CHECKLIST
Inspecting a Garage
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This section deals with the details of the garage or carport inspection that may be performed. At the end of this section, you shall be able to:

- describe the function of a firewall of a garage
- list some common concerns related to a garage
A typical garage is an enclosed four-walled structure. Garages can be attached or detached from the house. One side of a garage has a door to accommodate an automobile. There is typically an egress door on the side of the garage. The floor of the garage is commonly concrete. Some detached garages have gravel, wooden or dirt floors. Other types of structures and carports can be categorized as being open, enclosed, or partially enclosed.

**Carports**

A typical carport is an open building with posts. A carport does not have a door for an automobile. The carport floor is usually the same as the driveway material. The carport structure may be free-standing or attached to the house structure at the wall or the roof.

The garage and carport structures are often included during the inspection of the exterior. While outside, you could easily inspect the carport. Detached garages take longer to inspect than attached garages, because there are more structural issues to be concerned about. Attached garages are often simply inside the house’s main structural design. An attached garage shares many systems and components, including the foundation, with the rest of the house. Detached garages have their own separate footings, structural components, roof systems, siding, electrical system and component, doors & window, interior components, etc.

Inspecting a garage is very similar to inspecting a house. A detached garage and a house have the same type of things to inspect, including the system and components related to the exterior. Let’s take a brief look at the things to check at a garage.

A garage inspection may include the following:

- Roof system
- Gutters and downspouts
- Exterior grading
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- Siding
- Windows & doors
- Electrical system
- Foundation & structure
- Garage floor
- Interior
- HVAC
- Plumbing

There are certain concerns that are particular to a garage. Some of the concerns are about fire and safety issues. You should know about the following issues when inspecting a garage:
- Firewalls
- Openings
- Fire doors
- Attic access
- Garage door
- Combustion appliances

Firewall for Attached Garages

Before learning about firewalls in this section, you should understand that your local building codes should always be referred to and you should know about them. Your local building requirements might exceed the IRC 2006 (International Building Code) that will be referred to in this section.

Garage firewall materials installed on the walls and ceiling of the garage must meet certain requirements. The requirements are designed to protect the structure and occupants. The requirements slow the spread of fire and keep hazardous gases controlled.

The fire resistance rating (at a garage wall or ceiling or door) refers to the period of time the surface (gypsum, drywall, plaster) will serve as a barrier to the spread of fire. It indicates how long it can hold back a fire before it spreads to adjacent or attached areas of the house. Ratings of fire-resistance is expressed in hours. Terms such as ½-hour fire-rating, 1-hour fire-rating, 2-hour fire-rating are used.

It is very important to check with the local authority having jurisdiction (AHJ) for clarification on the matters of fire-resistance requirements before you report any violations or defects. When in doubt, check with your local building official.

Opening Protection

Openings from a garage directly into a room used for sleeping purposes are not permitted. Look for those openings. Look for any type of louvered air register in the attached garage. This may be an open pathway to the house interior.
Although the drywall or other approved material provides an adequate fire separation at the walls and ceilings between the house and the garage, it is important that all other openings in the firewall be appropriately protected. The type of door construction or fire rating of the door is a strict requirement.

The door between an attached garage and a dwelling unit should be a solid wood door not less than 1 and 3/8 inches (35 mm) in thickness, a solid or honeycomb core steel door not less than 1 and 3/8 inches (35 mm) in thickness, or a 20-minute fire-rated door. Interior doors like the ones you may find at a bedroom are allowed.

The code only covers the door itself and not the door assembly. The door assembly does not have to meet a fire-rating. The type of door construction or fire-rating of the door is important.

**Self-Closing Door**

Doors should have proper weather stripping to create an air tight barrier between the garage and a living quarters. In many jurisdictions a self-closing device on the door may be required. One more feature that helps to preserve the garage firewall is a self-closing door.

You may recommend a self-closing mechanism to your clients purchasing older homes. Self-closing garage door is required on a new construction in many jurisdictions. It is only around $30, and all that is needed is to replace a couple of regular door hinges with a spring-type and adjust the door so it will close fully and completely by itself.

**Ducts**

Where any ducts pass through the drywall surface of the garage side of the firewall, the duct material must be a minimum of No. 26 gauge (0.019 inch) galvanized steel. There should be no plastic or aluminum pipes (thin-wall or flexible) hoses penetrating the walls or ceiling. If there is no other way to run those pipes, they should be insulated, boxed out and finished with 5/8-inch drywall, type X, taped and compounded.
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There must not be any openings in the ductwork within the garage area.

**Drywall at Ceiling and Wall**

It is common for a fire to start in an attached garage. The fire may grow unnoticed by the occupants and become a significant hazard. Therefore, a minimum amount of fire protection is needed.

There should be at least 1/2-inch drywall (gypsum board) applied on the garage-side to separate the garage from the residence and its attic space. Garages located below a habitable room shall be separated by at least 5/8-inch Type X drywall (gypsum board) or equivalent.

This standard requires a minimum level of fire protection from the garage to the dwelling unit. It allows the occupants time to escape. The separation also restricts the spread of fire from the garage to the dwelling unit until the fire can be controlled and extinguished.

All drywall seams at the ceiling and wall must be taped or finished with joint compound. Some jurisdictions might require fire rated joint tape for this purpose. The garage firewall should have no missing or damaged drywall. All penetration must be sealed. A fire rated caulk can be applied at small gaps around the pipes, air ducts, doorframes, etc.

**Curb**

Many building codes require a step (or a curb) between the house door and the garage floor. That places the floor of the house slightly above or elevated higher than the garage floor surface. The step may be a minimum of 4 inches. This curb could prevent spilled gasoline vapors from drifting into the house.

**Electrical Box in the Firewall Ceiling**

An opening in the firewall will sometimes not be so obvious. Take for example an electrical outlet box in the ceiling of a garage with a habitable space above the garage.

There are outlet and device boxes available that are listed for use in fire-resistance-rated partitions without the use of putty pads, mineral wool, fiberglass. There are non-metallic outlet boxes that can be installed in a garage firewall that can meet the fire-resistance standard. As an inspector, you will not be able to determine visually if the box is fire-rated. They will be listed and identified by the manufacturer, but this identification goes well beyond the standards of practice. In an older home, the box will likely not be fire-rated.

A box in the garage ceiling or wall must not be installed back-to-back with another box.

For both metallic and non-metallic electrical outlet boxes, the maximum gap around the box is 1/8-inch (3 mm) for a firewall.
Putty pads are moldable pads that can be used to wrap metal electrical boxes or inserted on the inside back wall of metal electrical boxes. When exposed to fire, the pad expands and seals off any openings. A 1/8-inch thick pad provides a 1-hour fire-resistance rating.

**Garage Floor**

Garage floor should be a non-combustible material and sloped towards the floor drain (if one is installed) or towards the vehicle door opening. The slope of the garage surface allows for water on the garage floor to drain way.

Garage floors that are structural or suspended floors should be inspected by a specialist. Load on a structural floor are considerable and distress in the floor structure may not be readily apparent to a home inspector during a home inspection. You cannot simply get a sense of whether a garage floor is structurally strong enough to support the weight of a car. If you see any cracks or deterioration in the structural or suspended floor, you should recommend further evaluation by an expert or specialist.

**Poor drainage at the garage floor**

You should look at the garage floor to see that it is relatively uniform and is sloped properly toward the vehicle opening.

If there are structural problems with the concrete floor in the garage, there may be cracking at the corners or along the walls of the garage. Sometimes you may find large sections of the garage floor that have cracked and settled. Sometimes you may see that the entire garage floor has settled, but uniformly. That’s okay if there is still proper slope towards the vehicle opening. If there is a floor drain, the floor needs to slope towards that drain properly.

**Attic**
Attic access installed in the garage is an important part of a firewall. An open access to the attic space above the garage may create a vacuum, and a garage fire might be sucked into that attic. The garage attic should be closed at all times.

One-story homes (ranchers) with an attached garage often have no ceiling in the garage and an open attic above the house. In such situations, the garage firewall or house separation wall should extend all of the way to the roof, or a garage firewall ceiling should be installed.

You may find a garage attic access that may not be equivalent to the firewall. A common garage attic access is a square piece of plywood or drywall, usually resting upon four pieces of wood trim. Drywall may be approved by the local AHJ, but the trim neither provides a proper seal nor has a required fire rating. Be careful here. Make sure you know what the local building requirements and standards are in your local area.

An attic pull-down stairs finished with a quarter-inch thick plywood paneling may be considered by the local AHJ as a violation of the firewall or separation between the attic and garage. The pull-down stairs assembly rarely provides a proper seal along the opening. Have your local code enforcement inspector/officer comment on it.

Separation

In order to protect a house from a garage fire that is in a detached garage, a minimum degree of spatial separation is required. Where a separation of a least 3 feet is not provided, a minimum of one layer of ½-inch gypsum drywall board should be installed on the interior-side of the garage.

Mechanical Systems

Gasoline leakage or spillage in a garage can sometimes happen. This could be a hazardous situation. Gasoline fumes will evaporate from liquid puddles at the floor level. Any potential ignition source should be elevated to keep open flame, spark-producing elements and heating elements above the gasoline fume level.

An appliance with an open flame, spark-producing element or heating element should be elevated such that the source if ignition is at least 18 inches above the garage floor.

Impact

Appliances or equipment located in a garage or carport should be protected from impact by an automobile. Appliances or equipment exposed to impact by automobiles could create a hazardous situation if their fuel connections were broken, loosened, or damaged. The appliances or equipment should be protected by a barrier such as a curb wheel stop or pipe stanchions.