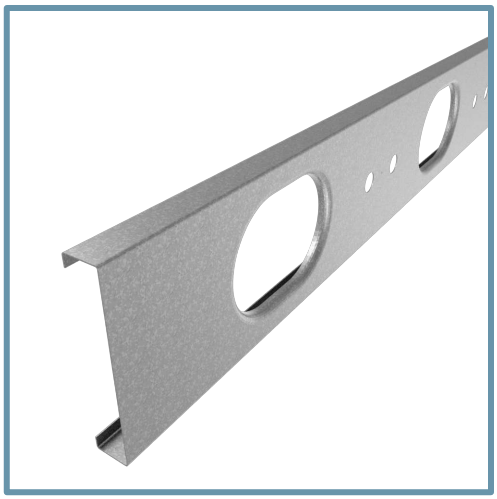
10" TradeReady® Floor Joist (1000TDW24-200-54)

Floor Joist with extruded holes



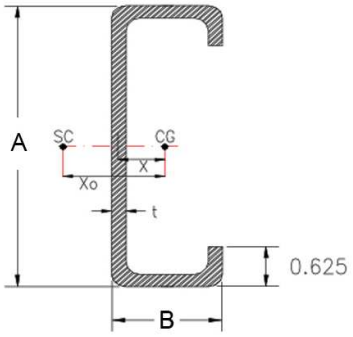
Geometric Properties

Web depth (A): 10.00 in
Flange width (B): 2.00 in
Extruded hole spacing: 24 in
Coating: CP60

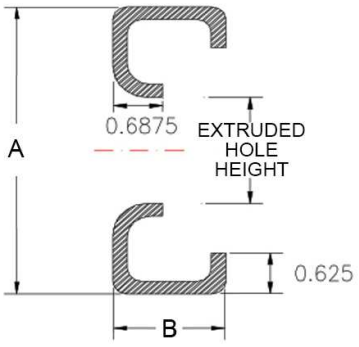
Extruded hole shape: Ellipse
Extruded hole Height: 6.25"
Extruded hole width: 6.25"

Design thickness: 0.0566 in
Min. steel thickness: 0.0538 in
Yield stress, Fy: 50 ksi

Gross Section Properties of Full Section	
Cross sectional area	0.839 in^2
Member weight per foot of length	2.748 lbs/ft
Moment of inertia (Ix)	11.271 in^4
Radius of gyration (Rx)	3.665 in
Gross moment of inertia (Iy)	0.377 in^4
Gross radius of gyration (Ry)	0.671 in
Net Section Properties (at Extruded Hole)	
Cross sectional area (A net)	0.554 in^2
Moment of inertia (Ix net)	10.804 in^4
Radius of gyration (Rx net)	4.415 in
Net moment of inertia (Iy net)	0.287 in^4
Net radius of gyration (Ry net)	0.720 in
Allowable Capacities (Fully Braced)	
Local Moment at Full Section (Mal-full)	47.19 in-kips
Distortional Moment at Full Section (Mad-full)	47.55 in-kips
Local Moment at Knockout (Mal-kno)	64.70 in-kips
Distortional Moment at Knockout (Mad-kno)	44.51 in-kips
Shear at Knockout (Va-kno)	1499 lbs
Shear at Full Section (Va-full)	1660 lbs
Torsional Section Properties	
Distance between centroid and shear-center (Xo)	-1.135 in
Distance between centroid and web-centerline (X)	0.398 in
St. Venant torsional constant (J*1000)	0.896 in^4
Torsional warping constant (Cw)	7.665 in^6
Radii of gyration (Ro)	3.896 in
Torsional flexural constant (Beta)	0.915
Unbraced Length (Lu)	39.8 in
Effective Section Properties	
Moment of inertia (Ixe)	10.652 in^4
Section modulus (Sxe)	1.576 in^3



GROSS SECTION



NET SECTION

Code Approvals & Performance Standards

- AISI S100-16 (2020) w/S2-20 North American Specification for the Design of Cold-Formed Steel Structural Members
  - Direct Strength Method (DSM) utilized for calculating flexural strength
- AISI S240-15 North American Standard for Cold-Formed Steel Structural Framing
  - Section A3 Material - Chemical & mechanical requirements (Referencing ASTM A1003/A1003M)
  - Section A4 Corrosion Protection (Referencing ASTM A653/A653M)
  - Section A5 Products - Thickness, shapes, tolerances, identification
- SDS For ASTM A1003 Steel Framing Products For Interior Framing, Exterior Framing and Clips/Accessories