Truss/Wall Plate Connections
By Martin Van Berlo, Emmet County Building Dept.

With the adoption by the State, of the 2003 Michigan Residential Code (MRC), which became effective nearly a year ago, several code changes became effective. One of those changes included a requirement for truss/wall plate connections on any project using wood trusses as the roof framing. While many Builders and Contractors have become familiar with the requirement for truss/wall plate connectors, there seems to be some confusion as to exactly what is required to be used, to make that connection.

The tie-downs used must be of an approved type designed for use on roof trusses, as a truss to wall plate connector. Section R802.10.5 of the 2003 MRC contains the code text regarding truss/wall plate connections. This section states that the connectors must be capable of resisting a minimum of 175 pounds of uplift and must be installed in accordance with the manufacturer’s installation instructions. In areas subject to high winds, roofs with long span trusses, roofs with large overhangs, and covered porch roofs, the connectors must be capable of resisting additional wind uplift pressures. There are tables in the Building Code that help determine what may be required in high wind areas. Many truss manufacturer’s are also including wind uplift resistance information on the truss spec sheets. By referring to the truss specs, Builders, Contractors, and Inspectors should be able to determine what the capability of the uplift protection should be. If the information is not provided on the truss specs, the truss manufacturer should be contacted and asked for a revised spec sheet, showing the required uplift resistance for the trusses being used.

The manufacturer’s of wood connection products make a large variety of connectors that can be used in wood construction. All of these connectors have been tested and approved for certain uses, and each connector has a maximum rating for its intended use. In order for the installation of a connector to be approved, it must be used and installed, as per the manufacturer’s specifications. While many truss installations will require a common type of truss/wall plate connector, others may require a much heavier type of connector. On a recent inspection of a building, the truss specs provided actually called for an uplift resistance of over 2000 pounds. The typical uplift connectors found at most retail outlets are capable of 490 - 750 pounds of uplift protection, which certainly would not be capable of resisting a 2000 pound uplift. Since undersized connectors had been installed, the connectors used had to be replaced with heavier connectors, ones that would meet the uplift requirements as shown on the truss specs. When in doubt about the installation of a connector, the connector manufacturer, the supplier, or your local Building Dept should be consulted, prior to the installation, so that the product is not installed or used incorrectly. Improperly installed connectors can add to the cost of construction, as replacement is often difficult and costly. Removal of connectors will typically result in damage to the connector. The manufacturer’s of wood connectors have strict requirements on the removal, reinstallation or site modifications to their products. Any damage or site modification to a connector will typically void the manufacturer’s warranty of the product. Improperly installed connectors can also create unsafe conditions in a building, and could lead to structural failure.

Knowing that truss/wall plate connectors are required, using the correct connector for a particular installation, and installing the product as per the manufacturer’s specs, are all important for the Builder or Contractor to be aware of, in a construction project. When a roof system installation is done correctly and per the Building Codes requirements, the building owner can rest assured that their building is safely constructed and should last for many years to come.

*Code text from the 2003 Michigan Residential Building Code*