

Piggyback Trusses

What is the purpose? How should they be installed?

In this article, we will address the purpose of Piggyback Trusses and their proper installation.

Due to shipping and/or manufacturing limitations, the required truss profile may need to be manufactured in multiple pieces and assembled in the field. Because of a large span, high pitch, or a combination of both, a truss profile can exceed these limits. The maximum truss height that can be manufactured by Rigidply Rafters, Inc. is 13'-6" tip-to-tip. When this limit is exceeded, a truss must be stubbed at the peak, and a Piggyback Truss must be designed to achieve the required truss profile and to properly transfer roof loads to base trusses.

When a project requires the use of Piggyback Trusses, Rigidply Rafters, Inc. will include a copy of MiTek's standard detail, MII-PIGGY, along with the sealed truss drawings. This detail describes the following guidelines that should be used for the proper installation of Piggyback Trusses:

1. Base truss must be properly braced with purlins and top chord diagonal bracing.
2. Proper installation requires flat 2x4 purlins to be installed on top of the flat section of the base truss, spaced a maximum of 24" o.c., or closer if specified on base truss design drawing.
3. Purlins are to be nailed to top chord of base truss with (2) 16d (0.131" ϕ x 3.5") nails.
4. Piggyback Truss to be connected to each purlin with (2) 16d (0.131" ϕ x 3.5") toenailed.
5. In high wind areas, plywood or OSB gusset plates on each face are required to attach Piggyback Truss to base truss.
6. If Piggyback Truss has a large point load, the design of the Piggyback Truss must be able to properly transfer that load to the base truss.
7. For large point load design, a vertical in the Piggyback Truss should be placed in line with the point load. Vertical member should run through bottom chord of Piggyback Truss, to sit directly on top of base truss top chord.

For Piggyback Truss spans over 12': A 2x _ x4' (size and grade to match top chord of Piggyback Truss, minimum grade to be No. 2) scab should be attached to one face, centered on intersection, with 2 rows of 10d (0.131" ϕ x 3") nails spaced 4" o.c.

NOTE: Scab is required for trusses spaced greater than 24" o.c.

For Piggyback Truss spans less than 12': The scab can be omitted, provided that the roof sheathing is continuous over the joint where the Piggyback Truss sits on the base truss. Sheathing to overlap a minimum of 12" over that joint.

NOTE: See Mitek's standard detail for Piggyback Truss Installation: MII-PIGGY – Standard Piggyback Truss Connection Detail.