MRI STEEL FRAMING LLC

Corporate Headquarters: 15 Salt Creek Lane, Suite 412 Hinsdale, IL 60521 **P:** 630-616-1850 **F:** 630-568-5979
Production Facility: 201 Mississippi St, Dock #Q40, Gary, IN 46402 **P:** 630-616-1850 **F:** 219-886-3341

Product Category: 05.40.00 - Cold-Formed Metal Framing **Product Name:** 1000S250-97

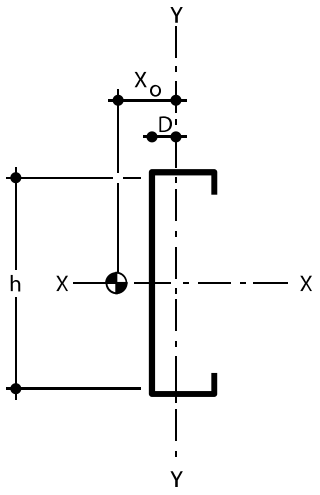
Available Finish: G60, G90
*Other standard coatings referenced in ASTM A1003

Web Depth: 10 in
Flange Width: 2-1/2 in
Design Thickness: 0.1017 in
Gauge: 97 mils or 12G
Yield stress, Fy: 50 ksi
Weight: 5.36 lb/ft

- Calculated properties are based on AISI S100-16/S240-20, North American Specification for Design of Cold-Formed Steel Structural Members and meets the requirements of the IBC 2021 Building Code.
- The centerline bend radius is based on inside corner radii shown in thickness chart.
- Effective properties incorporate the strength increase from the cold work of forming as applicable per AISI A7.2.
- Tabulated gross properties are based on full-unreduced cross section of the studs, away from punchouts.
- For deflection calculations, use the effective moment of inertia.
- Allowable moment includes cold-work of forming.
- For the steels that have both 33 and 50 ksi listing, if the design is based on 50 ksi, the 50 ksi steel needs to be specified. (ex. 3.625S137 16-50 (50 ksi))

Gross Section Properties

Cross sectional area (A)	1.576 in^2
Moment of inertia (Ix)	21.834 in^4
Section Modulus (Sx)	4.367 in^3
Radius of gyration (Rx)	3.722 in
Gross moment of inertia (Iy)	1.073 in^4
Gross Radius of gyration (Ry)	0.825 in



Effective Section Properties

Moment of inertia for deflection (Ix)	21.828 in^4
Section modulus (Sx)	4.181 in^3
Allowable bending moment (Ma)	140.630 In-k
Allowable bending moment from distortional buckling (Mad)	107.14 In-k
Allowable strong axis shear away from punch-out (Vag)	9864 lb
Allowable strong axis shear at punch out (Vanet)	7177 lb

Torsional Properties

St. Venant torsion constant (J x 1000)	5.433 in^4
Warping constant (Cw)	21.632 in^6
Distance from shear center to neutral axis (Xo)	-1.454 in
Distance from shear center to mid-plane of web (m)	0.932 in
Radii of gyration (Ro)	4.080 in
Torsional flexural constant (β)	0.873
Unbraced Length (Lu)	45.6 in

Floor Joist Tables

10 psf Dead Load and 20 psf Live Load

Live Load Deflection L/360						Live Load Deflection L/480					
Single Span Spacing (in) o.c.			Two Equal Spans Spacing (in) o.c.			Single Span Spacing (in) o.c.			Two Equal Spans Spacing (in) o.c.		
12	16	24	12	16	24	12	16	24	12	16	24
36' 3"	32' 11"	28' 9"	40' 9"	37' 0"	32' 4"	32' 11"	29' 11"	26' 2"	37' 0"	33' 7"	29' 4"

10 psf Dead Load and 30 psf Live Load

Live Load Deflection L/360						Live Load Deflection L/480					
Single Span Spacing (in) o.c.			Two Equal Spans Spacing (in) o.c.			Single Span Spacing (in) o.c.			Two Equal Spans Spacing (in) o.c.		
12	16	24	12	16	24	12	16	24	12	16	24
31' 8"	28' 9"	25' 2"	35' 7"	32' 4"	28' 3" i	28' 9"	26' 2"	22' 10"	32' 4"	29' 4"	25' 8"

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10 psf Dead Load and 40 psf Live Load

Live Load Deflection L/360						Live Load Deflection L/480					
Single Span Spacing (in) o.c.			Two Equal Spans Spacing (in) o.c.			Single Span Spacing (in) o.c.			Two Equal Spans Spacing (in) o.c.		
12	16	24	12	16	24	12	16	24	12	16	24
28' 9"	26' 2"	22' 10"	32' 4"	29' 4"	25' 8" i	26' 2"	23' 9"	20' 9"	29' 4"	26' 8"	23' 4"

10 psf Dead Load and 50 psf Live Load

Live Load Deflection L/360						Live Load Deflection L/480					
Single Span Spacing (in) o.c.			Two Equal Spans Spacing (in) o.c.			Single Span Spacing (in) o.c.			Two Equal Spans Spacing (in) o.c.		
12	16	24	12	16	24	12	16	24	12	16	24
26' 9"	24' 3"	21' 3"	30' 0"	27' 3"	23' 10" i	24' 3"	22' 1"	19' 3"	27' 3"	24' 9"	21' 8" i

15 psf Dead Load and 125 psf Live Load

Live Load Deflection L/360						Live Load Deflection L/480					
Single Span Spacing (in) o.c.			Two Equal Spans Spacing (in) o.c.			Single Span Spacing (in) o.c.			Two Equal Spans Spacing (in) o.c.		
12	16	24	12	16	24	12	16	24	12	16	24
19' 8"	17' 11"	15' 8"	22' 1" i	20' 1" i	16' 11" i	17' 11"	16' 3"	14' 2"	20' 1" i	18' 3" i	15' 11" i

40 psf Dead Load and 125 psf Live Load

Live Load Deflection L/360						Live Load Deflection L/480					
Single Span Spacing (in) o.c.			Two Equal Spans Spacing (in) o.c.			Single Span Spacing (in) o.c.			Two Equal Spans Spacing (in) o.c.		
12	16	24	12	16	24	12	16	24	12	16	24
19' 8"	17' 11"	15' 7" e	22' 0" i	19' 1" i	15' 7" i	17' 11"	16' 3"	14' 2"	20' 1" i	18' 3" i	15' 7" i

Additional Information

MRI Steel Framing, LLC is an SFIA member. MRI acts in accordance with the product and quality standards required by the SFIA program.

MRI meets or exceeds ASTM C955, A653, and A1003.

Current LEED credits available upon request