PHOENIX METAL
Buildings and Barndominiums

METAL BUILDING TERMINOLOGY

Rigid Frame Building (PEMB - pre-engineered metal building)

- Metal building with steel columns and rafters (straight or tapered)
- Straight columns and rafters means that they are made from constant shaped I or H beams. Each of these beams has an industry standard size.
- Tapered columns and rafters means they are not constant in size and are fabricated based on the engineering of the building. These pieces are created by cutting out specific sizes of plate and welding them together to make a column or rafter. There is no industry standard on tapered frames.
- Frameline is defined as one complete set of columns and rafters in a building.
- PBR (purlin bearing rib) panels are the most common type of panels that come with a PEMB. These have to be a minimum of 26 gauge sheet metal. These sheets play a part in the structural integrity of the building.
- Standing seam panels or concealed fastener panels are used on the roof of a PEMB instead of PBR panels in a few applications. These applications can occur when the roof pitch is lower than .5/12, when it is architecturally specified, when it is Weathertite warrantied or when it is aesthetically preferred. These panels are not screwed down like normal PBR. They use a clip system that is hidden by the panel itself but allows the roof to "float" during extreme weather conditions.
- Doors - A 3070 walk door is a 3'x7' man door with the frame put anywhere in the metal building to gain access to the inside. RUD is a roll up door, and these come in many sizes. They roll up into a drum mounted above the door frame.
- Windows - A PEMB comes with the desired window framing, but windows are purchased separately from another company.
- Insulation - 3" VRR is the typical insulation provided by most manufacturers. Thickness can be increased if needed. 3" is R11 on the industry standard scale.
- Wind framing - Cable bracing is the typical wind framing in a PEMB. This consists of steel cable made to length with eye bolts on each end to attach to columns and/or rafters. Portal frames and wind bents are more specific wind framing.
- Purlins - Purlins are called coldformed members as they are created by running flat metal through a series of dies to create the needed profile. Profiles are Zee, Cee, Open Cee, Eave Struts and Angles. These are created out of 16, 14 and 12 gauge material based on the software that created the metal building. Purlins in the wall are called girts, and purlins in the roof are called purlins.
- Structural bolts (A325) are used to bolt the columns and rafters together.
- Non-structural bolts (A307) are used to bolt purlins onto the columns and rafters.
- Fasteners - Standard or Lifelong screws are used in PEMB to fasten the panels to the purlins. Using Standard screws in the walls and Lifelong in the roof is the standard practice in the industry.

- Trim - Trim incorporates the pieces of sheet metal used to cover up edges of the panels and hide other items. Most common trim is ridge cap, gable rake, eave trim, gutters and downs, outside corners, base trim and j channel. Every piece of trim has a purpose, and it is made from at least 26g material.

Advantages of Rigid Frame Buildings

- Versatile and Unique – You can combine standardized components such as framing systems, wall systems, roof systems and other options to create your own design. In addition, our materials come in a variety of colors, textures and shapes.
- Material Strength – Steel buildings are more resilient to fire, seismic activity and weather. They also do not have the problems of termites, rotting and warping that can be found in wood frame homes.
- Reduced Construction Time – Many of the components of a pre-engineering metal building are built ahead of time and delivered to your site ready to be erected.
- Durability – The metal is specially coated to help retain color and resist dirt. Steel can stand up to the elements better that most materials that are used in constructing a traditional home.

Pole Barns

- Pole barns are made with metal trusses connected to 6x6 or 8x8 posts, then 2x6s are primarily used as purlins. The sheeting is typically made from an Ag profile of 29 gauge sheet metal.
- The trusses are made with structural angle iron cut into specific lengths and welded together. These are considered the rafters of a pole barn.
- Posts - These are the columns of a pole barn and are 6x6 or 8x8 depending on the size of the trusses. These are CCA treated posts to slow the rot process since thery are buried 4 feet in the ground with concrete.
- Panels - Ag panels (residential panels) are used on pole barns and are made from 29 gauge material, which is lower in cost. They have many color options as well.
- Trim - Ag panel trim, like PBR trim, is made to cover edges and hide other items. These pieces are made from 29g sheet metal as well.
- Structural bolts (A325) are used to bolt the trusses together at the ridge.
- Fasteners - Fasteners for the pole barns are like those used for the PEMB – Standard on the walls, and Lifelong on the roof.
- Insulation - Bubble insulation is typical in a pole barn. It comes as single or double insulation. It has a reflective side and a white side. The reflective side is installed to the outside to reflect the heat. Good in the summer, but not so good in the winter. Three inch insulation can be put in a pole barn, but panels must be upgraded to 26 gauge panels.
- Doors - 3070 walk doors or RUD can be used in a pole barn just like in a PEMB.
- Pole barns are not engineered in any way and use wood for most of the framing, so the cost is usually lower to manufacture. Alternatively, a PEMB can provide a wind rating and engineering documents, so it is used when building codes must be followed.