



Appendix F – Temporary Bracing

Last updated 10/4/2024

Overhang Framing Installation

Temporary Bracing

The installation of temporary bracing is critical to avoid building collapse or damaging structural movement during construction. This collapse can occur with no notice and as such the installation of appropriate temporary bracing is critical to avoid damage, injury, and possible death. Determination, procurement, and correct installation of temporary bracing is the responsibility of the builder / primary contractor / installer.

Bracing Materials

The constructor / installer is to supply suitably sized materials for temporary bracing. These materials are generally capable of tension, but in some circumstances will need to be capable of tension and compression.

Load rated ratchet strapping of an appropriate size can be used to temporarily “x-brace” bays in both directions, until the final bracing systems are fully installed. This is especially critical for buildings where X Bracing is not required in the final structure due to the use of moment frames or diaphragm bracing.

Temporary Bracing Location

The location of Temporary bracing will depend on the installation method used. Installation should be completed in accordance with the Construction Package, Engineering Plans, and Instruction Manuals.

If the Frame First Method (most common) is used, then the use of tension only bracing and creating temporarily braced bays as per Fig 1 and Fig 2. can be used. As a basic guide, a minimum of every 4th bay should have temporary bracing installed as per Fig 2.

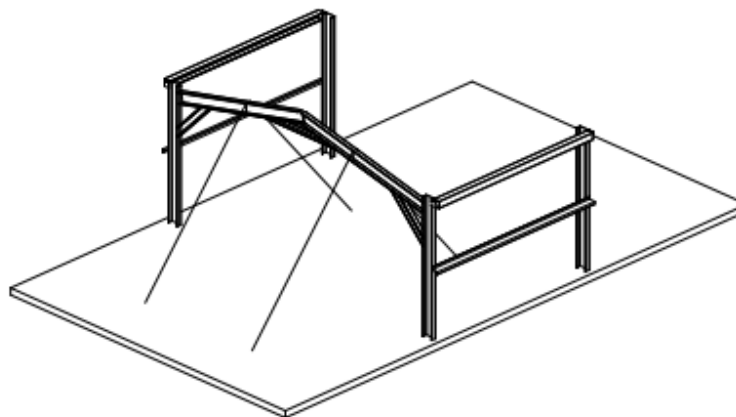


Fig 1. Frame First Temporary Bracing on First Rafter Installed

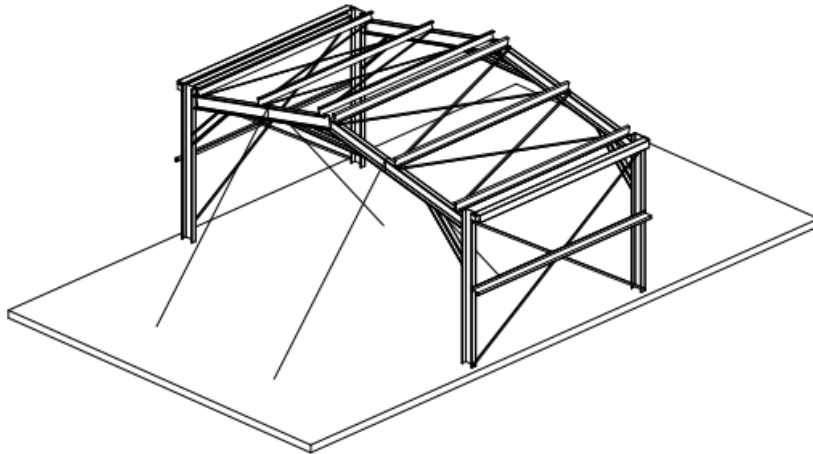


Fig 2. Temporary Bracing Installed as X Bracing

If the Tilt Up Method is used (where walls are constructed on the ground and then tilted into place), then the tops of columns are braced with a tension and compression brace in the same direction Fig 3. Then rafters and purlins can be installed with temporary bracing holding rafters in place (similar to Fig 1) until final bracing of diaphragm sheeting is installed.

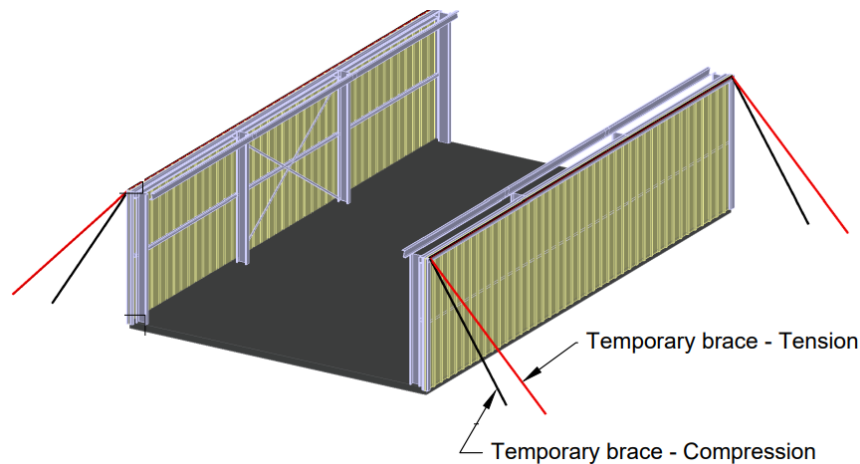


Fig 3. Tilt Up Method – Temporary Bracing

Typically, braces should be positioned diagonally across the structure from the top to the bottom, intersecting near the midpoint to provide stability, optimally at a 45-degree angle but no less than a 20-degree angle.

The connection strength of temporary bracing is a critical consideration, and these connections must be capable of resisting the potentially substantial temporary bracing loads – whether this connection point be to the building, the foundations or to the ground. Dependent upon building size this may include heavy angles and post installed concrete



anchors. The temporary bracing methods used must be capable of fully stabilizing the structure during the construction process.

Additional Temporary Bracing

The temporary bracing described is a minimum requirement for a standard-sized building in average conditions. Additional consideration should be given to larger building spans and/or challenging site conditions. There may also be an increased risk in relation to partially completed buildings and exposed sites. It is recommended that extra temporary bracing is utilized if moderate wind speeds are expected on site. Additional support elements, such as steel cables may need to be introduced that can be attached to the building's framework and anchored to the ground or other stable structures to provide extra stability. The frame should remain rigid throughout and such responsibility lies with the constructor. Buildings should not be left in a partially completed state longer than necessary.

Bracing Removal

The temporary bracing should not be removed until all purlins, girts and permanent cross bracing, diaphragm bracing or moment frames where used are installed. The temporary bracing is to remain in place where possible, until the roof and wall cladding is fully installed.

If you need any further information regarding the installation of temporary bracing or are at all unsure of the necessary requirements for this specific building, there are guides available through various industry bodies:

<https://www.aisc.org/>
<https://www.metal-buildings-institute.org/>

Support is also available at support@actbuildingsystems.com.

These illustrations are for reference only and are to be used to supplement the engineering drawings. If any discrepancies occur, the engineering plans will always take precedence.

