d to One- and Two- family dwellings and
Townhouses
Towiniouses
rovisions of the International Existing oby to the repair, alteration, change of and relocation of existing buildings. Intent of this code is to provide flexibility mative approaches to achieve um requirements to safeguard the d welfare insofar as they are affected <i>n</i> , change of occupancy, addition and <i>uildings</i> . <b>y</b> . This code shall apply to the repair, <i>scupancy</i> , addition and relocation of rdless of occupancy, subject to the criteria 101.4.2. <b>not previously occupied</b> . A building that has not been previously intended purpose in accordance ce at the time of its completion mply with the provisions of the time of its original permit unless . Subsequent permits shall comply Building Code or International Residential ing existing on the date of adoption mitted to continue without change, covered in this code, the International lational Property Maintenance lecessary by the code official ind welfare of the occupants and the

	302.2 Additional codes. Alterations, repairs, additions and
	changes of occupancy to, or relocation of, existing buildings
	and structures shall comply with the provisions for <i>alterations</i> ,
	repairs, additions and changes of occupancy or relocation,
	respectively, in this code and the <i>International Energy</i>
	Conservation Code, International Fire Code, International
	Fuel Gas Code, International Mechanical Code, International
	Plumbing Code, International Property Maintenance
	Code, International Private Sewage Disposal Code, International
	<i>Residential Code</i> and NFPA 70. Where provisions of
	the other codes conflict with provisions of this code, the provisions
	of this code shall take precedence.
FLOOD-RESISTANT CONSTRUCTION	<b>[BS] 402.2 Flood hazard areas.</b> For buildings and structures
<b>R322.1 General.</b> Buildings and structures constructed in	in <i>flood hazard</i> areas established in Section 1612.3 of the
whole or in part in flood hazard areas, including A or V	International Building Code, or Section R322 of the International
Zones and Coastal A Zones, as established in Table	<i>Residential Code</i> , as applicable, any <i>addition</i> that constitutes
R301.2(1), and substantial improvement and restoration of	substantial improvement of the existing structure
substantial damage of buildings and structures in flood hazard	shall comply with the flood design requirements for new construction.
areas, shall be designed and constructed in accordance	and all aspects of the existing structure shall be
with the provisions contained in this section. Buildings and	brought into compliance with the requirements for new construction
structures that are located in more than one flood hazard area	for flood design.
shall comply with the provisions associated with the most	For buildings and structures in <i>flood hazard areas</i> established
restrictive flood hazard area. Buildings and structures located	in Section 1612.3 of the International Building Code,
in whole or in part in identified floodways shall be designed	or Section R322 of the International Residential Code, as
and constructed in accordance with ASCE 24.	applicable, any <i>additions</i> that do not constitute <i>substantial</i>
<b>R322.1.1 Alternative provisions.</b> As an alternative to the	<i>improvement</i> of the existing structure are not required to
requirements in Section R322, ASCE 24 is permitted subject	comply with the flood design requirements for new construction.
to the limitations of this code and the limitations	[BS] 403.2 Flood hazard areas. For buildings and structures
therein.	in <i>flood hazard areas</i> established in Section 1612.3 of the
<b>R322.1.2 Structural systems.</b> Structural systems of buildings	International Building Code, or Section R322 of the International
and structures shall be designed, connected and	<i>Residential Code</i> , as applicable, any <i>alteration</i> that
anchored to resist flotation, collapse or permanent lateral	constitutes <i>substantial improvement</i> of the existing structure
movement due to structural loads and stresses from flooding	shall comply with the flood design requirements for new construction,
equal to the design flood elevation.	and all aspects of the existing structure shall be
R322.1.3 Flood-resistant construction. Buildings and	brought into compliance with the requirements for new construction
structures erected in areas prone to flooding shall be constructed	for flood design.
by methods and practices that minimize flood	For buildings and structures in <i>flood hazard areas</i> established
damage.	in Section 1612.3 of the International Building Code,
R322.1.4 Establishing the design flood elevation. The	or Section R322 of the International Residential Code, as
design flood elevation shall be used to define flood hazard	applicable, any alterations that do not constitute substantial

areas. At a minimum, the design flood elevation shall be the higher of the following: 1. The base flood elevation at the depth of peak elevation of flooding, including wave height, that has a 1 percent (100-year flood) or greater chance of being equaled or exceeded in any given year; or 2. The elevation of the design flood associated with the area designated on a flood hazard map adopted by the community, or otherwise legally designated. **R322.1.4.1 Determination of design flood elevations.** If design flood elevations are not specified, the *building official* is authorized to require the applicant to comply with either of the following:

1. Obtain and reasonably use data available from a federal, state or other source; or

2. Determine the design flood elevation in accordance with accepted hydrologic and hydraulic engineering practices used to define special flood hazard areas. Determinations shall be undertaken by a registered *design professional* who shall document that the technical methods used reflect currently accepted engineering practice. Studies, analyses and computations shall be submitted in sufficient detail to allow thorough review and approval.

R322.1.4.2 Determination of impacts. In riverine flood hazard areas where design flood elevations are specified but floodways have not been designated, the applicant shall demonstrate that the effect of the proposed buildings and structures on design flood elevations, including fill, when combined with other existing and anticipated flood hazard area encroachments, will not increase the design flood elevation more than 1 foot (305 mm) at any point within the *jurisdiction*.
R322.1.5 Lowest floor. The lowest floor shall be the lowest floor of the lowest enclosed area, including *basement*, and excluding any unfinished flood-resistant enclosure that is useable solely for vehicle parking, building access or limited

storage provided that such enclosure is not built so as to render the building or structure in violation of this section.

*improvement* of the existing structure are not required to comply with the flood design requirements for new construction. [BS] 404.5 Flood hazard areas. For buildings and structures in flood hazard areas established in Section 1612.3 of the International Building Code, or Section R322 of the International *Residential Code*, as applicable, any repair that constitutes substantial improvement or repair of substantial damage of the existing structure shall comply with the flood design requirements for new construction, and all aspects of the existing structure shall be brought into compliance. [BS] 408.3 Flood hazard areas. Within flood hazard areas established in accordance with Section 1612.3 of the International Building Code, or Section R322 of the International Residential Code, as applicable, where the work proposed constitutes substantial improvement, the building shall be brought into compliance with Section 1612 of the International Building Code, or Section R322 of the International Residential Code, as applicable: Exception: Historic buildings need not be brought into compliance that are: 1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places; 2. Determined by the Secretary of the U.S. Department of Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district; or 3. Designated as historic under a state or local historic preservation program that is approved by the Department of Interior.

**[BS] 601.3 Flood hazard areas.** In flood hazard areas, repairs that constitute *substantial improvement* shall require that the building comply with Section 1612 of the *International Building Code*, or Section R322 of the *International Residential Code*, as applicable,

**[BS] 606.2.4 Flood hazard areas.** In *flood hazard* areas, buildings that have sustained *substantial damage* shall be brought into compliance with Section 1612 of the *International* 

R322.1.6 Protection of mechanical, plumbing and electrical	Building Code, or Section R322 of the International
systems. Electrical systems, equipment and components;	Residential Code, as applicable.
heating, ventilating, air conditioning; plumbing	
appliances and plumbing fixtures; duct systems; and other	[BS] 701.3 Flood hazard areas. In flood hazard areas, alterations
service equipment shall be located at or above the elevation	that constitute substantial improvement shall require
required in Section R322.2 or R322.3. If replaced as	that the building comply with Section 1612 of the International
part of a substantial improvement, electrical systems,	Building Code, or Section R322 of the International
equipment and components; heating, ventilating, air conditioning	Residential Code, as applicable,
and plumbing appliances and plumbing fixtures;	
duct systems; and other service equipment shall meet the	[BS] 1103.5 Flood hazard areas. Additions and foundations
requirements of this section. Systems, fixtures, and equipment	in <i>flood hazard areas</i> shall comply with the following
and components shall not be mounted on or penetrate	requirements:
through walls intended to break away under flood loads.	1. For horizontal <i>additions</i> that are structurally interconnected
Exception: Locating electrical systems, equipment and	to the <i>existing building</i> :
components; heating, ventilating, air conditioning;	1.1. If the <i>addition</i> and all other proposed work,
plumbing appliances and plumbing fixtures; duct systems;	when combined, constitute substantial
and other service equipment is permitted below	<i>improvement</i> , the <i>existing building</i> and the
the elevation required in Section R322.2 or R322.3 provided	addition shall comply with Section 1612 of the
that they are designed and installed to prevent	International Building Code, or Section R322
water from entering or accumulating within the components	of the International Residential Code, as applicable.
and to resist hydrostatic and hydrodynamic loads	1.2. If the <i>addition</i> constitutes <i>substantial improvement</i> ,
and stresses, including the effects of buoyancy, during	the existing building and the addition
the occurrence of flooding to the design flood elevation	shall comply with Section 1612 of the International
in accordance with ASCE 24. Electrical wiring systems	Building Code, or Section R322 of the
are permitted to be located below the required elevation	International Residential Code, as applicable.
provided that they conform to the provisions of the	2. For horizontal <i>additions</i> that are not structurally interconnected
electrical part of this code for wet locations.	to the <i>existing building</i> :
R322.1.7 Protection of water supply and sanitary sewage	2.1. The <i>addition</i> shall comply with Section 1612 of
systems. New and replacement water supply systems	the International Building Code, or Section
shall be designed to minimize or eliminate infiltration of	R322 of the International Residential Code, as
flood waters into the systems in accordance with the	applicable.
plumbing provisions of this code. New and replacement	2.2. If the <i>addition</i> and all other proposed work,
sanitary sewage systems shall be designed to minimize or	when combined, constitute substantial
eliminate infiltration of floodwaters into systems and discharges	<i>improvement</i> , the <i>existing building</i> and the
from systems into floodwaters in accordance with	addition shall comply with Section 1612 of the
the plumbing provisions of this code and Chapter 3 of the	International Building Code, or Section R322
International Private Sewage Disposal Code.	of the International Residential Code, as applicable.
R322.1.8 Flood-resistant materials. Building materials	3. For vertical <i>additions</i> and all other proposed work that,
and installation methods used for flooring and interior and	when combined, constitute substantial improvement,
exterior walls and wall coverings below the elevation	the <i>existing building</i> shall comply with Section 1612 of

required in Section R322.2 or R322.3 shall be flood damage-	the International Building Code, or Section R322 of the
resistant materials that conform to the provisions of	International Residential Code, as applicable.
FEMA TB-2.	4. For a raised or extended foundation, if the foundation
R322.1.9 Manufactured homes. The bottom of the frame	work and all other proposed work, when combined,
of new and replacement manufactured homes on foundations	constitute substantial improvement, the existing building
that conform to the requirements of Section R322.2	shall comply with Section 1612 of the International
or R322.3, as applicable, shall be elevated to or above the	Building Code, or Section R322 of the International
elevations specified in Section R322.2 (flood hazard areas	Residential Code, as applicable.
including A Zones) or R322.3 in coastal high-hazard areas	5. For a new foundation or replacement foundation, the
(V Zones and Coastal A Zones). The anchor and tie-down	foundation shall comply with Section 1612 of the International
requirements of the applicable state or federal requirements	Building Code or Section R322 of the International
shall apply. The foundation and anchorage of <i>manufactured</i>	Residential Code, as applicable.
homes to be located in identified floodways shall	
be designed and constructed in accordance with ASCE 24.	[BS] 1201.4 Flood hazard areas. In <i>flood hazard areas</i> , if all
R322.1.10 As-built elevation documentation. A registered	proposed work, including repairs, work required because of a
design professional shall prepare and seal documentation	change of occupancy, and alterations, constitutes substantial
of the elevations specified in Section R322.2 or	<i>improvement</i> , then the <i>existing building</i> shall comply with
R322.3.	Section 1612 of the International Building Code, or Section
R322.2 Flood hazard areas (including A Zones). Areas that	R322 of the International Residential Code, as applicable.
have been determined to be prone to flooding and that are not	
subject to high-velocity wave action shall be designated as	1401.3.3 Compliance with flood hazard provisions. In
flood hazard areas. Flood hazard areas that have been delineated	flood hazard areas, buildings that are evaluated in accordance
as subject to wave heights between 11/2 feet (457 mm)	with this section shall comply with Section 1612 of
and 3 feet (914 mm) or otherwise designated by the jurisdiction	the International Building Code, or Section R322 of the
shall be designated as Coastal A Zones and are subject to	International Residential Code, as applicable if the work
the requirements of Section R322.3. Buildings and structures	covered by this section constitutes <i>substantial improvement</i> .
constructed in whole or in part in flood hazard areas shall be	
designed and constructed in accordance with Sections	
R322.2.1 through R322.2.3.	
R322.2.1 Elevation requirements.	
1. Buildings and structures in flood hazard areas,	
including flood hazard areas designated as Coastal	
A Zones, shall have the lowest floors elevated to or	
above the base flood elevation plus 1 foot (305 mm),	
or the design flood elevation.	
2. In areas of shallow flooding (AO Zones), buildings	
and structures shall have the lowest floor (including	
basement) elevated to a height of not less than the	
highest adjacent grade as the depth number specified	
highest adjacent grade as the depth number specified	

in feet (mm) on the FIRM plus 1 foot (305 mm),

or not less than 3 feet (15 mm) if a depth number is	
not specified.	
3. Basement floors that are below <i>grade</i> on all sides	
shall be elevated to or above base flood elevation	
plus 1 foot (305 mm), or the design flood elevation,	
whichever is higher.	
Exception: Enclosed areas below the design flood elevation,	
including basements with floors that are not	
below grade on all sides, shall meet the requirements of	
Section R322.2.2.	
R322.2.2 Enclosed area below design flood elevation.	
Enclosed areas, including crawl spaces, that are below the	
design flood elevation shall:	
1. Be used solely for parking of vehicles, building	
access or storage.	
2. Be provided with flood openings that meet the following	
criteria and are installed in accordance with	
Section R322.2.2.1:	
2.1. The total net area of openings shall be not	
less than 1 square inch (645 mm <sub>2</sub> ) for each	
square foot (0.093 m <sub>2</sub> ) of enclosed area	
where the enclosed area is measured on the	
exterior of the enclosure walls, or the openings	
shall be designed as engineered openings	
and the <i>construction documents</i> shall	
include a statement by a registered design	
professional that the design of the openings	
will provide for equalization of hydrostatic	
flood forces on <i>exterior walls</i> by allowing	
for the automatic entry and exit of floodwaters	
as specified in Section 2.6.2.2 of ASCE	
24.	
2.2. Openings shall be not less than 3 inches (76	
mm) in any direction in the plane of the wall.	
R322.2.2.1 Installation of openings. The walls of	
enclosed areas shall have openings installed such that:	
1. There shall be not less than two openings on different	
sides of each enclosed area; if a building	
has more than one enclosed area below the design	
flood elevation, each area shall have openings on	

exterior walls.	
2. The bottom of each opening shall be not more	
than 1 foot (305 mm) above the higher of the	
final interior grade or floor and the finished exterior	
grade immediately under each opening.	
3. Openings shall be permitted to be installed in	
doors and windows; doors and windows without	
installed openings do not meet the requirements	
of this section.	
R322.2.3 Foundation design and construction. Foundation	
walls for buildings and structures erected in flood hazard	
areas shall meet the requirements of Chapter 4.	
Exception: Unless designed in accordance with Section	
R404:	
1. The unsupported height of 6-inch (152 mm) plain	
masonry walls shall be not more than 3 feet (914	
mm).	
2. The unsupported height of 8-inch (203 mm) plain	
masonry walls shall be not more than 4 feet (1219	
mm).	
3. The unsupported height of 8-inch (203 mm) reinforced	
masonry walls shall be not more than 8	
feet (2438 mm).	
For the purpose of this exception, unsupported height is	
the distance from the finished grade of the under-floor	
space to the top of the wall.	
R322.2.4 Tanks. Underground tanks shall be anchored to	
prevent flotation, collapse and lateral movement under	
conditions of the base flood. Above-ground tanks shall be	
installed at or above the elevation required in Section	
R322.2.1 or shall be anchored to prevent flotation, collapse	
and lateral movement under conditions of the base	
flood.	
R322.3 Coastal high-hazard areas (including V Zones and	
Coastal A Zones, where designated). Areas that have been	
determined to be subject to wave heights in excess of 3 feet	
(914 mm) or subject to high-velocity wave action or waveinduced	
erosion shall be designated as coastal high-hazard	
areas. Flood hazard areas that have been designated as subject	
to wave heights between 11/2 feet (457 mm) and 3 feet (914	

mm) or otherwise designated by the jurisdiction shall be designated	
as Coastal A Zones. Buildings and structures constructed	
in whole or in part in coastal high-hazard areas and	
coastal A Zones, where designated, shall be designed and constructed	
in accordance with Sections R322.3.1 through	
R322.3.7.	
R322.3.1 Location and site preparation.	
1. New buildings and buildings that are determined to	
be substantially improved pursuant to Section	
R105.3.1.1 shall be located landward of the reach of	
mean high tide.	
2. For any alteration of sand dunes and mangrove	
stands, the building official shall require submission	
of an engineering analysis that demonstrates that the	
proposed alteration will not increase the potential	
for flood damage.	
R322.3.2 Elevation requirements.	
1. Buildings and structures erected within coastal highhazard	
areas and Coastal A Zones, shall be elevated	
so that the bottom of the lowest portion of horizontal	
structural members supporting the lowest floor, with	
the exception of piling, pile caps, columns, grade	
beams and bracing, is elevated to or above the base	
flood elevation plus 1 foot (305 mm) or the design	
flood elevation, whichever is higher.	
2. Basement floors that are below grade on all sides	
are prohibited.	
3. The use of fill for structural support is prohibited.	
4. Minor grading, and the placement of minor quantities	
of fill, shall be permitted for landscaping and for	
drainage purposes under and around buildings and	
for support of parking slabs, pool decks, patios and	
walkways.	
5. Walls and partitions enclosing areas below the	
design flood elevation shall meet the requirements	
of Sections R322.3.4 and R322.3.5.	
R322.3.3 Foundations. Buildings and structures erected in	
coastal high-hazard areas and Coastal A Zones shall be supported	
on pilings or columns and shall be adequately	
anchored to such pilings or columns. The space below the	

elevated building shall be either free of obstruction or, if enclosed with walls, the walls shall meet the requirements of Section R322.3.4. Pilings shall have adequate soil penetrations to resist the combined wave and wind loads (lateral and uplift). Water-loading values used shall be those associated with the design flood. Wind-loading values shall be those required by this code. Pile embedment shall include consideration of decreased resistance capacity caused by scour of soil strata surrounding the piling. Pile systems design and installation shall be certified in accordance with Section R322.3.6. Spread footing, mat, raft or other foundations that support columns shall not be permitted where soil investigations that are required in accordance with Section R401.4 indicate that soil material under the spread footing, mat, raft or other foundation is subject to scour or erosion from wave-velocity flow conditions. If permitted, spread footing, mat, raft or other foundations that support columns shall be designed in accordance with ASCE 24. Slabs, pools, pool decks and walkways shall be located and constructed to be structurally independent of buildings and structures and their foundations to prevent transfer of flood loads to the buildings and structures during conditions of flooding, scour or erosion from wave-velocity flow conditions, unless the buildings and structures and their foundations are designed to resist the additional flood load. **Exception:** In Coastal A Zones, stem wall foundations supporting a floor system above and backfilled with soil or gravel to the underside of the floor system shall be permitted provided the foundations are designed to account for wave action, debris impact, erosion and local scour. Where soils are susceptible to erosion and local scour, stem wall foundations shall have deep footings to account for the loss of soil. R322.3.4 Walls below design flood elevation. Walls and partitions are permitted below the elevated floor, provided that such walls and partitions are not part of the structural support of the building or structure and:

1. Electrical, mechanical and plumbing system components are not to be mounted on or penetrate through walls that are designed to break away under flood

loads; and	
2. Are constructed with insect screening or open lattice;	
or	
3. Are designed to break away or collapse without	
causing collapse, displacement or other structural	
damage to the elevated portion of the building or	
supporting foundation system. Such walls, framing	
and connections shall have a resistance of not less	
than 10 (479 Pa) and not more than 20 pounds per	
square foot (958 Pa) as determined using allowable	
stress design; or	
4. Where wind loading values of this code exceed 20	
pounds per square foot (958 Pa), the construction	
documents shall include documentation prepared	
and sealed by a registered <i>design professional</i> that:	
4.1. The walls and partitions below the design	
flood elevation have been designed to collapse	
from a water load less than that which	
would occur during the base flood.	
4.2. The elevated portion of the building and supporting	
foundation system have been	
designed to withstand the effects of wind and	
flood loads acting simultaneously on structural	
and nonstructural building components.	
Water-loading values used shall be those	
associated with the design flood. Wind-loading	
values shall be those required by this code.	
5. Walls intended to break away under flood loads as	
specified in Item 3 or 4 have flood openings that	
meet the criteria in Section R322.2.2, Item 2.	
6. In Coastal A Zones, walls shall be provided with	
flood openings that meet the criteria of Section	
R322.2.2.	
R322.3.5 Enclosed areas below design flood elevation.	
Enclosed areas below the design flood elevation shall be	
used solely for parking of vehicles, building access or storage.	
R322.3.5.1 Protection of building envelope. An exterior	
door that meets the requirements of Section R609	
shall be installed at the top of stairs that provide access	
to the building and that are enclosed with walls	

designed to break away in accordance with Section R 322 3 4	
<b>R322.3.6 Construction documents.</b> The <i>construction</i>	
<i>documents</i> shall include documentation that is prepared	
and sealed by a registered <i>design professional</i> that the	
design and methods of construction to be used meet the	
applicable criteria of this section.	
<b>R322.3.7 Tanks.</b> Underground tanks shall be anchored to	
prevent flotation, collapse and lateral movement under	
conditions of the base flood. Above-ground tanks shall be	
installed at or above the elevation required in Section	
R322.3.2. Where elevated on platforms, the platforms	
shall be cantilevered from or knee braced to the building	
or shall be supported on foundations that conform to the	
requirements of Section R322.3.	
<b>R308.1 Identification.</b> Except as indicated in Section	602.3 Glazing in hazardous locations. Replacement glazing
R308.1.1 each pane of glazing installed in hazardous locations	in hazardous locations shall comply with the safety glazing
as defined in Section R308.4 shall be provided with a	requirements of the International Building Code or International
manufacturer's designation specifying who applied the designation,	Residential Code as applicable.
designating the type of glass and the safety glazing	Exception: Glass block walls, louvered windows, and jalousies
standard with which it complies, which is visible in the final	repaired with like materials.
installation. The designation shall be acid etched, sandblasted,	
ceramic-fired, laser etched, embossed, or be of a type	
that once applied cannot be removed without being	
destroyed. A label shall be permitted in lieu of the manufacturer's	
designation.	
Exceptions:	
1. For other than tempered glass, manufacturer's designations	
are not required provided that the <i>building</i>	
official approves the use of a certificate, affidavit or	
other evidence confirming compliance with this code.	
2. Tempered spandrel glass is permitted to be identified	
by the manufacturer with a removable paper	
designation.	
R308.1.1 Identification of multiple assemblies. Multipane	
assemblies having individual panes not exceeding	
1 square foot (0.09 m <sub>2</sub> ) in exposed area shall have not	
less than one pane in the assembly identified in accordance	
with Section R308.1. Other panes in the assembly	
shall be labeled "CPSC 16 CFR 1201" or "ANSI Z97.1"	

as appropriate.	
<b>K308.2 Louvered windows or jalousies.</b> Regular, float,	
wired or patterned glass in jalousies and louvered windows	
shall be not less than nominal $\frac{3}{16}$ inch (5 mm) thick and not	
more than 48 inches (1219 mm) in length. Exposed glass	
edges shall be smooth.	
<b>R308.2.1 Wired glass prohibited.</b> Wired glass with wire	
exposed on longitudinal edges shall not be used in jalousies	
or louvered windows.	
<b>R308.3 Human impact loads.</b> Individual glazed areas,	
including glass mirrors in hazardous locations such as those	
indicated as defined in Section R308.4, shall pass the test	
requirements of Section R308.3.1.	
Exceptions:	
1. Louvered windows and jalousies shall comply with	
Section R308.2.	
2. Mirrors and other glass panels mounted or hung on a	
surface that provides a continuous backing support.	
3. Glass unit masonry complying with Section R607.	
<b>R308.3.1 Impact test.</b> Where required by other sections	
of the code, glazing shall be tested in accordance with	
CPSC 16 CFR 1201. Glazing shall comply with the test	
criteria for Category II unless otherwise indicated in Table	
R308.3.1(1).	
Exception: Glazing not in doors or enclosures for hot	
tubs, whirlpools, saunas, steam rooms, bathtubs and	
showers shall be permitted to be tested in accordance	
with ANSI Z97.1. Glazing shall comply with the test criteria	
for Class A unless indicated in Table R308.3.1(2).	
<b>R308.4 Hazardous locations.</b> The locations specified in Sections	
R308.4.1 through R308.4.7 shall be considered to be	
specific hazardous locations for the purposes of glazing.	
<b>R308.4.1 Glazing in doors.</b> Glazing in fixed and operable	
panels of swinging, sliding and bifold doors shall be	
considered to be a hazardous location.	
Exceptions:	
1. Glazed openings of a size through which a 3-	
inch-diameter (76 mm) sphere is unable to pass.	
2. Decorative glazing.	
R308.4.2 Glazing adjacent to doors. Glazing in an individual	

fixed or operable panel adjacent to a door shall be	
considered to be a hazardous location where the bottom	
exposed edge of the glazing is less than 60 inches (1524	
mm) above the floor or walking surface and it meets either	
of the following conditions:	
1. Where the glazing is within 24 inches (610 mm) of	
either side of the door in the plane of the door in a	
closed position.	
2. Where the glazing is on a wall perpendicular to the	
plane of the door in a closed position and within 24	
inches (610 mm) of the hinge side of an in-swinging	
door.	
Exceptions:	
1. Decorative glazing.	
2. Where there is an intervening wall or other	
permanent barrier between the door and the	
glazing.	
3. Where access through the door is to a closet or	
storage area 3 feet (914 mm) or less in depth.	
Glazing in this application shall comply with	
Section R308.4.3.	
4. Glazing that is adjacent to the fixed panel of	
patio doors.	
<b>R308.4.3 Glazing in windows.</b> Glazing in an individual	
fixed or operable panel that meets all of the following conditions	
shall be considered to be a hazardous location:	
1. The exposed area of an individual pane is larger than	
9 square feet (0.836 m <sub>2</sub> ).	
2. The bottom edge of the glazing is less than 18 inches	
(457 mm) above the floor.	
3. The top edge of the glazing is more than 36 inches	
(914 mm) above the floor: and	
4. One or more walking surfaces are within 36 inches	
(914 mm), measured horizontally and in a straight	
line, of the glazing.	
Exceptions:	
1. Decorative glazing.	
2. Where a horizontal rail is installed on the	
accessible side(s) of the glazing $34$ to $38$	
inches (864 to 965 mm) above the walking	

surface. The rail shall be capable of withstanding	
a horizontal load of 50 pounds per	
linear foot (730 N/m) without contacting	
the glass and have a cross-sectional height	
of not less than $11/2$ inches (38 mm).	
3. Outboard panes in insulating glass units	
and other multiple glazed panels where the	
bottom edge of the glass is 25 feet (7620	
mm) or more above grade, a roof, walking	
surfaces or other horizontal [within 45	
degrees (0.79 rad) of horizontal] surface	
adjacent to the glass exterior.	
R308.4.4 Glazing in guards and railings. Glazing in	
guards and railings, including structural baluster panels	
and nonstructural in-fill panels, regardless of area or	
height above a walking surface shall be considered to be a	
hazardous location.	
R308.4.5 Glazing and wet surfaces. Glazing in walls,	
enclosures or fences containing or facing hot tubs, spas,	
whirlpools, saunas, steam rooms, bathtubs, showers and	
indoor or outdoor swimming pools where the bottom	
exposed edge of the glazing is less than 60 inches (1524	
mm) measured vertically above any standing or walking	
surface shall be considered to be a hazardous location. This	
shall apply to single glazing and each pane in multiple glazing.	
Exception: Glazing that is more than 60 inches (1524	
mm), measured horizontally and in a straight line, from	
the water's edge of a bathtub, hot tub, spa, whirlpool or	
swimming pool or from the edge of a shower, sauna or	
steam room.	
R308.4.6 Glazing adjacent to stairs and ramps. Glazing	
where the bottom exposed edge of the glazing is less	
than 36 inches (914 mm) above the plane of the adjacent	
walking surface of stairways, landings between flights of	
stairs and ramps shall be considered to be a hazardous	
location.	
Exceptions:	
1. Where a rail is installed on the accessible side(s)	
of the glazing 34 to 38 inches (864 to 965 mm)	
above the walking surface. The rail shall be capable	

of withstanding a horizontal load of 50	
pounds per linear foot (730 N/m) without contacting	
the glass and have a cross-sectional height	
of not less than $1_{1/2}$ inches (38 mm).	
2. Glazing 36 inches (914 mm) or more measured	
horizontally from the walking surface.	
R308.4.7 Glazing adjacent to the bottom stair landing.	
Glazing adjacent to the landing at the bottom of a stairway	
where the glazing is less than 36 inches (914 mm) above	
the landing and within a 60-inch (1524 mm) horizontal arc	
less than 180 degrees from the bottom tread nosing shall	
be considered to be a hazardous location.	
<b>Exception:</b> The glazing is protected by a <i>guard</i> complying	
with Section R312 and the plane of the glass is	
more than 18 inches (457 mm) from the guard.	
R308.5 Site-built windows. Site-built windows shall comply	
with Section 2404 of the International Building Code.	
R308.6 Skylights and sloped glazing. Skylights and sloped	
glazing shall comply with the following sections.	
R308.6.1 Definitions. The following terms are defined in	
Chapter 2:	
SKYLIGHT, UNIT.	
SKYLIGHTS AND SLOPED GLAZING.	
TUBULAR DAYLIGHTING DEVICE (TDD).	
R308.6.2 Materials. The following types of glazing shall	
be permitted to be used:	
1. Laminated glass with not less than a 0.015-inch	
(0.38 mm) polyvinyl butyral interlayer for glass	
panes 16 square feet (1.5 m <sup>2</sup> ) or less in area located	
such that the highest point of the glass is not more	
than 12 feet (3658 mm) above a walking surface or	
other accessible area; for higher or larger sizes, the	
interlayer thickness shall be not less than 0.030 inch	
(0.76 mm).	
2. Fully tempered glass.	
3. Heat-strengthened glass.	
4. Wired glass.	
5. <i>Approved</i> rigid plastics.	
R308.6.3 Screens, general. For fully tempered or heat strengthened	
glass, a retaining screen meeting the requirements	

of Section R308.6.7 shall be installed below the	
glass, except for fully tempered glass that meets either	
condition listed in Section R308.6.5.	
R308.6.4 Screens with multiple glazing. Where the	
inboard pane is fully tempered, heat-strengthened or wired	
glass, a retaining screen meeting the requirements of Section	
R308.6.7 shall be installed below the glass, except for	
either condition listed in Section R308.6.5. Other panes in	
the multiple glazing shall be of any type listed in Section	
R308.6.2.	
R308.6.5 Screens not required. Screens shall not be	
required where fully tempered glass is used as single glazing	
or the inboard pane in multiple glazing and either of	
the following conditions are met:	
1. Glass area 16 square feet (1.49 m <sub>2</sub> ) or less. Highest	
point of glass not more than 12 feet (3658 mm)	
above a walking surface or other accessible area,	
nominal glass thickness not more than 3/16 inch (4.8	
mm), and (for multiple glazing only) the other pane	
or panes fully tempered, laminated or wired glass.	
2. Glass area greater than 16 square feet (1.49 m <sub>2</sub> ).	
Glass sloped 30 degrees (0.52 rad) or less from vertical,	
and highest point of glass not more than 10 feet	
(3048 mm) above a walking surface or other accessible	
area.	
R308.6.6 Glass in greenhouses. Any glazing material is	
permitted to be installed without screening in the sloped	
areas of greenhouses, provided that the greenhouse height	
at the ridge does not exceed 20 feet (6096 mm) above	
grade.	
<b>R308.6.7 Screen characteristics.</b> The screen and its fastenings	
shall be capable of supporting twice the weight of	
the glazing, be firmly and substantially fastened to the	
framing members, and have a mesh opening of not more	
than 1 inch by 1 inch (25 mm by 25 mm).	
R308.6.8 Curbs for skylights. Unit skylights installed in	
a roof with a pitch flatter than three units vertical in 12	
units horizontal (25-percent slope) shall be mounted on a	
curb extending not less than 4 inches (102 mm) above the	
plane of the roof unless otherwise specified in the manufacturer's	

installation instructions.	
R308.6.9 Testing and labeling. Unit skylights and tubular	
daylighting devices shall be tested by an <i>approved</i> independent	
laboratory, and bear a <i>label</i> identifying manufacturer,	
performance grade rating and <i>approved</i> inspection	
agency to indicate compliance with the requirements of	
AAMA/WDMA/CSA 101/I.S.2/A440.	
R308.6.9.1 Comparative analysis for glass-glazed	
unit skylights. Structural wind load design pressures	
for glass-glazed unit skylights different than the size	
tested in accordance with Section R308.6.9 shall be	
permitted to be different than the design value of the	
tested unit where determined in accordance with one of	
the following comparative analysis methods:	
1. Structural wind load design pressures for glassglazed	
unit skylights smaller than the size tested	
in accordance with Section R308.6.9 shall be permitted	
to be higher than the design value of the	
tested unit provided that such higher pressures	
are determined by accepted engineering analysis.	
Components of the smaller unit shall be the same	
as those of the tested unit. Such calculated design	
pressures shall be validated by an additional test	
of the glass-glazed unit skylight having the highest	
allowable design pressure.	
2. In accordance with WDMA I.S. 11.	
R310.1 Emergency escape and rescue opening required.	
Basements, habitable attics and every sleeping room shall	702.4 Window opening control devices. In Group R-2 or R-3
have not less than one operable emergency escape and rescue	buildings containing dwelling units and one- and two-family
opening. Where basements contain one or more sleeping	dwellings and townhouses regulated by the International Residential
rooms, an emergency escape and rescue opening shall be	<i>Code</i> , window opening control devices complying
required in each sleeping room. Emergency escape and rescue	with ASTM F 2090 shall be installed where an existing window
openings shall open directly into a public way, or to a	is replaced and where all of the following apply to the
<i>yard</i> or court that opens to a public way.	replacement window:
Exception: Storm shelters and <i>basements</i> used only to	1. The window is operable;
house mechanical equipment not exceeding a total floor	2. The window replacement includes replacement of the
area of 200 square feet (18.58 m <sub>2</sub> ).	sash and the frame;
R310.1.1 Operational constraints and opening control	3. One of the following applies:
devices. Emergency escape and rescue openings shall be	3.1. In Group R-2 or R-3 buildings containing
operational from the inside of the room without the use of	dwelling units, the top of the sill of the window

keys, tools or special knowledge. Window opening control	opening is at a height less than 36 inches (915
devices complying with ASTM F 2090 shall be permitted	mm) above the finished floor; or
for use on windows serving as a required emergency	3.2. In one- and two-family dwellings and townhouses
escape and rescue opening.	regulated by the International Residential
R310.2 Emergency escape and rescue openings. Emergency	<i>Code</i> , the top sill of the window opening is
escape and rescue openings shall have minimum dimensions	at a height less than 24 inches (610 mm) above
as specified in this section.	the finished floor;
R310.2.1 Minimum opening area. Emergency and	4. The window will permit openings that will allow passage
escape rescue openings shall have a net clear opening of	of a 4-inch-diameter (102 mm) sphere when the
not less than 5.7 square feet (0.530 m <sub>2</sub> ). The net clear	window is in its largest opened position; and
opening dimensions required by this section shall be	5. The vertical distance from the top of the sill of the window
obtained by the normal operation of the emergency escape	opening to the finished grade or other surface
and rescue opening from the inside. The net clear height	below, on the exterior of the building, is greater than 72
opening shall be not less than 24 inches (610 mm) and the	inches (1829 mm).
net clear width shall be not less than 20 inches (508 mm).	The window opening control device, after operation to
Exception: Grade floor or below grade openings shall	release the control device allowing the window to fully open,
have a net clear opening of not less than 5 square feet	shall not reduce the minimum net clear opening area of the
(0.465 m <sub>2</sub> ).	window unit to less than the area required by the International
R310.2.2 Window sill height. Where a window is provided	Building Code.
as the emergency escape and rescue opening, it shall	Exceptions:
have a sill height of not more than 44 inches (1118 mm)	1. Operable windows where the top of the sill of the window
above the floor; where the sill height is below grade, it	opening is located more than 75 feet (22 860 mm)
shall be provided with a window well in accordance with	above the finished grade or other surface below, on the
Section R310.2.3.	exterior of the room, space or building, and that are
R310.2.3 Window wells. The horizontal area of the window	provided with window fall prevention devices that
well shall be not less than 9 square feet (0.9 m <sub>2</sub> ), with	comply with ASTM F 2006.
a horizontal projection and width of not less than 36 inches	2. Operable windows with openings that are provided
(914 mm). The area of the window well shall allow the	with window fall prevention devices that comply
emergency escape and rescue opening to be fully opened.	with ASTM F 2090.
Exception: The ladder or steps required by Section	702.5 Emergency escape and rescue openings. Where windows
R310.2.3.1 shall be permitted to encroach not more	are required to provide emergency escape and rescue
than 6 inches (152 mm) into the required dimensions of	openings in Group R-2 and R-3 occupancies and one- and
the window well.	two-family dwellings and townhouses regulated by the International
R310.2.3.1 Ladder and steps. Window wells with a	Residential Code, replacement windows shall be
vertical depth greater than 44 inches (1118 mm) shall	exempt from the requirements of Sections 1030.2, 1030.3 and
be equipped with a permanently affixed ladder or steps	1030.5 of the International Building Code and Sections
usable with the window in the fully open position. Ladders	R310.21 and R310.2.3 of the International Residential Code
or steps required by this section shall not be	accordingly, provided the replacement window is the manufacturer's
required to comply with Sections R311.7 and R311.8.	largest standard size window that will fit within the
Ladders or rungs shall have an inside width of not less	existing frame or existing rough opening. The replacement

than 12 inches (305 mm), shall project not less than 3	window shall be permitted to be of the same operating style
inches (76 mm) from the wall and shall be spaced not	as the existing window or a style that provides for an equal or
more than 18 inches (457 mm) on center vertically for	areater window opening area than the existing window
the full height of the window well	Window opening control devices complying with ASTM F
<b>B310 2 3 2 Drainage</b> Window wells shall be designed	2000 shall be permitted for use on windows required to provide
for proper drainage by connecting to the building's	amergency escape and rescue openings
foundation drainage system required by Section R405.1	emergency escupe and rescue openings.
or by an approved alternative method	
<b>Excention:</b> A drainage system for window wells is	
not required where the foundation is on well-drained	
soil or sand-gravel mixture soils in accordance with	
the United Soil Classification System Group I Soils	
as detailed in Table R405 1	
R310.2.4 Emergency escape and rescue openings under	
decks and porches. Emergency escape and rescue openings	
shall be permitted to be installed under decks and	
porches provided that the location of the deck allows the	
emergency escape and rescue openings to be fully opened	
and provides a path not less than 36 inches (914 mm) in	
height to a <i>vard</i> or court.	
R310.3 Emergency escape and rescue doors. Where a door	
is provided as the required emergency escape and rescue	
opening, it shall be permitted to be a side-hinged door or a	
slider. Where the opening is below the adjacent ground elevation,	
it shall be provided with a bulkhead enclosure.	
R310.3.1 Minimum door opening size. The minimum	
net clear height opening for any door that serves as an	
emergency and escape rescue opening shall be in accordance	
with Section R310.2.1.	
R310.3.2 Bulkhead enclosures. Bulkhead enclosures	
shall provide direct access from the <i>basement</i> . The bulkhead	
enclosure shall provide the minimum net clear opening	
equal to the door in the fully open position.	
R310.3.2.1 Drainage. Bulkhead enclosures shall be	
designed for proper drainage by connecting to the	
building's foundation drainage system required by Section	
R405.1 or by an <i>approved</i> alternative method.	
Exception: A drainage system for bulkhead enclosures	
is not required where the foundation is on	
well-drained soil or sand-gravel mixture soils in	

according with the United Soil Classification System	
Crown I Soils, as detailed in Table P405.1	
Dibup I Solis, as detailed in Table R405.1.	
<b>KS10.4 Dats, grines, covers and screens.</b> Dats, grines, covers,	
screens of similar devices are permitted to be placed over	
energency escape and rescue openings, buiknead enclosures,	
of window wens that serve such openings, provided that the	
D210.1.1 to D210.2.2 and such devices shall be released to an	
R310.1.1 to R310.2.3, and such devices shall be releasable or	
removable from the inside without the use of a key, tool, special	
knowledge of force greater than that required for the normal	
<b>P310.5</b> Dwelling additions. Where dwelling additions occur	
that contain cleaning rooms, on emergency eccane and receive	
ananing shall be provided in each new cleaning room. Where	
dualling additions occur that have because the an emergency	
aweiing dadiions occur that have basements, an emergency	
Excaptioner	
Lixceptions:	
1. All emergency escape and rescue opening is not	
required in a new <i>basement</i> that contains a steeping	
room with an emergency escape and rescue opening.	
2. An emergency escape and rescue opening is not	
required in a new <i>basement</i> where there is an emergency	
escape and rescue opening in an existing	
basement that is accessible from the new basement.	
<b>R310.6 Alterations or repairs of existing basements.</b> An	
emergency escape and rescue opening is not required where	
existing <i>basements</i> undergo alterations or repairs.	
Exception: New sleeping rooms created in an existing	
<i>basement</i> shall be provided with emergency escape and	
rescue openings in accordance with Section R310.1.	
<b>R908.1 General.</b> Materials and methods of application used	[BS] 707.2 Addition or replacement of roofing or replacement
for re-covering or replacing an existing roof covering shall	of equipment. Where addition or replacement of roofing
comply with the requirements of Chapter 9.	or replacement of equipment results in additional dead
Exceptions:	loads, structural components supporting such reroofing or
1. Reroofing shall not be required to meet the minimum	equipment shall comply with the gravity load requirements of
design slope requirement of one-quarter unit	the International Building Code.
vertical in 12 units horizontal (2-percent slope) in	Exceptions:
Section R905 for roofs that provide positive roof	1. Structural elements where the additional dead load
drainage.	from the roofing or equipment does not increase the
2. For roofs that provide positive drainage, re-covering	force in the element by more than 5 percent.

or replacing an existing roof covering shall not	2. Buildings constructed in accordance with the International
require the secondary (emergency overflow) drains	Residential Code or the conventional lightframe
or scuppers of Section R903.4.1 to be added to an	construction methods of the International
existing roof.	Building Code and where the dead load from the
R908.2 Structural and construction loads. The structural	roofing or equipment is not increased by more than
roof components shall be capable of supporting the roof covering	5 percent.
system and the material and equipment loads that will	3. Addition of a second layer of roof covering weighing
be encountered during installation of the roof covering system.	3 pounds per square foot (0.1437 kN/m2) or less
R908.3 Roof replacement. Roof replacement shall include	over an existing, single layer of roof covering.
the removal of existing layers of roof coverings down to the	
roof deck.	
Exception: Where the existing roof assembly includes an	
ice barrier membrane that is adhered to the roof deck, the	
existing ice barrier membrane shall be permitted to remain	
in place and covered with an additional layer of ice barrier	
membrane in accordance with Section R905.	
R908.3.1 Roof re-cover. The installation of a new roof	
covering over an existing roof covering shall be permitted	
where any of the following conditions occur:	
1. Where the new roof covering is installed in accordance	
with the roof covering manufacturer's	
approved instructions	
2. Complete and separate roofing systems, such as	
standing-seam metal roof systems, that are designed	
to transmit the roof loads directly to the building's	
structural system and do not rely on existing roofs	
and roof coverings for support, shall not require the	
removal of existing roof coverings.	
3. Metal panel, metal shingle and concrete and clay tile	
roof coverings shall be permitted to be installed over	
existing wood shake roofs where applied in accordance	
with Section R908.4.	
4. The application of a new protective coating over an	
existing spray polyurethane foam roofing system	
shall be permitted without tear-off of existing roof	
coverings.	
<b>R908.3.1.1</b> A roof re-cover shall not be permitted	
where any of the following conditions occur:	
1. Where the existing roof or roof covering is water	
soaked or has deteriorated to the point that the	

existing roof or roof covering is not adequate as a	
base for additional roofing	
2 Where the existing roof covering is slate, clay	
cement or ashestos-cement tile	
3 Where the existing roof has two or more applications	
of any type of roof covering	
<b>R908 4 Roof re-covering</b> . Where the application of a new	
roof covering over wood spingle or shake roofs creates a	
combustible concealed space, the entire existing surface shall	
be covered with gyneum hoard mineral fiber glass fiber or	
other approved materials securally fastened in place	
<b>D008 5 Doinstellation of materials</b> Existing slate, alow or	
compart tile shall be permitted for reinstallation, except that	
demograd, gracked or broken slate or tile shall not be reinstalled	
Any existing fleshings, adgings, outlate, yents or similar	
Any existing mashings, edgings, outlets, vents of similar	
ubore must a democrad on deteriorated. A correcte surfacing	
where rusted, damaged of detenorated. Aggregate surfacing	
<b>D009 6 Eleghings</b> Eleghings shall be reconstructed in accordance	
<b>Ryos.o Flashings.</b> Flashings shall be reconstructed in accordance	
With <i>approved</i> manufacturer's installation instructions.	
All and shall be primed prior to installation	
adhered shall be primed prior to installation.	
N1101.1 Scope. This chapter regulates the energy efficiency	<b>708.1 Minimum requirements.</b> Level 1 alterations to existing
for the design and construction of buildings regulated by this	buildings or structures are permitted without requiring the
code.	entire building or structure to comply with the energy
<i>Note:</i> The text of the following Sections N1101.2 through	requirements of the International Energy Conservation Code
N1105 is extracted from the 2012 edition of the International	or International Residential Code. The alterations shall conform
Energy Conservation Code—Residential Provisions and has	to the energy requirements of the International Energy
been editorially revised to conform to the scope and application	Conservation Code or International Residential Code as they
of this code. The section numbers appearing in parenthesis	relate to new construction only.
after each section number are the section numbers of the	
corresponding text in the International Energy Conservation	<b>811.1 Minimum requirements.</b> Level 2 <i>alterations</i> to <i>existing</i>
Code—Residential Provisions.	buildings or structures are permitted without requiring the
N1101.2 (R101.3) Intent. This chapter shall regulate the	entire building or structure to comply with the energy
design and construction of buildings for the effective use and	requirements of the International Energy Conservation Code
conservation of energy over the useful life of each <i>building</i> .	or International Residential Code. The alterations shall conform
This chapter is intended to provide flexibility to permit the	to the energy requirements of the International Energy
use of innovative approaches and techniques to achieve this	Conservation Code or International Residential Code as they
objective. This chapter is not intended to abridge safety,	relate to new construction only.
health or environmental requirements contained in other	

applicable codes or ordinances.	<b>908.1 Minimum requirements.</b> Level 3 alterations to existing
N1101.3 (R101.5.1) Compliance materials. The building	<i>buildings</i> or structures are permitted without requiring the
official shall be permitted to approve specific computer software,	entire building or structure to comply with the energy
worksheets, compliance manuals and other similar	requirements of the International Energy Conservation Code
materials that meet the intent of this code.	or International Residential Code. The alterations shall conform
N1101.4 (R102.1.1) Above code programs. The building	to the energy requirements of the International Energy
official or other authority having jurisdiction shall be permitted	Conservation Code or International Residential Code as they
to deem a national, state or local energy-efficiency program	relate to new construction only.
to exceed the energy efficiency required by this code.	
Buildings <i>approved</i> in writing by such an energy-efficiency	<b>1106.1 Minimum requirements.</b> Additions to existing buildings
program shall be considered in compliance with this code.	shall conform to the energy requirements of the International
The requirements identified as "mandatory" in this chapter,	Energy Conservation Code or International
as applicable, shall be met.	Residential Code as they relate to new construction.
N1101.5 (R103.2) Information on construction documents.	
Construction documents shall be drawn to scale upon	
suitable material. Electronic media documents are permitted	
to be submitted when <i>approved</i> by the <i>building official</i> . Construction	
documents shall be of sufficient clarity to indicate	
the location, nature and extent of the work proposed, and	
show in sufficient detail pertinent data and features of the	
building, systems and equipment as herein governed. Details	
shall include, but are not limited to, as applicable:	
1. Insulation materials and their <i>R</i> -values.	
2. Fenestration <i>U</i> -factors and SHGCs.	
3. Area-weighted U-factor and SHGC calculations.	
4. Mechanical system design criteria.	
5. Mechanical and service water heating system and	
equipment types, sizes and efficiencies.	
6. Equipment and system controls.	
7. Duct sealing, duct and pipe insulation and location.	
8. Air sealing details.	
N1101.5.1 (R103.2.1) Thermal envelope depiction. The	
building's thermal envelope shall be represented on the	
construction drawings.	
N1101.6 (R202) Defined terms. The following words and	
terms shall, for the purposes of this chapter, have the meanings	
shown herein.	
ADDITION. An extension or increase in the conditioned	
space floor area or height of a building or structure.	
<b>ALTERATION.</b> Any construction, retrofit or renovation to	

an existing structure other than repair or addition that requires	
a permit. Also, a change in a building, electrical, gas,	
mechanical or plumbing system that involves an extension,	
addition or change to the arrangement, type or purpose of the	
original installation that requires a permit.	
<b>REPAIR.</b> The reconstruction or renewal of any part of an	
existing building for the purpose of its maintenance or to correct	
damage. For definitions applicable in Chapter 11, see	
Section N1101.9.	
N1107.1 (R501.1) Scope. The provisions of Sections N1107	
through N1111 shall control the <i>alteration</i> , repair, addition	
and change of occupancy of existing buildings and structures.	
N1107.1.1 (R501.1.1) Additions, alterations, or repairs:	
General. Additions, alterations, or repairs to an existing	
building, building system or portion thereof shall comply	
with Section N1108, N1109 or N1110. Unaltered portions	
of the existing building or building supply system shall not	
be required to comply with this chapter.	
N1107.2 (R501.2) Existing buildings. Except as specified in	
this chapter, this code shall not be used to require the	
removal, alteration or abandonment of, nor prevent the continued	
use and maintenance of, an existing building or build- ing system lawfully in	
existence at the time of adoption of	
this code.	
N1107.3 (R501.3) Maintenance. Buildings and structures,	
and parts thereof, shall be maintained in a safe and sanitary	
condition. Devices and systems that are required by this code	
shall be maintained in conformance with the code edition	
under which installed. The owner or the owner's authorized	
agent shall be responsible for the maintenance of buildings	
and structures. The requirements of this chapter shall not provide	
the basis for removal or abrogation of energy conservation,	
fire protection and safety systems and devices in existing	
structures.	
N1107.4 (R501.4) Compliance. Alterations, repairs, additions	
and changes of occupancy to, or relocation of, existing	
buildings and structures shall comply with the provisions for	
alterations, repairs, additions and changes of occupancy or	
relocation, respectively, in this code and the International	

Building Code, International Fire Code, International Fuel Gas Code, International Mechanical Code, International Plumbing Code, International Property Maintenance Code, International Private Sewage Disposal Code and NFPA 70. N1107.5 (R501.5) New and replacement materials. Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

**N1107.6 (R501.6) Historic buildings.** No provision of this chapter relating to the construction, *repair, alteration*, restoration and movement of structures, and *change of occupancy* shall be mandatory for *historic buildings* provided a report has been submitted to the code official and signed by the owner, a registered *design professional*, or a representative of the State Historic Preservation Office or the historic preservation authority having jurisdiction, demonstrating that compliance with that provision would threaten, degrade or destroy the historic form, fabric or function of the *building*.

### SECTION N1108 (R502) ADDITIONS

**N1108.1 (R502.1) General.** Additions to an existing building, building system or portion thereof shall conform to the provisions of this chapter as they relate to new construction without requiring the unaltered portion of the existing building or building system to comply with this chapter. Additions shall not create an unsafe or hazardous condition or overload existing building systems. An addition shall be deemed to comply with this chapter where the addition alone complies, where the existing building, or where the building with the addition uses no more energy than the existing building. Additions shall be in accordance with Section N1108.1.1 or N1108.1.2.

N1108.1.1 (R502.1.1) Prescriptive compliance. Additions shall comply with Sections N1108.1.1.1 through N1108.1.1.4.

N1108.1.1.1 (R502.1.1.1) Building envelope. New	
building envelope assemblies that are part of the addition	
shall comply with Sections N1102.1, N1102.2,	
N1102.3.1 through N1102.3.5, and N1102.4.	
Exception: Where nonconditioned space is changed	
to conditioned space, the building envelope of the	
addition shall comply where the UA, as determined	
in Section N1102.1.4, of the existing building and	
the addition, and any alterations that are part of the	
project, is less than or equal to UA generated for the	
existing building.	
N1108.1.1.2 (R502.1.1.2) Heating and cooling systems.	
New heating, cooling and duct systems that are	
part of the addition shall comply with Sections	
N1103.1, N1103.2, N1103.3, N1103.5 and N1103.6.	
Exception: Where ducts from an existing heating	
and cooling system are extended to an addition, duct	
systems with less than 40 linear feet (12.19 m) in	
unconditioned spaces shall not be required to be	
tested in accordance with Section N1103.2.2.	
N1108.1.1.3 (R502.1.1.3) Service hot water systems.	
New service hot water systems that are part of the addition	
shall comply with Section N1103.4.	
N1108.1.1.4 (R502.1.1.4) Lighting. New lighting systems	
that are part of the addition shall comply with Section	
N1104.1.	
N1108.1.2 (R502.1.2) Existing plus addition compliance	
(Simulated Performance Alternative). Where nonconditioned	
space is changed to conditioned space, the addition	
shall comply where the annual energy cost or energy use	
of the addition and the existing building, and any alterations	
that are part of the project, is less than or equal to the	
annual energy cost of the existing building when modeled	
in accordance with Section N1105. The addition and any	
alterations that are part of the project shall comply with	
Section N1105 in its entirety.	
SECTION N1109 (R503)	
ALTERATIONS	
N1109.1 (R503.1) General. Alterations to any building or	
structure shall comply with the requirements of the code for	

new construction. Alterations shall be such that the existing	
building or structure is no less conforming with the provisions	
of this chapter than the existing building or structure	
was prior to the <i>alteration</i> .	
Alterations to an existing building, building system or portion	
thereof shall conform to the provisions of this chapter as	
they relate to new construction without requiring the unaltered	
portions of the existing building or building system to	
comply with this chapter. Alterations shall not create an	
unsafe or hazardous condition or overload existing building	
systems. Alterations shall be such that the existing building or	
structure uses no more energy than the existing building or	
structure prior to the <i>alteration</i> . Alterations to existing buildings	
shall comply with Sections N1109.1.1 through N1109.2.	
N1109.1.1 (R503.1.1) Building envelope. Building envelope	
assemblies that are part of the alteration shall comply	
with Section N1102.1.2 or N1102.1.4, Sections N1102.2.1	
through N1102.2.12, N1102.3.1, N1102.3.2, N1102.4.3	
and N1102.4.4.	
Exception: The following alterations need not comply	
with the requirements for new construction provided	
the energy use of the building is not increased:	
1. Storm windows installed over existing fenestration.	
2. Existing ceiling, wall or floor cavities exposed	
during construction provided that these cavities	
are filled with insulation.	
3. Construction where the existing roof, wall or	
floor cavity is not exposed.	
4. Roof recover.	
5. Roofs without insulation in the cavity and where	
the sheathing or insulation is exposed during	
reroofing shall be insulated either above or below	
the sheathing.	
6. Surface applied window film installed on existing	
single pane fenestration assemblies to reduce	
solar heat gain provided the code does not require	
the glazing or fenestration assembly to be	
replaced.	
N1109.1.1.1 (R503.1.1.1) Replacement fenestration.	
Where some or all of an existing fenestration unit is	

replaced with a new fenestration product, including	
sash and glazing, the replacement fenestration unit shall	
meet the applicable requirements for U-factor and	
SHGC as provided in Table N1102.1.4.	
N1109.1.2 (R503.1.2) Heating and cooling systems.	
New heating, cooling and duct systems that are part of the	
alteration shall comply with Sections N1103.1, N1103.2,	
N1103.3 and N1103.6.	
Exception: Where ducts from an existing heating and	
cooling system are extended, duct systems with less	
than 40 linear feet (12.19 m) in unconditioned spaces	
shall not be required to be tested in accordance with	
Section N1103.3.3.	
N1109.1.3 (R503.1.3) Service hot water systems. New	
service hot water systems that are part of the alteration	
shall comply with Section N1103.5.	
N1109.1.4 (R503.1.4) Lighting. New lighting systems	
that are part of the alteration shall comply with Section	
N1104.1.	
Exception: Alterations that replace less than 50 percent	
of the luminaires in a space, provided that such alterations	
do not increase the installed interior lighting	
power.	
N1109.2 (R503.2) Change in space conditioning. Any nonconditioned	
or low energy space that is altered to become	
conditioned space shall be required to be brought into full	
compliance with this chapter.	
Exception: Where the simulated performance option in	
Section N1105 is used to comply with this section, the	
annual energy cost of the proposed design is permitted to	
be 110 percent of the annual energy cost otherwise	
allowed by Section N1105.3.	
SECTION N1110 (R504)	
REPAIRS	
N1110.1 (R504.1) General. Buildings, structures and parts	
thereof shall be repaired in compliance with Section N1107.3	
and this section. Work on nondamaged components necessary	
for the required repair of damaged components shall be	
considered part of the repair and shall not be subject to the	
requirements for alterations in this chapter. Routine maintenance	

required by Section N1107.3, ordinary repairs exempt	
from <i>permit</i> , and abatement of wear due to normal service	
conditions shall not be subject to the requirements for <i>repairs</i>	
in this section.	
N1110.2 (R504.2) Application. For the purposes of this	
code, the following shall be considered repairs:	
1. Glass-only replacements in an existing sash and frame.	
2. Roof repairs.	
3. Repairs where only the bulb and/or ballast within the	
existing luminaires in a space are replaced provided	
that the replacement does not increase the installed	
interior lighting power.	
SECTION N1111 (R505)	
CHANGE OF OCCUPANCY OR USE	
N1111.1 (R505.1) General. Spaces undergoing a change in	
occupancy that would result in an increase in demand for	
either fossil fuel or electrical energy shall comply with this	
code.	
N1111.2 (R505.2) General. Any space that is converted to a	
dwelling unit or portion thereof from another use or occupancy	
shall comply with this code.	
<b>Exception:</b> Where the simulated performance option in	
Section N1105 is used to comply with this section, the	
annual energy cost of the proposed design is permitted to	
be 110 percent of the annual energy cost otherwise	
allowed by Section N1105.3.	
*	[BS] 807.4 Existing structural elements carrying gravity
	loads. Alterations shall not reduce the capacity of existing
	gravity load-carrying structural elements unless it is demonstrated
	that the elements have the capacity to carry the applicable
	design gravity loads required by the <i>International</i>
	Building Code, Existing structural elements supporting any
	additional gravity loads as a result of the <i>alterations</i> , including
	the effects of snow drift, shall comply with the <i>International</i>
	Building Code.
	Exceptions:
	1. Structural elements whose stress is not increased by
	more than 5 percent
	2 Buildings of Group R occupancy with not more than
	five dwelling or sleeping units used solely for residential
	<ul> <li>Exceptions:</li> <li>1. Structural elements whose stress is not increased by more than 5 percent.</li> <li>2. Buildings of Group R occupancy with not more than five dwelling or sleeping units used solely for residential</li> </ul>

purposes where the <i>aristing building</i> and its
alteration comply with the conventional light frame
construction mothods of the International Building
Construction methods of the <i>international buttaing</i>
Code of the International Residential Code.
[BS] 907.4 Existing structural elements resisting lateral
loads. All existing elements of the lateral force-resisting system
shall comply with this section.
Exceptions:
1. Buildings of Group R occupancy with no more than
five dwelling or sleeping units used solely for residential
purposes that are altered based on the conventional
light-frame construction methods of the
International Building Code or in compliance with
the provisions of the International Residential Code.
Ī
[BS] 1103.2 Additional gravity loads. Existing structural
elements supporting any additional gravity loads as a result of
additions shall comply with the International Building Code
Expontions
1. Structural alaments whose stress is not increased by
1. Structural elements whose stress is not increased by
nore than 5 percent.
2. Buildings of Group R occupancy with no more than
five dwelling units or sleeping units used solely for
residential purposes where the <i>existing building</i> and
the <i>addition</i> comply with the conventional lightframe
construction methods of the International
Building Code or the provisions of the International
Residential Code.
[BS] 1103.3 Lateral force-resisting system. The lateral
force-resisting system of existing buildings to which additions
are made shall comply with Sections 1103.3.1, 1103.3.2
and 1103.3.3.
Exceptions:
1. Buildings of Group R occupancy with no more than
five dwelling or sleeping units used solely for residential
purposes where the <i>existing building</i> and the
addition comply with the conventional light-frame
construction methods of the International Ruilding
construction methods of the international buttaing

	Code or the provisions of the International Residential
	Code.
	[BS] 1103.4 Snow drift loads. Any structural element of an
	existing building subjected to additional loads from the
	effects of snow drift as a result of an <i>addition</i> shall comply
	with the International Building Code.
	Exceptions:
	1. Structural elements whose stress is not increased by
	more than 5 percent.
	2. Buildings of Group R occupancy with no more than
	five dwelling units or sleeping units used solely for
	residential purposes where the <i>existing building</i> and
	the <i>addition</i> comply with the conventional lightframe
	construction methods of the <i>International</i>
	<i>Building Code</i> or the provisions of the <i>International</i>
	Residential Code.
<b>E3401.1 Applicability.</b> The provisions of Chapters 34	<b>808.3 Residential occupancies.</b> In Group R-2, R-3 and R-4
through 43 shall establish the general scope of the electrical	occupancies and buildings regulated by the <i>International</i>
system and equipment requirements of this code. Chapters 34	Residential Code the requirements of Sections 808.3.1
through 43 cover those wiring methods and materials most	through 808 3.7 shall be applicable only to work areas
commonly encountered in the construction of one- and twofamily	located within a dwelling unit
dwellings and structures regulated by this code. Other	<b>808.3.1 Enclosed areas.</b> All enclosed areas other than
wiring methods materials and subject matter covered in	closets kitchens basements garages ballways laundry
NFPA 70 are also allowed by this code	areas utility areas storage areas and bathrooms shall have
<b>E3401.2. Scope</b> Chapters 34 through 43 shall cover the	a minimum of two duplex recentacle outlets or one duplex
installation of electrical systems, equipment and components	recentacle outlet and one ceiling or wall-type lighting outlet
indoors and outdoors that are within the scope of this code	<b>808 3 2 Kitchens</b> Kitchen areas shall have a minimum of
including services power distribution systems fixtures	two duplex recentacle outlets
appliances devices and appurtenances. Services within the	<b>808.3.3 Laundry areas.</b> Laundry areas shall have a minimum
scope of this code shall be limited to 120/240-volt. 0- to 400-	of one duplex receptacle outlet located near the laundry
ampere single-phase systems. These chapters specifically	equipment and installed on an independent circuit
cover the equipment, fixtures, appliances, wiring methods	808.3.4 Ground fault circuit interruption. Newly
and materials that are most commonly used in the construction	installed receptacle outlets shall be provided with ground
or alteration of one- and two-family dwellings and accessory	fault circuit interruption as required by NFPA 70.
structures regulated by this code. The omission from	<b>808.3.5 Minimum lighting outlets.</b> At least one lighting
these chapters of any material or method of construction provided	outlet shall be provided in every bathroom, hallway, stairway.
for in the referenced standard NFPA 70 shall not be	attached garage, and detached garage with electric
construed as prohibiting the use of such material or method of	power, and to illuminate outdoor entrances and exits.
construction. Electrical systems, equipment or components	<b>808.3.6 Utility rooms and basements.</b> At least one lighting

not specifically covered in these chapters shall comply with	outlet shall be provided in utility rooms and basements
the applicable provisions of NFPA 70.	where such spaces are used for storage or contain equipment
<b>E3401.3 Not covered.</b> Chapters 34 through 43 do not cover	requiring service.
the following:	<b>808.3.7 Clearance for equipment.</b> Clearance for electrical
1. Installations, including associated lighting, under the	service equipment shall be provided in accordance
exclusive control of communications utilities and electric	with the NFPA 70.
utilities.	
2. Services over 400 amperes.	
E3401.4 Additions and alterations. Any addition or alteration	
to an existing electrical system shall be made in conformity	
to the provisions of Chapters 34 through 43. Where	
additions subject portions of existing systems to loads	
exceeding those permitted herein, such portions shall be	
made to comply with Chapters 34 through 43.	
R302.2 Townhouses. Common walls separating townhouses	903.2 Fire partitions in Group R-3. Fire separation in
shall be assigned a fire-resistance rating in accordance with	Group R-3 occupancies shall be in accordance with Section
Section R302.2, Item 1 or 2. The common wall shared by two	903.2.1.
townhouses shall be constructed without plumbing or	903.2.1 Separation required. Where the work area is in
mechanical equipment, ducts or vents in the cavity of the	any attached dwelling unit in Group R-3 or any multiple
common wall. The wall shall be rated for fire exposure from	single-family dwelling (townhouse), walls separating the
both sides and shall extend to and be tight against exterior	dwelling units that are not continuous from the foundation
walls and the underside of the roof sheathing. Electrical	to the underside of the roof sheathing shall be constructed
installations shall be in accordance with Chapters 34 through	to provide a continuous fire separation using construction
43. Penetrations of the membrane of common walls for electrical	materials consistent with the existing wall or complying
outlet boxes shall be in accordance with Section	with the requirements for new structures. All work shall be
R302.4.	performed on the side of the dwelling unit wall that is part
1. Where a fire sprinkler system in accordance with	of the work area.
Section P2904 is provided, the common wall shall	
be not less than a 1-hour fire-resistance-rated wall	
assembly tested in accordance with ASTM E 119 or	
UL 263.	
2. Where a fire sprinkler system in accordance with	
Section P2904 is not provided, the common wall	
shall be not less than a 2-hour fire-resistance-rated	
wall assembly tested in accordance with ASTM E	
119 or UL 263.	
R302.2.1 Continuity. The fire-resistance-rated wall or	
assembly separating townhouses shall be continuous from	
the foundation to the underside of the roof sheathing, deck	
or slab. The fire-resistance rating shall extend the full length	

of the wall or assembly including wall extensions through	
and separating attached enclosed accessory structures	
and separating attended enclosed accessory sinactares.	
<b>R302.3 Two-family dwellings.</b> <i>Dwelling units</i> in two-family	
dwellings shall be separated from each other by wall and	
floor assemblies having not less than a 1-hour fire-resistance	
rating where tested in accordance with ASTM E 119 or UL	
263. Fire-resistance-rated floor/ceiling and wall assemblies	
shall extend to and be tight against the <i>exterior wall</i> , and wall	
assemblies shall extend from the foundation to the underside	
of the roof sheathing.	
Exceptions:	
1. A fire-resistance rating of $1/2$ hour shall be permitted in	
buildings equipped throughout with an automatic	
sprinkler system installed in accordance with NFPA	
13.	
2. Wall assemblies need not extend through attic spaces	
where the ceiling is protected by not less than 5/8-inch	
(15.9 mm) Type X gypsum board, an <i>attic</i> draft stop	
constructed as specified in Section R302.12.1 is provided	
above and along the wall assembly separating	
the dwellings and the structural framing supporting	
the ceiling is protected by not less than 1/2-inch (12.7	
mm) gypsum board or equivalent.	
R302.3.1 Supporting construction. Where floor assemblies	
are required to be fire-resistance rated by Section	
R302.3, the supporting construction of such assemblies	
shall have an equal or greater fire-resistance rating.	
SMOKE ALARMS	1104.1 Smoke alarms in existing portions of a building.
<b>R314.1 General.</b> Smoke alarms shall comply with NFPA 72	Where an <i>addition</i> is made to a building or structure of a
and Section R314.	Group R or I-1 occupancy, the <i>existing building</i> shall be provided
<b>R314.1.1 Listings.</b> Smoke alarms shall be <i>listed</i> in accordance	with smoke alarms as required by Section 1103.8 of the
with UL 217. Combination smoke and carbon monoxide	International Fire Code or Section R314 of the International
alarms shall be <i>listed</i> in accordance with UL 217	Residential Code as applicable.
and UL 2034.	
<b>R314.2 Where required.</b> Smoke alarms shall be provided in	
accordance with this section.	
<b>K314.2.1 New construction.</b> Smoke alarms shall be provided	
in dwelling units.	
<b>R314.2.2 Alterations, repairs and additions.</b> Where	

alternations, non sing on additions requising a normit accur	
anerations, repairs of datations requiring a perint occur,	
or where one or more steeping rooms are added or created	
in existing <i>aweilings</i> , the individual <i>aweiling unit</i> shall be	
equipped with smoke alarms located as required for new	
dwellings.	
Exceptions:	
1. Work involving the exterior surfaces of <i>dwellings</i> ,	
such as the replacement of roofing or siding,	
the <i>addition</i> or replacement of windows or doors,	
or the addition of a porch or deck, are exempt	
from the requirements of this section.	
2. Installation, alteration or repairs of plumbing or	
mechanical systems are exempt from the requirements	
of this section.	
<b>R314.3 Location.</b> Smoke alarms shall be installed in the following	
locations:	
1. In each sleeping room.	
2. Outside each separate sleeping area in the immediate	
vicinity of the bedrooms.	
3. On each additional <i>story</i> of the <i>dwelling</i> , including	
basements and habitable attics and not including crawl	
spaces and uninhabitable attics. In dwellings or dwelling	
units with split levels and without an intervening	
door between the adjacent levels, a smoke alarm	
installed on the upper level shall suffice for the adjacent	
lower level provided that the lower level is less than	
one full <i>story</i> below the upper level.	
4. Smoke alarms shall be installed not less than 3 feet	
(914 mm) horizontally from the door or opening of a	
bathroom that contains a bathtub or shower unless this	
would prevent placement of a smoke alarm required by	
Section R314.3.	
R314.3.1 Installation near cooking appliances. Smoke	
alarms shall not be installed in the following locations	
unless this would prevent placement of a smoke alarm in a	
location required by Section R314.3.	
1. Ionization smoke alarms shall not be installed less	
than 20 feet (6096 mm) horizontally from a permanently	
installed cooking appliance.	
2. Ionization smoke alarms with an alarm-silencing	

switch shall not be installed less than 10 feet (3048	
switch shall not be installed less than 10 feet (3048	
anni nonzontany non a permanentry instaned cooking	
<i>appuance</i> .	
5. Photoelectric smoke alarms shall not be installed	
less than 6 feet (1828 mm) norizontally from a permanently	
installed cooking <i>appliance</i> .	
<b>R314.4 Interconnection.</b> Where more than one smoke alarm	
is required to be installed within an individual dwelling unit	
in accordance with Section R314.3, the alarm devices shall be	
interconnected in such a manner that the actuation of one	
alarm will activate all of the alarms in the individual dwelling	
unit. Physical interconnection of smoke alarms shall not be	
required where listed wireless alarms are installed and all	
alarms sound upon activation of one alarm.	
Exception: Interconnection of smoke alarms in existing	
areas shall not be required where <i>alterations</i> or repairs do	
not result in removal of interior wall or ceiling finishes	
exposing the structure, unless there is an <i>attic</i> , crawl space	
or <i>basement</i> available that could provide access for interconnection	
without the removal of interior finishes.	
R314.5 Combination alarms. Combination smoke and carbon	
monoxide alarms shall be permitted to be used in lieu of	
smoke alarms.	
<b>R314.6 Power source.</b> Smoke alarms shall receive their primary	
power from the building wiring where such wiring is	
served from a commercial source and, where primary power	
is interrupted, shall receive power from a battery. Wiring	
shall be permanent and without a disconnecting switch other	
than those required for overcurrent protection.	
Exceptions:	
1 Smoke alarms shall be permitted to be battery operated	
where installed in buildings without commercial	
nower	
<b>B301 1 Application</b> Buildings and structures, and parts	1301 1 Scone This chapter provides requirements for relocated
thereof shall be constructed to safely support all loads	or moved structures, including relocatable buildings as
including dead loads live loads roof loads flood loads snow	defined in Chapter 2
loads, wind loads and seismic loads as prescribed by this	<b>1301 2 Conformance</b> The building shall be safe for human
code. The construction of buildings and structures in accordance	occupancy as determined by the International Fire Code and
with the provisions of this code shall result in a system	the International Property Maintenance Code Any repair
that provides a complete lead path that meats the requirements	alteration or change of occurrency undertaken within the
that provides a complete load path that meets the requirements	alteration, or change of occupancy undertaken within the

for the transfer of loads from their point of origin	moved structure shall comply with the requirements of this
through the load-resisting elements to the foundation. Buildings	code applicable to the work being performed. Any field-fabricated
and structures constructed as prescribed by this code are	elements shall comply with the requirements of the
deemed to comply with the requirements of this section.	International Building Code or the International Residential
<b>R301.1.1 Alternative provisions.</b> As an alternative to the	<i>Code</i> as applicable.
requirements in Section R301.1, the following standards	
are permitted subject to the limitations of this code and the	<b>1302.1 Location on the lot.</b> The building shall be located on
limitations therein. Where engineered design is used in	the lot in accordance with the requirements of the International
conjunction with these standards, the design shall comply	Building Code or the International Residential Code as
with the International Building Code.	applicable.
1. AF&PA Wood Frame Construction Manual	<b>[BS] 1302.2 Foundation.</b> The foundation system of relocated
(WFCM).	buildings shall comply with the International Building Code
2. AISI Standard for Cold-Formed Steel Framing—	or the International Residential Code as applicable.
Prescriptive Method for One- and Two-Family	[BS] 1302.2.1 Connection to the foundation. The connection
Dwellings (AISI S230).	of the relocated building to the foundation shall
3. ICC Standard on the Design and Construction of	comply with the International Building Code or the International
Log Structures (ICC 400).	<i>Residential Code</i> as applicable.
R301.1.2 Construction systems. The requirements of this	[BS] 1302.3 Wind loads. Buildings shall comply with International
code are based on platform and balloon-frame construction	Building Code or International Residential Code
for light-frame buildings. The requirements for concrete	wind provisions as applicable.
and masonry buildings are based on a balloon	Exceptions:
framing system. Other framing systems must have equivalent	1. Detached one- and two-family dwellings and Group
detailing to ensure force transfer, continuity and compatible	U occupancies where wind loads at the new location
deformations.	are not higher than those at the previous location.
R301.1.3 Engineered design. Where a building of otherwise	2. Structural elements whose stress is not increased by
conventional construction contains structural elements	more than 10 percent.
exceeding the limits of Section R301 or otherwise	[BS] 1302.4 Seismic loads. Buildings shall comply with
not conforming to this code, these elements shall be	International Building Code or International Residential
designed in accordance with accepted engineering practice.	<i>Code</i> seismic provisions at the new location as applicable.
The extent of such design need only demonstrate	Exceptions:
compliance of nonconventional elements with other applicable	1. Structures in Seismic Design Categories A and B
provisions and shall be compatible with the performance	and detached one- and two-family dwellings in Seismic
of the conventional framed system. Engineered	Design Categories A, B and C where the seismic
design in accordance with the International Building Code	loads at the new location are not higher than
is permitted for buildings and structures, and parts thereof,	those at the previous location.
included in the scope of this code.	2. Structural elements whose stress is not increased by
R301.2 Climatic and geographic design criteria. Buildings	more than 10 percent.
shall be constructed in accordance with the provisions of this	[BS] 1302.5 Snow loads. Structures shall comply with International
code as limited by the provisions of this section. Additional	Building Code or International Residential Code
criteria shall be established by the local <i>jurisdiction</i> and set	snow loads as applicable where snow loads at the new location

forth in Table R301.2(1).	are higher than those at the previous location.
R301.2.1 Wind design criteria. Buildings and portions	Exception: Structural elements whose stress is not
thereof shall be constructed in accordance with the wind	increased by more than 5 percent.
provisions of this code using the ultimate design wind	[BS] 1302.6 Flood hazard areas. If relocated or moved into
speed in Table R301.2(1) as determined from Figure	a flood hazard area, structures shall comply with Section
R301.2(4)A. The structural provisions of this code for	1612 of the International Building Code, or Section R322 of
wind loads are not permitted where wind design is required	the International Residential Code, as applicable.
as specified in Section R301.2.1.1. Where different construction	
methods and structural materials are used for various	
portions of a building, the applicable requirements of	
this section for each portion shall apply. Where not otherwise	
specified, the wind loads listed in Table R301.2(2)	
adjusted for height and exposure using Table R301.2(3)	
shall be used to determine design load performance requirements	
for wall coverings, curtain walls, roof coverings,	
exterior windows, skylights, garage doors and exterior	
doors. Asphalt shingles shall be designed for wind speeds	
in accordance with Section R905.2.4. A continuous load	
path shall be provided to transmit the applicable uplift	
forces in Section R802.11.1 from the roof assembly to the	
foundation.	
R301.2.1.1 Wind limitations and wind design	
required. The wind provisions of this code shall not	
apply to the design of buildings where wind design is	
required in accordance with Figure R301.2(4)B.	
<b>R401.1</b> Application. The provisions of this chapter shall	
control the design and construction of the foundation and	
foundation spaces for buildings. In addition to the provisions	
of this chapter, the design and construction of foundations in	
flood hazard areas as established by Table R301.2(1) shall	
meet the provisions of Section R322. Wood foundations shall	
be designed and installed in accordance with AWC PWF.	
Exception: The provisions of this chapter shall be permitted	
to be used for wood foundations only in the following	
situations:	
1. In buildings that have no more than two floors and a	
root.	
2. Where interior <i>basement</i> and foundation walls are	
constructed at intervals not exceeding 50 feet (15	

240 mm).	
Wood foundations in Seismic Design Category D <sub>0</sub> , D <sub>1</sub> or	
D <sub>2</sub> shall be designed in accordance with accepted engineering	
practice.	
<b>R401.2 Requirements.</b> Foundation construction shall be	
capable of accommodating all loads in accordance with Section	
R301 and of transmitting the resulting loads to the supporting	
soil. Fill soils that support footings and foundations	
shall be designed, installed and tested in accordance with	
accepted engineering practice. Gravel fill used as footings for	
wood and precast concrete foundations shall comply with	
Section R403.	
R110.1 Use and occupancy. A building or structure shall not	1401.2.1 Change in occupancy. Where an existing building
be used or occupied, and a change in the existing use or occupancy	is changed to a new occupancy classification and this
classification of a building or structure or portion	section is applicable, the provisions of this section for the
thereof shall not be made, until the building official has	new occupancy shall be used to determine compliance
issued a certificate of occupancy therefor as provided herein.	with this code.
Issuance of a certificate of occupancy shall not be construed	1401.2.2 Partial change in occupancy. Where a portion
as an approval of a violation of the provisions of this code or	of the building is changed to a new occupancy classification
of other ordinances of the jurisdiction. Certificates presuming	and that portion is separated from the remainder of the
to give authority to violate or cancel the provisions of this	building with fire barrier or horizontal assemblies having a
code or other ordinances of the <i>jurisdiction</i> shall not be valid.	fire-resistance rating as required by Table 508.4 of the
Exceptions:	International Building Code or Section R317 of the International
1. Certificates of occupancy are not required for work	Residential Code for the separate occupancies, or
exempt from permits under Section R105.2.	with approved compliance alternatives, the portion
2. Accessory buildings or structures.	changed shall be made to conform to the provisions of this
	section.
	Where a portion of the building is changed to a new
R110.2 Change in use. Changes in the character or use of an	occupancy classification and that portion is not separated
existing structure shall not be made except as specified in	from the remainder of the building with fire barriers or
Sections 3408 and 3409 of the International Building Code.N1111.1	horizontal assemblies having a fire-resistance rating as
(R505.1) General. Spaces undergoing a change in	required by Table 508.4 of the International Building
occupancy that would result in an increase in demand for	Code or Section R317 of the International Residential
either fossil fuel or electrical energy shall comply with this	<i>Code</i> for the separate occupancies, or with approved compliance
code.	alternatives, the provisions of this section which
N1111.2 (R505.2) General. Any space that is converted to a	apply to each occupancy shall apply to the entire building.
dwelling unit or portion thereof from another use or occupancy	Where there are conflicting provisions, those requirements
shall comply with this code.	which secure the greater public safety shall apply to the
Exception: Where the simulated performance option in	entire building or structure.
Section N1105 is used to comply with this section, the	1401.2.3 Additions. Additions to existing buildings shall

annual energy cost of the proposed design is permitted to	comply with the requirements of the International Building
be 110 percent of the annual energy cost otherwise	Code, International Residential Code, and this code
allowed by Section N1105.3.	for new construction. The combined height and area of the
	existing building and the new addition shall not exceed the
	height and area allowed by Chapter 5 of the <i>International</i>
	Building Code. Where a fire wall that complies with Section
	706 of the International Building Code is provided
	between the <i>addition</i> and the <i>existing building</i> the <i>addition</i>
	shall be considered a separate building
EXISTING MECHANICAL SYSTEMS	shan be considered a separate bunding.
M1202 1 Additions alterations on repairs Additions alterations	
reportions or repairs to a mechanical system shall	
renovations of repairs to a mechanical system shan	
conform to the requirements for a new mechanical system	
without requiring the existing mechanical system to comply	
with all of the requirements of this code. Additions, alterations	
or repairs shall not cause an existing mechanical system	
to become unsafe, hazardous or overloaded. Minor <i>additions</i> ,	
alterations or repairs to existing mechanical systems shall	
meet the provisions for new construction, unless such work is	
done in the same manner and arrangement as was in the existing	
system, is not hazardous, and is <i>approved</i> .	
M1202.2 Existing installations. Except as otherwise provided	
for in this code, a provision in this code shall not	
require the removal, <i>alteration</i> or abandonment of, nor prevent	
the continued use and maintenance of, an existing	
mechanical system lawfully in existence at the time of the	
adoption of this code.	
EXISTING PLUMBING SYSTEMS	
P2502.1 Existing building sewers and building drains.	
Where the entire sanitary drainage system of an existing	
building is replaced, existing <i>building drains</i> under concrete	
slabs and existing <i>building sewers</i> that will serve the new system	
shall be internally examined to verify that the piping is	
sloping in the correct direction, is not broken, is not	
obstructed and is sized for the drainage load of the new	
plumbing drainage system to be installed.	
P2502.2 Additions, alterations or repairs. Additions, alterations,	
renovations or repairs to any plumbing system shall	
conform to that required for a new plumbing system without	
requiring the existing plumbing system to comply with the	

requirements of this code. Additions, <i>alterations</i> or repairs shall not cause an existing system to become unsafe, insanitary or overloaded. Minor additions, <i>alterations</i> , renovations and repairs to existing plumbing systems shall be permitted in the same manner and arrangement as in the existing system, provided that such repairs or replacement are not hazardous and are <i>annroved</i>	
Reference to the IEBC in the IRC	Exceptions for One- and Two- family Dwellings in the IEBC
AJ102.6 Equivalent alternatives. Work performed in accordance with the <i>International Existing Building Code</i> shall be deemed to comply with the provisions of this appendix. These provisions are not intended to prevent the use of any alternative material, alternative design or alternative method of construction not specifically prescribed herein, provided that any alternative has been deemed to be equivalent and its use authorized by the <i>building official</i> .	<ul> <li>[BS] 404.2 Substantial structural damage to vertical elements of the lateral force-resisting system. A building that has sustained <i>substantial structural damage</i> to the vertical elements of its lateral force-resisting system shall be evaluated and repaired in accordance with the applicable provisions of Sections 404.2.1 through 404.2.3.</li> <li>Exceptions: <ol> <li>Buildings assigned to Seismic Design Category A, B</li> <li>C whose substantial structural damage was not</li> <li>caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake</li> <li>effects.</li> <li>One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.</li> </ol> </li> <li>[BS] 404.3.1 Lateral force-resisting elements. Regardless of the lavel of damage to vertical elements was caused primarily by wind or earthquake effects, then the building shall be evaluated in accordance with Section 404.2.1 and, if noncompliant, rehabilitated in accordance with Section 404.2.3.</li> <li>Exceptions: <ol> <li>One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include a lements. Regardless of the level of damage to acarrying components was caused primarily by wind or earthquake effects, then the building shall be evaluated in accordance with Section 404.2.1 and, if noncompliant, rehabilitated in accordance with Section 404.2.3.</li> </ol> </li> <li>Exceptions: <ol> <li>One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.</li> </ol> </li> </ul>

be evaluated in accordance with Section 606.2.2.1 and
aither repaired in accordance with Section 606.2.2.1, and
repaired and rehabilitated in accordance with Section
repaired and remaining on the results of the conclustion $(0, 2, 2, 2, 3)$
505.2.2.5, depending on the results of the evaluation.
Exceptions:
1. Buildings assigned to Seismic Design Category
A, B, or C whose substantial structural damage
was not caused by earthquake need not be evaluated
or rehabilitated for load combinations that
include earthquake effects.
2. One- and two-family dwellings need not be evaluated
or rehabilitated for load combinations that
include earthquake effects.
[BS] 606.2.3.1 Lateral force-resisting elements.
Regardless of the level of damage to gravity elements
of the lateral force-resisting system, if substantial structural
damage to gravity load-carrying components was
caused primarily by wind or seismic effects, then the
building shall be evaluated in accordance with Section
606.2.2.1 and if noncompliant, rehabilitated in accordance
with Section 606.2.2.2
With Section 000.2.2.3.
Exceptions:
1. Buildings assigned to Seisinic Design Category
A, B, or C whose substantial structural
damage was not caused by earthquake need
not be evaluated or rehabilitated for load combinations
that include earthquake effects.
2. One- and two-family dwellings need not be
evaluated or rehabilitated for load combinations
that include earthquake effects.
<b>803.1 Scope.</b> The requirements of this section are limited to
work areas in which Level 2 alterations are being performed
and shall apply beyond the work area where specified.
<b>803.2 Vertical openings.</b> Existing vertical openings shall
comply with the provisions of Sections 803.2.1, 803.2.2 and
803.2.3.
803.2.1 Existing vertical openings. All existing interior
vertical openings connecting two or more floors shall be
enclosed with approved assemblies having a fire-resistance

rating of not less than 1 hour with approved opening
protectives.
Exceptions:
12. One- and two-family dwellings.
[BS] 1302.3 Wind loads. Buildings shall comply with International
Building Code or International Residential Code
wind provisions as applicable.
Exceptions:
1. Detached one- and two-family dwellings and Group
U occupancies where wind loads at the new location
are not higher than those at the previous location.