



Heating Ventilation and Air Conditioning Rough-in Inspection Guide

The roughed-in HVAC system is inspected to confirm that the system is sized and installed to meet the heating and ventilation requirements for a healthy living environment for the occupants.

When must an inspection be requested

A rough-in HVAC inspection is often conducted to coincide with the framing and plumbing rough-in inspections and prior to the installation of the insulation.

What is involved during an inspection

A provincially qualified building inspector reviews the roughed-in HVAC system for compliance with the building permit drawings and the Ontario Building Code. The following is a list of the major areas that are inspected.

- Supply air system
- Return air system
- Exhaust systems
- Mechanical ventilation

The construction progress, including Building Code deficiencies, are documented on a Field Inspection Report issued by the building inspector immediately after the site inspection.

How to prepare for the inspection

A review of the construction prior to the inspector's arrival can help to ensure a smooth flow in the construction of your project. A checklist of the most common Building Code deficiencies found while performing HVAC rough-in inspections follows.

How to request an inspection

Inspections are requested online through the Cloudpermit portal.

Looking ahead

The next inspection may be the insulation and air barrier inspections.

HVAC Rough-in Inspection Checklist

This checklist identifies the most common Ontario Building Code deficiencies found while performing HVAC rough-in inspections. Use this checklist as a guide to reduce delays associated with Building Code deficiencies. Not all Building Code requirements are included in this checklist.

Supply Air System

- Clearance has been maintained between the plenum and combustible materials. Refer to the manufacturer's installation instructions.
- Supply ducts and associated fittings are non-combustible except when they conform to test criteria.
- Sealed to Class A level and insulated to not less than RSI 1.4 when exposed to unheated space or not protected by an insulated exterior wall
- Sealed to Class C level when located in a conditioned space
- Butterfly damper at each register.
- Maximum of 1200 mm allowed for supply air from the outside wall in an unfinished basement.
- Ducts in floors or walls are fire stopped with mineral wool between the duct and the construction at each end.
- S and drive cleat connections or equivalent are provided for rectangular duct connections.
- To avoid excessive vibration, trunk supply ducts are not nailed directly to wood joists.
- Ducts placed in concrete must be inspected prior to covering.
- Vertical flexible ducts are not permitted.
- Horizontal flexible ducts do not exceed 4000 mm and are ULC Class 1 type.
- Vertical clearance beneath ducts in basement space is a minimum of 1.95 m.

Return Air System

- Return air installed on each storey.
- Return air chases are backed with metal, gypsum board or plywood.
- Return air inlet not located in garage, kitchen, washroom, furnace or laundry room.
- A return air outlet installed in all rooms over a garage or an unheated space.
- Blockage of return air ducts not permitted. Relocate all electrical boxes, wiring, piping and blocking. Full width cut outs in floor.
- All supply and return air ducts exposed or passing through unheated spaces are insulated with a minimum of R-12 insulation.
- Exhaust systems
- An exhaust air intake or exhaust fan is installed in each kitchen and room containing a water closet.
- Exhaust ducts are wrapped with insulation and vapour barrier for a minimum of 1200 mm from the outside wall and entirely through an unheated space.

- Kitchen exhaust duct installed so that entire duct can be cleaned when duct not equipped with a filter at the intake.
- Sealed to Class C level when located in a conditioned space

Mechanical Ventilation

- Fuel-fired appliances and all other space heating equipment are installed in accordance with the permit documents.
- The categorization of the dwelling unit corresponds with the type of fuel-fired appliances installed.
- Mechanical ventilation system installed under Part 6 or Part 9 of the Building Code.
- Principal exhaust fan is HVI approved.
- Principal exhaust fan switch located in central location and identified.