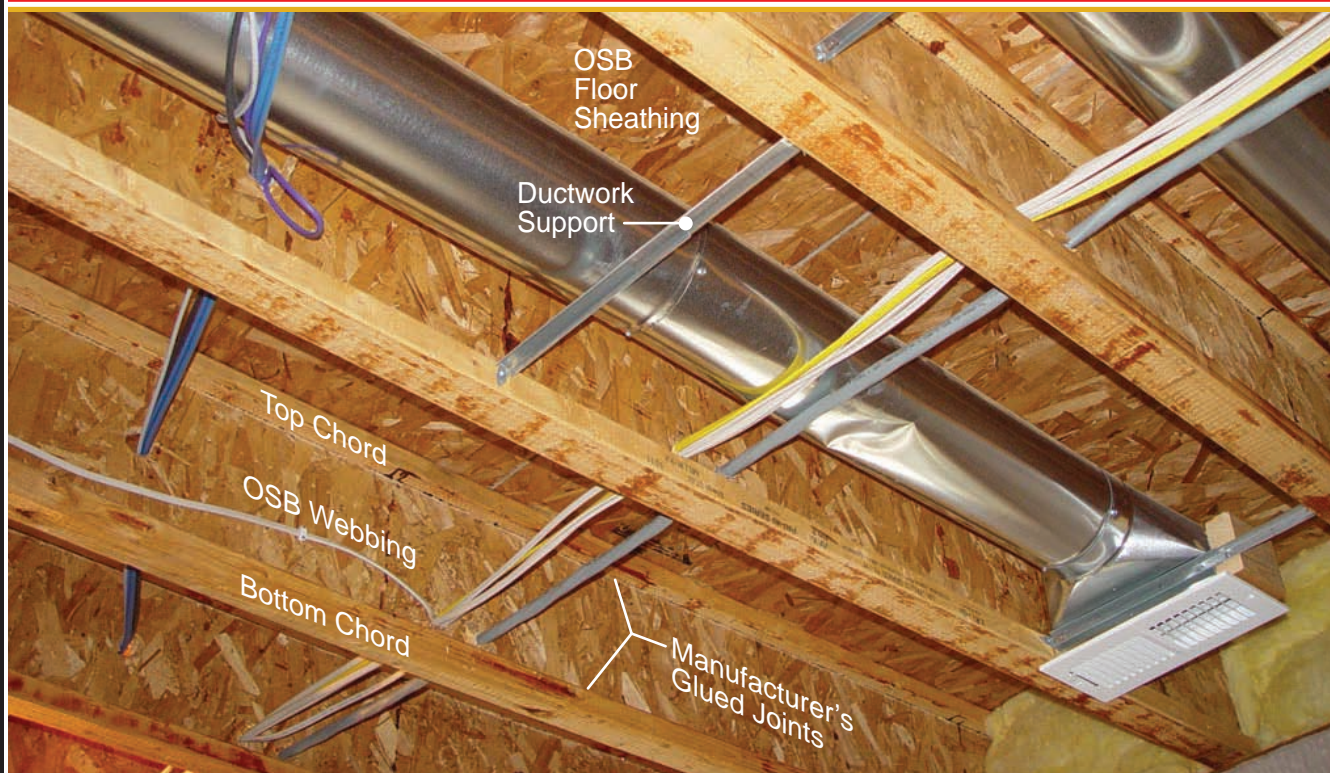


I - Joists



Basic Description

Wooden I-Joists are becoming increasingly popular today in wood frame construction due to their uniformity, lighter weight, and ability to span large open spaces. They are constructed of a top and bottom chord made of dimensional lumber joined with a web panel made of oriented strand board (OSB). Physical dimensions of the I-Joist and its components is based on engineered design for the span and load the floor system will handle. They are typically spaced at 16, 19.2, or 24 inch centers to accommodate the use of 4' x 8' floor sheathing, which is typically plywood or OSB. The installation of trades, such as ductwork, wiring, and piping, is somewhat easier than with dimensional lumber in that the OSB web is more easily cut or drilled for penetrations. Some I-Joists come with pre-cut holes to ensure proper penetration of the web by trades.

Firefighter's Notes

1. Use of Engineered Floor Systems is Not Generally Identifiable From Outside the Home. A pre-fire assessment is necessary to identify and verify use of I-Joists. Neighborhood surveys may be helpful in determining where I-Joist construction exists.

2. I-Joists With Open Pre-Cut Holes Will Allow Fire to Spread Easily Throughout the Floor Structure. Although I-Joists without pre-cut holes provide a compartmentalized floor system, similar to solid dimensional lumber, they have a high surface area to mass ratio which means they'll burn fast once ignited. Even when I-Joists are protected from below by drywall, if open pre-cut holes exist they will allow the enclosed space to be preheated prior to

direct exposure to fire. This results in quicker ignition once fire penetrates the enclosed space. The webs and their glued connections with the chords deteriorate rapidly once exposed to fire. Combustible components of the trades only accelerate the spread of fire.

3. Some Protection is Better Than None. It is important that I-Joists, like any wood framed floor system, be protected from the rapid spread of fire. A finished drywall ceiling should be installed to protect the joists from below. This provides a measure of protection from fire entering the floor structure immediately. **Homeowners need to be made aware that by protecting their floors from below, they are protecting the occupants above.**