Weekly Drill

DRILL #110:

Roofs

Introduction

Every structure has one! The many purpose of having a roof is to protect the interior of the building from the elements of the weather outside. Additionally, the roof helps to hold the structure together.

Interior firefighters rely on these roofs to maintain their integrity during firefighting operations, however, at times, a roof may fail under abnormal conditions. Having an understanding of the different types of roofs we might encounter on the job is beneficial.

Gable roof

The first style is the gable roof and is a simple and cost effective means of construction, making it the most common roof. This roof is formed when two surfaces slope or angle from the ridge board (centerline of the roof) forming a triangular shape on the ends called a gable.

Hip roof

This type of roof features all four sides of the building having a sloped roof coming from the ridge board. The angles created where the two sides meet is known as a hip, hence the name. This style roof is found on many ranch homes and has an advantage of providing an overhang all around the house.

Gambrel roof

This type of roof is a variation of the gable roof, however, each slope is further broken down forming a more efficient use of the space on the second floor. This style roof started appearing in the colonial days and is sometime referred to as a barn roof.

Mansard roof

This roof starts out like a hip roof, having four sides to it. The upper most portion of the roof has a slightly pitched slope to it, and when it reaches the outer slope the roof becomes almost vertical. Once again the advantage of this style roof is the extra space being gained on the top floor. Unlike the other named roofs, this one gets its name from the architect that designed it, Francois Mansart.

Flat roof

As the name says, this roof is flat with perhaps a slight pitch for drainage. The main support for this roof comes



from the joists underneath, which, by the way, are also supporting the ceiling materials on the underside of them.

Shed roof

This roof is the simplest of all roofs and has also been called a lean-to roof, perhaps because this roof is generally used when adding onto the original structure. In any event, the roof is a single-pitched roof that covers the entire structure. In most applications, the pitch will run towards the back of the structure.

Bowstring roof

In reality, this roof is a truss-style roof and is shaped much like an archer's bow, hence the name bowstring. This style roof is very popular in large, open-floor space buildings such as bowling alleys, supermarkets and warehouses. A major concern with this roof is early failure during a fire, which also will sometimes cause the walls to push out during collapse. Extreme safety should be used when encountering a fire in any building having a bowstring roof.

-Prepared by Russell Merrick