

STUDY SESSION 1

1. This section introduces roofing terminology and concepts necessary when discussing commercial roofing systems with your clients.
2. By the end of this Study Session, you should be able to –
 - Explain why the roof system of the building should be a primary concern for your commercial clients.
 - Describe the difference between a sloped roof and a ‘flat’ roof.
 - Describe the layers that make up a typical flat roof assembly.
3. This Study Session should take you about 40 minutes to complete.
4. Quick Quiz 1 is included at the end.

FLAT ROOFS

Many of us have experience with sloped roofing systems like asphalt shingles because it is the roofing strategy of choice on single-family residential homes. Maybe you have even resurfaced your own roof or have been invited to help a friend resurface a sloped roof in exchange for pizza and beer.

Commercial
Buildings Have Flat
Roofs

On commercial buildings, flat roofs are the rule rather than the exception, particularly on industrial and retail buildings. These roofing systems are much more complicated and most people have very much less experience and understanding of these systems.

For the rest of this module we will focus exclusively on flat roofs.

There are several different types of flat roof surfaces. We will look at these in the next study session. Regardless of the type of surface, flat roofs have the following layers –

ROOF DECKING

The roof decking may be corrugated steel, concrete or wood. The roof decking supports the roofing material and any loads such as rooftop equipment, foot traffic, water, wind and snow.

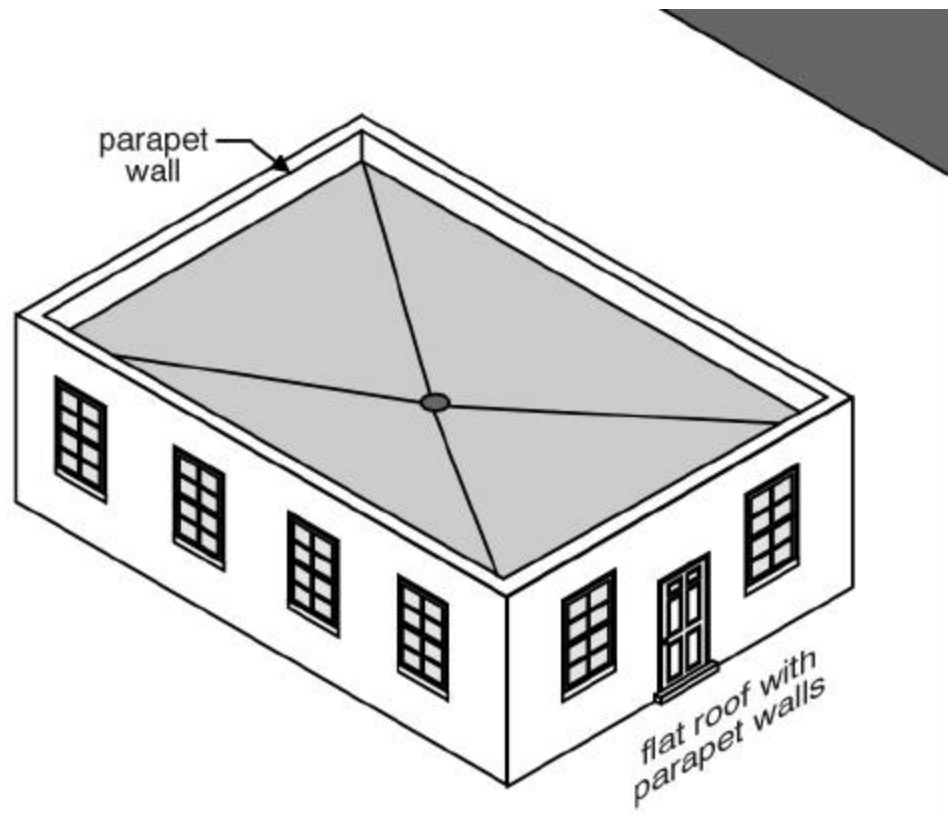
The roof decking is firmly attached to the structural framing of the building.



PARAPET WALL

A 'parapet wall' is a wall that extends up higher than the roof level. The parapet wall forms a short wall enclosing the rooftop area. Most commercial buildings have a parapet enclosing the roof surface. This is an area where roof leaks often form.

The purpose of the parapet wall is to allow the waterproof membrane to terminate well above the roof surface and minimize the risk of leakage at the termination.



FLASHING

Before we discuss flashing, we need to know the following definitions:

- **Roof penetration:** A roof penetration is where something passes through the roof surface. By passing through the roof surface, we effectively have to make a hole in the roof membrane. An example of a roof penetration is a plumbing stack or a chimney

- **Roof intersection:** A roof intersection is where a roof meets a wall or another roof plane. For example, where a flat roof surface meets a parapet wall or where a sloped roof meets a flat roof.

Flashings Are at Penetrations and Intersections in the Roof.

Roof membranes seal water out of the building over the roof area. At roof penetrations and intersections, special attention is required. These are the vulnerable areas. For example, consider a pitched single family residential home, when the roof leaks it never leaks in the middle of a field of shingles, it leaks at the chimney or skylight.

The same is true with commercial roofing. The vulnerable areas are at roof penetrations and roof intersections. At these areas we install ‘flashing.’

Flashings are found at—

- chimneys
- pipes or stacks that penetrate roofs
- roof-wall intersections
- parapet walls
- sloped roofs which intersect flat roofs
- skylights
- roof-mounted mechanical equipment that penetrates the roof (HVAC)

Flashings are typically made of the same material as the roof membrane and then covered in metal or may be another material. For example on a sloped shingle roof, the roof surface may be made of asphalt shingles and the chimney flashing is typically metal.