Southwest
New Brunswick
Service Commission

Garage construction

Attached garages are quite common, both as part of a new build and as part of an addition to an existing home. (A number of our past building permit files were for additions of attached garages.) Constructing an attached garage isn't vastly complicated, however, there are a few things to note.

Foundations and concrete

Garages that are attached to a house need a foundation system. This usually means footings and a four-foot frost wall. Other Code requirements that do or may involve cement include:

- Floors in garages must be 32 MPa strength (4,600 PSI). [9.3.1.6(1)(c)]
- Where runoff water from a driveway is likely to accumulate or enter a garage, a catch basin shall be installed to provide adequate drainage. [9.14.6.4]
- Floors of attached garages must either slope to the outside (ie: at the garage door(s)) or be constructed so that a 5 cm (2") airtight sill abuts any occupied space. This is usually done at the concrete stage by either pouring a sill, or making it so the garage is at a lower height than any occupied space. [9.35.2.2(1)]

Air barriers and carbon monoxide

It's important to makes sure that exhaust fumes from a vehicle do not penetrate the living space. For this reason, the garage must be sealed off from the rest of the house with a complete air barrier (vapour barrier) system. [9.10.9.16(4)(a)].

 Homes with attached garages must have carbon monoxide alarms either in each bedroom, or within five metres (16'5") of all sleeping areas.

A house with an attached garage requires carbon monoxide alarms. They must be placed in, or within 5 m (16'5") of every sleeping area. [9.32.3.9(6)a, b]. In new builds, this requirement is often achieved by the installation of alarms that respond to both smoke and carbon monoxide.

Any doors between a garage and an adjacent house must be “tight fitting” and sealed with weather stripping. This is to prevent the passage of fumes. The door must also have a self-closing device of some nature. (Usually, this involves special hinges that are spring loaded, and can be adjusted with a hex wrench.) [9.10.13.15(1) and 9.10.9.16(4)(b).]

Vapour barrier location pitfalls

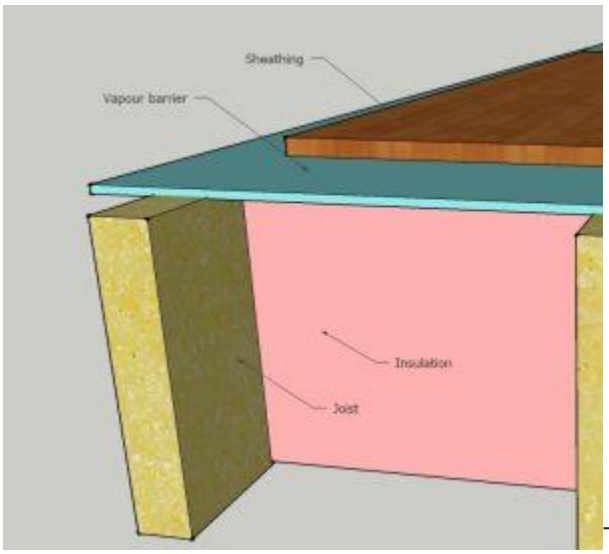
Sometimes, especially in new construction, there is a little challenge that can emerge when installing insulation in attached garages. First off, a garage - no matter how well insulated, isn't considered a "conditioned space," in building terms. That's because garage doors are often left open, and even when closed, garage doors are typically poorly insulated.

Here's where things get a little tricky. Even though the garage is not technically considered a conditioned space, it needs to have vapour barrier installed on the warm side of the insulation. [9.25.4.3(2)]. No problem there: the vapour barrier is installed on the inside of all the exterior walls of the garage, and on the inside of the ceiling.

But what about the vapour barrier between the garage and the house? This has to be installed on the house side of the dividing walls, since that's the warm side of the insulation between house and garage. Any argument that the two spaces are sufficiently alike in temperature as to not require vapour barrier are irrelevant,

because a vapour barrier is still required to prevent gas permeating from the garage into the house.

This isn't an issue with garage additions, as the existing house will have the vapour barrier in the correct location.



This image shows the correct location of vapour barrier in a floor over a garage.

A similar critical issue arises when there's a heated space over a garage. The same rule applies: the vapour barrier has to go on the warm side of the ceiling, which is to say, it has to go on top of the joists of the floor above *before* sheathing goes down.

The exception: if closed-cell foam is to be used as the insulation, in which case, vapour barrier is not required.

Finish for garages

There is a common misconception that fire-rated drywall needs to be installed between the garage and the rest of the home. This is not required, providing the garage is attached to a residential structure.

In fact, it isn't necessary to finish the walls of the garage - and Code says so.

"9.35.4.1. Interior Finish
1) Interior finish need not be applied to garage and carport walls. "

It is vital to note that garages attached to something other than single-family homes do have to meet stricter requirements. In such cases, the garage must be separated with a wall having a one-hour fire resistance rating (or, perhaps more). [9.10.9.16(2)].