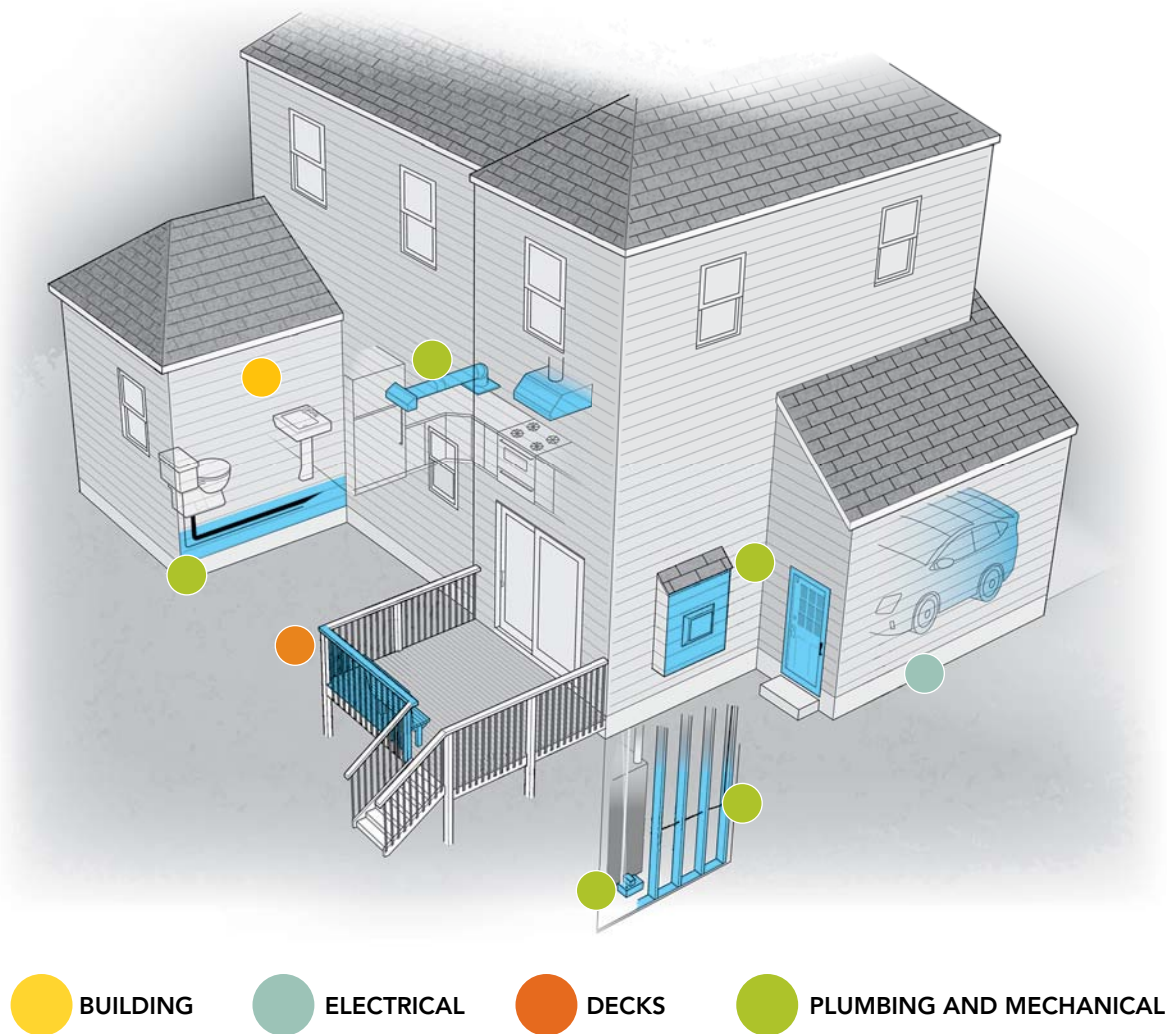


Illustrated Guide to Code Changes

Here's what you can expect in the 2015 IRC

BY GLENN MATHEWSON



The latest building-code requirements typically start becoming the law of the land a year after they're published, so it won't be long before you'll need to comply with new provisions in the 2015 International Residential Code (IRC). A quick shuffle through the 902 pages of the new code book reveals

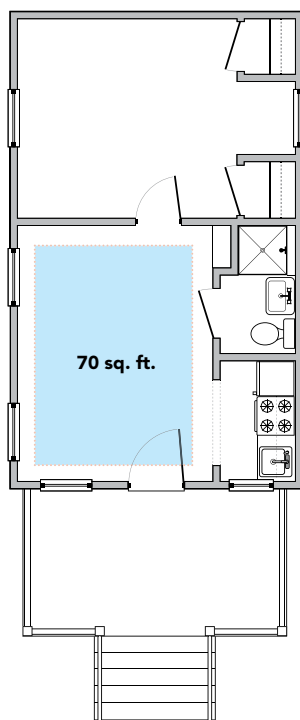
that most have a black bar in the margin, signaling a change. There are hundreds of changes, but most are editorial, intended to make the respective provisions easier for builders to understand and easier for code officials to interpret. Still, there are significant changes of substance as well. Here, I highlight those that I think will have the

most far-reaching effects and the ones that code officials and builders should be most aware of. The changes are grouped in four categories: building, plumbing and mechanical, electrical, and decks.

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BUILDING

Fire and injury prevention is still the emphasis, but the code also reflects changes in society's attitudes. Recent revisions to the IRC brought on by tiny-house advocates demonstrate that anybody can lobby the International Code Council—which is comprised of municipal code officials and interested parties—for changes.



Room size R304.1

Tiny-house advocates convinced the ICC to shrink the minimum room size. Previous code versions required at least one 120-sq.-ft. room in every dwelling. The new minimum is 70 sq. ft., plus a bathroom.

Joist spans R502.3

After remaining unchanged for many years, span tables for joists have been revised. There's been a reduction in maximum span for joists made of southern pine and a slight increase in allowable spans for Douglas fir and hem-fir.

JOIST SPANS

40 psf live load, 20 psf dead load

		2x10	2x12
2012	#2 Southern pine (16 in. o.c.)	14 ft. 8 in.	17 ft. 2 in.
2015	#2 Southern pine (16 in. o.c.)	12 ft. 10 in.	15 ft. 1 in.
2012	#2 Douglas fir (16 in. o.c.)	14 ft. 1 in.	16 ft. 3 in.
2015	#2 Douglas fir (16 in. o.c.)	14 ft. 3 in.	16 ft. 6 in.

Smoke alarms R314.1–R314.7

To limit false alarms, smoke alarms now must be at least 3 ft. from bathroom doors. In addition, alarms with a photoelectric sensor must be at least 6 ft. from cooking appliances; ionization detectors must be at least 20 ft. away. Carbon-monoxide alarms must be hard-wired to the building power and are now required in bedrooms when a fuel-fired appliance such as a gas fireplace is in the bedroom or in an attached bathroom.



Ceiling heights R305.1

The minimum ceiling height in laundry areas, powder rooms, and bathrooms has been reduced from 7 ft. in the 2012 version of the IRC to 6 ft. 8 in. in the new version. The change should make it easier to install pipes, ducts, and mechanical equipment in these spaces because of the lowered ceiling.

ELECTRICAL

Electrical codes in the IRC come from the National Electrical Code (NEC), published by the National Fire Protection Association (NFPA). Like the IRC, this code is on a three-year cycle; however, it comes out one year earlier, so it's the 2014 NEC provisions that are found in the 2015 IRC.

Additional GFCIs E3902.8–E3902.10

All receptacles in laundry areas must now be protected by an easily accessible ground-fault circuit interrupter (GFCI). You'll also need GFCI protection for garbage disposals and for locations within 6 ft. of a bathtub or shower, even if they are outside the bathroom.

Arc-fault protection E3902.16

The electrical code now requires arc-fault circuit-interrupter (AFCI) outlets in nearly every room of the house except bathrooms, unfinished basements, garages, and outdoors. Protection can come from either an AFCI breaker or an AFCI receptacle installed in the first outlet box on a branch circuit.

Although previous versions of the code glossed over deck construction, elevated wood decks are fully covered in the 2015 version of the IRC. No longer do builders and inspectors have to make their best guess as to a deck's compliance; now the rules are spelled out fully.

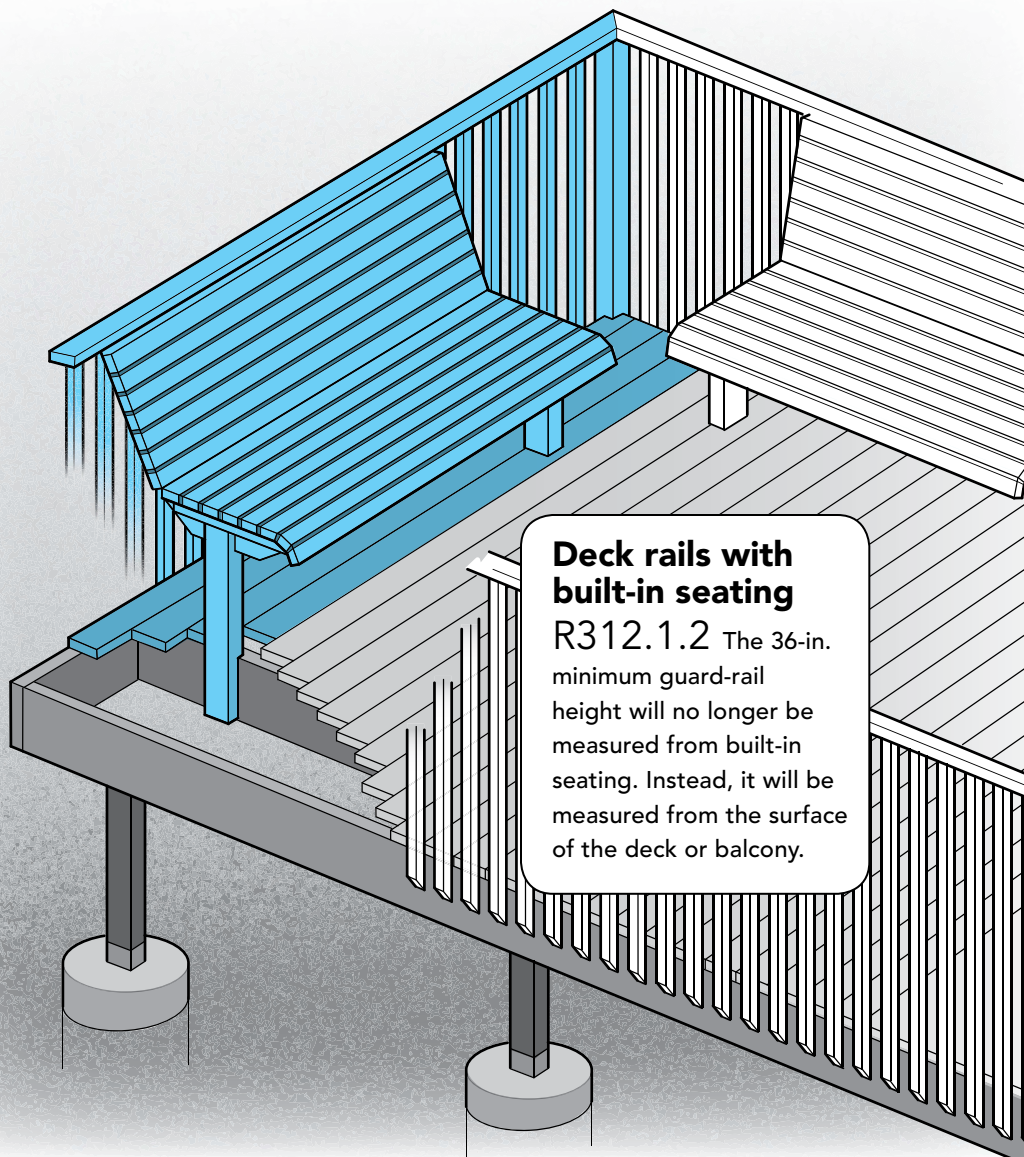
Deck joists and deck beams

R507.5 and R507.6

New "wet-condition" span tables for joists and beams outside the building envelope have been added to the code. Allowable cantilevers over dropped beams are also specified. The companion table R507.5 provides maximum spans for all three common types of deck framing lumber. The new deck-related rules are based on the *Prescriptive Residential Deck Construction Guide (DCA 6)* from the American Wood Council.

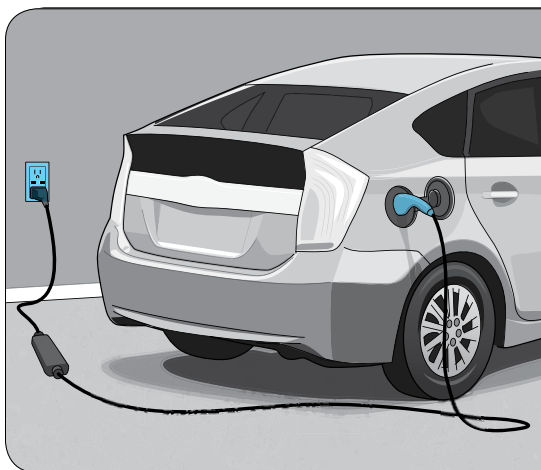
Posts R507.8

Limits of 8 ft. for 4x4 and 4x6 posts and 14 ft. for 6x6 posts finally offer prescriptive guidance for allowable post length. Deck-board fastening, post-to-beam connections, and post-to-foundation connections are specified also.



Deck rails with built-in seating

R312.1.2 The 36-in. minimum guard-rail height will no longer be measured from built-in seating. Instead, it will be measured from the surface of the deck or balcony.



Garage receptacles E3901.9

The increasing popularity of electric cars drove the requirement for additional outlets in the garage. Now all vehicle spaces in a garage must be provided with their own GFCI-protected receptacle. Also, all circuits serving receptacles in the garage can serve no other indoor or outdoor locations.

Every switch needs a neutral E4001.15

With the increased use of motion detectors, illuminated switches, and other "smart" switch devices, all switch locations (with a few exceptions) are required to have a neutral (grounded conductor) in the box. In certain arrangements, three-way switches now require a four-conductor cable.

PLUMBING AND MECHANICAL

Many of the plumbing-code changes will be cheered by plumbers everywhere. The code also addresses increased attention to water conservation with seven new pages describing rainwater and gray-water collection.

Insulation under pipes N1102.2.8

Floor insulation works best when it's in contact with the underside of the floor sheathing, so this is what the IRC has required for years. When pipes or ducts are run through the floor system, however, this puts them outside the conditioned envelope. The result is wasted energy and pipes prone to freezing. You can now use continuous insulation beneath the floor framing to bring pipes and ducts within the building envelope. However, the rim joist must be insulated to the R-value required for walls.



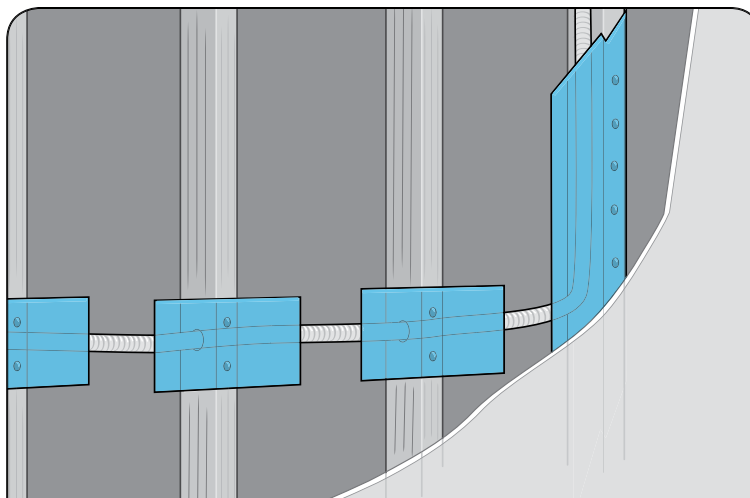
Forget about PVC primer P3003.9.2

The telltale drips of purple primer on white PVC drain-and-vent piping will become a thing of the past. National Sanitary Foundation testing reveals that the primer isn't necessary on unpressurized pipes of 4 in. dia. or less.

Relaxed nail-plate rules

P2603.2.1

The longstanding 1½-in. distance from the edge of a framing member to a pipe has been reduced to 1¼ in., which is in line with the electric-code requirements for cables and the mechanical-code requirements for dryer vents. The change should make it easier to run pipe and tubing in 2x4 walls without needing nail plates.

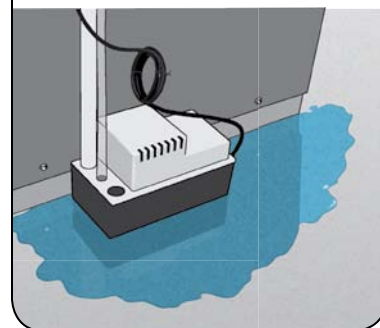


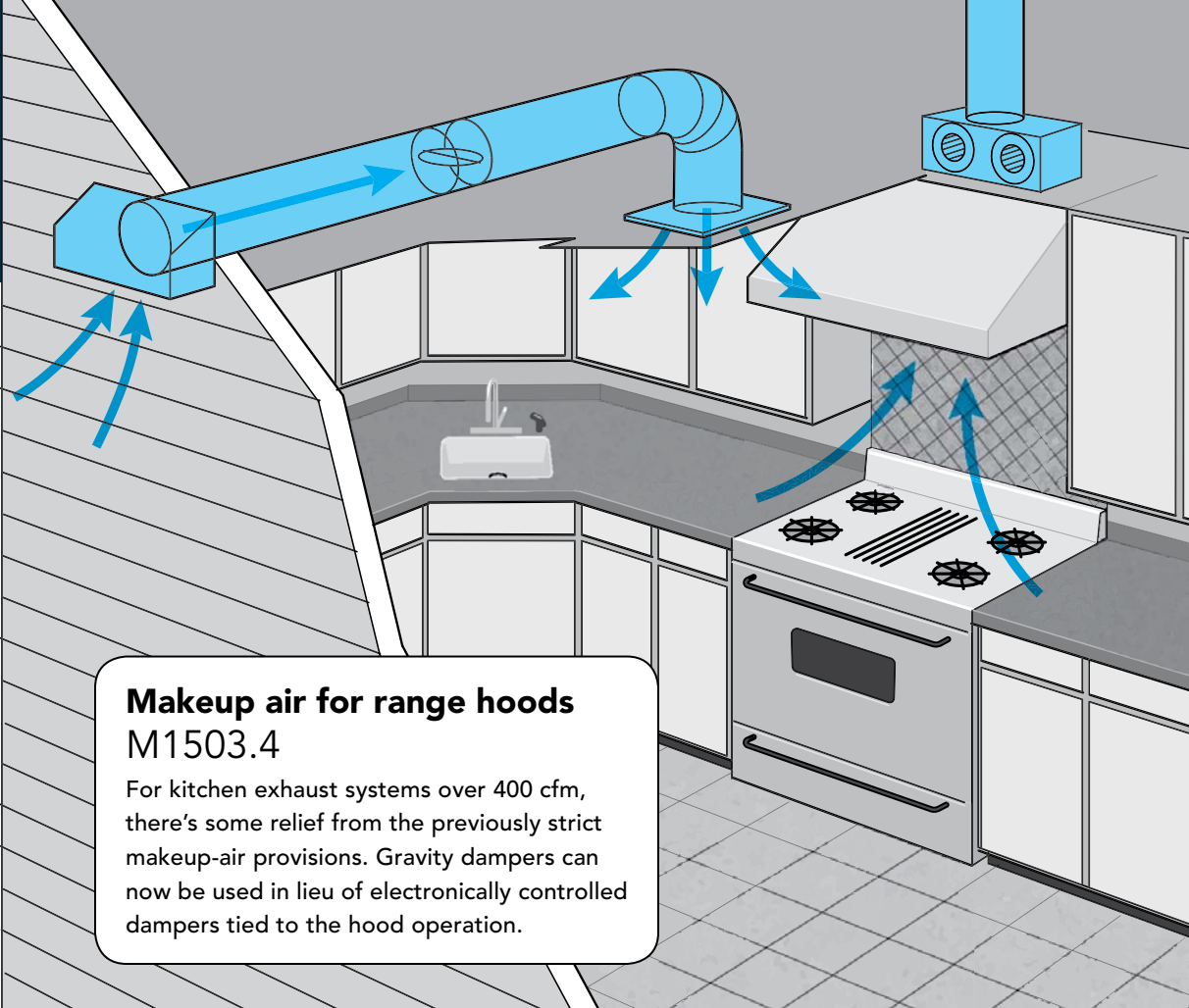
Pipes in walls G2415.7.1

While nail plates got less restrictive under plumbing codes, they became more restrictive under mechanical codes. Flexible gas and air-conditioning lines must be at least 1½ in. from stud faces or be protected with metal plates. The new rule requires that a plate extend for at least 4 in. beyond the stud edges. This is to prevent fasteners that miss the framing member from damaging the tubing. If the tubing is attached to the side of the stud, it must be at least 1½ in. away from the stud face or protected by 16-ga. flat steel for its entire length and width.

Condensate pumps G2404.11

In an effort to squeeze every available Btu from natural gas, high-efficiency furnaces and water heaters produce condensate. When you can't drain the condensate by gravity, condensate pumps are the solution, but because they're often in a basement or crawlspace, no one may notice if a pump stops working. The 2015 IRC requires a condensate pump to be wired so that when it stops, the water heater or furnace also stops. This way the occupant will know there's a problem.





Makeup air for range hoods M1503.4

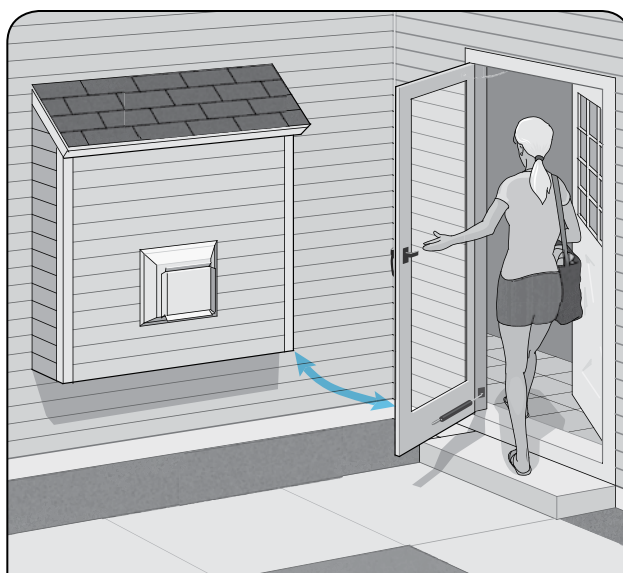
For kitchen exhaust systems over 400 cfm, there's some relief from the previously strict makeup-air provisions. Gravity dampers can now be used in lieu of electronically controlled dampers tied to the hood operation.

Cleanouts P3005.2

A plumbing cleanout is no longer required at the base of each waste stack, but the necessary space around cleanouts for access has been increased from 12 in. to 18 in.

Dryer ducts M1502.4.5

Clothes-dryer ductwork over 35 ft. long must have a permanent identification tag within 6 ft. of the dryer connection specifying its length. If the run is longer than 35 ft., the dryer manufacturer's instructions allowing the code-exceeding length must be provided during inspections. Alternatively, you can now use a booster fan for extralong dryer ducts.



Sidewall venting M1804.4

For heating equipment such as high-efficiency furnaces and gas fireplaces that vent directly through a sidewall, you now need to place vent terminations so they're at least 12 in. away from a door's swing. The rule also applies to storm and screen doors.

The code process

The International Code Council (ICC) publishes a new version of the International Residential Code (IRC) every three years. Additions and other changes are worked out ahead of the publishing date at annual hearings that move around the country. Anyone can attend the hearings or follow the proceedings live online.

Anyone can submit code-modification proposals and testify in favor of or in opposition to any code proposal during any hearing. Individuals and corporations can join the ICC, but only governmental ICC members (those members who work in municipal-code enforcement) can vote to complete the code-development cycle. Once the new version of the IRC is published, it's up to the individual states and municipalities to adopt it.

The adoption process and schedule are unique to each state, municipality, and code-enforcement office. In many instances, a state or municipality will keep a previous version of the code in place well after a new version has been released. For example, some states will adopt the 2015 IRC by the end of 2016, but the new code is unlikely to be mainstream until 2017. Hearings for the 2018 IRC will occur throughout 2016, with the final vote occurring in October 2016.