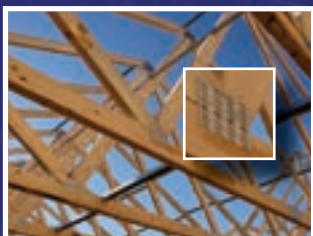


- ✓ Design
- ✓ Engineering
- ✓ Quality Products
- ✓ Quality Service
- ✓ Competitive Pricing
- ✓ Fast Bidding Information
- ✓ Engineering Support



Wood Trusses



Wall Panels



Light Gauge Steel Trusses



Phone 610.438.5191
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Trusses, Wall Panels & Light Gauge Steel Trusses



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The End Result

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Lehigh Structural Components, LLC. (LSC) is a wholesale manufacturing company which designs, builds and ships standard and sophisticated quality roof trusses, floor trusses and wall panels for residential & commercial buildings in the Tri-State and surrounding area.

We maintain the latest state of the art computerized systems, manufacturing tables and saws. This allows our operation to maintain a "Turn-N-Burn" production schedule, while maintaining an annual "On Time" delivery schedule.

As a member of the Structural Building Components Association (SBCA) our high standards meet those developed by the SBCA Engineering Review Committee.

Our staff of Designers and Marketing Rep's are always ready to meet with you and your builder to discuss their upcoming projects.

Our outside truss crew can respond quickly and efficiently to handle any situation.

Our Standard Services:

- Coordination of Project Blueprints & Review.
- Timely quotes and quick quotes.
- Site Survey, if needed.
- Complete set of the Truss detail drawings for floor or roof with each order.
- Wall panel detail drawings provided with each order.
- Engineering Seals for each order.
- Meetings with your contractor, architect, if needed.

Communication is a Priority:

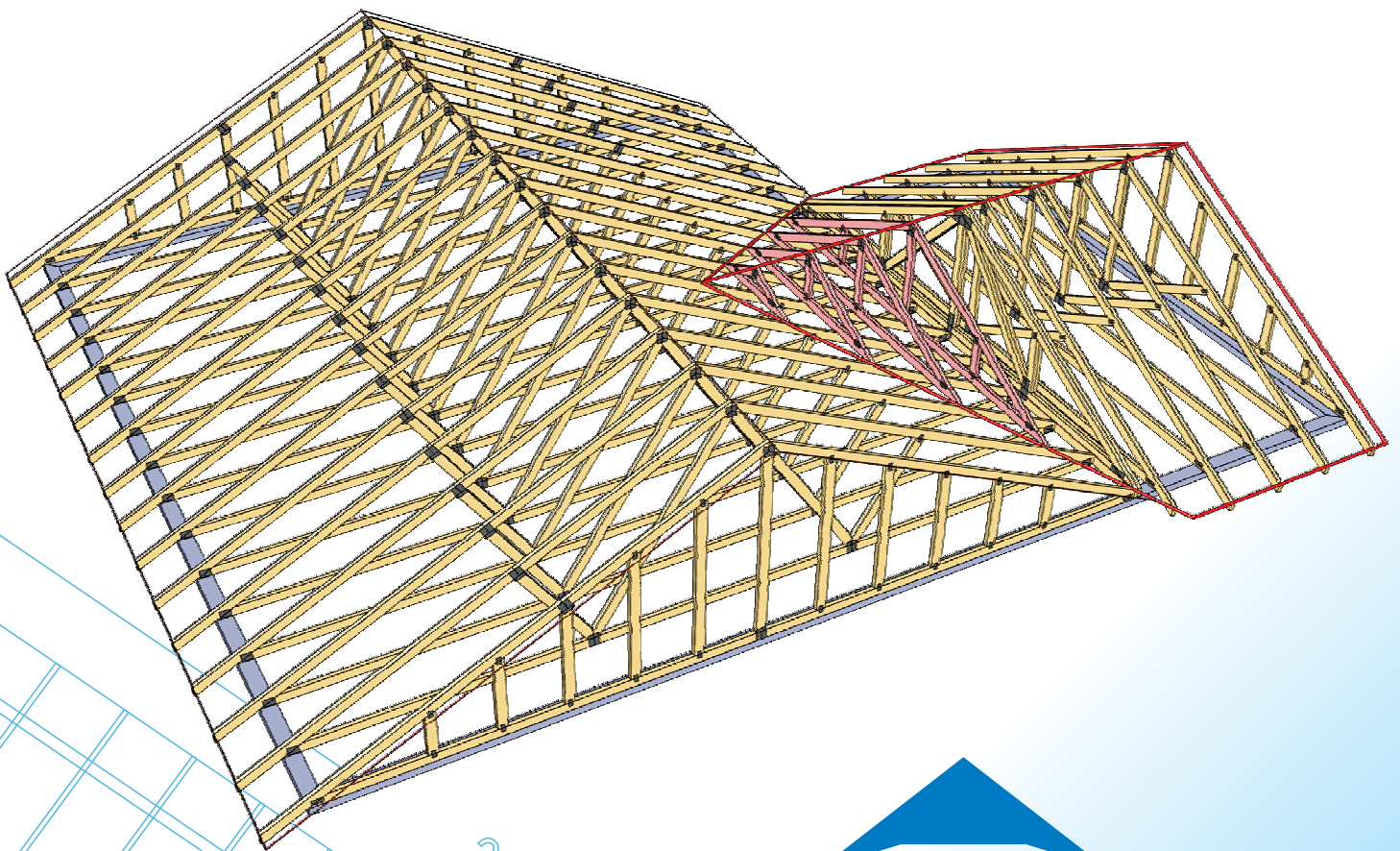
Once you are established as a customer of LSC you will be assigned to one of our in house designers and an outside manufacturer representative. This will ease the flow of information and documentation through the processing system.

Our plant manager is responsible for the production of each truss order, shipping and delivery. As the primary contact person from the plant, he can schedule or reschedule the delivery to meet you and your customers needs.





Get more Quality, Flexibility and Labor Savings using
ROOF TRUSSES



32'



Wood Roof Trusses are
Environmentally Compatible.

ALPINE[®]
AN ITW COMPANY



Builders want solutions that help them stay on schedule and maintain quality construction and profits. When compared to traditional beam construction, manufactured wood roof truss systems are better, stronger, and can be installed faster. A manufactured truss is an engineered structural component assembled from wood members, metal connector plates and other mechanical fasteners. The truss members form a semi-rigid structural framework and are assembled such that the members form triangles. Trusses are designed to engineering standards with a substantial factor of safety applying to every truss in the roof. Most builders are familiar with roof truss systems, but may not realize the advantages of a manufactured system. Traditional stick built roofs which are based on historical conservative carpentry practices, use greater quantities of lumber to achieve acceptable factors of safety. The reserve strength of these traditional roofs is also variable and depends on the skill of the individual carpenter.

The benefits of manufactured wood truss systems are many. Trusses can span great distances, creating larger open spaces below unobstructed by columns and partitions. Roof truss systems are manufactured in controlled environments, so there's less chance of warping, shrinking, and twisting of lumber. Trusses also save timber resources by reducing the amount of wood waste generated during construction. The owner can enjoy piece of mind knowing that the trusses have been professionally engineered and quality manufactured for that specific job.



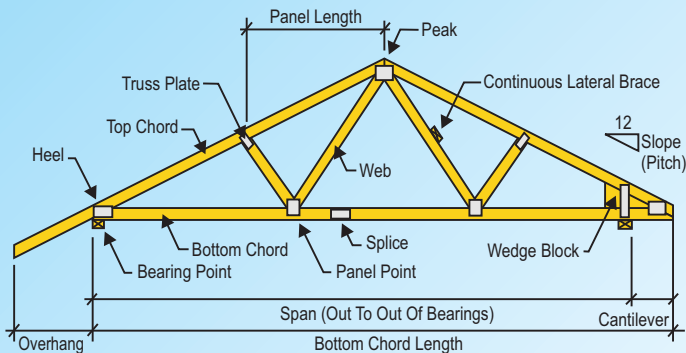
The Benefits of Wood Trusses:

- A wood trussed-home costs less. The total in-place cost of trussed roof and floor systems is lower. Trusses are delivered to the site ready to be installed. Labor is saved because trusses can be installed three to four times faster than it would take a carpenter to build the roof on-site. The open spaces in the trusses allows duct work, plumbing and wiring to be installed quickly and easily. Construction costs also are reduced because the building is "closed-in" faster, there is less pilferage of materials, and it takes less time to clean up the site.
- You get peace of mind – knowing that the trusses were professionally computer-designed, engineered and factory-built to assure the highest quality and reliability.
- Trusses allow virtually unlimited architectural versatility. That means designs can include vaulted or studio ceilings inside the home and high pitched or hipped roofs on the exterior, offering greater aesthetic and functional advantages.
- Proven performance – hundreds of millions of wood trusses have been installed throughout the country. In fact, wood trusses are used in more than 75% of all homes built in the U. S. and Canada today.
- Pre-engineered wood trusses are scientifically designed for strength. A pre-engineered framing system eliminates guesswork on the construction site.

Framing with *Roof Trusses*



Parts of a Truss:



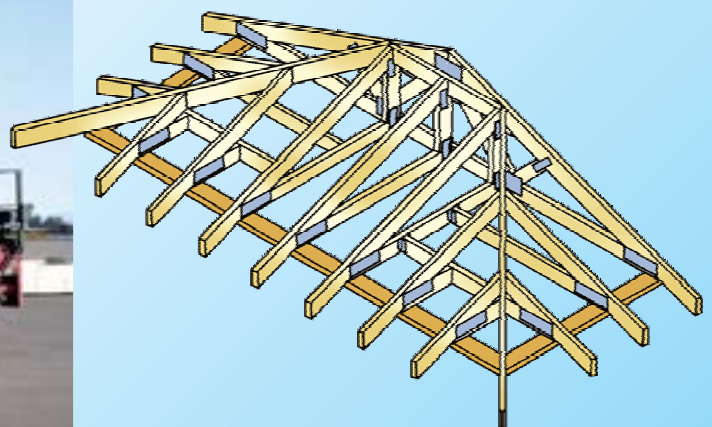
The component manufacturing process is simple and offers the professional builder plenty of time- and cost-saving resources along the way. **Here's how it works:**

House plans are sent by the builder to the truss manufacturer. There are dozens of truss manufacturers operating nationwide, but builders should research the quality and delivery costs before choosing a vendor.

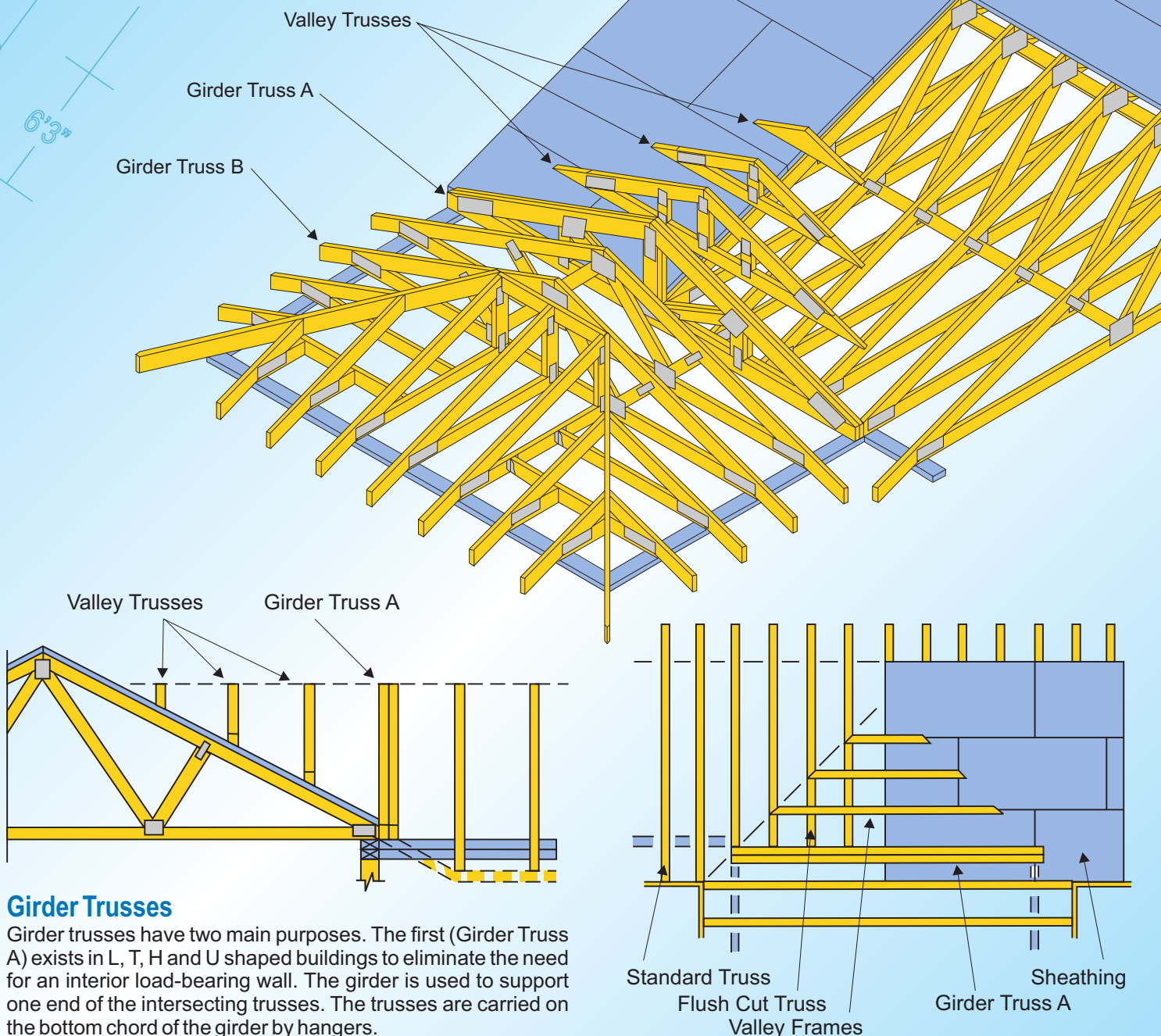
The manufacturer determines what loads the building designer requires to be supported within the home, how many trusses will be required, and their specific placement in the home. The manufacturer then builds the trusses, numbers them for accurate installation, and ships them to the builder on the jobsite.

A detailed diagram with the placements of the trusses is sent along with the trusses to help the builder place the trusses exactly where they should be installed.

Once the trusses are on the site, the builder can really start to see the benefits. The consistent size and height of the manufactured truss will mean easier sheathing material installation, and the open web design allows for utilities to be run between in the roof system without drilling or cutting holes. These benefits will reduce the amount of time trade contractors spend on site, speed up construction, and ultimately save the builder money. The technology used in the design and manufacturing of roof trusses makes them a superior choice for builders looking to streamline construction and provide a higher quality home to their customers.



Framing with Trusses



Girder Trusses

Girder trusses have two main purposes. The first (Girder Truss A) exists in L, T, H and U shaped buildings to eliminate the need for an interior load-bearing wall. The girder is used to support one end of the intersecting trusses. The trusses are carried on the bottom chord of the girder by hangers.

The second use of a girder truss (Girder Truss B) is to support perpendicular framing in hip roofs. In some plans girder truss A and B may be one in the same. The hip framing is carried on both the top and bottom chords of the girder truss by nailing or by hangers.

Girder trusses, because of the heavy loads they support, are generally multiple units with larger chord members than the adjacent trusses. Generally, because of the construction of girders, overhangs are not used.

The girder truss may also be designed for "drag strut" loads which are calculated and specified by the building designer.

Valley Framing Sets

Valley framing sets are primarily used to form a ridge line by framing over the main roof where perpendicular building sections intersect.

Valley trusses are set directly on the main trusses. Sheathing is required for main trusses with 2x4 top chords, and is recommended for other top chord sizes, under valley frames to continue the lateral bracing of the main truss top chords. The bottom chords of the valley trusses are generally beveled to match the slope of the roof below.

Framing with Trusses

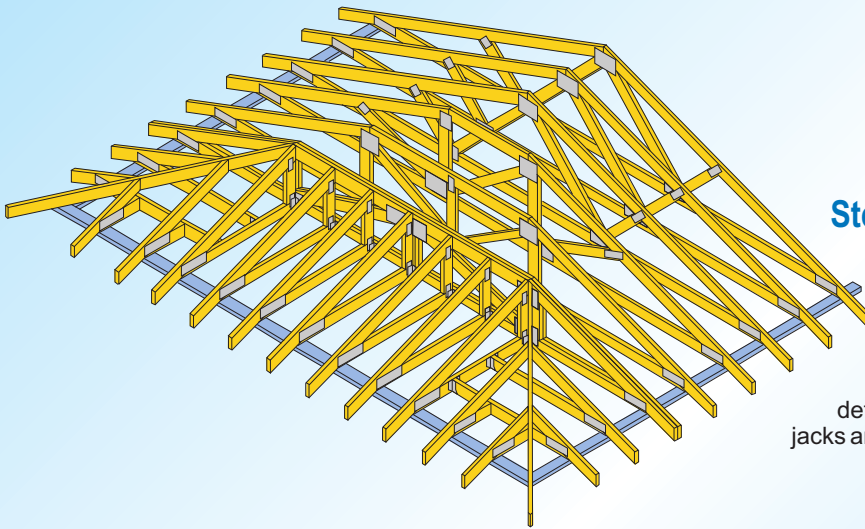
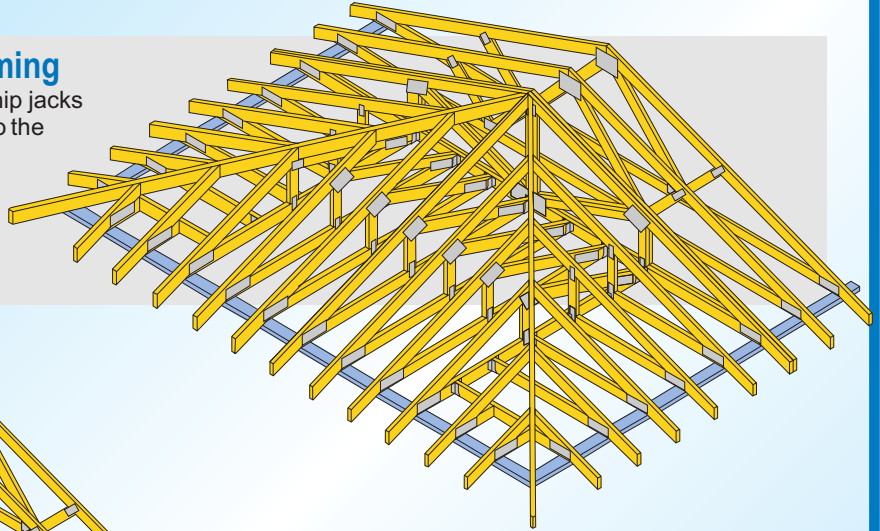


Hip Framing

Trussed hip framing offers the advantage of clear span, an eave or fascia line at the same elevation around the building, and the speed of pre-built components. The end slope may be equal to or different from the side slope. The ceiling line may be flat or sloped. Sloped ceilings have limitations, therefore, consult the truss designer.

Terminal Hip Framing

Best suited for relatively short spans of 26'-0" or less, the hip jacks extend directly to the peak. The distance from the end wall to the face of the girder is equal to one half the span, provided the slopes are equal. The last standard truss is designed as a girder to carry the loads transferred by the hip jack.

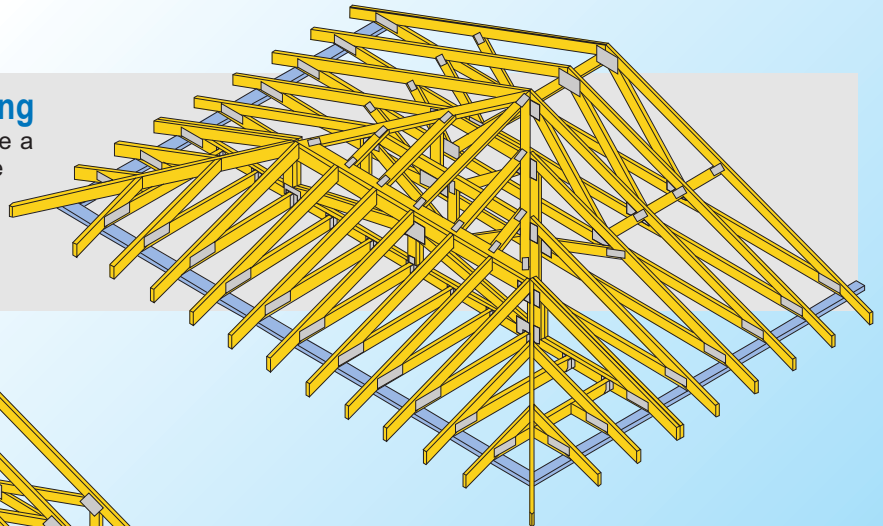


Step Down Hip Framing

Better suited for longer spans, the Step Down hip is the most versatile of all hip types. Each of the "step down" trusses is the same span and has the same overhang as the adjacent standard trusses, but decrease in height to form the end slope. The girder location is generally from 8 to 12 feet from the end wall and is determined by the span to depth ratio. The corner and end jacks are normally pre-built components.

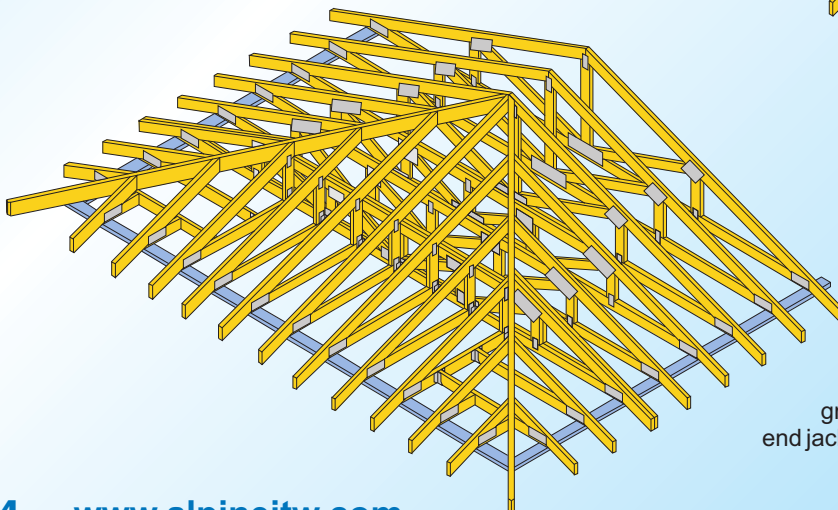
Midwest Hip Framing

The Midwest type hip framing was developed to create a more uniform configuration of each of the trusses in the hip. This hip type also provides for a more uniform structure for attaching the decking. Span capability is the same as the step down hip.



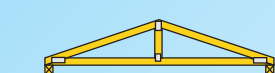
California Hip Framing

Although this type hip framing is used as an alternative to the step down hip, the California hip is similar in span capability and field installation. The base portion of each truss inside the girder is the same, except that the sloping top chord of each successive truss is extended upward greater amounts to form the slope intersection. Corner and end jacks are used to form the area outside the girder.

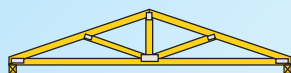




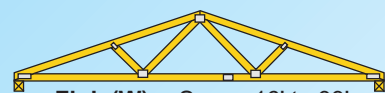
Wood trusses are pre-built components that function as structural support members. A truss commonly employs one or more triangles in its construction. The wood truss configurations illustrated here are a representative sampling. The number of panels, configuration of webs and length of spans will vary according to given applications, building materials and regional conditions. Always refer to an engineered drawing for the actual truss design.



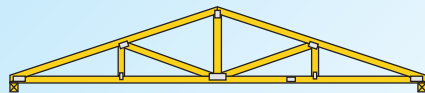
King Post -- Span Up to 16'



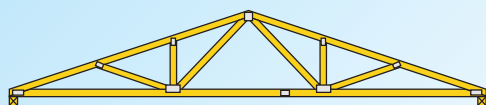
Queen Post (Fan) -- Spans 10' to 22'



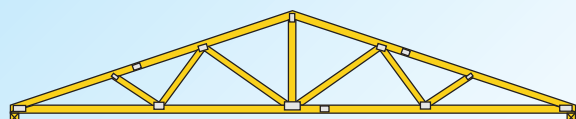
Fink (W) -- Spans 16' to 33'



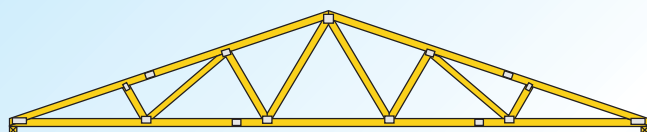
Howe (K) -- Spans 24' to 36'



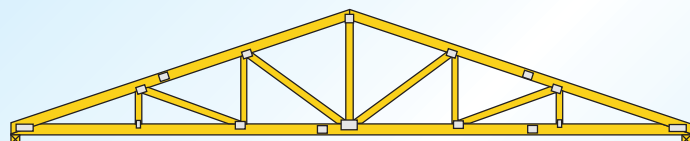
Fan (Double Fan) -- Spans 30' to 36'



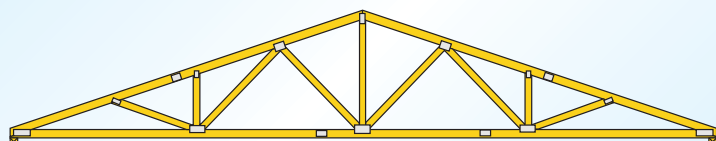
Modified Queen (Multi-Panel) -- Spans 32' to 44'



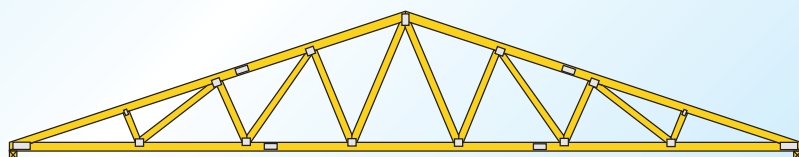
Double Fink (WW) -- Spans 40' to 60'



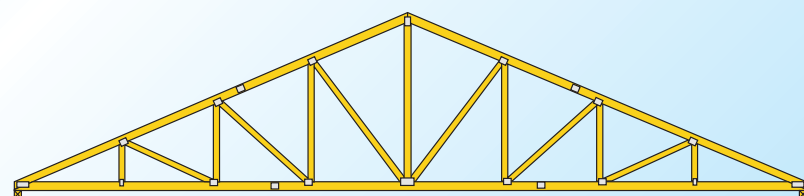
Double Howe (KK) -- Spans 40' to 60'



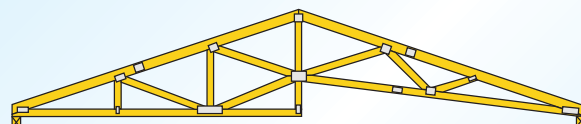
Modified Fan (Triple Fan) -- Spans 44' to 60'



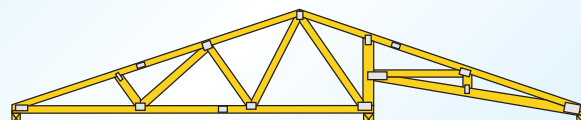
Triple Fink (WWW) -- Spans 54' to 80'



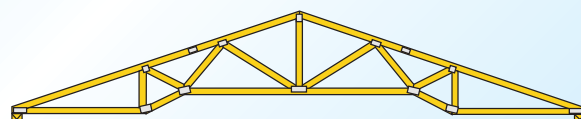
Triple Howe (KKK) -- Spans 54' to 80'



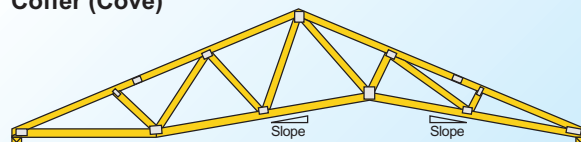
Vault - Two Bearing Points



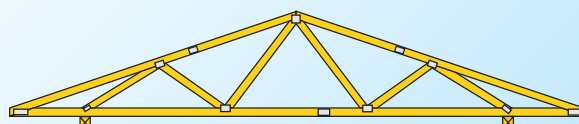
Vault - Three Bearing Points



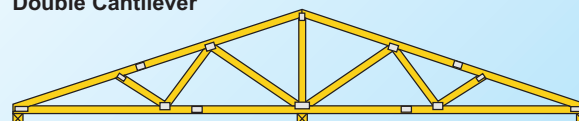
Coffer (Cove)



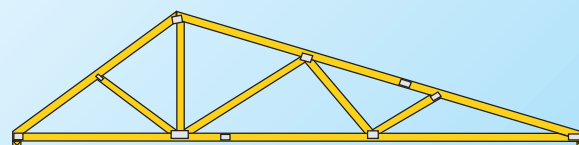
Cathedral (CATH)



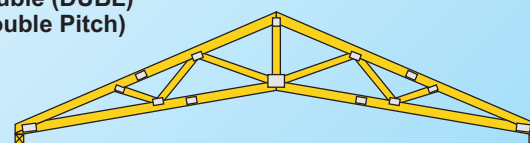
Double Cantilever



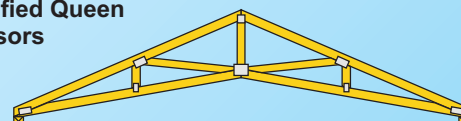
Tri-Bearing



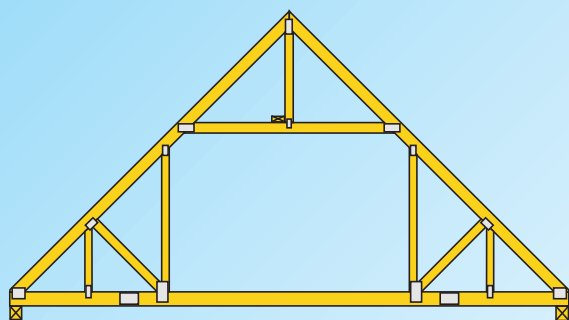
**Double (DUBL)
(Double Pitch)**



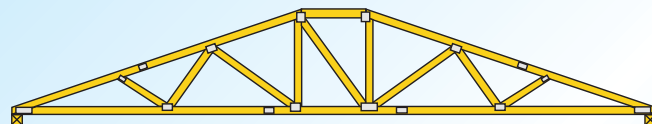
**Modified Queen
Scissors**



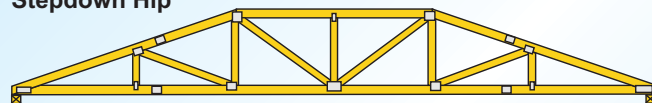
Howe Scissors



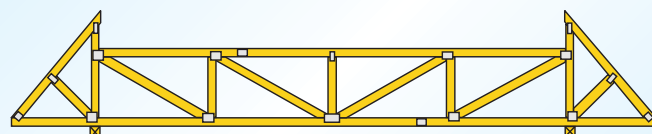
Room-In-Attic



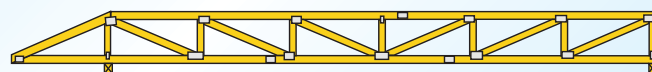
Steppedown Hip



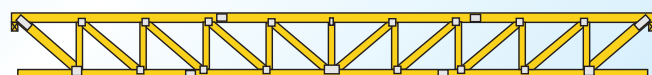
Hip Girder



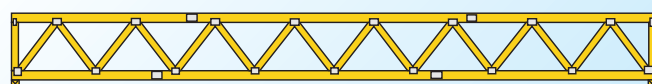
Double Cantilever With Parapets



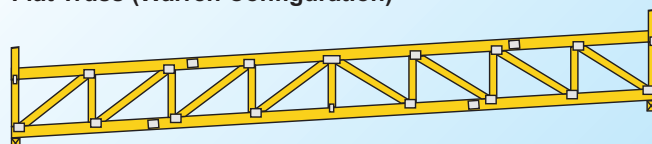
Flat Truss With Cantilever (Pratt Configuration)



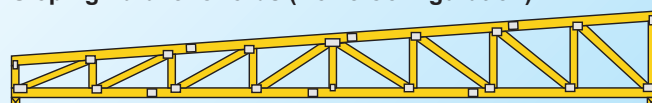
Top Chord Bearing Flat Truss (Pratt Configuration)



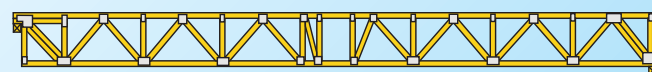
Flat Truss (Warren Configuration)



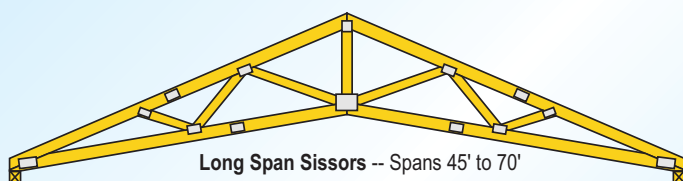
Sloping Parallel Chords (Howe Configuration)



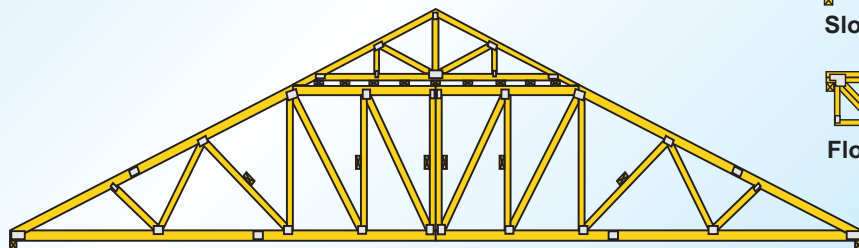
Sloping Top Chord (Howe Configuration)



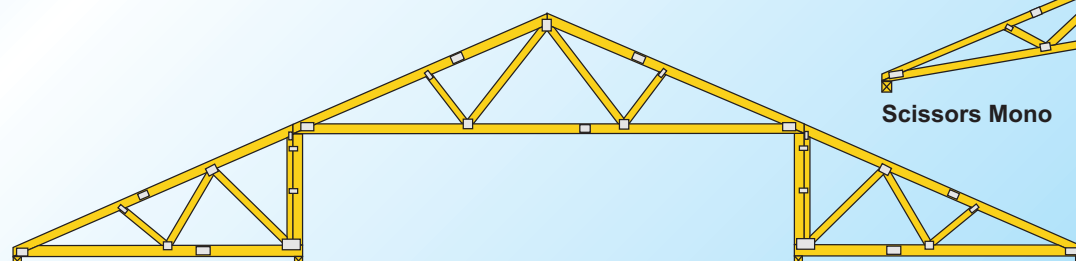
Floor Truss (System 42 - Modified Warren Configuration)



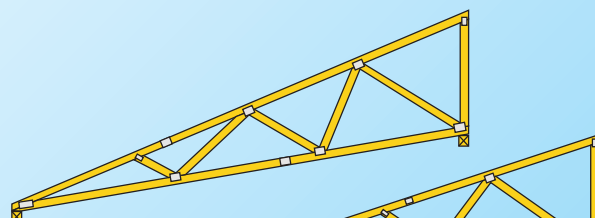
Long Span Sissors -- Spans 45' to 70'



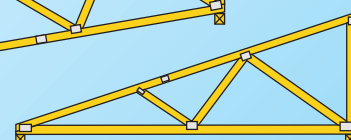
Three Piece Long Span (Field Connected) -- Spans 60' to 80'



Three Piece Raised Center Bay -- Lengths 50' to 100'+



Scissors Mono



Mono

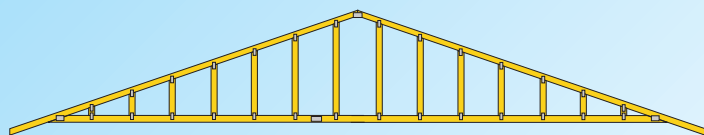
Large, Long Span Trusses require special handling and erection specifications. The installation of wood trusses requires the same high degree of safety awareness as the installation of any other structural material. Spans over 60' may require complex permanent bracing. Please ask your sales representative for more information.



Gable Framing

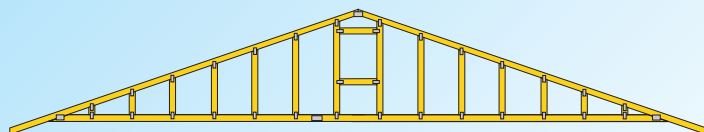
Gable ends when not configured in triangles as a truss, are more related to stud walls. However, they are structural elements and are analyzed to resist wind and seismic loads as noted on the truss design. The web design or framing pattern is determined by

the type of siding, either horizontal or vertical, and the need for a louver in the end of the building. The type of gable required is controlled by the end overhang and the need to match a soffit line.

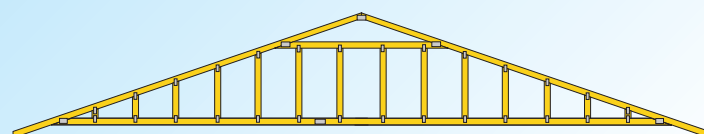


Standard Gable

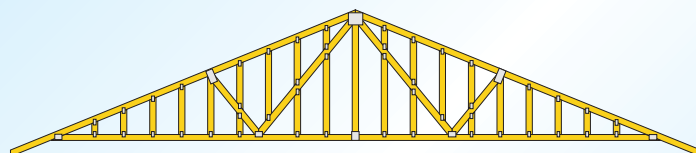
Stud spacing as necessary to support siding.



Standard Gable Framed For Rectangular Louver

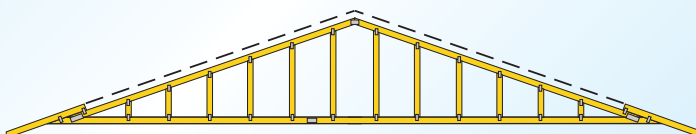


Standard Gable Framed For Triangular Louver



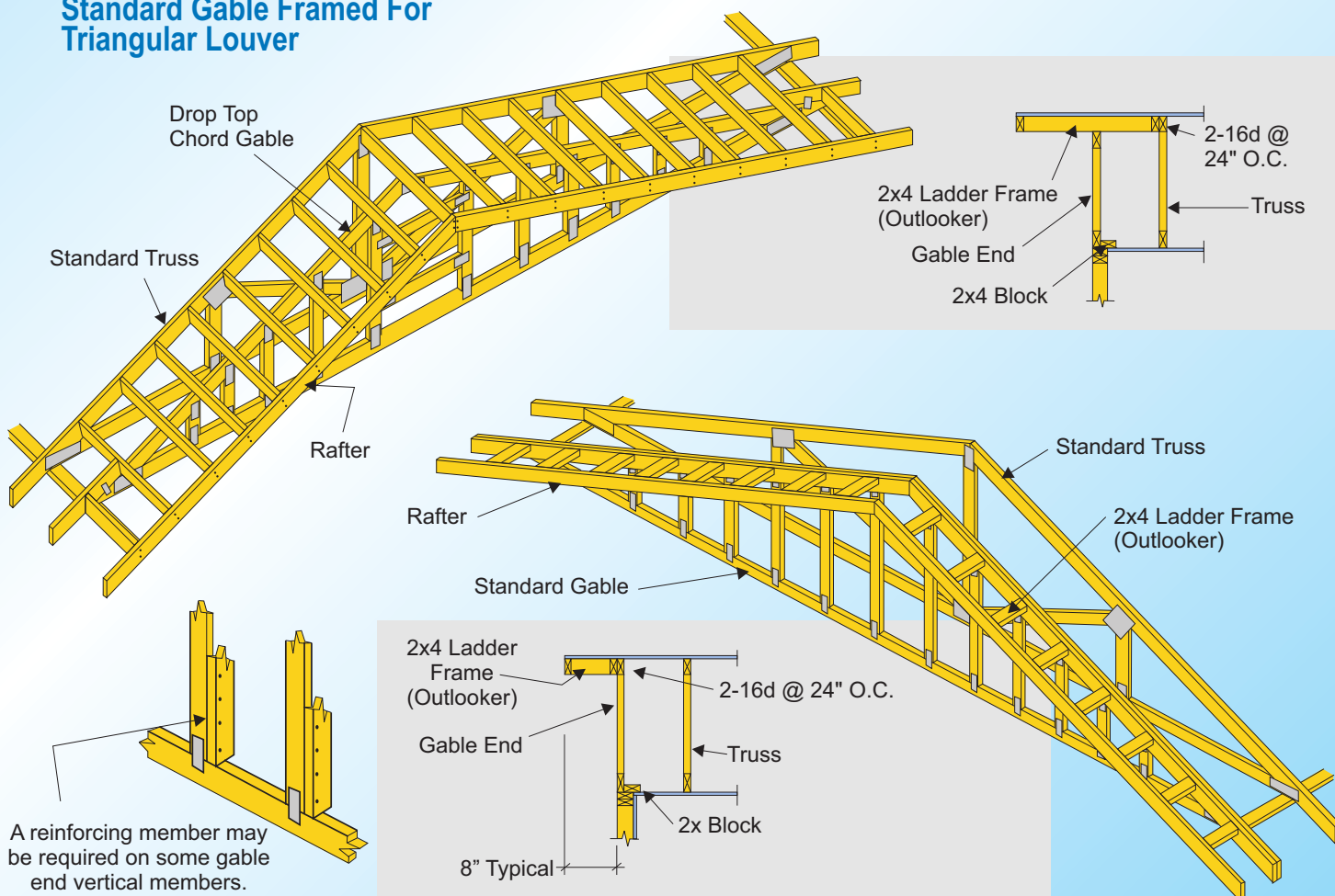
Clearspan Gable

Used when the gable wall does not provide continuous bearing support for the gable framing.



Dropped Top Chord Gable

Illustrated with studs. Also available with framing for rectangular, square or triangular louver.



A reinforcing member may be required on some gable end vertical members.

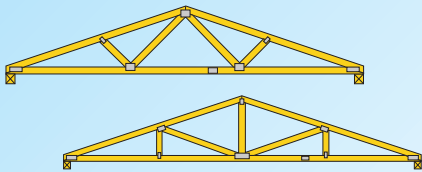
Roof Truss Span Tables



Alpine truss designs are engineered to meet specific span, configuration and load conditions. The shapes and spans shown here represent only a fraction of the millions of designs produced by Alpine Engineers.

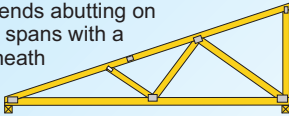
Total load(PSF) Duration factor Live load(PSF) Roof type	55 1.15 40 snow shingle	47 1.15 30 snow shingle	40 1.15 20 snow shingle	40 1.25 20 ** shingle
	55 1.15 30 snow tile			**construction or rain, not snow load
Top Chord	2x4 2x6 2x6	2x4 2x6 2x6	2x4 2x6 2x6	2x4 2x6 2x6
Bottom Chord	2x4 2x4 2x6	2x4 2x4 2x6	2x4 2x4 2x6	2x4 2x4 2x6

Common -- Truss configurations for the most widely designed roof shapes.



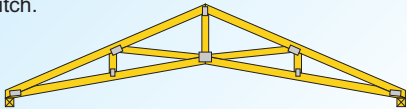
Pitch	Spans in feet to out of bearing											
2/12	24	24	33	27	27	37	31	31	43	33	33	46
2.5/12	29	29	39	33	33	45	37	38	52	39	40	55
3/12	34	34	46	37	39	53	40	44	60	43	46	64
3.5/12	39	39	53	41	44	61	44	50	65	47	52	70
4/12	41	43	59	43	49	64	46	56	69	49	57	74
5/12	44	52	67*	46	58	69*	49	66	74*	53	66	80*
6/12	46	60*	69*	47	67*	71*	51	74*	76*	55	74*	82*
7/12	47	67*	70*	48*	72*	72*	52*	77*	77*	56*	80*	83*

Mono -- Used where the roof is required to slope only in one direction. Also in pairs with their high ends abutting on extremely long spans with a support underneath the high end.



2/12	24	24	33	25	27	38	27	31	41	29	32	44
2.5/12	28	29	40	29	32	43	31	37	46	33	37	49
3/12	30	33	45	31	37	47	34	42	50	36	42	54
3.5/12	33	37	49*	34	41	51*	36	46	54*	39	46	58*
4/12	35	41	52*	36	45*	54*	39	50*	58*	42*	49*	62*
5/12	38*	47*	57*	39*	51*	59*	42*	56*	63*	45*	54*	68*

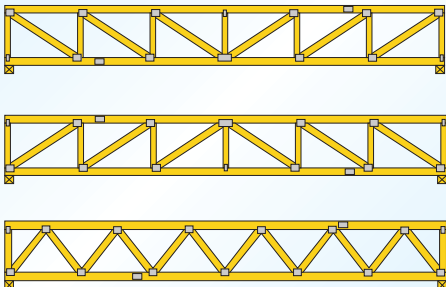
Scissors -- Provides a cathedral or vaulted ceiling. Most economical when the difference in slope between the top and bottom chords is at least 3/12 or the bottom chord pitch is no more than half the top chord pitch.



6/12 - 2/12 ‡	40	43	59*	42	49	62*	45	56*	66	48	57*	71*
6/12 - 2.5/12 ‡	37	38	52	38	44	57*	41	50	61*	44	52	66*
6/12 - 3/12 ‡	33	33	45	35	38	52	38	43	56*	40	46	60*
6/12 - 3.5/12 ‡	28	28	38	32	32	44	34	37	50	36	39	54
6/12 - 4/12 ‡	22	22	31	26	26	36	30	30	41	32	32	44

‡ Other pitch combinations available with these spans
For Example, a 5/12 - 2/12 combination has approx. the same allowable span as a 6/12 - 3/12

Flat -- The most economical flat truss for a roof is provided when the depth of the truss in inches is approximately equal to 7% of the span in inches.



Total load(PSF) Duration factor Live load(PSF)	55 1.15 40 snow			47 1.15 30 snow			40 1.15 20 snow			40 1.25 20 rain or constr.		
Top Chord	2x4	2x6	2x6	2x4	2x6	2x6	2x4	2x6	2x6	2x4	2x6	2x6
Bottom Chord	2x4	2x4	2x6	2x4	2x4	2x6	2x4	2x4	2x6	2x4	2x4	2x6
Depth	Spans in feet to out of bearing											
16"	23	24	25 §	25 §	25 §	25 §	25 §	25 §	25 §	25 §	25 §	25 §
18"	25	27	28	27	27	29 §	29 §	29 §	29 §	29 §	29 §	29 §
20"	27	28	30	28	28	32	31	30	33 §	32	31	33 §
24"	29	30	33	31	31	35	34	33	38	35	34	40
28"	32	32	36	34	33	39	37	36	42	38	37	44
30"	33	33	38	35	35	40	38	37	44	40	39	45
32"	34	34	39	36	36	42	39	39	45	41	40	47
36"	36	36	42	39	38	45	42	41	48	43	43	50
42"	39	39	45	41	41	48	44	44	52	45	46	54
48"	40	42	49	43	44	52	46	47	56	46	49	58
60"	44	47	55	46	49	58	48	53	63	49	55	65
72"	45	51	60	48	54	64	51	57	68	51	59	69

§ = Span Limited by length to depth ratio of 24

NOTES: These overall spans are based on NDS '01 with 4" nominal bearing each end, 24" o.c. spacing, a live load deflection limited to L/240 maximum and use lumber properties as follows: 2x4 $f_c=2000$ psi $f_t=1100$ psi $E=1.8 \times 10^6$ 2x6 $f_c=1750$ psi $f_t=950$ psi $f_c=1900$ psi $E=1.8 \times 10^6$. Allowable spans for

2x4 top chord trusses using sheathing other than plywood (e.g. spaced sheathing or 1x boards) may be reduced slightly. Trusses must be designed for any special loading such as concentrated loads from hanging partitions or air conditioning units, and snow loads caused by

drifting near parapet or slide-off from higher roofs. To achieve maximum indicated spans, trusses may require six or more panels. Trusses with an asterisk (*) that exceed 14' in height may be shipped in two pieces. Contact your Alpine truss manufacturer for more information.

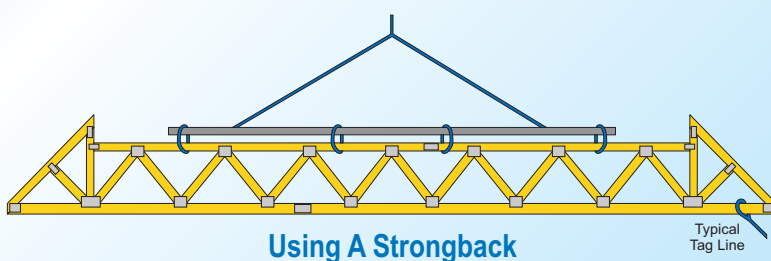
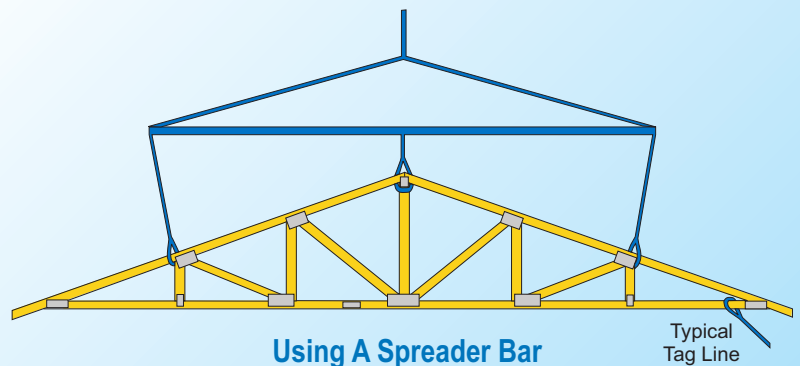
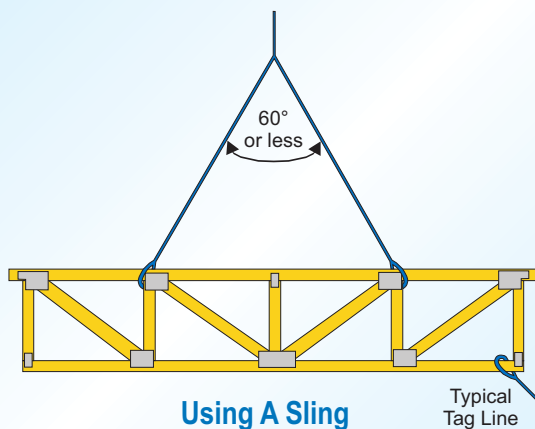


The installation of wood trusses requires the same high degree of safety awareness as the installation of any other structural material. It is essential that prudent methods be used at all times. Trusses may be installed manually, by crane, or by forklift, depending on truss size, wall height and job conditions. Individual trusses should always be carried vertically to avoid lateral strain and damage to joints and members.

Trusses installed manually are slid into position over the sidewall and rotated into place using poles. The longer the span, the more workers are needed to avoid excessive lateral strain on the trusses. Trusses should be supported at joints and the peak while being raised.



Large trusses require the most planning and attention before lifting and should be installed by a crane or forklift employing chokers, slings, spreader bars and strongbacks to prevent lateral bending. Trusses may be lifted singly, in banded groups, or preassembled in groups. Planning ahead is essential before lifting any truss. First determine the proper location of lift points and the type of rigging and lifting procedure that will assure truss balance. Tag lines should always be used to control movement of trusses during lifting and placement.



IMPORTANT SAFETY INFORMATION: Refer to BCSI Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses for more detailed information. This publication is jointly produced by the Truss Plate Institute and Wood Truss Council of America for proper methods of installation. Installation procedures are the responsibility of the installer. Job conditions and procedures vary considerably. Every project has different site conditions that can have an effect on the erection process. Before the first truss is erected every individual involved needs to understand the installation plan and the intended bracing requirements for a safe, efficient and accident-free jobsite. These are only guidelines and may not be proper under all conditions. Visit www.sbcindustry.com for specific details.



Wood Roof and Floor Trusses are

Environmentally Compatible

BUILDING GREEN:
Using less gives more.



"Building Green" isn't new to the structural building components industry. In fact, we've been green since 1952! **At Alpine**, we are committed to helping our builders, remodelers and home owners practice environmental responsibility and sustainability by conserving today's resources for tomorrow's children. Every effort is made to offer products that balance design and performance with environmental responsibility. There's no getting around it, the wood you purchase comes from one of the Earth's most renewable resources—trees. Wood is the most energy efficient of major building products.

Components minimize the amount of material used and jobsite waste created. This is a no brainer, but it's a good point to reinforce with builders and general contractors. And there's data to prove it! The 1996 WTCA Framing the American Dream® project reported a more than 25 percent material savings (and labor savings of more than 60 percent!) when components were used to frame a 2600-sq.ft. home. visit www.sbcindustry.com/pubs/fad-d to view a pdf.

Components are designed to utilize materials most efficiently. Don't forget that material efficiency is inherent to the process of component design. Design software from Alpine enables the designer or technician to value engineer and optimize virtually any component design. This means material is not used when it isn't needed. Many green building rating systems recognize this benefit of components and award points based on their use. The National Resource Defense Council realized this fact in 1998 when they placed trusses high on their list of great products due to optimum value engineering. View their detailed report at www.nrdc.org/cities/building/rwoodus.asp.

Visit www.sbcindustry.com for more details on green building component fabrication.



Why Build Green? In the United States, buildings account for:

39 percent of total energy use, 12 percent of the total water consumption, 68 percent of total electricity consumption and 38 percent of the carbon dioxide emissions.

The built environment has a vast impact on the natural environment, human health, and the economy. By adopting green building strategies, we can maximize both economic and environmental performance. Green construction methods can be integrated into buildings at any stage, from design and construction, to renovation and deconstruction. However, the most significant benefits can be obtained if the design and construction team takes an integrated approach from the earliest stages of a building project. Potential benefits of green building can include:

Environmental benefits: Enhance and protect biodiversity and ecosystems, Improve air and water quality, Reduce waste streams and Conserve, restore natural resources.

Economic benefits: Reduce operating costs, Expand markets for green product and services, Improve occupant productivity, Optimize life-cycle economic performance.

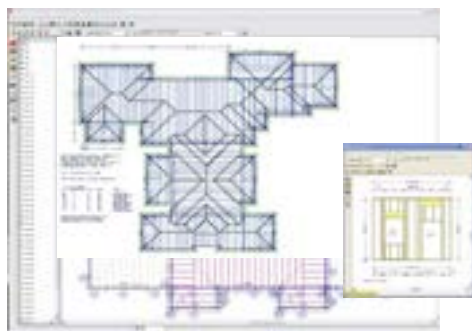
Social benefits: Enhance occupant comfort and health, Heighten aesthetic qualities, Minimize strain on local infrastructure, Improve overall quality of life.

www.epa.gov/greenbuilding/pubs/whybuild.htm



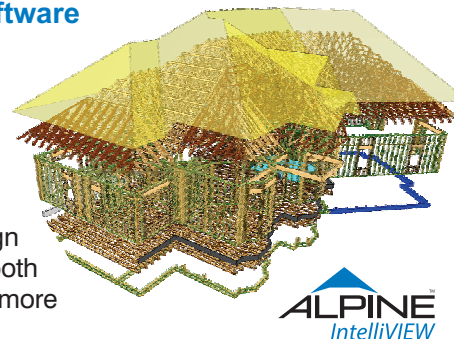
Get more Quality, Flexibility and Labor Savings using

Roof Trusses



Layout, Design and Engineering Software

Powerful CAD-based design software from Alpine generates traditional plan view layouts, and 3-D graphics that give an accurate picture of a structure from virtually any perspective by showing every component in place. Work confidently with the industry's best fully integrated design solution. Our IntelliVIEW software reduces both designer time and aggravation, giving you more peace of mind with fewer mouse clicks.



ALPINE
IntelliVIEW

Bracing is extremely IMPORTANT!! Every roof system needs adequate bracing. The purpose of most bracing is to ensure that the trusses and truss members remain straight and do not bow out of their plane. Inadequate, improper or incorrectly installed bracing can lead to collapses, failures and serious accidents. An engineered bracing system will avoid these pitfalls and ensure the structural integrity of the truss system. Trusses need to be braced during installation, which is called temporary bracing and they need permanent bracing which will remain installed for the life of the roof system. Follow the recommendations for handling, installing and temporary restraining and bracing of trusses.

Temporary Bracing Guidelines: For metal plate connected wood truss systems, refer to BCSI Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses for more detailed information. Truss design drawings may specify locations of permanent lateral restraint or reinforcement for individual truss members. Refer to the BCSI-B3 Summary Sheet – Permanent Restraint/Bracing of Chords & Web Members for more information. All other permanent bracing design is the responsibility of the Building Designer. Contact the Component Manufacturer for more information or consult a Professional Engineer for assistance.

The innovative software, equipment, products and services available from Alpine, enables our customers to manufacture and sell the finest truss and wall components available in North America. Alpine offers component engineering services, design and management software, production equipment and truss connector plates. The pioneering concept developed for wood trusses was also applied to our revolutionary line of products and services for cold-formed steel components used in commercial applications. Alpine's software includes design and manufacturing programs that work together to quickly produce structural framing components. Our powerful CAD-based software generates highly accurate 3D layouts that show structural framing with every component in place from any perspective. iCommand, part of the IntelliView suite, enables truss manufacturers to manage business their way with unprecedented power and flexibility.

Alpine is part of the Residential Construction (North America) Division of Illinois Tool Works Inc. (NYSE: ITW), a Fortune 250 global multi-industrial manufacturing leader of value added consumables and specialty equipment with related service businesses. Founded in 1912, ITW's recipe for success has been consistent: value added products and outstanding service win the day with customers. ITW places a high premium on the development of highly engineered products and systems – most of which are developed in tandem with customers. And the company continues to ensure that customers receive timely, cost-effective service for the innovative products ITW provides. ITW's more than 50,000 dedicated colleagues around the world thrive in our decentralized, entrepreneurial culture. In 2016, the company achieved revenues of \$13.6 billion, with roughly half coming from outside North America. For more information, visit www.itw.com.

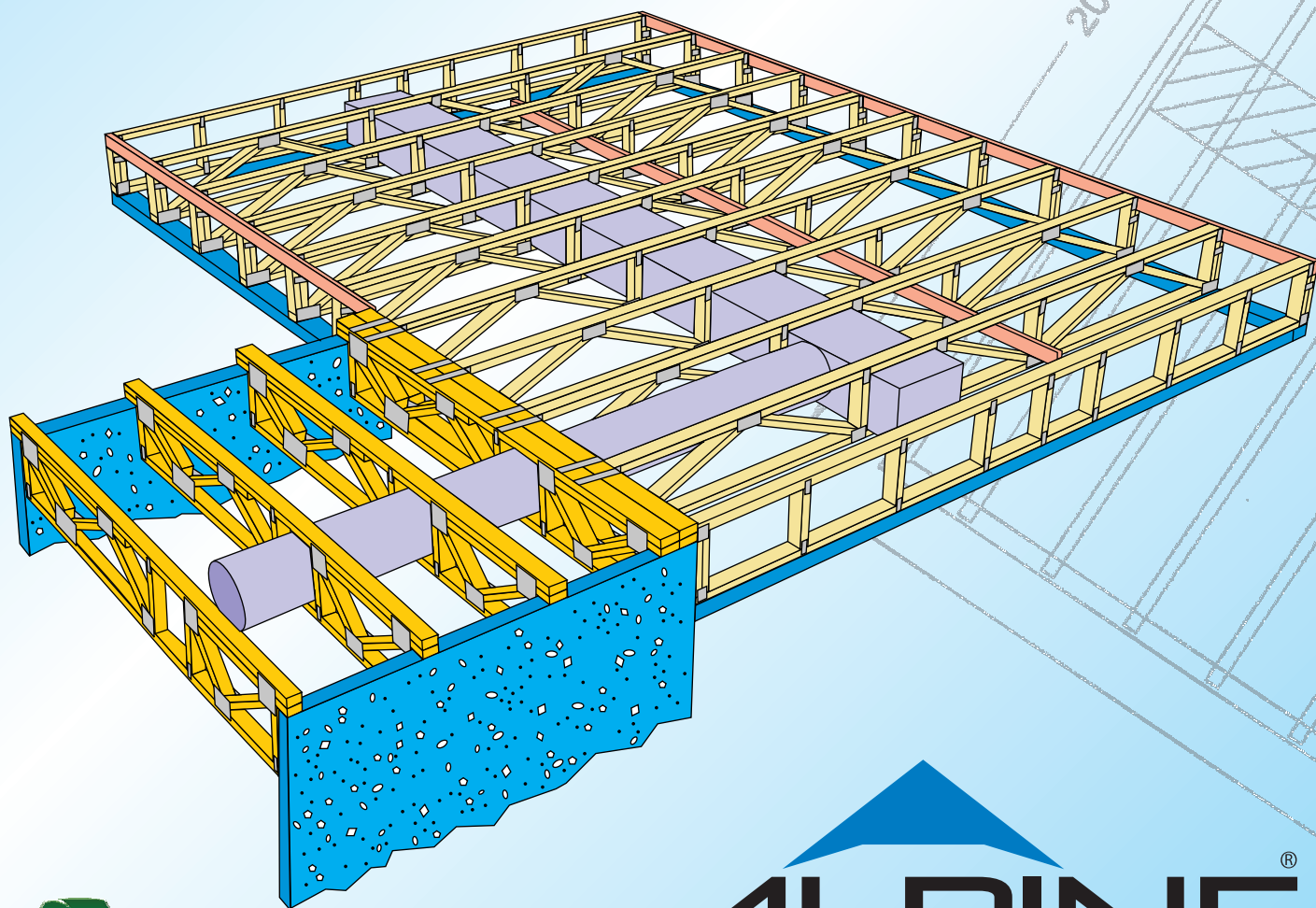


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For more information please contact mfagan@alpineitw.com



Get more Quality, Flexibility and Labor Savings using
FLOOR TRUSSES



Wood Floor Trusses are
Environmentally Compatible.

ALPINE[®]
AN ITW COMPANY



Builders want solutions that help them stay on schedule and maintain quality construction and profits. When compared to traditional joist construction, manufactured wood floor truss systems are better, stronger, and can be installed faster. A manufactured truss is an engineered structural component assembled from wood members, metal connector plates and other mechanical fasteners. The truss members form a rigid structural framework and are assembled such that the members form triangles. Most builders are familiar with roof truss systems, but may not realize the advantages of a manufactured floor truss system.

The benefits of manufactured wood truss floor systems are many. Floor trusses can span great distances, creating larger open spaces below unobstructed columns and partitions. Truss systems are quicker and easier to install than traditional floor joists, and because they're manufactured in controlled environments, there's less chance of warping, shrinking, and twisting of lumber. Manufactured floor truss systems also save timber resources by reducing the amount of wood waste generated during construction.



The component manufacturing process is simple and offers the professional builder plenty of time- and cost-saving resources along the way. Here's how it works:

House plans are sent by the builder to the wood floor truss manufacturer. There are hundreds of truss manufacturers operating nationwide, but builders should research the quality and delivery costs before choosing a vendor.

The building designer determines what loads need to be supported by the floor trusses. Then the truss designer determines how many trusses will be required, and their specific placement on the structure. The manufacturer then builds the trusses, labels them for accurate installation, and ships them to the builder on the jobsite.

A detailed diagram with the placements of the trusses is sent along with the order to help the builder place the trusses exactly where they should be installed.

Once the trusses are on the site, the builder can really start to see the benefits. The consistent size and height of the manufactured floor joist will mean easier sub-floor material installation, and the open web design allows for utilities to be run through in the floor system without drilling or cutting holes. These benefits will reduce the amount of time trade contractors spend on site, speed up construction, and ultimately save the builder money. The technology used in the design and manufacturing of floor trusses makes them a superior choice for builders looking to streamline construction and provide a higher quality home to their customers.



The Benefits of **FLOOR TRUSSES**



Floor trusses are delivered to your site, ready for installation. No cutting or fitting is required. Strong, lightweight and rigid "System 42" Floor Trusses go up easily and quickly. Often without the use of a crane. Expensive steelworkers, welders or riggers are not required. Your crew can do it all.

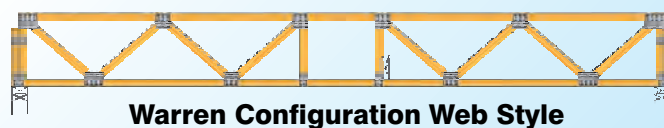
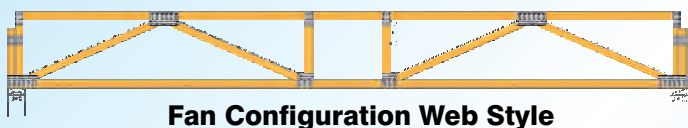
Decking and ceiling materials are attached directly to trusses without need for special hardware. And because System 42 trusses can be spaced wider apart, less trusses are required resulting in less nails to drive.

Mechanicals are installed quickly through the open webs without notching or furring. Electricians, A/C contractors and plumbers are off the job quicker.

System 42 provides longer clear spans providing exceptional design flexibility. For this reason, plus their cost saving benefits during construction, more and more architects are specifying System 42 Floor Trusses than ever before.

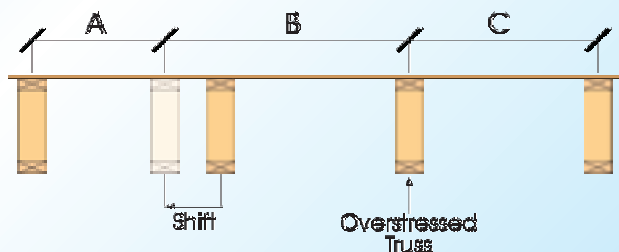


Two of the most common web patterns for floor trusses:



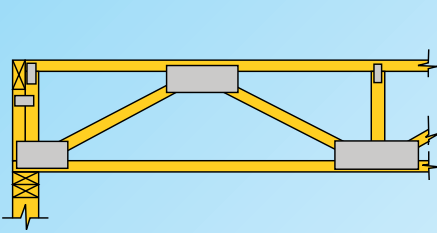
Floor truss are built with open chases for ductwork and have natural open spaces for plumbing and electrical wiring. Floor truss systems are sometimes called System 42's, because to build them manufacturers turn the 2x4's on their side. This allows for shallow depths as well as a 3 1/2" nailing surface. Some floors are built from 2x3's, others from 2x4's. Floor trusses can be manufactured with many different possible end conditions to accommodate different installation needs; around raised walls, pocketed beams, headers around stairways, etc.

Is it OK to move a floor truss? Typical floor trusses are engineered to be spaced evenly, and the truss design drawing verifies the required truss spacing. Occasionally the need will arise to shift one of the floor trusses from where it was designed to be. When this happens, please contact the truss manufacturer to be sure it works. Sliding a floor truss even a few inches puts more load on the truss you're moving it away from, as shown in the drawing below.

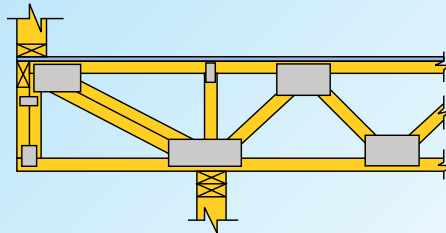


<u>If you shift it:</u>		<u>Then overstressed truss carries:</u>	
			B
24"	3"	6.2% more load than designed for	27"
on center	6"	12.5% "	30"
trusses	9"	18.7% "	33"
16"	3"	9.3% more load than designed for	19"
on center	6"	18.7% "	22"

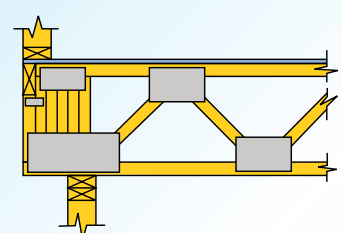
Check with the truss manufacturer before shifting a truss !



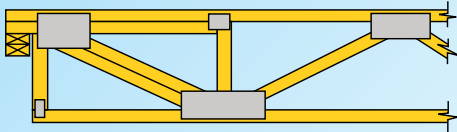
Bottom chord bearing on a stud wall.



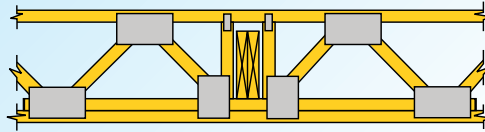
Cantilever with an exterior wall on the end.



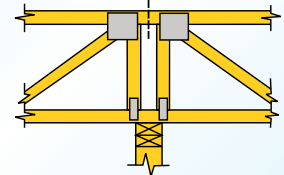
Bottom chord bearing with short cantilever and exterior wall.



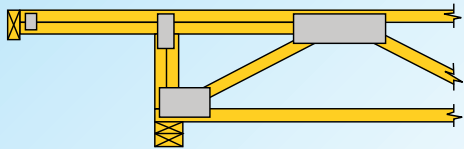
Top chord bearing on stud wall.



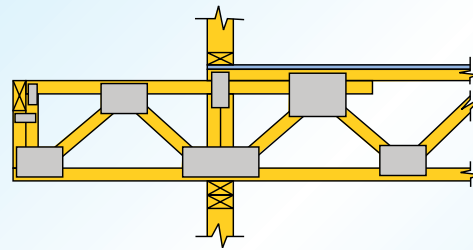
Floor truss designed to carry an interior header.



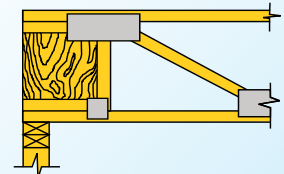
Interior bearing on wall



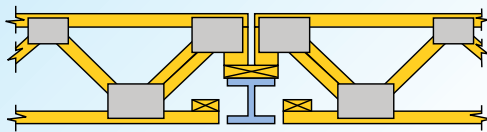
Overhang on a floor truss used on a roof.



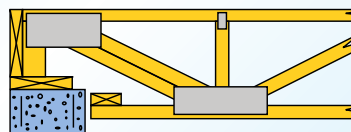
Dropped cantilever for use on exterior balconies.



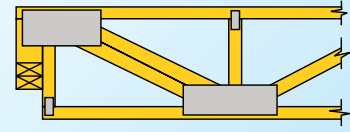
Trimmable end condition with I-Joist insert.



Interior top chord bearing with a variable end height.

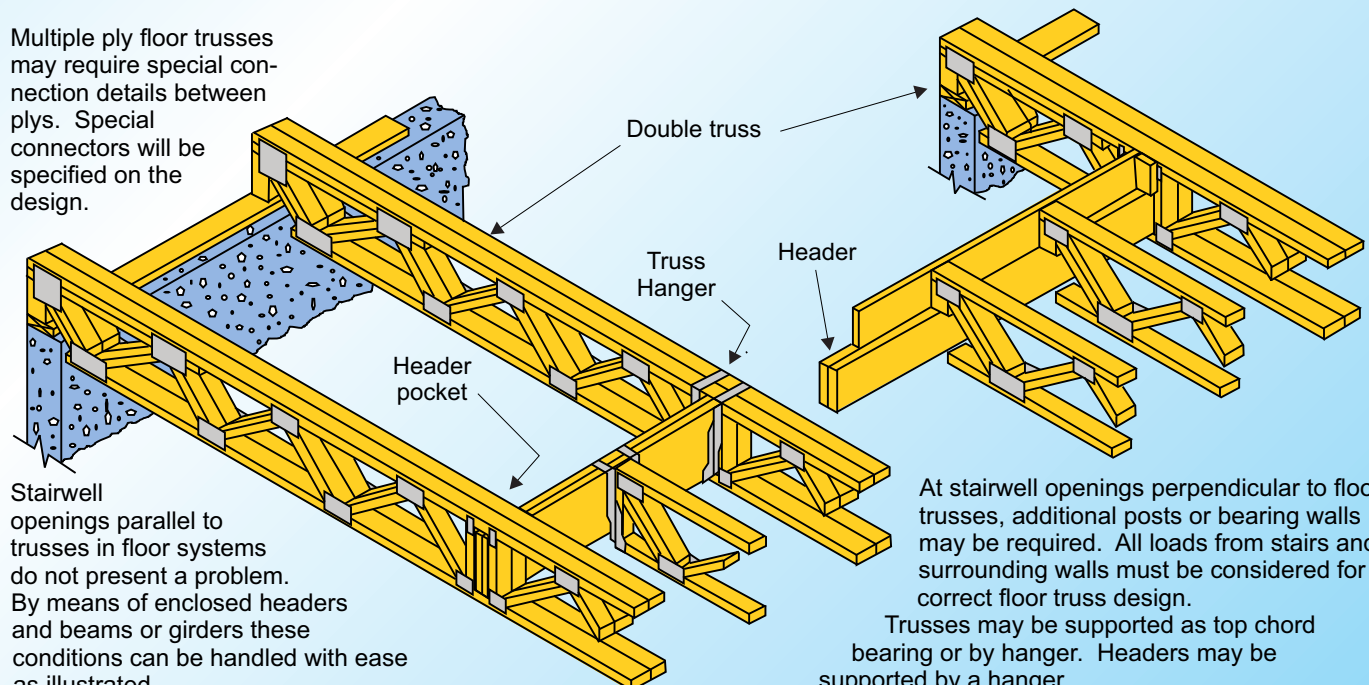


Top chord bearing with a variable end height.



Top chord bearing on stud wall with variable end height.

Multiple ply floor trusses may require special connection details between plys. Special connectors will be specified on the design.



Stairwell openings parallel to trusses in floor systems do not present a problem. By means of enclosed headers and beams or girders these conditions can be handled with ease as illustrated.

At stairwell openings perpendicular to floor trusses, additional posts or bearing walls may be required. All loads from stairs and surrounding walls must be considered for correct floor truss design.

Trusses may be supported as top chord bearing or by hanger. Headers may be supported by a hanger.

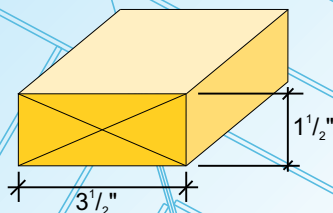
Span Tables for FLOOR TRUSSES



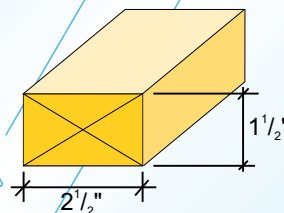
These allowable spans are based on NDS 2005. Maximum deflection is limited by L/360 or L/480⁽¹⁾ under live load. Basic Lumber Design Values are $F_{(b)}=2000$ psi $F_{(v)}=1100$ psi $F_{(c)}=2000$ psi $E=1,800,000$ psi Duration Of Load = 1.00. Spacing of trusses are center-to-center (in inches).

Top Chord Dead Load = 10 psf. Bottom Chord Dead Load = 5 psf. Center Line Chase = 24" max. Trusses must be designed for any special loading, such as concentrated loads. Other floor and roof loading conditions and a variety of species and other lumber grades are available.

**4x2
Lumber**



**3x2
Lumber**



40 PSF Live Load 55 PSF Total Load

Center Spacing	Deflection Limit	12"	14"	16"	18"	20"	22"
16" o.c.	L/360	22'2"	24'11"	26'10"	28'8"	30'4"	31'11"
	L/480	20'2"	22'7"	24'11"	27'2"	29'4"	31'5"
19.2" o.c.	L/360	20'9"	22'8"	24'4"	26'0"	27'6"	29'0"
	L/480	18'11"	21'3"	23'6"	25'7"	27'6"	29'0"
24" o.c.	L/360	18'5"	20'1"	21'7"	23'1"	24'5"	25'9"
	L/480	17'7"	19'9"	21'7"	23'1"	24'5"	25'9"

40 PSF Live Load 55 PSF Total Load

12"	14"	16"	18"	20"	22"
19'0"	20'9"	22'4"	23'10"	25'3"	26'7"
18'0"	20'2"	22'4"	23'10"	25'3"	26'7"
17'3"	18'9"	20'3"	21'7"	22'10"	24'1"
16'11"	18'9"	20'3"	21'7"	22'10"	24'1"
15'2"	16'7"	17'10"	19'1"	20'2"	21'3"
15'2"	16'7"	17'10"	19'1"	20'2"	21'3"

60 PSF Live Load 75 PSF Total Load

12"	14"	16"	18"	20"	22"
19'4"	21'4"	23'0"	24'6"	26'0"	27'4"
17'7"	19'9"	21'10"	23'9"	25'8"	27'4"
17'9"	19'4"	20'10"	22'3"	23'7"	24'10"
16'7"	18'7"	20'6"	22'3"	23'7"	24'10"
15'9"	17'2"	18'6"	19'9"	20'11"	22'0"
15'4"	17'2"	18'6"	19'9"	20'11"	22'0"

60 PSF Live Load 75 PSF Total Load

12"	14"	16"	18"	20"	22"
16'3"	17'9"	19'2"	20'5"	21'8"	22'9"
15'9"	17'8"	19'2"	20'5"	21'8"	22'9"
14'9"	16'1"	17'4"	18'6"	19'7"	20'7"
14'9"	16'1"	17'4"	18'6"	19'7"	20'7"
13'0"	14'2"	15'3"	16'4"	17'3"	18'2"
13'0"	14'2"	15'3"	16'4"	17'3"	18'2"

85 PSF Live Load 100 PSF Total Load

12"	14"	16"	18"	20"	22"
16'11"	18'6"	19'11"	21'3"	22'6"	23'8"
15'8"	17'7"	19'5"	21'2"	22'6"	23'8"
15'4"	16'9"	18'1"	19'3"	20'5"	21'6"
14'9"	16'6"	18'1"	19'3"	20'5"	21'6"
13'8"	14'10"	16'0"	17'1"	18'1"	19'1"
13'8"	14'10"	16'0"	17'1"	18'1"	19'1"

85 PSF Live Load 100 PSF Total Load

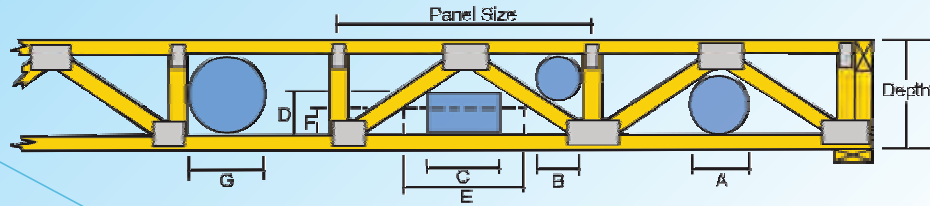
12"	14"	16"	18"	20"	22"
14'1"	15'5"	16'7"	17'8"	18'9"	19'9"
14'0"	15'5"	16'7"	17'8"	18'9"	19'9"
12'9"	13'11"	15'0"	16'0"	16'11"	17'10"
12'9"	13'11"	15'0"	16'0"	16'11"	17'10"
11'3"	12'3"	13'3"	14'1"	14'11"	15'9"
11'3"	12'3"	13'3"	14'1"	14'11"	15'9"

(1) Vibration Control -- Research by Virginia Tech indicates that L/480 live load deflection criteria provides a high degree of resistance to floor vibration (bounce). The building designer

desiring this benefit may choose to specify an L/480 live load deflection criteria to be used for the floor trusses.



Duct Openings For Fan Style Floor Trusses With 4x2 Chords & Webs

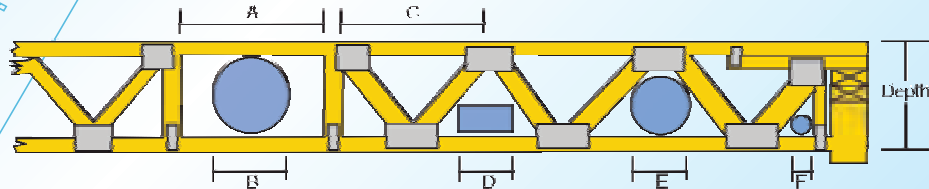


Typical Duct Opening Sizes For 4x2 Fan Style Floor Trusses

Depth	Panel Size	A	B	C	D	E	F	G
10	60	4 ¹ / ₂	4 ¹ / ₄	11	4 ¹ / ₂	16	4	7
11	60	5 ¹ / ₄	5 ¹ / ₄	12	5 ¹ / ₂	15	5	8
11 ⁷ / ₈	60	7 ³ / ₄	6 ³ / ₄	10	6 ¹ / ₄	14	5 ¹ / ₂	8 ³ / ₄
12	60	6 ¹ / ₄	6 ¹ / ₄	14	6	20	5	9
13	60	7 ¹ / ₄	7 ¹ / ₄	12	7	18 ¹ / ₂	6	10
14	60	8 ¹ / ₄	8 ¹ / ₄	17	7	22	6	11
15	60	9 ¹ / ₄	8 ¹ / ₂	15	8	25	6	12
16	60	10 ¹ / ₄	9 ¹ / ₂	14	9	27	6	13
18	60	12 ¹ / ₄	10 ¹ / ₂	14 ¹ / ₂	10 ¹ / ₂	26	7	15
20	60	14	11 ¹ / ₂	14 ¹ / ₂	12	26	8	17
22	60	16	12 ¹ / ₂	15	13	30	8	19
24	60	18	13 ¹ / ₂	16	14	32	8	21
26	60	19	14 ¹ / ₂	18	15	34	8	23
30	60	22	16	20	17	32	10	24
36	60	25	17 ¹ / ₂	22	19 ¹ / ₂	36	10	24

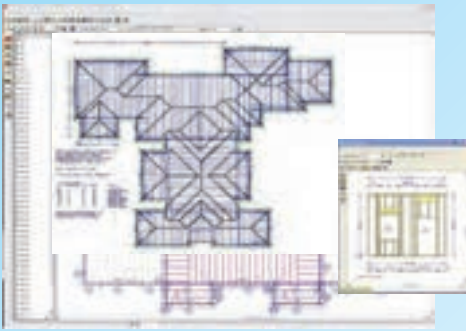
All Dimensions In Inches

Duct Openings For Warren Style Low Joists



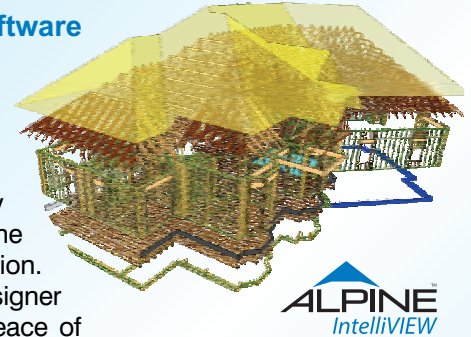
Depth	A	B	C	D	E	F
10	18	7	24	4x6	5	41/2
12	20	9	30	5x9	7	53/4
13	20	10	30	5x11	8	6
14	24	11	30	6x10	8 1/2	6 1/2
15	24	12	30	6x12	9 1/2	7
16	24	13	30	6x13	10	7 1/2
17	24	14	30	6x14	10 1/2	7 1/2
18	24	15	30	7x13	11	8
19	24	16	30	7x14	11 1/2	8 3/4
20	24	17	30	7x15	12	8 1/2
21	24	18	30	8x14	12 1/2	9
22	24	19	30	8x15	13	9
24	24	21	30	8x16	14	9 1/4

All Dimensions In Inches



Layout, Design and Engineering Software

Powerful CAD-based design software from Alpine generates traditional plan view layouts, and 3-D graphics that give an accurate picture of a structure from virtually any perspective by showing every component in place. Work confidently with the industry's best fully integrated design solution. Our IntelliVIEW software reduces both designer time and aggravation, giving you more peace of mind with fewer mouse clicks.



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Bracing is extremely IMPORTANT!! Every truss system needs adequate bracing. The purpose of most bracing is to ensure that the trusses and truss members remain straight and do not bow out of their plane. Inadequate, improper or incorrectly installed bracing can lead to collapses, failures and serious accidents. An engineered bracing system will avoid these pitfalls and ensure the structural integrity of the truss system. Trusses need to be braced during installation, which is called temporary bracing and they need permanent bracing which will remain installed for the life of the roof system.

Temporary Bracing Guidelines: For metal plate connected wood truss systems, refer to BCSI-B7 for proper installation bracing guidelines.

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Sound Transmission through Floor Trusses

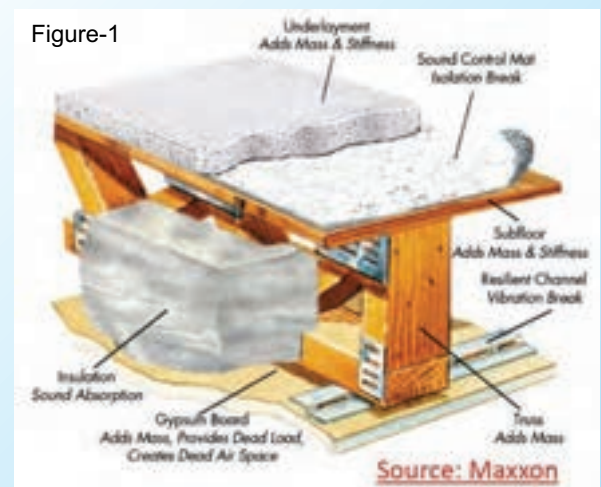
Common complaints about noise through ceilings in floor trusses include walking, moving furniture, and dropping objects, all of which are considered impact sounds. When addressing noise in floor systems, the Impact Insulation Class (IIC) rating is often the most critical value to consider. In general, IIC values for flooring are similar to their Sound Transmission Class (STS) values, so satisfying the code requirement for one will typically work for the other, if not come close.

A floor/ceiling's ability to limit sound transmission is not highly dependent on the type of joist or truss to be used, but rather the types of insulation, sheathing, flooring, and subflooring. Most basic floor/ceiling construction materials like gypsum board and hard surface flooring don't provide much IIC value.

The best methods for reducing impact noise, besides substantially increasing the floor systems mass, is to use specialized acoustic products such as resilient channels and special acoustic underlayment's, as identified in [Figure-1](#).

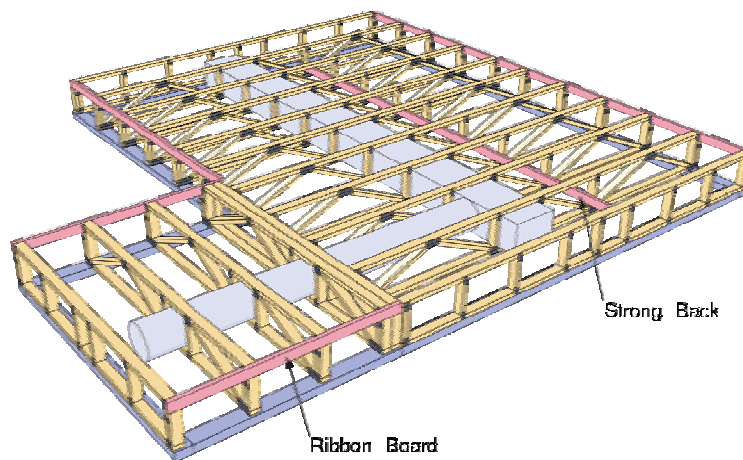
Many of these measures are effective at reducing only certain types of noise and work in combination with the other measures to create a complete soundproofing system. Batt insulation, for example, is effective for absorbing airborne sounds, but does little or no good against structural/impact noise. While carpeting with a fairly thick layer of padding beneath it is excellent at reducing impact noise, it is not effective against airborne noise. For additional information regarding Sound Transmission in Wood Floor and Roof Trusses, refer to SBCA report: **SRR No. 1601-03**.

Figure-1





- Faster Construction / Saves Money
- Longer Clear Spans
- Hides Mechanicals
- Spaced 24" oc., multiple depths
- Cantilever and Balcony Built In
- 3.5 Width Surface to Glue and Nail to
- Cold Air Returns can be Eliminated
- Reduce Field Material Losses
- Pick-up Interior Point Loads
- Custom Designed for your project
- Commercial & Residential Applications
- Trim-able ends for concrete mis-pours
- No Humps in Floors
- Sound and Fire Ratings
- Angled Walls



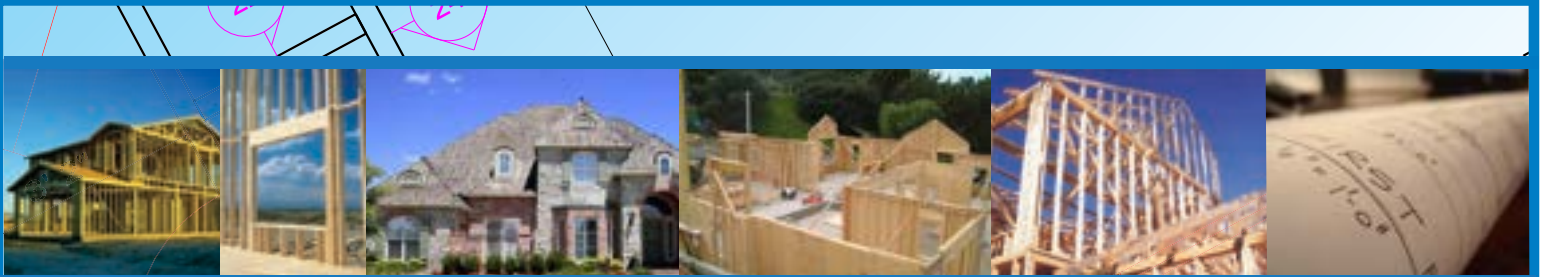
The System 42 floor truss system provide longer, stronger clear spans and greater design flexibility in locating bearing walls and partitions. Because the System 42 floor truss system can be spaced farther apart, fewer are needed. Delivered to the job site ready for installation, the lightweight, rigid floor trusses go up easily and quickly, often without the use of a crane. Wide (3 1/2"), nailable top and bottom chords speed placement of decking and ceiling material without the need of special fasteners or clips. Mechanicals are installed quickly through the opening between webs without notching or furring. Tradesmen are on and off the job faster resulting in earlier completion dates and lower on-site labor costs.

The innovative software, equipment, products and services available from Alpine, enables our customers to manufacture and sell the finest truss and wall components available in North America. Alpine offers component engineering services, design and management software, production equipment and truss connector plates. The pioneering concept developed for wood trusses was also applied to our revolutionary line of products and services for cold-formed steel components used in commercial applications. Alpine's software includes design and manufacturing programs that work together to quickly produce structural framing components. Our powerful CAD-based software generates highly accurate 3D layouts that show structural framing with every component in place from any perspective. iCommand, part of the IntelliView suite, enables truss manufacturers to manage business their way with unprecedented power and flexibility.

Alpine is part of the Residential Construction (North America) Division of Illinois Tool Works Inc. (NYSE: ITW), a Fortune 250 global multi-industrial manufacturing leader of value added consumables and specialty equipment with related service businesses. Founded in 1912, ITW's recipe for success has been consistent: value added products and outstanding service win the day with customers. ITW places a high premium on the development of highly engineered products and systems – most of which are developed in tandem with customers. And the company continues to ensure that customers receive timely, cost-effective service for the innovative products ITW provides. ITW's more than 50,000 dedicated colleagues around the world thrive in our decentralized, entrepreneurial culture. In 2016, the company achieved revenues of \$13.6 billion, with roughly half coming from outside North America. For more information, visit www.itw.com.



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Glenview, Illinois 60025
800-521-9790 - www.alpineitw.com



Get more Quality, Flexibility and Labor Savings using

WALL PANELS



Get more Quality, Flexibility and Labor Savings using
WALL PANELS

Builders want solutions that help them stay on schedule and maintain quality construction and profits. When compared to traditional frame construction, manufactured wall panels are better, stronger, and can be installed faster. A wall panel is an engineered structural component assembled from wood members.

Like other engineered wood products, wall panels save you time, money, and guesswork. All wall panels are developed by skilled technicians using sophisticated computer modeling software. The result is building components precision fitted to exact job specifications. You'll receive a layout for a complete wall system with framed-in openings for windows, doors, and headers, exactly as detailed on the plans.



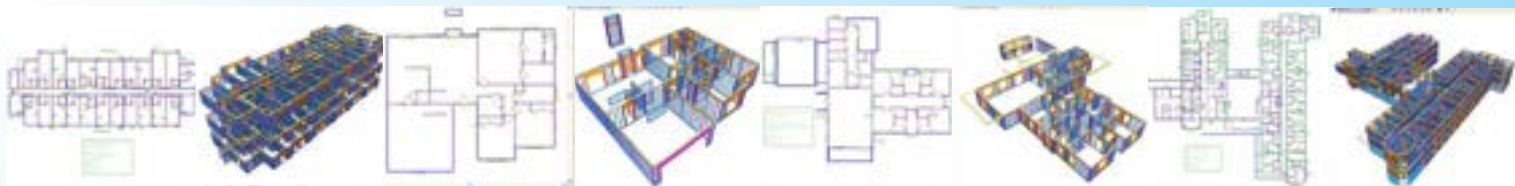
The component manufacturing process is simple and offers the professional builder plenty of time- and cost-saving resources along the way.

Here's how it works:

The building designer determines what loads need to be supported within the home. House plans are sent by the builder to the component manufacturer. There are hundreds of manufacturers operating nationwide, but builders should research the quality and delivery costs before choosing a vendor. Then the component designer determines the panels that will be required, and their specific placement in the home. The manufacturer then builds the component, labels them for accurate installation, and ships them to the builder on the job site.



A detailed diagram with the placements of the panels is sent along with the shipment to help the builder place the components exactly where they should be installed. Once the wall panels are on the site, the builder can really start to see the benefits. These benefits will reduce the amount of time trade contractors spend on site, speed up construction, and ultimately save the builder money. The technology used in the design and manufacturing of wall panels makes them a superior choice for builders looking to streamline construction and provide a higher quality home to their customers.

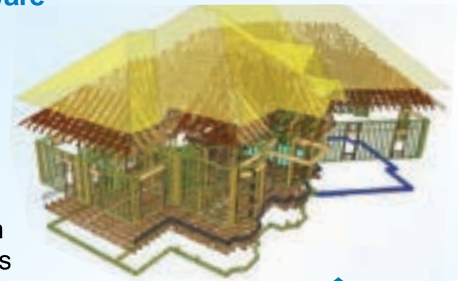


Get more Quality, Flexibility and Labor Savings using

WALL PANELS

Layout, Design and Engineering Software

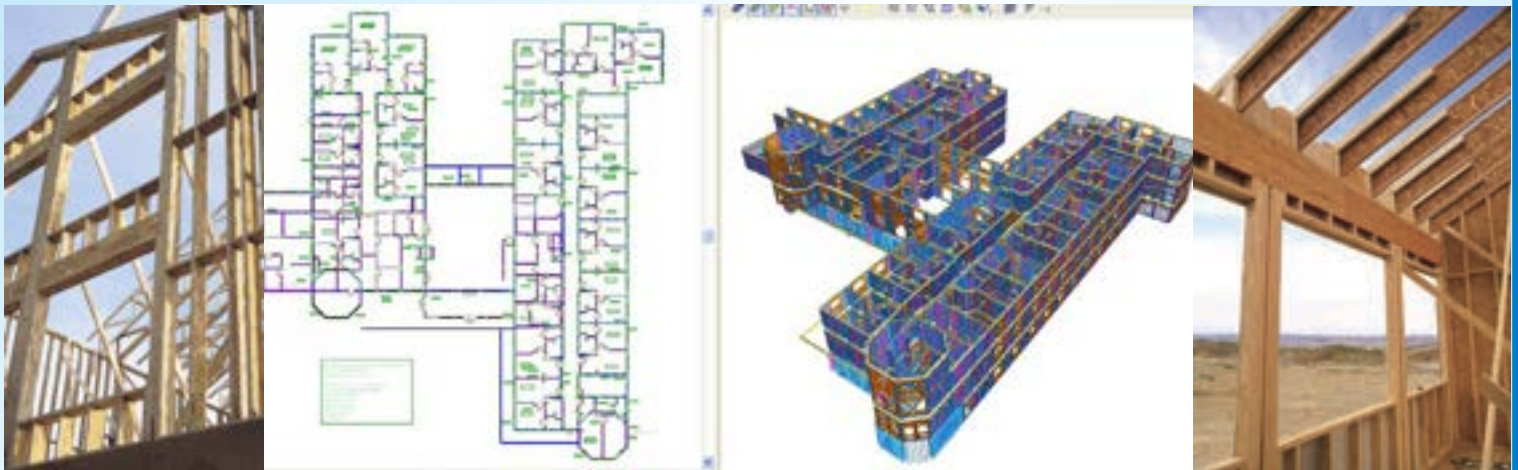
Powerful CAD-based design software from Alpine generates traditional plan view layouts, and 3-D graphics that give an accurate picture of a structure from virtually any perspective by showing every component in place. Work confidently with the industry's best fully integrated design solution. Our IntelliVIEW software reduces both designer time and aggravation, giving you more peace of mind with fewer mouse clicks.



ALPINE
IntelliVIEW

Wall Panels Save You Money

The dry-in time for a structure using wall panels is significantly shorter than stick framing. This saves money in construction costs. The simplicity of erecting a panelized structure allows for a less experienced construction crew, saving cost of labor and expensive mistakes from field decisions. Far less scrap is generated on a job-site using panelized walls.



Less Waste and Safe job sites

Because wall panels arrive as a complete system, you'll reduce waste from inaccurately cut lumber. Less waste results in lower cost of dumpster removal. Additionally, the amount of shrinkage, warping and twisting of the material due to weather conditions is greatly reduced. Panelization reduces the amount of lumber being cut on a job site. Thereby, reducing injuries resulting from cutting lumber.



Job Site Look Like This?

Get more Quality, Flexibility and Labor Savings using

WALL PANELS



You Can Save Time, Money and Build a Better Home

Wall panels are built in a controlled environment using precision laser technology to ensure consistent quality and fit. Because the wall panels arrive on site as a system, there are fewer construction delays, allowing you to complete more homes per year.



Get the Job Done Faster

When wall panels arrive on your job site, each one is labeled and accompanied by detailed instructions for set-up sequence and placement. This speeds up installation.

Reduce Your Labor Needs and Costs

Using wall panels means faster installation time. It also means you'll need fewer framers, which translates into more cost savings for you. You're able to maximize your team with only one crew leader. General contractors can also manage multiple job sites more efficiently. In addition, wall panels require less cutting and nailing so you can reduce the risk of job site injuries.



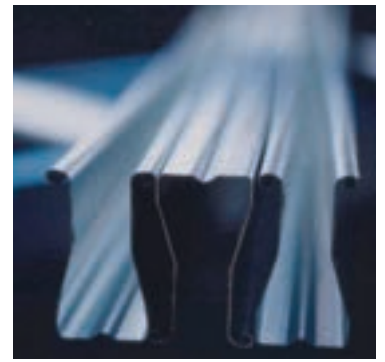
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Leadership



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ENGINEERS INSTITUTE



CFSC

Cold-Formed
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Steel Framing Alliance™



SFIA
STEEL FRAMING INDUSTRY ASSOCIATION

TrusSteel Provides Peak Performance

The innovative TrusSteel Cold-Formed Steel Truss System offers proven, reliable and economical solutions for virtually every roof or floor application. It delivers strength and stiffness, highly efficient transfer of structural loads and greater stability for easier handling and installation. That's why it's the most accepted and specified cold-formed steel truss system available.

Today, as a member of ITW's North American Construction Group, Alpine TrusSteel is building upon its firm foundation of experience and stability by continuously delivering new products and services to the marketplace. TrusSteel embraces its role as the industry leader in engineering, software development and metal forming technology. These leadership qualities have led to more TrusSteel trusses being installed each year than any other proprietary CFS truss system.

TrusSteel provides ongoing leadership to the cold-formed steel truss industry through active participation in key organizations such as the Cold-Formed Steel Engineers Institute and the American Iron and Steel Institute. TrusSteel is also actively involved with the International Code Council, Underwriters Laboratories and the U.S. Green Building Council.

TrusSteel's state-of-the-art roll-forming facility in Pontotoc, Mississippi opened in 2014. The 150,000 sq. ft. facility is currently home to precision high-speed roll formers that manufacture all rolled chord and web products for the TrusSteel system. Strategically located near multiple steel mills ensures a minimal carbon footprint that enhances LEED credits and delivers best-in-class practices.

Innovation

Unique Chord Sections

The symmetrical shape of the TrusSteel patented U-shaped chord sections provides nearly equal chord member moment capacity in both in-plane directions. The TrusSteel chord members have superior bending strength in out-of-plane directions. These characteristics combine to create an efficient truss that is exceptionally strong and stiff.

Multiple Web Sections

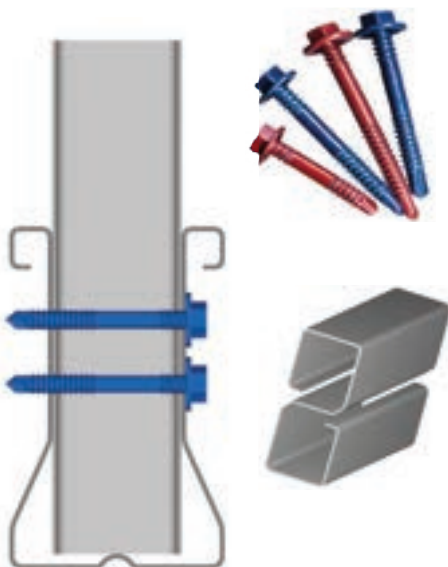
TrusSteel combines its patented roll-formed webs along with fully welded rectangular tube webs, both in various sizes and steel thicknesses, to attain strength and suitability simultaneously. These symmetrical shapes contribute to the stiffness and stability of each truss which reduces bracing by eliminating torsional buckling.

Patented Fasteners

TrusSteel revolutionized the CFS truss industry with the introduction of Double-Shear™ fastener technology. This patented technology provides a rigid, bolt-like connection at all chord/web intersections and is specifically designed to resist movement and back-out. In addition to strength, the color-coded fasteners deliver a dependable and easily inspected connection.

Structural Connections

TrusSteel manufactures a comprehensive line of truss-to-truss and truss-to-bearing connectors, which provide consistent quality and ease of field installation. The industry's most extensive library of Standard Details, which describes our connections, capacities and section properties, is available in various CAD formats via www.TrusSteel.com.



Productivity



Design Flexibility

TrusSteel provides span capabilities with greater design flexibility than those of competing products such as bar joists and cee stud trusses. As a result, you can design in familiar roof lines, pitched or flat, with hips, gables, gambrels, mono pitch, mansards, cantilevers, overhangs, scissors and floor trusses - even curves and barrel vaults using TrusSteel's ARC™ truss system. TrusSteel delivers a framing solution for all types of construction including retrofit.

Easy to Specify and Design

TrusSteel's comprehensive Truss Design Manual contains information on the latest industry standards and building codes, a guide specification in CSI format, and standard details in DXF and DWG formats, assuring that your specs and construction documents are accurate and complete. Local TrusSteel fabricators can aid you in making informed decisions about project designs and costs.

Availability

TrusSteel supports the most extensive network of CFS truss fabricators in the industry. This nationwide network assures that TrusSteel trusses are available for your projects in every region of the United States and Canada. Authorized Fabricators may qualify as "local" suppliers toward LEED point calculations.

More Information

For in-depth technical and application information on TrusSteel, go to www.TrusSteel.com. You can download CAD details, order a Truss Design Manual or request an educational seminar.



Responsibility



Project Phoenix - Pentagon Rebuild



Ka'anapali Ocean Resorts - Maui, HI

Responsible Products

TrusSteel CFS trusses contribute to a safer built environment. They do not emit moisture or fumes during their life cycle. They are resistant to insect attack, and do not provide a medium for the growth of mold. And, since steel is the most recycled building material, TrusSteel can help you reach your LEED goals.

Recognized Fire Resistance

Noncombustible TrusSteel trusses provide integral, recognized fire resistance that does not fade with time. See our Truss Design Manual or our website for more information on TrusSteel's useful, cost-saving UL-listed roof and floor assemblies.

Structural Performance

Backed by nearly 50 years of experience in the truss industry, you can be assured that TrusSteel understands the structural performance of trusses. The powerful SteelVIEW™ truss design software analyzes each truss using the latest industry standards, guided by AISI Design Standards. TrusSteel's unique multi-node modeling, derived and validated from full-scale testing, delivers the most accurate structural analysis within the industry.

Quality Trusses

TrusSteel CFS trusses are built in a shop environment with experienced fabrication personnel. TrusSteel endorses industry truss shop quality control standards developed by the SBCA Cold-Formed Steel Council.

Economical System

Since TrusSteel CFS trusses are the stiffest trusses in the industry, less permanent bracing is typically required within the truss system. This feature, combined with excellent performance at 4 ft. or greater on-center spacing, can reduce the cost of the installed truss system through reduced labor costs, materials and project duration. Property insurance premium discounts may provide long-term savings.

Availability



Who is a TrusSteel Authorized Fabricator?

An Authorized Fabricator is an independently owned and operated local truss fabrication shop. Each Fabricator markets and services truss projects in their own region, backed by our near 50 continuous years of truss experience. Taken together, the nationwide network of TrusSteel Authorized Fabricators forms a vast repository of truss and framing knowledge at your disposal.

Knowledge Base

TrusSteel Authorized Fabricators are truss experts. They can answer questions about truss applications and installations, as well as questions about pricing and delivery. Do you have questions about CFS roof framing systems, truss layouts, spans, spacing, profiles, systems, connections, bracing, overhangs, mechanical chases...and more? Call your local Authorized Fabricator. They can save you money up front in your design development or structural design process.

Engineering

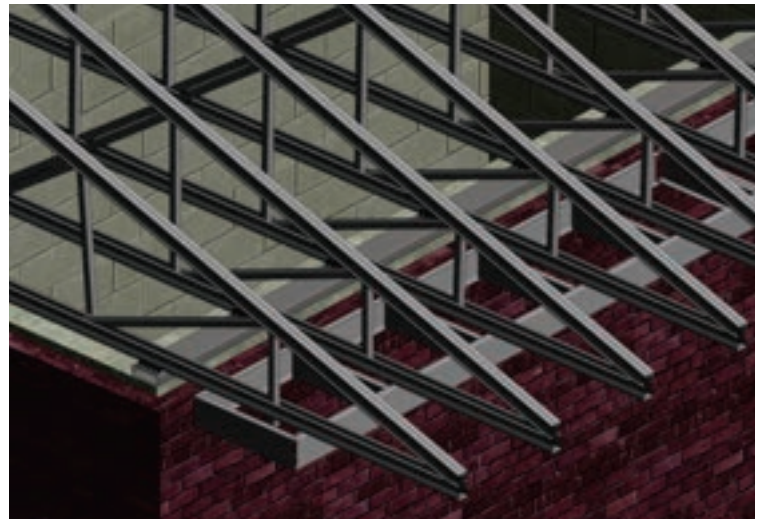
All TrusSteel trusses are engineered trusses. Authorized Fabricators provide not only building components, but can provide, through their integration with TrusSteel, individually-engineered and sealed truss designs. TrusSteel has a staff of in-house engineers that reviews and seals hundreds of thousands of trusses each year, in every state and Canadian provinces.

Quality Trusses

Each Authorized Fabricator builds TrusSteel trusses in a plant environment to ensure the highest-quality components. Trusses are built according to engineered shop drawings and highly accurate cutting/assembly drawings created by Alpine SteelVIEW software. TrusSteel trusses are built with patented Double-Shear fasteners and internal connectors to assure consistently accurate trusses.

How Can I find TrusSteel Authorized Fabricators?

You can find a list of TrusSteel Authorized Fabricators on the TrusSteel website at www.TrusSteel.com. Or you may call TrusSteel at (888) 565-9181.



Profitability



Safer and Easier to Install

The unique features of TrusSteel trusses make them safe to handle and erect. Stiffer trusses add handling control and reduce the danger of buckling during lifting and placement. The rolled edges of the chords and webs help protect workers from cuts. TrusSteel trusses can be as light as one-half the weight of similar wood or "C" channel steel trusses. Unlike some other CFS trusses, laterally stiff TrusSteel trusses resist folding or "butterflying" and perform exceptionally well in rafted installations.

Reduced Callbacks

TrusSteel trusses reduce callbacks because they start straighter and remain straighter than many other types of trusses. The dimensional stability of steel also reduces drywall fastener pops.

Delivered Quality and Value

TrusSteel trusses help you achieve your quality goals: roof lines that plane accurately, eaves and soffits that align properly and interior ceiling lines that are flat and true. From bidding to punch list, TrusSteel delivers value to your project through increased safety, quality, efficiency and cost-effectiveness.



Save Time and Money

- | | |
|-------------------------------|-------------------------------|
| ✕ Turnkey Packages | ≈ Experienced Designers |
| ✕ Sealed Engineering Drawings | ≈ Shop-Fabricated Trusses |
| ✕ Field Installation Details | ≈ Accurate Truss Layouts |
| ✕ BIM-Enabled | ≈ Comprehensive Shop Drawings |
| ✕ Floor Trusses | ≈ Curved ARC Trusses |
| ✕ Timely Quotations | ≈ UL-Rated Assemblies |

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 costs in design and installation. The unique u-shaped, symmetrical chord section allows TrusSteel to deliver unequalled clear span capabilities and structural performance. Mechanical, Electric & Plumbing systems are easily installed throughout the plenum of the TrusSteel floor truss due to top & 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 air-borne and impact sound transmissions are available.

Deflection Criteria

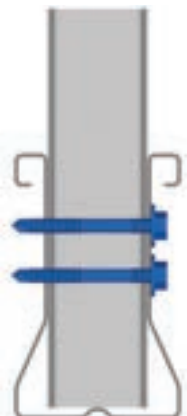
TrusSteel floor trusses may be designed to any deflection criteria required by the building designer. Typical Live Load deflection limitations of L/360 and L/480 are addressed in the maximum span charts shown on pages 2 & 3. Project specific serviceability may warrant more stringent criteria which should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

Bracing & 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.



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"

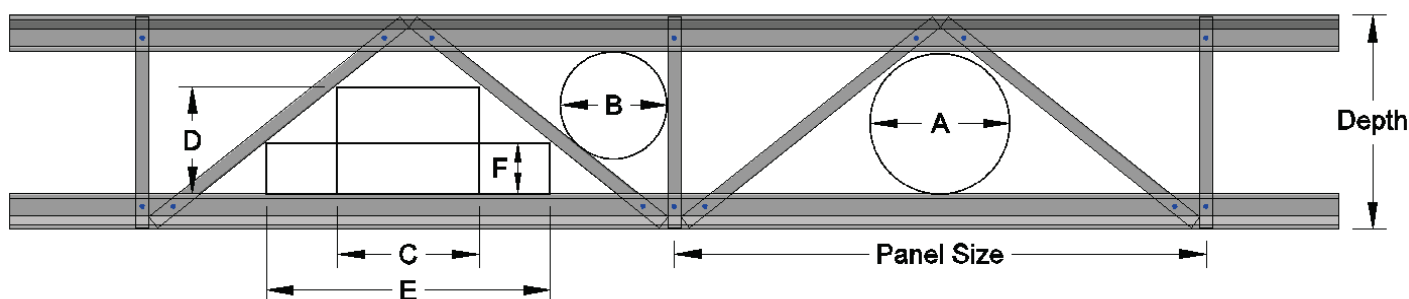
40 PSF Live Load & 40 PSF Dead Load

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"

40 PSF Live Load & 15 PSF Dead Load

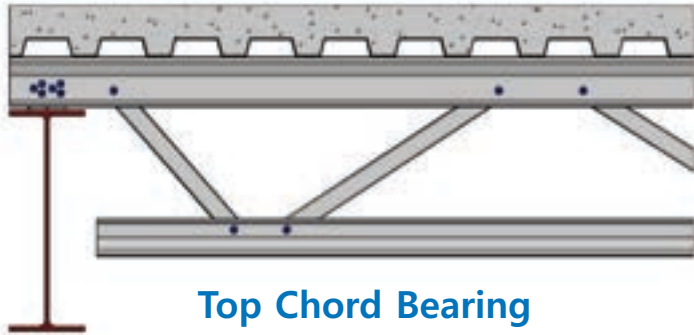
Depth	Live Load Deflection Criteria = L/360 Total Load Deflection Criteria = L/240				Live Load Deflection Criteria = L/480 Total Load Deflection Criteria = L/360			
	On-Center Spacing				On-Center Spacing			
	12"	16"	19.2"	24"	12"	16"	19.2"	24"
12"	24'-6"	24'-6"	24'-6"	24'-6"	24'-6"	24'-6"	24'-6"	24'-6"
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.

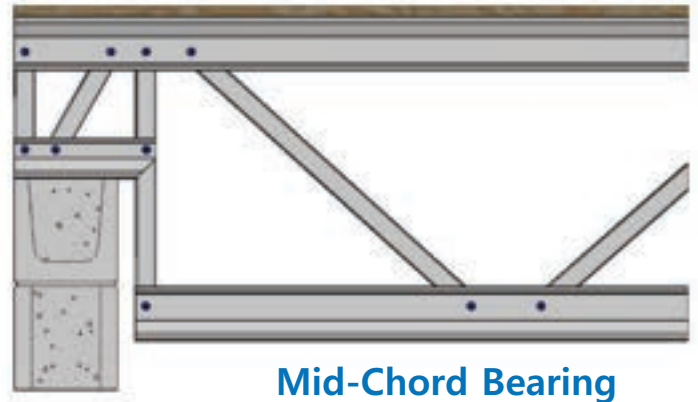


Approximate Duct Opening Sizes for TrusSteel Floor Trusses

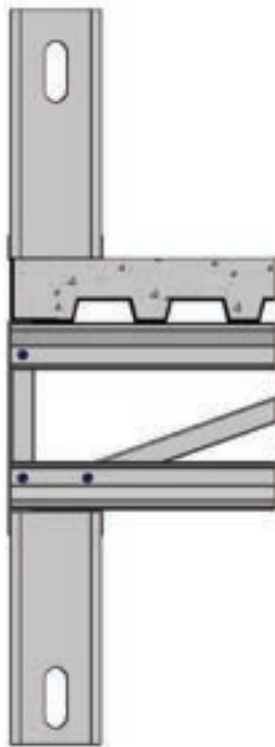
Depth	Panel Size	A	B	C	D	E	F
12"	60"	5"	4-7/8"	14"	4-3/8"	20"	3-3/8"
14"	60"	7"	6-5/8"	17"	5"	22"	4-1/8"
16"	60"	9"	8-1/4"	14"	7-3/8"	27"	4-1/8"
18"	60"	11"	9-7/8"	14-1/2"	8-7/8"	26"	5-3/8"
20"	60"	13"	10-1/2"	14-1/2"	10-3/8"	26"	6-5/8"
22"	60"	14-3/4"	11-1/2"	15"	11-5/8"	30"	6-1/8"
24"	60"	16-1/2"	12-3/8"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



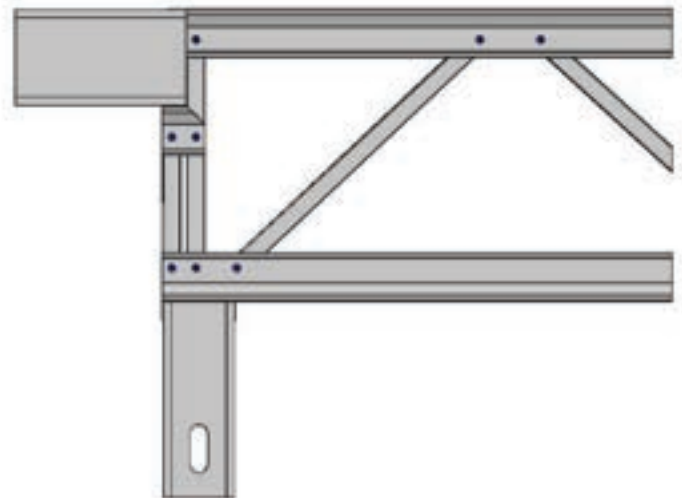
Top Chord Bearing



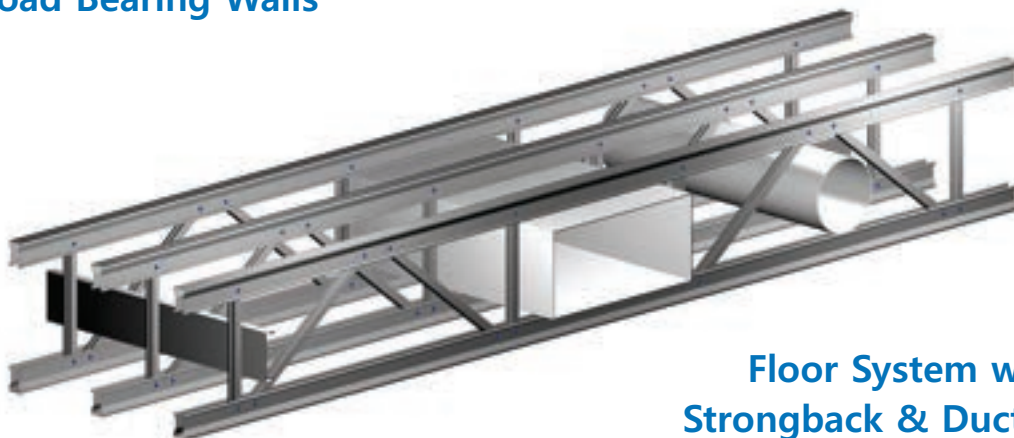
Mid-Chord Bearing



Exterior Load Bearing Walls



**Bottom Chord Bearing at
Corridor Wall with Joist Pocket**



**Floor System with
Strongback & Duct Work**