

## Inspection of New One and Two Family Dwellings

Planning and Development Services Department

[www.opkansas.org](http://www.opkansas.org)

Inspection services for one and two family dwellings are divided between three groups of inspectors:

- Building Safety inspectors are responsible for inspecting the building and erosion and sediment control measures.
- Engineering Services inspectors inspect site-related issues related such as overflow swales, sidewalks and drive approaches.
- Public Works inspectors look at compaction issues related to excavations in the public right-of-way.

All inspections, except the compaction inspection made by Public Works staff, can be requested online through the [E-Place portal](#). You will need a log-in ID and password to schedule inspections. If you need assistance, contact Permit Services at (913) 895-6220.

General inspection guidelines for the construction of one and two family dwellings:

**Note:** Prior to excavating, erosion and sediment control measures to be installed. Adjacent lots that are finished (sod or seed) shall be protected. Inlets on the lot or adjacent to the lot shall be protected. No inspection is required.

### EROSION AND SEDIMENT CONTROL (ESC)

When an inspection is requested, an ESC inspection is also performed. The inspector will look to see that measures have been taken to protect adjacent property, inlets (both on the property and at the curb), and that stockpiles are protected. There is also an expectation that the street will be clean of gravel and mud. The inspector can refuse to make the inspection if proper erosion and sediment control measures are not in place or if there is mud and/or gravel in the street. Ordering concrete prior to the inspection being made is at the contractor's risk. For further guidance on what constitutes proper erosion and sediment control protection for one and two family dwellings, see our erosion and sediment control standards.

### FOOTING INSPECTION

This inspection is made prior to concrete being poured. The inspection entails the inspection of the soil, the bearing capacity, forms, pier pads, trenches and all reinforcing steel. The city approved plot plan and construction plans are required to be on-site for this inspection. If the site conditions dictate a special design, then an engineer's report (design) is required to be on-site.

- Minimum Low Opening (MLO): Many of the plot plans today dictate a certain MLO because of swales or flooding conditions. If this is the case, the contractor is responsible for providing survey equipment so that the inspector can verify the MLO.
- Insulation for foundations should be done or planned for at this time.
- Footings/piers for decks not supporting a roof structure are not required to be inspected by the city, but must be installed per the code. A minimum depth of 36" below finished grade is required by code.

## **FOUNDATION WALL INSPECTION**

This inspection is also known as a structural wall inspection. The inspector looks at the location, size and spacing of the reinforcing steel in the walls prior to concrete placement. The city approved plot plan and construction plans are required to be on-site for this inspection. If the site conditions dictate a special wall design, then an engineer's report (design) is required to be on-site. On some construction drawings, lateral bracing method dictates that a certain type of anchoring device be installed in the concrete. Prior to the inspection, all anchoring devices (straps and/or anchor bolts) shall be on-site.

- Minimum Low Opening (MLO): Depending on the site situation and/or the design, the elevation readings for the MLO may need to be taken or retaken for this inspection. If this is the case, the contractor is responsible for providing survey equipment so that the inspector can verify the MLO.

## **PLUMBING GROUND ROUGH**

This is an inspection of the under slab plumbing lines prior to the slab being poured. An air or water test is not required for one and two family dwellings. Plumbing ground rough inspections will not be scheduled unless a right-of-way permit has been secured.

## **ROW COMPACTION**

Prior to working in the public right-of-way (ROW), a ROW permit shall be secured. A compaction inspection is required for all excavations for sewer and water lines. These inspections are made by the Public Works inspectors. Call (913) 895-6189 for inspection. \*Failure to secure a satisfactory ROW compaction inspection will result in occupancy permits being withheld.

## **VAPOR BARRIER**

A 6 mil vapor retarder must be placed between the concrete floor slab and the base course (gravel). Garages and other unheated areas are exempt from this requirement.

- Insulation at walkouts shall be in place at this time.

## **SLAB-ON-GRADE FLOORS**

Slab-on-grade floors with a floor surface less than 12 inches below grade shall be insulated per 2018 International Residential Code (IRC), Table N1102.1.2. This table requires R-10 insulation for a distance of 2 feet. This item can be inspected in conjunction with a vapor barrier or structural slab inspection.

*This item will be inspected in conjunction with a vapor barrier, structural wall or structural slab inspection depending on where the insulation is installed.*

## **STRUCTURAL SLAB**

The inspector looks at the installation, size and location of the reinforcing steel in concrete floors prior to pouring the concrete. City approved plans are required. If a city standard is referenced on the plans then the contractor should be prepared to show the design standard to the inspector.

## **FIRE RESISTIVE WALL**

This inspection is required for duplexes and/or town homes. Inspectors look at the installation of materials for fire-rated assemblies including rated walls, ceilings, columns, floors etc. If the assembly utilizes drywall materials, the inspection must be made before mudding and taping. If multiple layers are involved, each layer must be inspected prior to proceeding to additional layers or application of finish materials being applied. Approved plans are required on-site.

## STRUCTURAL BRACED WALL

This is the inspection type to be used for lateral braced walls or shear walls. It can involve a number of things such as anchoring devices or nailing patterns. Approved plans are required on-site. When requesting this inspection, be specific as to what the inspector is to look at. Depending on the design, it may be necessary to request this inspection several times throughout the construction process.

## FLASHING

This inspection is of windows and doors to verify how they are flashed in order to prevent water infiltration. The inspector will need to be shown how the windows are being flashed in a step-by-step fashion. Twenty-five percent of the windows need to be inspected. \*May be inspected as part of the rough-in inspection if the flashing process can be easily observed.

## WEATHER RESISTIVE BARRIER

A weather resistive barrier is required to be installed on studs or sheathing on all exterior walls. One layer of #15 asphalt felt complying with ASTM D226 or other approved material such as a house wrap is required. An inspection of this item is required. The inspector will check to see that the material is installed properly (ship lapped horizontally), that the material is free of holes and breaks, and that the material is properly wrapped around corners. Depending on the method of construction and the timing of the installation, one or more inspections may be required.

## LATH INSPECTION

This inspection is of the installation of metal lath. The inspector will look for proper lapping of the metal base, how the metal lath is attached (size and spacing of the staples or nails); location of expansion/control joints, size of the accessories, and weep screeds.

## ROUGH-IN

General inspection of the structure, the electrical service and wiring, the plumbing system, and the mechanical work. This inspection is to be made prior to the installation of insulation and drywall. \*Approved plans are required to be on the job site.

- Recessed luminaires installed in the building thermal envelope shall be sealed to limit air leakages between conditioned and unconditioned spaces. The luminaires shall be IC rated and labeled as having an air leakage rate not more than 2.0 cfm per ASTM E283. All recessed luminaires shall be sealed with a gasket or caulk between the housing and the interior wall or ceiling covering. *This item will be inspected as part of the rough-in inspection and the final inspection.* See OPMC16.110.N1102.4, Section N1102.4.4. The inspection of this item will be part of the rough-in inspection and the final inspection.
- Ducts, air handlers, filter boxes and building cavities used as ducts shall be sealed. Joints of ducts systems shall be made substantially airtight by means of tapes, mastics, gasketing or other approved closure systems. **\*Caution\***: the code is very specific as to the type of tape and mastic used to seal duct systems. Supply and return air ducts not located entirely within the building envelope shall be insulated to a minimum of R-8. *The inspection of this item will be part of the rough-in inspection.* See Section 2018 IRC N1103.2.1, N1103.2.2 and M1601.3. The inspection of this item will be part of the rough-in inspection.
- Insulation and fenestration requirements - The building thermal envelope shall meet the requirements of Table N1102.1.1. Overland Park is located in climate Zone 4. Table N1102.1.1 specifies requirements for ceilings, floor, wood frame walls, basement walls, floor slabs, crawl spaces and fenestration components.

## **BUILDING THERMAL ENVELOPE**

The code requires that the building thermal envelope be durably sealed to limit filtration. The following shall be caulked, gasketed, weather stripped or otherwise sealed with an air barrier, suitable film or solid material.

- All joints, seams and penetrations.
- Site-built windows, doors and skylights.
- Openings between window and door assemblies, their respective jambs and framing.
- Utility penetrations.
- Dropped ceiling or chases adjacent to the thermal envelope.
- Knee walls.
- Walls and ceilings separating the garage from conditioned spaces.
- Behind tubs and showers on exterior walls.
- Common walls between dwelling units.
- Other sources of infiltration.

See Section N1102.4.1, 2018 IRC.

*The inspection of these items will be primarily accomplished as part of the rough-in inspection.*

## **ELECTRICAL SERVICE**

Inspection of the electrical service. Upon approval of the inspection, clearance for the service is forwarded to the utility company the following day. The contractor can call the utility company for service anytime after clearance has been given. This inspection is typically done as part of the rough-in inspection. For record keeping purposes, it is best to request this inspection with the rough-in inspection.

## **FUEL GAS - INSIDE**

Also known as a mechanical inside gas inspection. The inspector looks at all interior gas line piping and ensures that the pipe is holding the proper test pressure. In order to get a service clearance, the piping must be connected to a properly vented gas-fired appliance. Upon approval of the inspection, the city will contact the applicable utility company the following day and authorize a meter. The contractor can call for service anytime after the clearance has been given to the utility company. This inspection can be scheduled separately or as part of the rough-in inspection.

## **INSULATION**

The primary focus of this inspection will be on vaulted ceilings, walls and other areas that will be covered by drywall. The inspection will look at the venting of the rafter space during the rough-in inspection. A separate inspection will be required to look at the insulation. R-49 insulation is the general requirement for this part of the country which means a rafter depth equal to at least 15 ½ inches is required. R-30 can be used in limited applications (See Section N1102.2.2, 2018 IRC). The rafter depth for R-30 insulation would need to be 9 ½ inches deep. Although the focus of this inspection will be on cathedral ceilings the inspector will also look to see that other areas of the structure are properly insulated. Finished spaces below suspended garage floors require R-49.

For blown or sprayed insulation (fiberglass and cellulose), the insulation contractor shall provide a certification statement listing the initial installed thickness, settled thickness, settled R-value, installed density, coverage area and number of bags installed shall be on the certification. For sprayed polyurethane foam (SPF) insulation, the thickness of the area covered and R-value of installed thickness shall be listed on the certification. See IRC 2018, Section N1101.10.1.

*The Certification statement will be required prior to approval of the final inspection.*

## **CERTIFICATE**

A permanent certificate is required to be posted on or in the electrical panel. (Blank certificates for use will be given to the contractor at the time of permit issuance.) The certificate shall specify the predominate R-values of insulation installed in or on ceiling/roof, walls, foundation (slab, basement wall, crawl space and/or floor) and ducts outside conditioned spaces; U-factors of fenestration; and the solar heat gain coefficient (SHGC) of fenestration. Where there is more than one value for each component, the certificate shall list the value covering the largest area. The certificate shall list the type of efficiency of heating, cooling and service water heating equipment. See 2018 IRC, Section 1101.14. This item will be inspected as part of the final inspection.

*This item will be inspected as part of the final inspection.*

## **SHEET ROCK**

Inspectors will check to see that a cement, fiber-cement or a glass mat gypsum board have been used as backers for wall tile in tub and shower areas and wall panels in shower areas. **Note** – where water resistant gypsum (green board) is used on ceilings, ½ inch gypsum is allowed when ceiling joists are spaced no more than 12” on center. 5/8 inch gypsum can be used when ceiling joists are spaced no more than 16” on center.

## **FORM INSPECTION**

There are two types of form inspections; one for drive approaches and sidewalks and another for ADA ramps. These inspections are made by the Engineering Services inspectors within four hours of the request for inspection. This inspection is to ensure that the sidewalks, drive approaches and ADA ramps are constructed in accordance with City Standards prior to the placement of concrete.

## **ENGINEERING SERVICES – SITE GRADE**

Many residential lots have swales or berms to control drainage or overflow. These types of lots are usually flagged on the permit and require inspection. This inspection is made by Engineering Services inspectors, and is generally done after the swale or berm has been constructed (fine graded).

## **PUBLIC SIDEWALK**

The final inspection of the installation of a sidewalk, made after the concrete has been poured and all forms removed.

## **FINAL INSPECTION**

This inspection is required before any type of occupancy can be granted. It entails the general inspection of all completed work both interior and exterior. In order to obtain a Certificate of Occupancy all permit conditions must be satisfied and all work must be complete. If the permitted work is not entirely complete, the contractor may request a Temporary Certificate of Occupancy. Temporary Certificates of Occupancy are granted at the discretion of the inspector. A Certificate of Occupancy or a Temporary Certificate of Occupancy must be obtained from Building Safety before a building can be occupied. If the time frame allotted by the Temporary Certificate of Occupancy expires, you are required to either schedule a final inspection to address any outstanding items, or renew the Certificate.

*The City of Overland Park does not warrant the accuracy, completeness, or timeliness of the information contained in this handout. To verify the city requirements please refer to the official version of the Municipal Code.*