



Code Administrators, Inc.

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2006 IRC Requirements for Gas Fired Mechanical Projects

The following information is provided to assist permit applicants with the requirements of performing mechanical alterations to a dwelling for gas fired appliances and equipment. These items are not inclusive and if there are questions regarding the code applicability to a specific project, a preliminary inspection with a construction code official should be scheduled with our office.

G2401.1 (101.2) Application. This chapter covers those fuel gas piping systems, fuel-gas utilization equipment and related accessories, venting systems and combustion air configurations most commonly encountered in the construction of one- and two-family dwellings and structures regulated by this code.

Exception: As an alternative to the provisions of this code, fuel-gas piping systems, fuel-gas utilization equipment and related accessories in existing buildings that are undergoing repairs, alterations, changes in occupancy or construction of additions shall be permitted to comply with the provisions of the *International Existing Building Code*.

Coverage of piping systems shall extend from the point of delivery to the outlet of the equipment shutoff valves (see "Point of delivery"). Piping systems requirements shall include design, materials, components, fabrication, assembly, installation, testing, inspection, operation and maintenance. Requirements for gas utilization equipment and related accessories shall include installation, combustion and ventilation air and venting and connections to piping systems.

INSTALLATION

G2408.1 General. Equipment and appliances shall be installed as required by the terms of their approval, in accordance with the conditions of listing, the manufacturer's instruction and this code. Manufacturers' installation instructions shall be available on the job site at the time of inspection. Where a code provision is less restrictive than the conditions of the listing of the equipment or appliance or the manufacturer's installation instructions, the conditions of the listing and the manufacturer's installation instructions shall apply.

BUILDING PLANNING AND CONSTRUCTION

R502.8 Drilling and notching. Structural floor members shall not be cut, bored or notched in excess of the limitations specified in this section. See Figure R502.8.



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2006 IRC Requirements for Gas Fired Mechanical Projects **BUILDING PLANNING AND CONSTRUCTION – CONTINUED**

R502.8.1 Sawn lumber. Notches in solid lumber joists, rafters and beams shall not exceed one-sixth of the depth of the member, shall not be longer than one-third of the depth of the member and shall not be located in the middle one-third of the span. Notches at the ends of the member shall not exceed one-fourth the depth of the member. The tension side of members 4" (102 mm) or greater in nominal thickness shall not be notched except at the ends of the members. The diameter of holes bored or cut into members shall not exceed one-third the depth of the member. Holes shall not be closer than 2" (51 mm) to the top or bottom of the member, or to any other hole located in the member. Where the member is also notched, the hole shall not be closer than 2" (51 mm) to the notch.

R602.6 Drilling and notching studs. Any stud in an exterior wall or bearing partition may be cut or notched to a depth not exceeding 25% of its width. Studs in nonbearing partitions may be notched to a depth not to exceed 40% of a single stud width. Any stud may be bored or drilled, provided that the diameter of the resulting hole is not greater than 40% of the stud width, the edge of the hole is no closer than 5/8" (15.9 mm) to the edge of the stud, and the hole is not located in the same section as a cut or notch. See Figures R602.6(1) and R602.6(2).

Exceptions:

1. A stud may be bored to a diameter not exceeding 60% of its width, provided that such studs located in exterior walls or bearing partitions are doubled and that not more than two successive studs are bored.
2. Approved stud shoes may be used when installed in accordance with the manufacturer's recommendation.

R602.6.1 Drilling and notching of top plate. When piping or ductwork is placed in or partly in an exterior wall or interior load-bearing wall necessitating cutting, drilling or notching of the top plate by more than 50% of its width, a galvanized metal tie of not less than 0.054" thick (1.37 mm) (16ga) and 1.5" (38 mm) wide shall be fastened to each plate across and to each side of the opening with not less than eight 16d nails at each side or equivalent. See Figure R602.6.1.

Exception: When the entire side of the wall with the notch or cut is covered by wood structural panel sheathing.



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2006 IRC Requirements for Gas Fired Mechanical Projects **BUILDING PLANNING AND CONSTRUCTION – CONTINUED**

R602.8 Fireblocking required. Fireblocking shall be provided to cut off all concealed draft openings (both vertical and horizontal) to form an effective fire barrier between stories, and between a top story and the roof space. Fireblocking shall be provided in wood-frame construction in the following locations:

- 1.1 Vertically at the ceiling and floor levels
- 1.2 Horizontally at intervals not exceeding 10' (3048 mm)
2. At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and cover ceilings
3. In concealed spaces between stair stringers at the top and bottom of the run. Enclosed spaces under stairs shall comply with Section R311.2.2.
4. At openings around vents, pipes and ducts at ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion
5. For the fireblocking of chimneys and fireplaces, see Section R1001.16
6. Fireblocking of cornices of a two-family dwelling is required at the line of dwelling unit separation

R602.8.1 Materials. Except as provided in Section R602.8, Item 4, fireblocking shall consist of 2" (51 mm) nominal lumber, or two thicknesses of 1" (25.4 mm) nominal lumber with broken lap joints, or one thickness of 23/32" (19.8 mm) wood structural panels with joints backed by 23/32" (19.8 mm) wood structural panels or one thickness of 3/4" (19.1 mm) particleboard with joints backed by 3/4" (19.1 mm) particleboard, 1/2" (12.7 mm) gypsum board or 1/4" (6.4 mm) cement-based millboard. Batts or blankets of mineral wool or glass fiber or other approved materials installed in such a manner as to be securely retained in place shall be permitted as an acceptable fire block. Batts or blankets of mineral or glass fiber or other approved non-rigid materials shall be permitted for compliance with the 10' horizontal fireblocking in walls constructed using parallel rows of studs or staggered studs. Loose-fill insulation material shall not be used as a fire block unless specifically tested in the form and matter intended for use to demonstrate its ability to remain in place and to retard the spread of fire and hot gasses.

SECTION R807 ATTIC ACCESS

R87.1 Attic access. In buildings with combustible ceiling or roof construction, an attic access opening shall be provided to attic areas that exceed 30 square feet (2.8m²) and have a vertical height of 30" (762 mm) or greater. The rough-framed opening shall not be less than 22" by 30" (559 mm by 762 mm) and shall be located in a hallway or other readily accessible location. A 30" (762 mm) minimum unobstructed headroom in the attic space shall be provided at some point above the access opening. See Section M1305.1.3 for access requirements where mechanical equipment is located in attics.



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2006 IRC Requirements for Gas Fired Mechanical Projects **BUILDING PLANNING AND CONSTRUCTION – CONTINUED**

SECTION R808 INSULATION CLEARANCE

R808.1 Combustible insulation. Combustible insulation shall be separated a minimum of 3” (76 mm) from recessed lighting fixtures, fan motors and other heat-producing devices.

Exception: When heat-producing devices are listed for lesser clearances, combustible insulation complying with the listing requirements shall be separated in accordance with the conditions stipulated in the listing. Recessed lighting fixtures installed in the building thermal envelope shall meet the requirements of Section N1101.3