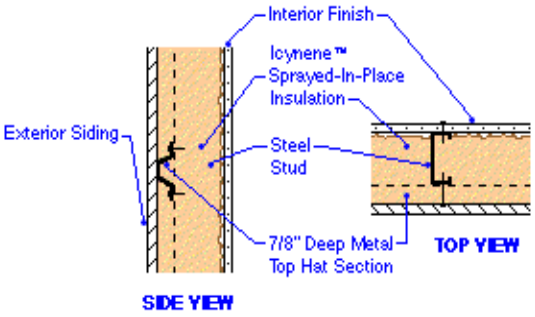
Thermal Break Requirement

Creating a thermal break between the steel stud and the cold side of the building envelope is an indispensable design requirement with steel. The thermal break is usually achieved by adding board-type insulation to the cold side of the studs. The rule of thumb is that a minimum of 25% of the overall R-value should be outside the steel frame.

Steel is more conductive than wood and research has proven that without a thermal break, the temperature of the stud can be below the dew point and moisture will condense. Frost or mold on interior walls can result. Fortunately this can be prevented by placing 25% of the required R-value of the insulation on the outside of the studs in heating climates, and on the inside of the studs in cooling climates. There are many board-type insulation products available, but selection of an insulation board should be governed by a requirement that it be vapor permeable and be able to indent to accommodate screw heads and allow it to lie flat over the steel studs.

Icynene®'s Thermal Break



Alternative Wall Section and Plan
(Using Icynene® Thermal Break)

Another alternative is to fasten steel furring strips or top hat sections horizontally across the studs to which gypsum board or sheathing is fastened. Icynene insulation can then be installed behind the studs, providing the necessary thermal break. This strip can also replace the bridging that may be needed when using light gage 'C' section steel studs. See Alternative Wall Section Detail below.

http://www.icynene.com/ThermalBreak.aspx