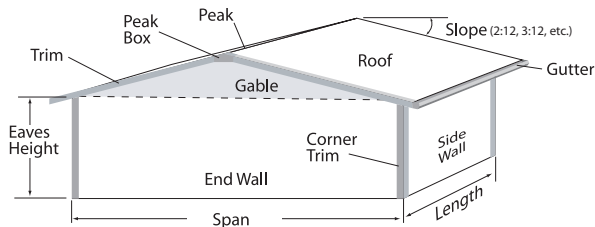


Metal Building Basics

Building Terminology

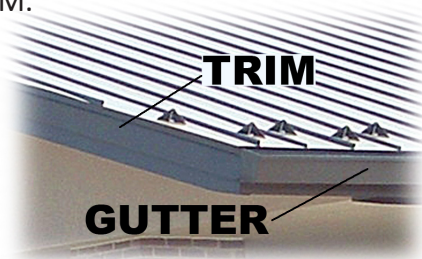
Understanding basic terminology is the start of a successful metal building project. At the simplest level, most buildings will have four outside walls. The two walls that run parallel with the ridge line and meet the lowest edge of the roof are called the SIDE WALLS. The other two walls that run perpendicular to the ridge, and rise to meet the roof peak are called the END WALLS.



The point where the sidewall and the roof meet is called the EAVE. Eave height is measured from the bottom of the base plate to the point where the sidewall and the roof intersect, or the eave strut.

Metal buildings usually require trim or GUTTERS along the eaves. The edges of the roof perpendicular to the ridge usually require TRIM for a finished look. The roof pitch or SLOPE is an important factor in designing a metal building. It is determined by measuring the amount of height drop per foot, and expressed as a ratio, such as 4:12. A 4:12 ratio indicates that the roof slopes down 4 inches per every 12 inches away from the ridge.

The GABLE is the triangular area formed between the two eaves points and the peak, on the end wall. Where the end walls and side walls meet is typically finished out with CORNER TRIM.

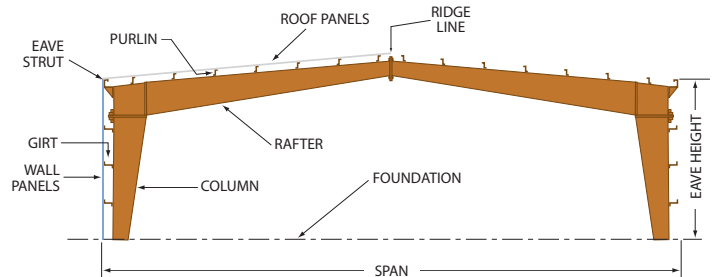


A metal building is measured by SPAN, LENGTH and EAVE HEIGHT. The span is measured between the side-wall girt on one side and the sidewall girt on the other. The span is usually measured on the end wall plane, and is parallel with the framing rafters. The length is measured along the side wall plane, end wall to end wall. The eaves height is the measurement between the base plate and the eave strut.

Structural Framing

In reality, metal buildings are usually more involved than our previous illustration. But regardless of their complexity, all metal buildings have similar parts.

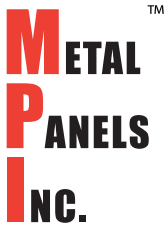
Metal buildings are built on a poured concrete foundation, over load-engineered footings. Anchor bolts are set into the footings to attach the columns of the frame. The frame columns and frame rafters make up the primary structural frame of the building. Between



the frames, lighter frame members span horizontally for lateral strength and wall attachment. These members are called SIDE WALL and END WALL GIRTS. The members that span across the roof between the frames are called PURLINS.

Framing Types

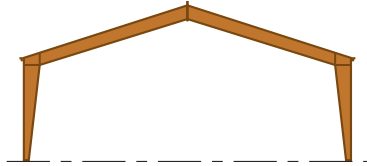
There are several types of building frames, each ideally suited to a specific building application. They are shown on the following page.



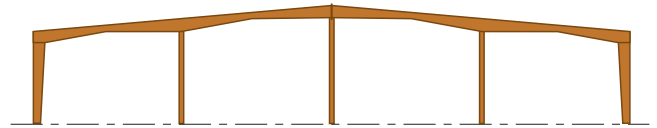
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(918) 641-0640 fax
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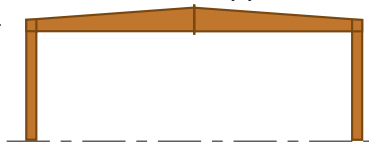
Clear-span frames feature great strength with no required interior supports. This frame design is ideal for factories, warehouses, and storage buildings. Clear-span frames are a good choice for buildings up to 150 feet wide.



Multi-span tapered beam frames are well-suited for large buildings with low-sloped roof designs.

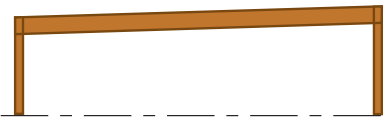


Clear-span taper frames offer the same superior strength and clear space without interior supports, but are best suited for low-sloped roofs.

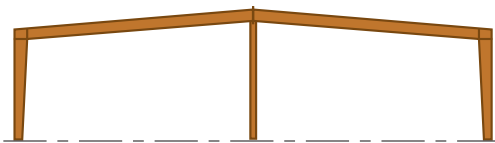


Building Panels

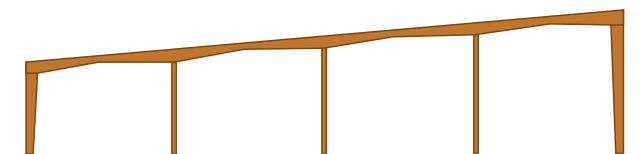
Clear-span single-slope frames have different eave heights so that the roof of the building “slopes” up from front to back. Single slope frames are ideal for strip centers, mini-storage and office center applications.



Modular frames employ interior columns in their design. Modular frames can use lighter spans because of the interior support, and do not have maximum width restrictions.

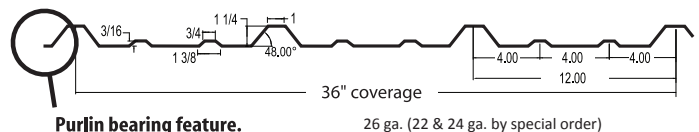


Modular single-slope frames are ideal for larger spaces such as strip centers or other commercial applications where lighter framing or larger spans are required.



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