.00	2.50	0.75	0.0566	2.14	0.528	7.16	1.79	3.68	0.444	0.918	7.07	1.54	46.2	1.67	0.563	7.69	4.41	
800JR300-43	5.5	8.00	2.50	0.75	0.0713	2.67	0.654	8.85	2.21	3.68	0.541	0.909	8.85	1.97	58.9	3.38	1.11	9.45	4.40	
800JR300-54	5.5	8.00	2.50	0.75	0.1017	3.72	0.902	12.2	3.04	3.67	0.718	0.892	12.20	2.99	89.6	8.71	3.11	12.80	4.38	
800JR300-68	5.5	8.00	3.00	0.75	0.0451	1.82	0.470	6.51	1.63	3.72	0.584	1.11	6.25	1.37	27.1	0.840	0.319	9.57	4.74	
800JR300-97	5.5	8.00	3.00	0.75	0.0566	2.33	0.584	8.07	2.02	3.72	0.716	1.11	7.59	1.58	47.4	1.67	0.624	11.8	4.73	
800JR300-68	5.5	8.00	3.00	0.75	0.0713	2.91	0.725	9.99	2.50	3.71	0.875	1.10	9.66	2.03	60.9	3.38	1.23	14.5	4.71	
800JR300-97	5.5	8.00	3.00	0.75	0.1017	4.07	1.00	13.80	3.44	3.70	1.17	1.08	13.8	3.18	95.3	8.71	3.46	19.8	4.69	
800JT250-54	N/A	8.00	2.50	N/A	0.0566	2.29	0.671	5.70	1.57	2.93	0.263	0.626	5.70	1.47	24.1	4.12	0.717	1.87	3.59	
10" MEMBERS																				
1000JR200-54	7.2	10.00	2.00	0.75	0.0566	2.27	0.483	10.28	2.06	4.61	0.267	0.744	10.28	1.97	59.0	1.33	0.516	7.19	4.98	
1000JR200-68	7.2	10.00	2.00	0.75	0.0713	2.84	0.599	12.7	2.54	4.61	0.324	0.736	12.7	2.54	76.1	2.68	1.01	8.81	4.97	
1000JR200-97	7.2	10.00	2.00	0.75	0.1017	3.97	0.823	17.4	3.48	4.60	0.427	0.721	17.4	3.48	104	7.89	2.84	11.9	4.95	
1000JR250-54	7.2	10.00	2.50	0.75	0.0566	2.46	0.540	11.7	2.34	4.65	0.457	0.920	11.5	2.02	60.4	1.33	0.577	12.1	5.22	
1000JR250-68	7.2	10.00	2.50	0.75	0.0713	3.08	0.670	14.5	2.89	4.65	0.557	0.921	14.5	2.57	76.9	2.68	1.14	14.8	5.21	
1000JR250-97	7.2	10.00	2.50	0.75	0.1017	4.31	0.924	19.9	3.98	4.64	0.740	0.895	19.9	3.92	117	7.89	3.19	20.2	5.19	
1000JR300-54	7.2	10.00	3.00	0.75	0.0566	2.66	0.597	13.1	2.62	4.69	0.734	1.11	12.3	2.06	61.8	1.33	0.637	18.5	5.49	
1000JR300-68	7.2	10.00	3.00	0.75	0.0713	3.32	0.741	16.3	3.25	4.68	0.898	1.10	15.7	2.65	79.4	2.68	1.26	22.9	5.48	
1000JR300-97	7.2	10.00	3.00	0.75	0.1017	4.66	1.03	22.4	4.48	4.67	1.20	1.08	22.4	4.14	124.0	7.89	3.54	31.2	5.45	
1000JT250-54	N/A	10.00	2.50	N/A	0.0566	2.66	0.784	10.0	2.16	3.57	0.275	0.592	10.0	2.00	30.8	4.13	0.638	3.14	4.38	
12" MEMBERS																				
1200JR200-54	9.2	12.00	2.00	0.75	0.0566	2.47	0.496	15.5	2.58	5.59	0.267	0.734	15.5	2.48	74.2	1.10	0.53	10.28	5.89	
1200JR200-68	9.2	12.00	2.00	0.75	0.0713	3.08	0.615	19.2	3.20	5.58	0.324	0.726	19.2	3.20	95.7	2.22	1.04	12.61	5.88	
1200JR200-97	9.2	12.00	2.00	0.75	0.1017	4.32	0.846	26.3	4.38	5.58	0.426	0.710	26.3	4.38	131.0	6.52	2.92	17.02	5.86	
1200JR250-54	9.2	12.00	2.50	0.75	0.0566	2.66	0.553	17.5	2.92	5.63	0.458	0.910	17.3	2.53	75.8	1.10	0.591	17.3	6.10	
1200JR250-68	9.2	12.00	2.50	0.75	0.0713	3.33	0.686	21.7	3.62	5.62	0.558	0.902	21.7	3.22	96.5	2.22	1.16	21.3	6.09	
1200JR250-97	9.2	12.00	2.50	0.75	0.1017	4.67	0.947	29.9	4.98	5.62	0.740	0.884	29.9	4.91	147.0	6.52	3.27	29.9	6.07	
1200JR300-54	9.2	12.00	3.00	0.75	0.0566	2.85	0.610	19.6	3.26	5.67	0.736	1.10	18.5	2.59	77.4	1.10	0.651	26.5	6.33	
1200JR300-68	9.2	12.00	3.00	0.75	0.0713	3.57	0.757	24.3	4.05	5.66	0.900	1.09	23.5	3.32	99.3	2.22	1.28	32.7	6.32	
1200JR300-97	9.2	12.00	3.00	0.75	0.1017	5.01	1.05	33.5	5.59	5.65	1.20	1.07	33.5	5.17	155.0	6.52	3.62	44.8	6.30	
1200JT250-54	N/A	12.00	2.50	N/A	0.0566	3.04	0.893	15.7	2.79	4.18	0.284	0.563	15.7	2.59	39.5	3.95	0.954	4.73	5.18	
14" MEMBERS																				
1400JR200-54	9.2	14.00	2.00	0.75	0.0566	2.85	0.610	24.0	3.42	6.27	0.328	0.733	24.0	3.30	98.9	0.94	0.651	16.0	6.47	
1400JR200-68	9.2	14.00	2.00	0.75	0.0713	3.57	0.757	29.7	4.25	6.26	0.399	0.726	29.7	4.25	127.0	1.89	1.28	19.7	6.46	
1400JR200-97	9.2	14.00	2.00	0.75	0.1017	5.01	1.05	41.0	5.86	6.25	0.530	0.711	41.0	5.86	175.0	5.55	3.62	26.6	6.45	
1400JR250-54	9.2	14.00	2.50	0.75	0.0566	3.05	0.666	26.7	3.82	6.33	0.556	0.913	26.4	3.37	101.0	0.94	0.711	26.8	6.66	
1400JR250-68	9.2	14.00	2.50	0.75	0.0713	3.81	0.829	33.2	4.74	6.33	0.679	0.905	33.2	4.29	128.0	1.89	1.40	33.1	6.65	
1400JR250-97	9.2	14.00	2.50	0.75	0.1017	5.36	1.15	45.9	6.56	6.32	0.910	0.889	45.9	6.48	194.0	5.55	3.97	45.1	6.63	
1400JR300-54	9.2	14.00	3.00	0.75	0.0566	3.24	0.723	29.5	4.21	6.39	0.877	1.10	28.0	3.44	103.0	0.94	0.772	41.1	6.86	
1400JR300-68	9.2	14.00	3.00	0.75	0.0713	4.05	0.900	36.7	5.24	6.38	1.08	1.09	35.5	4.41	132.0	1.89	1.53	50.8	6.85	
1400JR300-97	9.2	14.00	3.00	0.75	0.1017	5.70	1.25	50.9	7.27	6.37	1.45	1.08	50.9	6.79	203.0	5.55	4.32	69.6	6.83	
1400JT250-54	N/A	14.00	2.50	N/A	0.0566	3.42	1.01	23.2	3.51	4.80	0.291	0.537	23.2	3.22	46.6	3.95	1.08	6.72	6.01	

*Gross section properties are listed for JoistRite Track-JT.

