

Significant Changes to the International Codes 2012 Edition from the 2006 Edition (2 code cycles) and to the 2011 NEC from the 2005 NEC (2 code cycles) -

The purpose for this report is to familiarize the City Council and the development construction industry with the important changes related to construction design and installation. The changes selected were identified for their special significance to the possible cost of construction for future developments compared to the positive impact the change has on the life - safety aspects for the community.

2012 International Building Code (IBC)

Chapter 4 – The 2009 major change was to recognize the post 911 terrorist attack studies on high rise buildings with both code editions recognizing the ‘ambulatory care facilities’ as a new commonly seen use.

1). NEW/REVISED CODE Section 403.6.1 – This section will now require an increase in fire service elevators (minimum 2 or more) in buildings with occupied floors more than 120 feet above level of fire department vehicle access. Previously only one was required.
SIGNIFICANT COMMENT – This change will apply to 10 story and above buildings, so no immediate cost concern.

2). NEW/REVISED CODE Section 422 - Ambulatory care facilities are classified as B occupancy and the use has been modified in the 2009 and 2012 code editions. This section applies when there is the potential of four or more recipients who are rendered incapable of self-preservation. Space needs to be separated by fire partitions and if space is greater than 10,000 square foot on single story, the space needs to be within smoke compartments.

SIGNIFICANT COMMENT – The types of occupancies that administer sedation or anesthesia to four or more recipients were previously assigned a B occupancy much like a general practice clinic with in and out, patient surgeries. The 2012 code has responded to the life safety requirements for people who may be rendered incapable of self-preservation by added a higher degree of protection by requiring a fire sprinkler system and fire alarm as well as a fire partition between an adjacent occupancy. COST – based on size and use.

Chapter 9 – Recognition of the need to require Carbon Monoxide detectors in Group R occupancies (example - apartments/hotels) and Group I occupancies (example - child daycare, assisted living facilities) if there exists a direct location of fuel fired appliances in the sleeping/dwelling unit or a direct opening from a garage into the sleeping unit).

3). NEW/REVISED CODE Section 908.7 - Will now require carbon monoxide alarms in Group I and R occupancies which contain fuel burning appliances or attached garages. This requirement for R Occupancies covered in the IRC, began with the 2009 edition.
SIGNIFICANT COMMENT – The CO detectors have evolved into a cost effective design allowing flexibility in location and can also be combined with the smoke detectors.
COST – based on number.

Chapter 10 – Life Safety provision added to allow occupants in R-1 occupancies (Motels/Hotels) that may be trying to exit in a smoke filled corridor, an opportunity to identify the exit path if in a crawl position.

4). NEW/REVISED CODE Section 1011.2 - Floor level exit sign in R-1 has been added and will require floor level exit signs in all areas serving guestrooms in R-1 occupancies.

SIGNIFICANT COMMENT – The floor level exit signs would be placed in same location as ceiling level exits. **COST** – Contractors will just double the cost for exit signs.

2012 International Residential Code (IRC)

Chapter 3 – This chapter covers all aspects of building planning and has seen revisions/additions to both code editions. Some significant changes are listed.

5). NEW/REVISED CODE Section R302.5.1 – The 2012 edition now requires the door between the dwelling unit and the garage to be self-closing.

SIGNIFICANT COMMENT – Dwelling to garage wall separation protection by fire rated drywall is already in the code - the 2012 code adds a self-closing door to help prevent the accidental spread of toxic gases from garage to the dwelling unit. **COST** – very negligible (spring hinges).

6). NEW/REVISED CODE Section R315 – The 2009 code edition added this new section requiring the installation of carbon monoxide detectors under specific house design qualifiers for the installation. The 2012 code edition added to this section the recognition of NFPA 720 as an alternate method from prescriptive requirements.

SIGNIFICANT COMMENT - The CO detectors have evolved into a cost effective design allowing flexibility in location and can also be combined with the smoke detectors. **COST** – based on number.

Chapter 6 – The major changes to wall construction requirements occurred in the 2009 code addition with the 2012 code edition reformatting to allow the prescriptive methods easier to locate.

7). NEW/REVISED CODE Section R602.10 – The wall bracing provisions have undergone a major overhaul from the 2006 provisions, reorganizing and revising the text for technical accuracy and clarity.

SIGNIFICANT COMMENT – The wall bracing design has to be completed by an engineer and is currently a part of all SF residential permits and the inspection process. This is due to the builder recognition of a need to have a better wind load design. **COST** – not a factor for most builders.

Chapter 7 – The 2009 and 2012 code editions showed most changes and additions to the exterior covering requirements.

8). NEW/REVISED CODE Table R703.4 – One key change in the 2009 code edition and continued to 2012 code edition is the removal of the allowance to apply the 1” air space behind masonry veneer for the required weather resistive barrier. Installation of an approved sheathing paper or house wrap behind masonry veneer is now required and must be listed and labeled for compliance.

SIGNIFICANT COMMENT – The change has been accepted by most builders as a result of this requirement in the 2009 code edition and most builders are using a ‘house wrap’ product for the weather resistive barrier. **COST** – not a factor for most builders.

2012 International Energy Conservation Code (IECC) for COMMERCIAL OCCUPANCIES

Compliance with State of Texas Requirements

2012 International Energy Conservation Code (IECC) for RESIDENTIAL OCCUPANCIES

Compliance with State of Texas Requirements

9). SIGNIFICANT COMMENT – The Energy Code compliance is a State mandated requirement under the Texas Building Energy Performance Standards (TBEPS) and is already being implemented in the City. COST – some increase based on higher energy saving prescriptive requirements.

2012 International Fuel Gas Code (IFGC) – None Observed

2012 International Plumbing Code (IPC) – None observed

2012 International Fuel Gas Code (IFGC) – None Observed

2012 International Mechanical Code (IMC)

Chapter 4 – The 2009 edition saw most of the changes/additions, specifically to Section 403 on mechanical ventilation (new section). The 2012 edition saw minor changes to intake air and to enclosed parking garages and nail saloon use.

10). NEW/REVISED CODE Table 403.3 will now require that each nail saloon station to have a source capture system capable of exhausting not less than 50 cfm per station.

SIGNIFICANT COMMENT – The continued recognition of possible air entrained odors that could affect the health of occupants and the general public has led to this more stringent requirement. COST – depends on number of stations as opposed to previously requiring only one system.

Chapter 5 – Most of the key changes and additions occurred with the 2009 edition and related to clothes dryer exhaust, kitchen makeup air, commercial kitchen hood and duct exhaust systems.

11). NEW/REVISED CODE Section 506 and 507 – the 2009 edition and 2012 edition shows significant changes to commercial kitchen ducts and hood systems. Testing of ducts, clearances to combustibles, cleanout locations and outside terminations requirements are listed and revised.

SIGNIFICANT COMMENT – These more stringent changes are in conjunction with the 2012 International Fire Code requirements in Chapter 6 and address the need to provide a safer protection method for grease ducts and hoods. COST – depends on many factors such as new construction technique and maintenance programs initiated by the owner.

2011 National Electrical Code (NEC)

12). SIGNIFICANT COMMENT - No substantial cost concern since the 2011 NEC has been the required code for electrical installers for the last 16 months (TDLR Rule).

Chapter 2--Wiring and Protection

- As has been the case for the last several Code cycles, 210.8, covering GFCI protection, has been revised. The test and reset functions of the GFCI device must now be in a readily accessible location so that they can be tested monthly, as required by the product standard. A revision was made to the requirements of GFCI protected receptacles in patient care areas, and a new requirement for GFCI protection in non-dwelling unit indoor wet locations have been added. Non-dwelling locker rooms with associated showering facilities also require GFCI protection now, as do all 15A and 20A, 125V receptacles installed in service bays, garages and similar areas. The area in which this applies is wherever electrical diagnostic equipment, electrical hand tools, or portable lighting equipment are to be used.

- Clarifications to the AFCI requirements have been made, especially as it pertains to branch circuit extensions and modifications.

Chapter 4--Equipment for General Use

- Significant changes to Chapter 4 can be found throughout the chapter, beginning in Article 404, Switches. 404.2(C) contains a very substantial change. With these changes, the days of two conductor switch loops and dead-end three way switches are in the past, except for raceway systems and some unfinished areas of buildings. This new requirement will mandate a grounded conductor at each switch location for line-to-neutral switch controlled loads.

- As wiring systems become older, the Code has added provisions for updating systems, and this edition of the Code is no different. Replacement of AFCI protected circuits, tamper-resistant receptacles, and weather-resistant receptacles are all now addressed in the Code, and tamper-resistant receptacles are now required in guest rooms, guest suites, and child care facilities.

This significant change report has been prepared by Rick Herzberger, Chief Building Official for the City of McKinney, Texas with the support of the Building Inspection Department employees. The ICC Transitional Series workbooks for the I-Codes (2012 from 2006 editions) was used as a reference as well as the IAEI code update series for the 2005 to 2011 NEC code editions. The U.S. Department of Energy (DOE) Building Energy Codes Program (BECP) guide was used to compare where and how the 2009 and 2012 IECC documents differ.