

## **Mechanical & Plumbing Inspection Checklist**

### **Mechanical**

#### **1. Duct**

- All ducts must be installed to current code.
- All ducts must be sized correctly.
- Seal all duct connections.
- Duct insulation in attics shall be R-8.
- Flex duct shall be properly stretched with no bends that collapse the pipe.

#### **2. Dryer Exhaust**

- All exhaust must be installed to current code.
- Duct must be metal, minimum 0.016 thick.
- Duct must be minimum 4" in diameter.
- Maximum length is 25' or to manufacturer's specifications. Each 90 takes off 5' and each 45 takes off 2 ½'.
- The dryer vent must terminate outside of the building 3' away from any opening and terminate with a back draft damper without a screen.

#### **3. Bathroom Exhaust**

- All exhaust must be installed to current code.
- Bathroom exhaust duct must terminate outside of the building with a factory made termination point. It cannot be installed in the eaves if you have to egg shape it to do so.

#### **4. Heaters**

- All heating appliances must be installed to current code.
- Vents must be correctly sized for the equipment installed.
- Must have 1" clearance around double wall vent pipe and combustibles.
- Must have 6" clearance around single wall vent connector and combustibles.
- Install a gas shutoff outside of the heater cabinet.
- Install an approved flex connector outside of the heater cabinet. It can not stick through the cabinet.
- It must have rigid pipe sticking out of the cabinet.
- Must have combustion air sized for the equipment installed.
- Unvented heaters without an oxygen-depletion safety shutoff are prohibited by code.
- Install a carbon monoxide alarm outside of each sleeping area where a fuel fired appliance is installed in a dwelling unit or has an attached garage without a sealed door.
- Heating equipment in attics shall have a work platform in front of the service side of the unit not less than 30" deep by 30" long and a walkway 24" wide from the access opening to the platform no more than 20' long.
- On new construction a GFCI protected 115-volt outlet shall be installed within sight, but not to exceed 25 feet from the service side of ground level equipment or 6 feet from attic or crawl space located equipment.

#### **5. Air Conditioning Equipment**

- All air conditioning equipment must be installed to current code.
- Install locking caps on all refrigerant lines access ports.

- A disconnecting means shall be installed within sight and easy reach in the ungrounded leads of each power circuit to electrically operated components. The disconnecting means shall in no case be installed farther than 25 feet from the service side of the equipment.
- On new construction a GFCI protected 115-volt outlet shall be installed within sight, but not to exceed 25 feet from the service side of ground level equipment or 6 feet from attic or crawl space located equipment.
- Potable water supply and building drainage system connections to equipment and appliances regulated in this code shall be in accordance with the international plumbing code. Additionally, no wastewater from cooling or air conditioning systems shall be permitted to drain or discharge upon any street, alley or place that causes a nuisance. . All systems discharging twenty-five (25) gallons or more water per minute shall be connected with the storm sewer system of the city. Systems discharging less than twenty-five (25) gallons of water per minute may be connected with the sanitary sewer system if no storm sewer connection is available.

## 6. Mechanical Final

- Check to see that all mechanical equipment is installed to code and is completed.

## Plumbing

### 1. Plumbing Rough-In (In Ground)

- All plumbing must be installed to current code.
- All drain lines shall be properly vented.
- Plastic pipe and fittings must be a minimum schedule 40.
- No tee's can be installed on their side or back.
- All drainage pipes under the floor shall be a minimum 2" pipe.
- Washer drains shall be a minimum of 2" and run to a 3" or larger drain before anything else connects to it.
- No floor drains under the washer and dryer.
- The sewer coming out from under the house shall be a minimum of 18" deep.
- Floor drains are required in all commercial bathrooms except in private single user bathrooms or unless approved by the plumbing inspector.
- The test for drainage system shall be a 6' head water test or a 5 pound air test.
- Copper water lines under the floor shall be Type K.
- Protect all water lines from damage from backfill and where the pipe is exposed to concrete.

### 2. Sewer

- All plumbing must be installed to current code and inspected.
- Pipe must be a minimum 4" schedule 40 in the yard.
- Sewer must be 18" deep to protect from freezing.
- Sewer must have 1/8" fall in the direction of flow. (Toward the sewer main)
- Make sure dirt is packed under and on both sides of the pipe for support.
- There must be a two-way cleanout at the building and the cap must be above ground.
- There must also be a cleanout every 100' of the sewer line.
- The homeowner (who owns and lives in the house) can install their own sewer line to the easement but a licensed plumber must run the sewer from there and connect to the main.
- If the owner does not live in the house the work must be done by a licensed plumber.

### 3. Water Line

- All plumbing must be installed to current code and inspected.
- Minimum Size  $\frac{3}{4}$  pipe of approved material.
- Minimum burial depth 30" (city ordinance)
- There must be a meter connector, they cannot connect pipe straight to the meter.
- A homeowner (who owns and lives in the house) can put in his own water line, but a licensed plumber must make the connection at the meter.
- If the owner does not live in the house all work must be done by a licensed plumber.
- Copper water lines underground shall be Type K.
- Must have approved backflow protection for lawn irrigation systems (2009 IRC Sec. 2902.5.3) installed by a licensed plumber.

### 4. Plumbing Top-Out (In the Walls)

- All plumbing must be installed to current code and inspected.
- Copper water lines above the floor shall be a minimum of Type L.
- All plumbing fixtures shall be vented to code.
- Vents must extend though the roof a minimum of 12".
- No drainage tee shall be laid on their back or side.
- No floor drains under the washer and dryer.
- The washer drain standpipe shall be a minimum 18" from the trap to the opening on top.
- Nail plates must be installed to protect the water, drain and vent piping where the pipe is within a  $\frac{1}{2}$ " of the outside of the framing member.

### 5. Water Heater

- All plumbing must be installed to current code and inspected.
- All water heaters (gas and electric) installed in a garage or in a room that opens only into the garage must have the ignition source elevated at least 18" from the floor.
- A single wall vent connector is allowed in a conditioned space or an enclosed closet in the garage.
- There must be minimum 6" clearance around the single wall pipe.
- The vent penetrating the ceiling and all the way out the roof shall be double wall. If two appliances are connected to a single vent then the fitting that connects them shall be double wall also. There must be minimum 1" clearance around double wall vent pipe all the way from the ceiling through the roof.
- The water heater must be installed in a pan if it is located where it can cause damage to the structure. A pan is not commonly required where the water heater is installed on a stand in the garage on a concrete floor.
- There must be an approved gas shutoff.
- There must be an approved gas flex connector.
- There must be a cold water shutoff valve.
- There must be properly sized combustion air the appliances installed.
- All water heaters shall have a temperature and pressure relief valve. (pop-off)
- All water heaters shall have a pop-off drain. It must be made of approved rigid pipe. Not black pipe. It can run to a plumbing drain, dump into the pan or if no drain is available it can drain to within 6" of the floor.

## 6. Plumbing Final

-Check to see that all plumbing is installed to code and is completed.

### Gas

#### 1. Gas Underground (Yard)

##### New Yard Line

- Gas line must be a minimum 18" deep.
- Gas line must be 1 ¼" in size to the first outlet unless it is a 2# system or greater.
- The gas line must come out of the ground before it goes into the building.
- If the gas line is steel test it to 15# for 10 minutes.
- If the gas line is poly pipe (plastic) all of the poly must be underground.
- A poly line must also have a tracer wire that is minimum 12 gauge, any color; it must come above ground and be attached to the pipe with 1 stainless steel clamp or 2 plastic wire ties.
- The test for poly is 50# for 10 minutes.
- A gas cock (shutoff) is no longer required at the building on residential single-family dwellings.

##### Existing Yard Line

- Test the yard line and the house at 15# for 10 minutes.

#### 2. Gas Rough-In (Inside Building)

##### New House Line

- Test the house line at 15# for 10 minutes.
- The gas pipe must be properly supported.
- CSST pipe must have factory termination fittings.
- CSST pipe must have the proper nail plates.
- Gas piping shall be bonded. (by an electrician)

##### Existing House Line

- Test the house line at 15# for 10 minutes.
- Test the yard and the house when the meter has been pulled.
- Test the house when the yard line has been replaced because of a leak.
- Test the house when the line has been moved. (Like going around a pool for example)

#### 3. Gas Final

- Check to see that all gas piping and appliances are installed to code and are completed.

**\*\*\* Please take note this is only a reference tool, there may be other required inspections.**