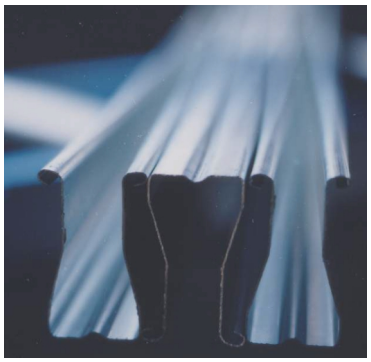
ALPINE TrusSteel™

Floor Trusses



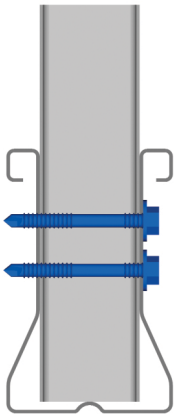
Cost-Effective Floor Framing

TrusSteel cold-formed steel floor trusses provide an economical floor framing solution for multi-story residential and commercial construction projects. Utilizing high-strength steel with thicknesses ranging from 22 gauge (28 mil) to 12 gauge (97 mil), TrusSteel produces a lightweight yet strong floor truss system that reduces design and installation costs. The unique U-shaped, symmetrical chord section allows TrusSteel to deliver unequaled clear span capabilities and structural performance. Mechanical, electric and plumbing systems are easily installed throughout the plenum of the TrusSteel floor truss due to top and bottom chords not exceeding 4 inches in depth in tandem with slender web members.

Utilizing a turnkey cold-formed steel framing package delivers numerous financial benefits for the developer. Elimination of certain trades, such as structural steel when bar joists are incorporated into a project, streamlines the framing phase and delivers a quicker dry-in shell. Many cold-formed steel truss fabricators manufacture and supply prefabricated wall panels, which eliminates the time and expense associated with coordination of multiple suppliers.

Cold-formed steel floor trusses provide enormous design flexibility that does not exist with hot-rolled heavy steel trusses and other proprietary cold-formed steel joists. Unlimited depth and spacing combinations allow a customized and engineered solution that is built around project specific loading and deflection criteria. In addition, end bearing conditions (top-chord, mid-chord, ledger supported, etc.) can be tailored around project-specific requirements.

Design Considerations



UL Fire Ratings

Design No. L551 - 1 hour, single layer 5/8" gypsum board with plywood sheathing.
Design No. G542 - 1 & 2 hour with concrete sub-floor over metal deck.

Sound Transmission Class

STC rated assemblies for airborne and impact sound transmissions are available.

Deflection Criteria

TrusSteel floor trusses may be designed to any defection criteria required by the building designer. Typical Live Load deflection limitations of L/360 and L/480 are addressed in the maximum span charts shown on pages 2 and 3. Project-specific serviceability may warrant more stringent criteria, which should be written into the project specifications for design consideration.

Bracing and Bridging

TrusSteel floor truss bracing requirements are limited to installation of 600S162-33 strongbacks at 10'-0" on-center. The strongback performs a dual role as a load distribution member, as well as helping to minimize any dynamic response within the system.

Stack Loads

Load from bearing walls above, both exterior and interior, must be transferred vertically through the end vertical(s) of the floor truss or a structural blocking panel into the bearing wall below.

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Floor Truss Maximum Span Charts

100 PSF Live Load & 40 PSF Dead Load

Depth	Live Load Deflection Criteria = L/360 Total Load Deflection Criteria = L/240				Live Load Deflection Criteria = L/480 Total Load Deflection Criteria = L/360			
	On-Center Spacing				On-Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
12”	24’-6”	23’-2”	21’-5”	20’-1”	22’-7”	20’-1”	18’-11”	17’-7”
14”	28’-6”	26’-3”	24’-11”	21’-4”	25’-7”	23’-3”	19’-10”	18’-5”
16”	32’-6”	29’-10”	27’-10”	25’-11”	29’-0”	25’-11”	24’-5”	22’-7”
18”	36’-2”	33’-0”	30’-10”	28’-6”	31’-9”	28’-10”	26’-9”	24’-10”
20”	39’-5”	35’-9”	33’-5”	31’-2”	34’-9”	31’-4”	29’-5”	27’-3”
22”	42’-6”	38’-6”	36’-2”	33’-8”	37’-5”	34’-0”	31’-8”	29’-4”
24”	44’-9”	41’-4”	38’-11”	36’-1	39’-10”	36’-4”	34’-0”	31’-3”

80 PSF Live Load & 25 PSF Dead Load

Depth	Live Load Deflection Criteria = L/360 Total Load Deflection Criteria = L/240				Live Load Deflection Criteria = L/480 Total Load Deflection Criteria = L/360			
	On-Center Spacing				On-Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
12”	24’-6”	24’-6”	23’-7”	21’-6”	24’-5”	22’-4”	21’-0”	19’-2”
14”	28’-6”	28’-4”	26’-9”	24’-9”	27’-7”	25’-4”	23’-11”	22’-2”
16”	32’-6”	32’-0”	29’-8”	27’-10”	31’-4”	28’-9”	26’-11”	24’-11”
18”	36’-6”	35’-2”	33’-3”	30’-10”	34’-10”	31’-6”	29’-10”	27’-8”
20”	40’-6”	38’-5”	36’-4”	33’-5”	38’-0”	34’-7”	32’-5”	30’-0”
22”	44’-6”	41’7”	39’-0”	36’-1”	41’-1”	37’-5”	35’-1”	32’-5”
24”	48’-0”	44’-5”	38’-11”	38’-9"	44’-2”	39’-11”	37’-2”	34’-8”

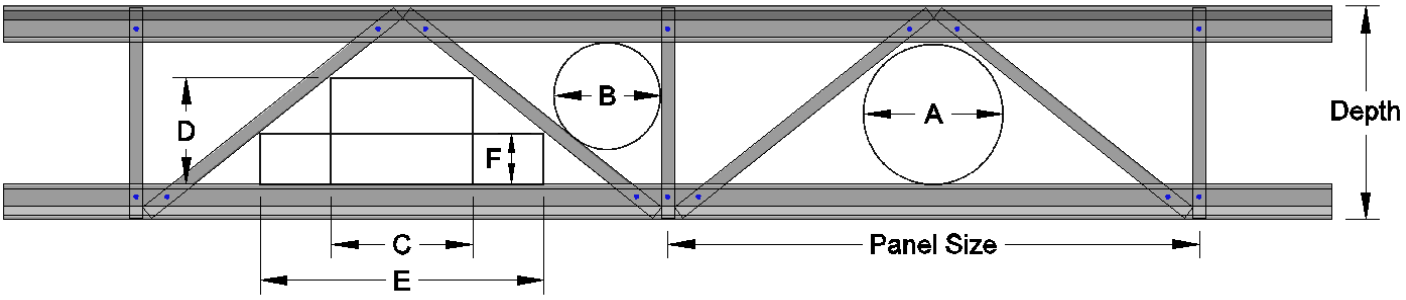
40 PSF Live Load & 40 PSF Dead Load

Depth	Live Load Deflection Criteria = L/360 Total Load Deflection Criteria = L/240				Live Load Deflection Criteria = L/480 Total Load Deflection Criteria = L/360			
	On-Center Spacing				On-Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
12”	24’-6”	24’-6”	24’-6”	24’-6”	24’-6”	24’-1”	23’-2”	21’-0”
14”	28’-6”	28’-6”	28’-6”	28’-4”	28’-6”	27’-11”	26’-3”	24’-6"
16”	32’-6”	32’-6”	32’-6”	32’-1”	32’-6”	31’-7”	29’-10”	27’-2”
18”	36’-6”	36’-6”	36’-6”	35’-6”	36’-6”	34’-10”	32’-8”	33’-3"
20”	40’-6”	40’-6”	40’-6”	38’-6”	40’-6”	38’-4”	35’-11”	33’-1”
22”	44’-6”	44’-6”	43’-6”	41’-1”	44’-6”	41’-2”	38’-8”	35’-8”
24”	48’-6”	47’-11”	45’-8”	43’-1”	48’-6”	44’-0”	41’-3”	38’-3”

Maximum Span Charts, cont.

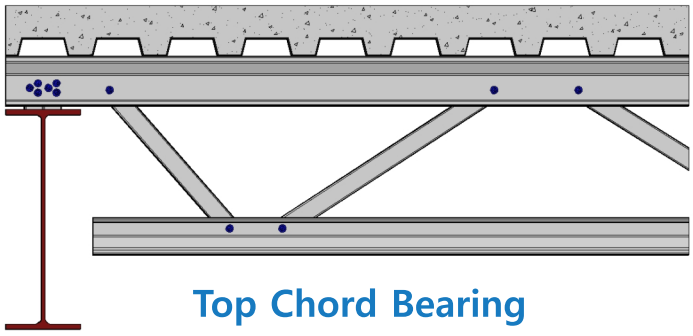
40 PSF Live Load & 15 PSF Dead Load								
Depth	Live Load Deflection Criteria = L/360 Total Load Deflection Criteria = L/240				Live Load Deflection Criteria = L/480 Total Load Deflection Criteria = L/360			
	On-Center Spacing				On-Center Spacing			
	12”	16”	19.2”	24”	12”	16”	19.2”	24”
12”	24’-6”	24’-6”	24’-6”	24’-6”	24’-6”	24’-6”	24’-6”	24’-6”
14”	28’-6”	28’-6”	28’-6”	28’-6”	28’-6”	28’-6”	28’-6”	27’-7"
16”	32’-6”	32’-6”	32’-6”	32’-6”	32’-6”	32’-6”	32’-6”	31’-5”
18”	36’-6”	36’-6”	36’-6”	36’-6”	36’-6”	36’-6”	36’-6”	34’-6"
20”	40’-6”	40’-6”	40’-6”	40’-6”	40’-6”	40’-6”	40’-6”	37’-11”
22”	44’-6”	44’-6”	44’-6”	44’-6”	44’-6”	44’-6”	44’-1”	40’-9”
24”	48’-6”	48’-6”	48’-6”	47’-6”	48’-6”	47’-11”	47’-0”	43’-6”

Maximum distances shown are for clear span applications with chase opening located at mid-span. Span ratings shown shaded are limited by length to depth ratio of 24. Factors such as end bearing conditions, off-center chase openings and specific web patterns may also influence span capabilities. Contact your local Authorized TrusSteel Fabricator for design assistance utilizing project specific span, depth, loading and deflection criteria.

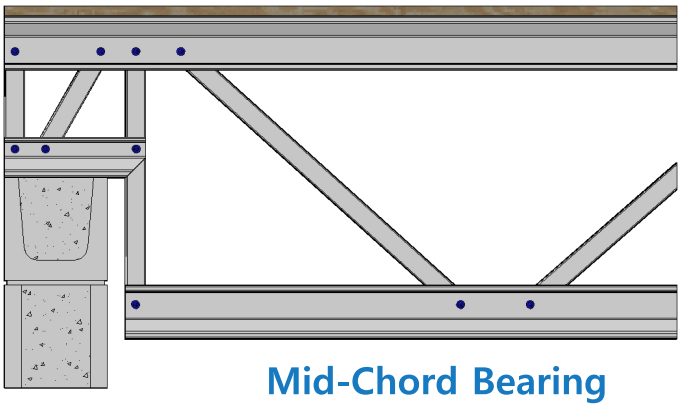


Approximate Duct Opening Sizes for TrusSteel Floor Trusses

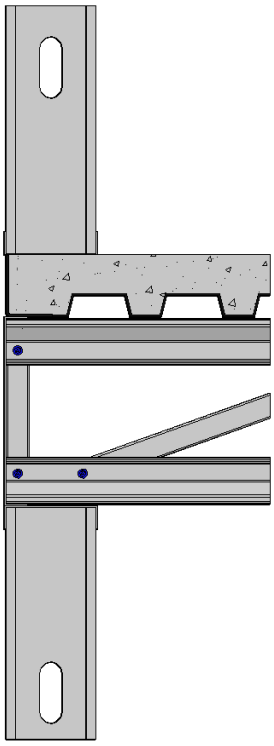
Depth	Panel Size	A	B	C	D	E	F
12″	60″	5″	4-7/8″	14″	4-3/8″	20″	3-3/8″
14″	60″	7″	6-5/8″	17″	5″	22″	4-1/8″
16″	60″	9″	8-1/4″	14″	7-3/8″	27″	4-1/8″
18″	60″	11″	9-7/8″	14-1/2″	8-7/8″	26″	5-3/8″
20″	60″	13″	10-1/2″	14-1/2″	10-3/8″	26″	6-5/8″
22″	60″	14-3/4″	11-1/2″	15″	11-5/8″	30″	6-1/8″
24″	60″	16-1/2″	12-3/8″	16″	12-5/8″	32″	6-3/8″



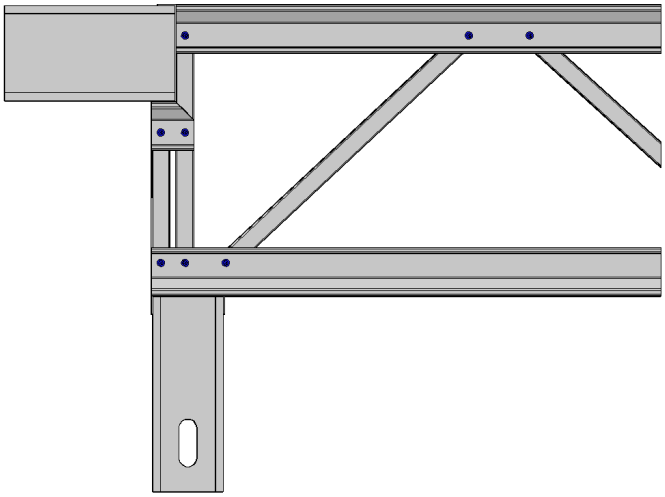
Top Chord Bearing



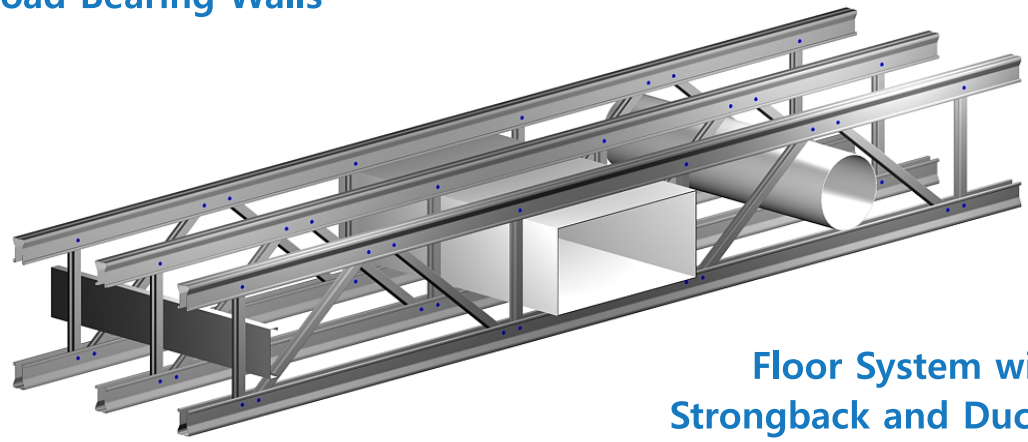
Mid-Chord Bearing



Exterior Load Bearing Walls



Bottom Chord Bearing at
Corridor Wall with Joist Pocket



Floor System with
Strongback and Duct Work