



Welcome



# 2012 INTERNATIONAL RESIDENTIAL CODE UPDATE

Presented by Jeff Whitney  
Grand County Building Department  
July 19, 2013

# Today's Overview

1

- Review Building Department Processes

2

- Review iWorQ System

3

- Gain an understanding of the 2012 IRC

4

- Discuss changes to 2012 IRC through state amendments





# BUILDING DEPARTMENT PROCESSES REVIEW



# Building Department Processes

## Building Permit Application Submittal

- Acquire zoning approval first!
- Request site plan from County Recorder's office for building permit use with zoning signoff block; Recorder will also verify address

<b>COUNTY RECORDER</b>
Parcel Number _____
<input type="checkbox"/> Correct as shown on site plan
Owner(s) Name _____
<input type="checkbox"/> Correct as shown on site plan
Address _____
_____
(RECORDER'S SIGNATURE)
<b>ZONING</b>
Zone _____ Use _____
Minimum Setbacks:
Front _____ Side _____ Side _____ Rear _____
Building Height _____
_____
(ZONING ADMINISTRATOR'S SIGNATURE)



# Building Department Processes

## Building Permit Application Submittal

- Submit one set plans for review including site plan (with recorder's and zoning's approval)
- Plan check will be emailed
- List **ALL** contractors and subs with contact information, email addresses, and Utah state contractor's license number (use back if necessary)



# Building Department Processes

## Solar Permits

- Applicant sets up net metering work request to create work order and request application (888-221-7070)
  - Have account number, address, or meter number handy
  - Know the kW size of system being installed (helpful)
- Customer completes and returns application/agreement
- Analyst reviews for completeness
- Engineer performs technical review
- Customer receives approval via email (can take 30 days)



# Building Department Processes

## Solar Permits *(continued)*

- Applicant submits approval and all permit application documents
- Applicant requests inspection, including work order number
- Building inspector will submit inspection report to Rocky Mountain Power Net Metering
- Go to [rockymountainpower.net/netmetering](http://rockymountainpower.net/netmetering) for more information about Net Metering



# Building Department Processes

## Inspections

- Contact office to schedule inspection at **259-4134**
- 24-hour notice **REQUIRED**
- Provide address or permit number

## Reinspections

- Reinspection fee of \$47 will be applied for **ALL** reinspections after the first to be paid prior to the inspection



# Building Department Processes

## Miscellaneous

- Additional fees for expired permits (nine months beyond issuance or last inspection)
- Plan check deposit of required for all commercial projects
- Email or drop copy of license renewal to office so we can update your information; iWorQ will flag all expired licenses!
- If you are purchasing plans, be sure to submit the set stamped in red





# IWORQ SYSTEMS



# iWorQ Notes

## **Contractor's List**

- License and employee information (including expired licenses)
- Permits

## **Permit**

- Data tracked

## **Property**

- Links permits, enforcements, and licenses

## **Contractor's Portal**





## CHAPTER 3

# BUILDING PLANNING

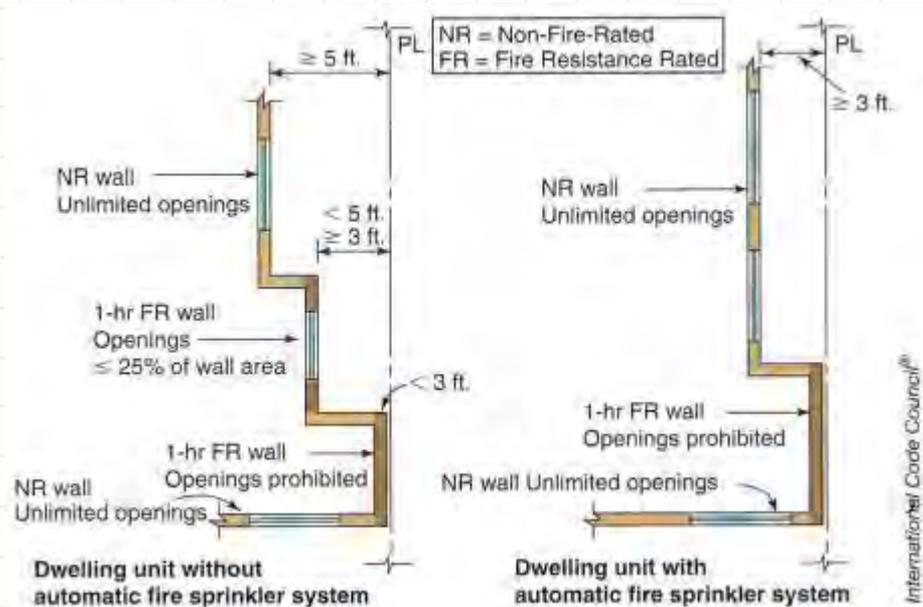


# Fire-Resistant Construction Exterior walls

## R302.1

### Fire Sprinklers Drop Separation Requirements

- Reduction in minimum fire separation distance

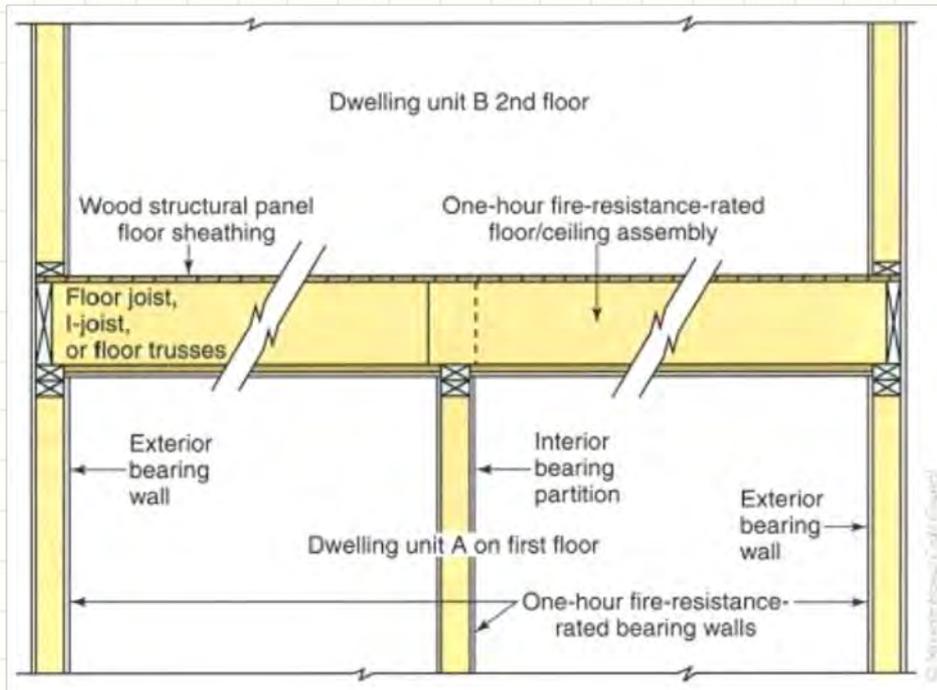


# Fire-Resistant Construction Two-family dwellings

R302.3

## Duplex/Condominium

- One owner or point-to-point ownership of space with homeowner's association



- Half-hour construction if sprinkled
- Anything over a two-plex to be fire sprinkled (except townhomes)

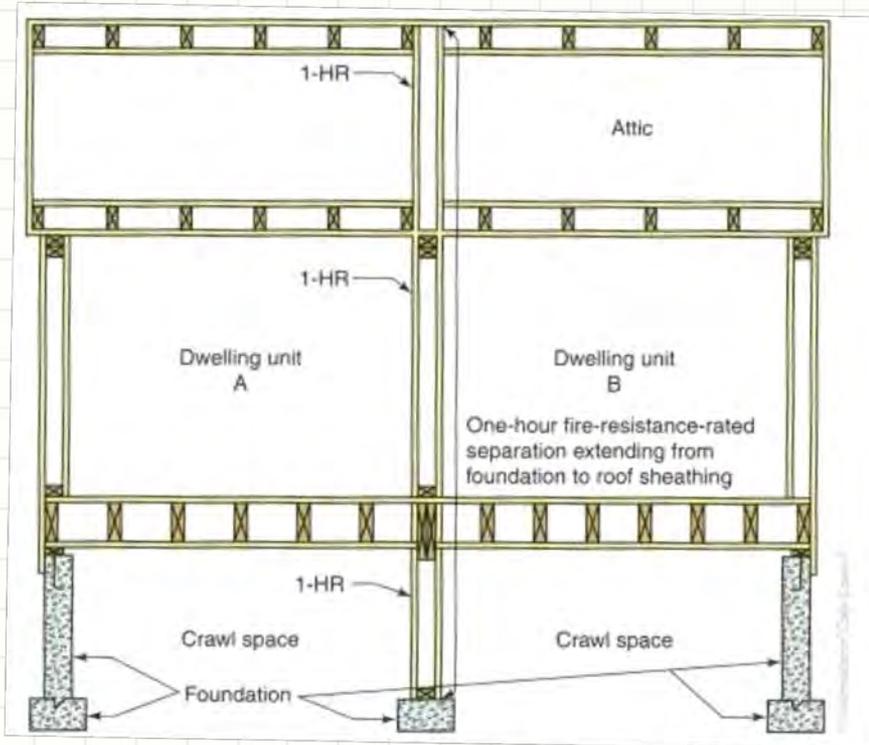


# Fire-Resistant Construction Two-family dwellings

R302.3

## Duplex/Condominium

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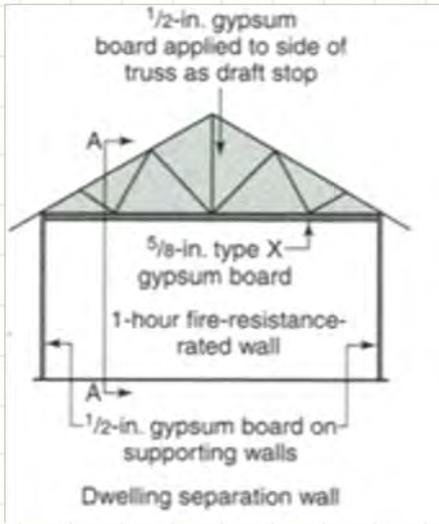
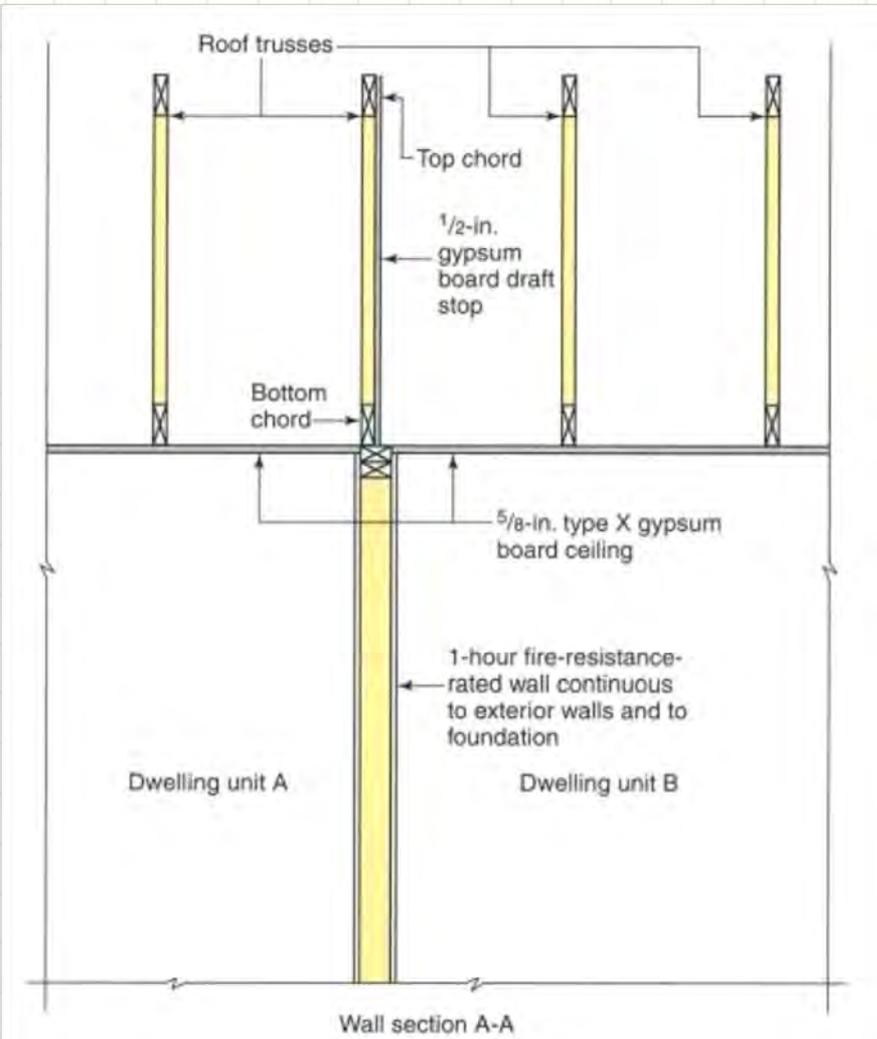


- Half-hour construction if sprinkled



# Fire-Resistant Construction Two-family dwellings

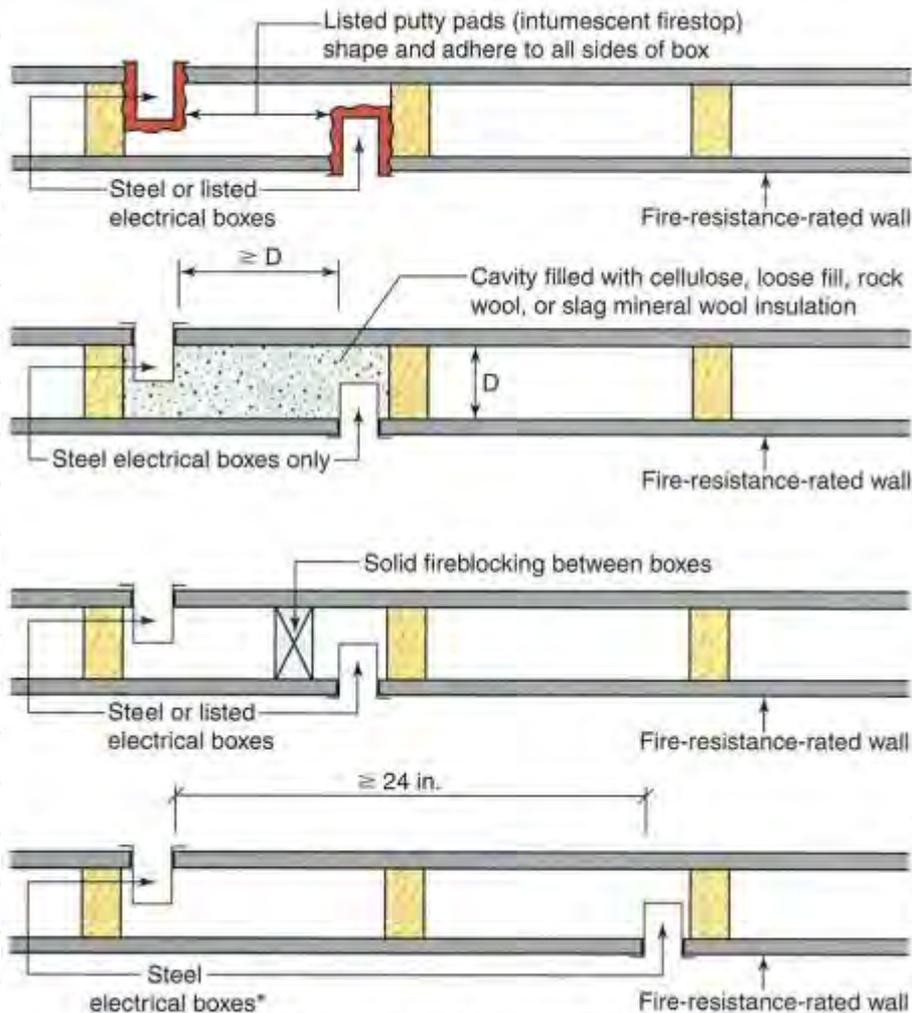
R302.3



# Fire-Resistant Construction Membrane penetrations

R302.4.2

Note: Steel boxes limited to 16 sq. in. each and total of 100 sq. in. in any 100 sq. ft. of wall



\*Note: Separation distance for listed boxes is determined by the listing.

## Electrical Box Penetrations on Opposite Sides of Fire-Resistance-Rated Wall Assembly



## Fire-Resistant Construction Dwelling/garage opening/penetration protection

# R302.5

### R302.5.1

- No openings from garage to sleeping room; all others protected by 1-3/8" solid wood door, 1-3/8" solid or honeycomb steel door, or listed 20-min fire door *equipped with self-closing device*  
*(Grand County will not enforce)*

### R302.5.2

- Duct penetrations need to be made of 26-gage steel and no openings into garage (no vibration isolator and must be insulated)

### R302.5.3

- Other penetrations need to be sealed to resist the free passage of flame and products of combustion



**Table R302.6 Dwelling/Garage Separation**

<b>SEPARATION</b>	<b>MATERIAL</b>
<b>From the residence and attics</b>	Not less than 1/2" gypsum board or equivalent applied to the garage side
<b>From all habitable rooms above the garage</b>	Not less than 5/8-inch Type X gypsum board or equivalent
<b>Structure(s) supporting floor/ceiling assemblies used for separation required by this section</b>	Not less than 1/2-inch gypsum board or equivalent
<b>Garages located less than 3 feet from a dwelling unit on the same lot</b>	Not less than 1/2-inch gypsum board or equivalent applied to the interior side of exterior walls that are within this area

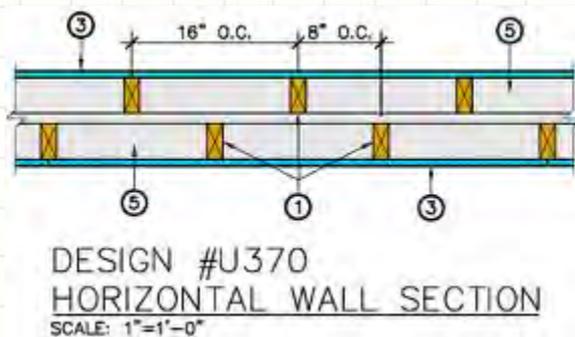


# Fire-Resistant Construction Fireblocking

R302.11

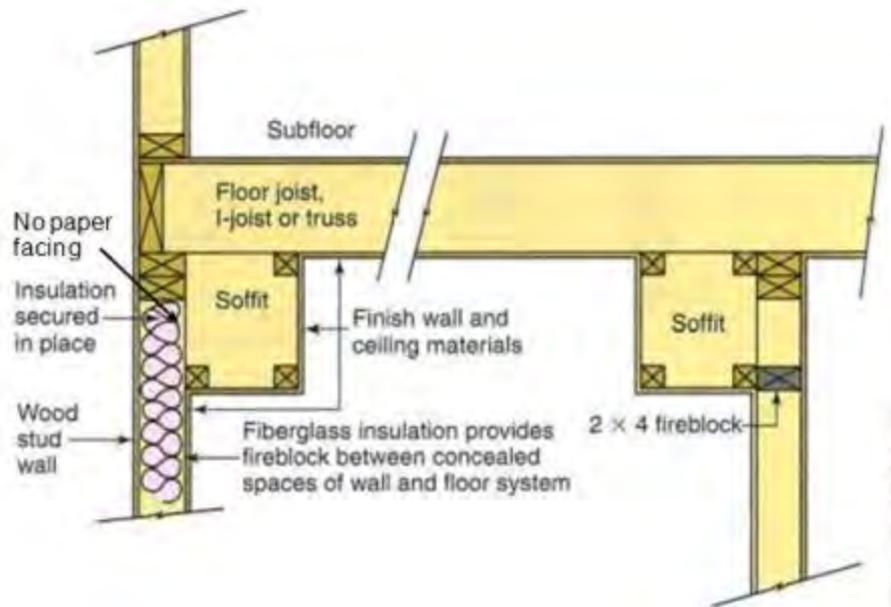
## Fireblocking #1

- Staggered stud
  - At ceiling and floor levels
  - Horizontally at 10'



### Fireblocking #2

- Soffits; can also prerock before soffit framing
- Grand County requires insulation to be tightly packed at interconnection

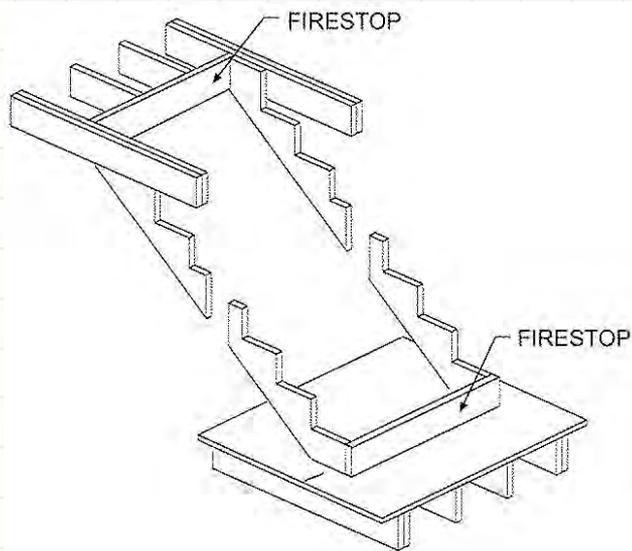


# Fire-Resistant Construction Fireblocking

R302.11

## Fireblocking #3

➤ Stairways

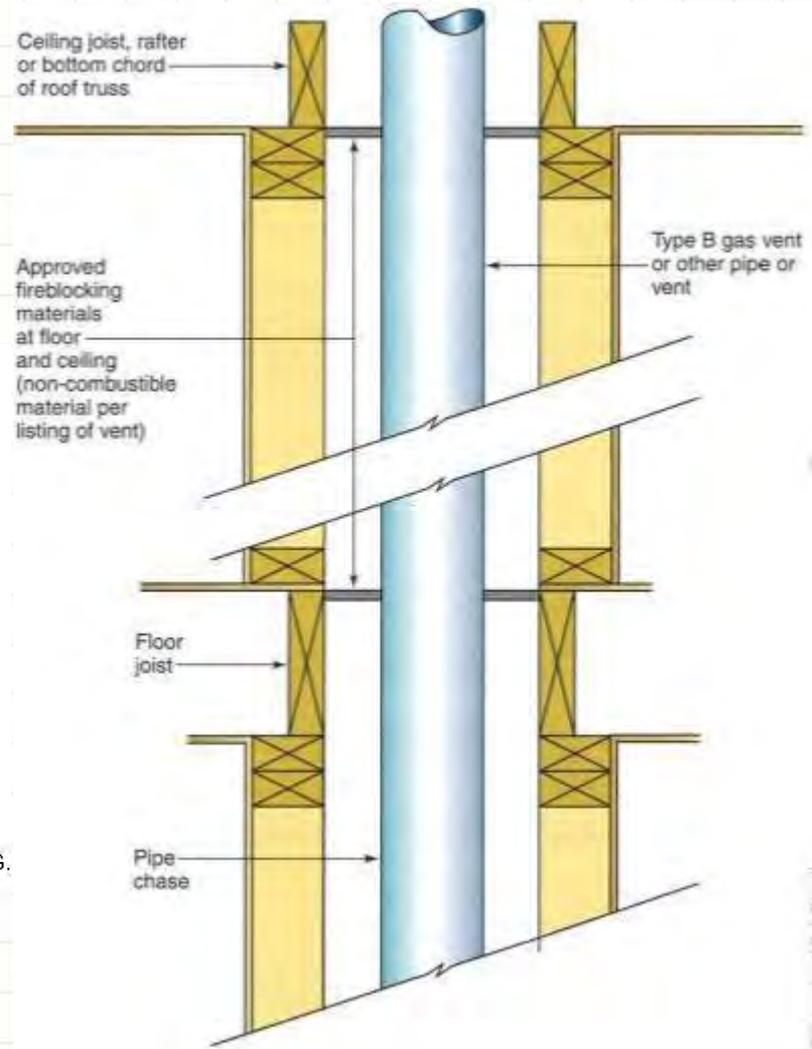
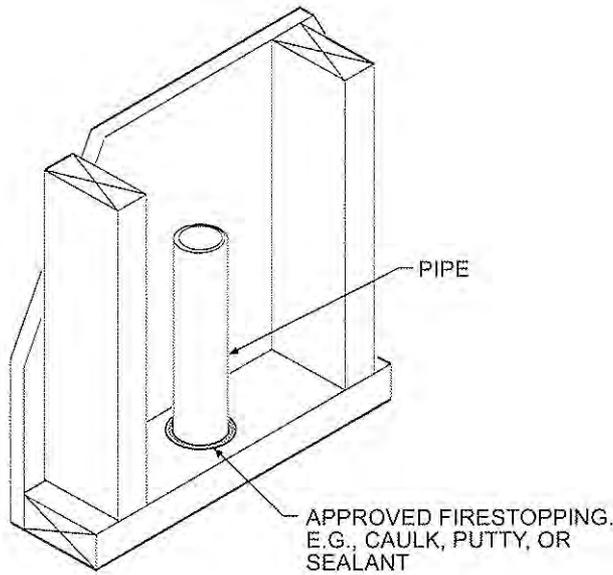


# Fire-Resistant Construction Fireblocking

R302.11

## Fireblocking #4

➤ Pipe chase



© International Code Council

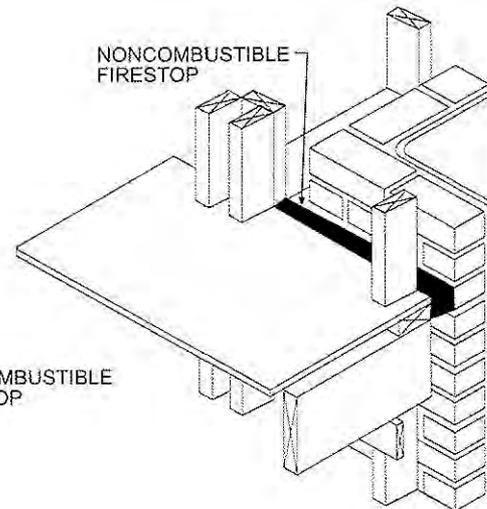
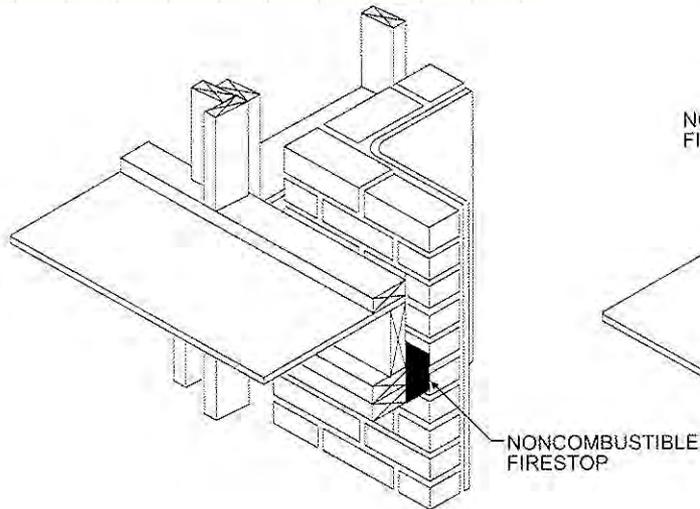
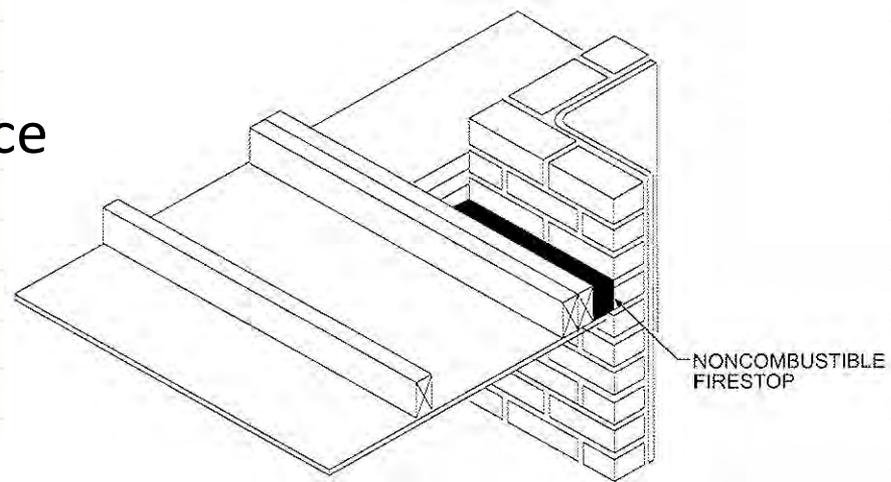


# Fire-Resistant Construction Fireblocking

R302.11

## Fireblocking #5

➤ Chimney and fireplace



### Draftstop

- Where a floor ceiling assembly is of combustible construction, has usable space above and below, and is open web trusses or a drop ceiling, draft stop shall be installed so that the area of concealed space does not exceed 1000 square feet and should be separated into approximately equal areas.



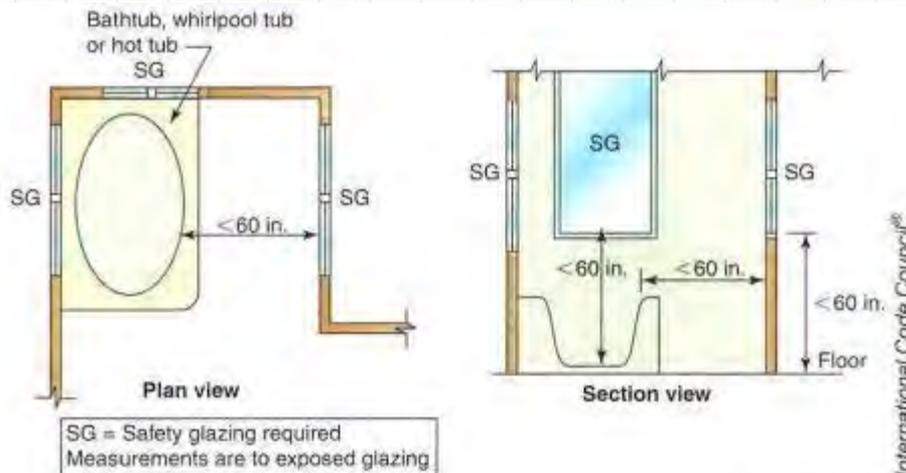
# Glazing

## Glazing and wet surfaces

R308.4.5

## Tempered Glazing

- Required when there is  $\leq 60$ " vertical or horizontal of wet surfaces



# Emergency Escape/Rescue Openings Drainage

R310.2.1

## Window Well Drainage

- Ladder required if greater than 44" deep
- Ladder requirements:



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- 12" wide
- 3" minimum projection from wall
- 36" minimum wide
- 9 square foot total
- May encroach 6" into required space

A window well serving an emergency escape and rescue opening requires provisions for drainage.

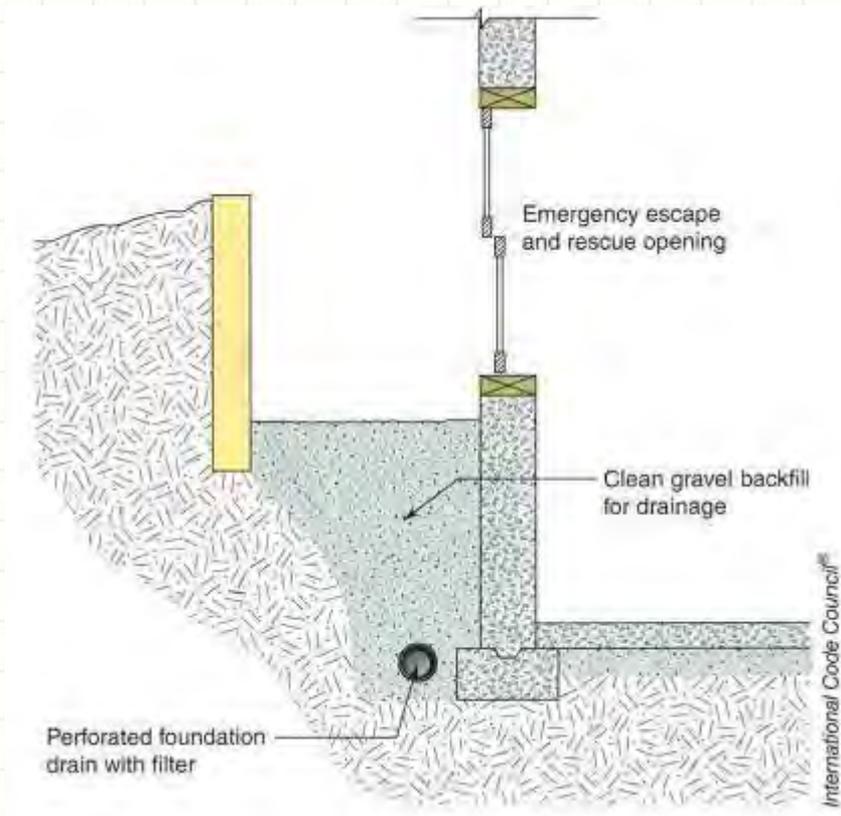


# Emergency Escape/Rescue Openings Drainage

R310.2.2

## Window Well Drainage

- 8" minimum below window buck



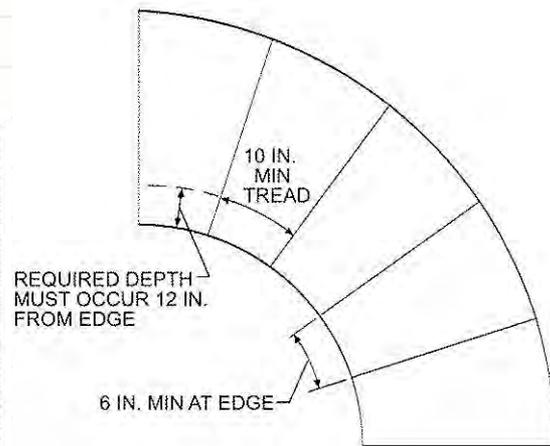
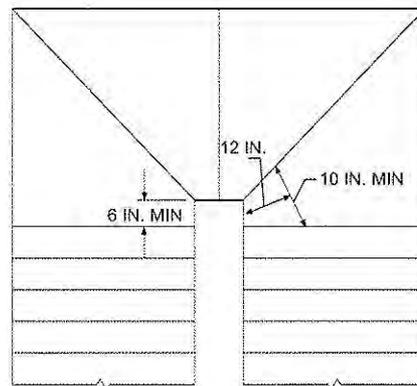
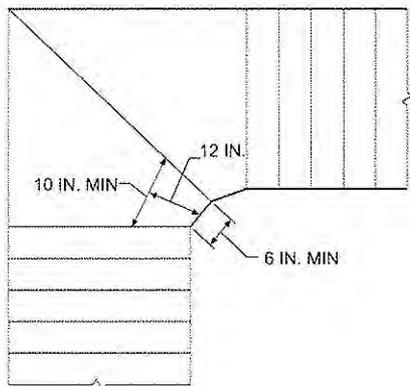
# Means of Egress Stair treads and risers

## R311.7.5.2.1

### UTAH STATE AMENDMENT

## Winders

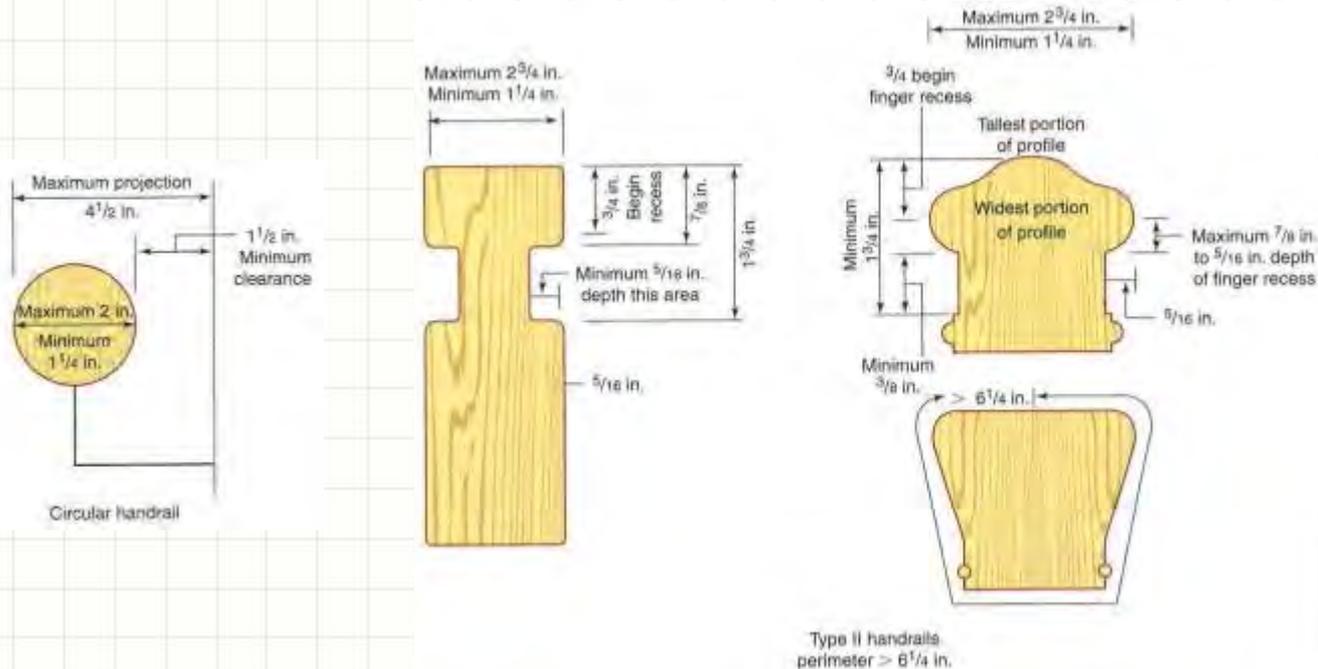
- Winder treads shall have a minimum tread depth of 10" measured at a point 12" from the side where the treads are narrower. Winder treads shall have a minimum tread depth of 6" at any point. Within any flight of stairs, the greatest winder tread depth at the 12-44" walk line shall not exceed the smallest by more than 3/8".



# Means of Egress Stairways

## R311.7.8.3

### Handrail Grasp Size



# Guards and Window Fall Protection

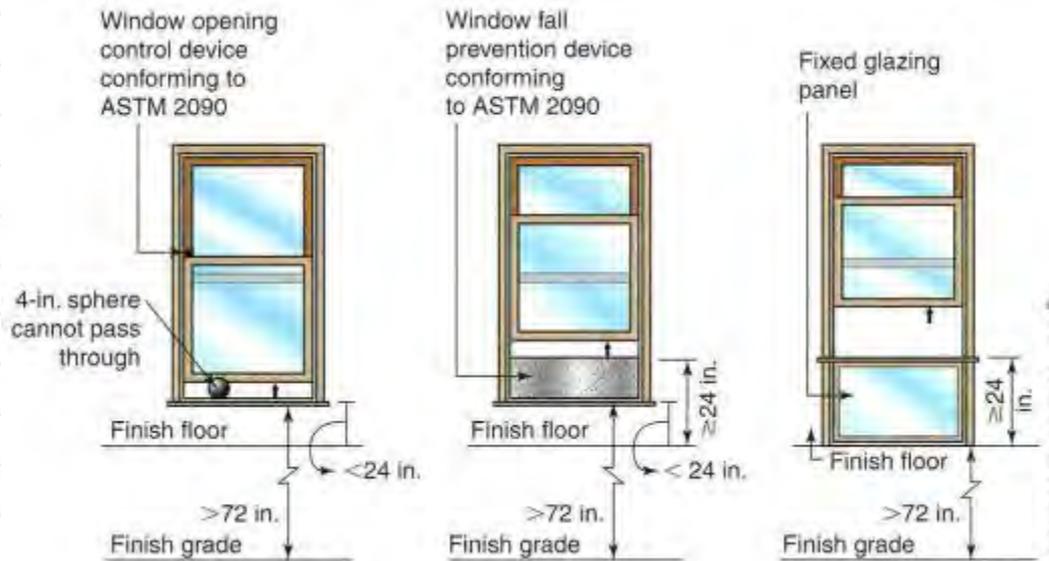
## Window fall protection

R312.2-312.2.1

## Window Sills

### ➤ Exceptions

- Windows whose openings will not allow a 4"-diameter sphere to pass through the opening when the opening is in its largest opened position

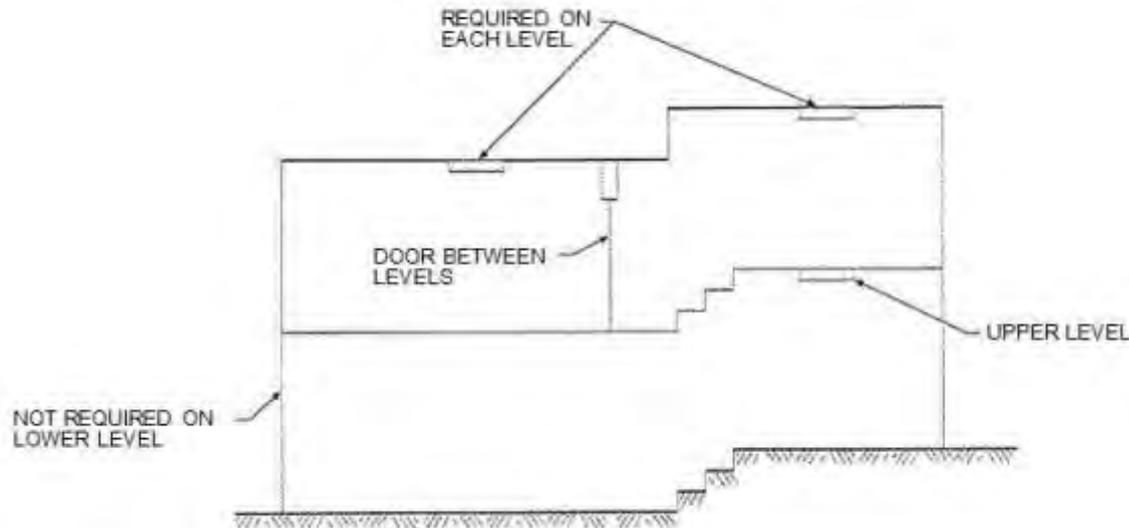


- Openings that are provided with window fall prevention devices that comply with ASTM F 2090
- Windows that are provided with window opening control devices that comply with Section R312.2.2



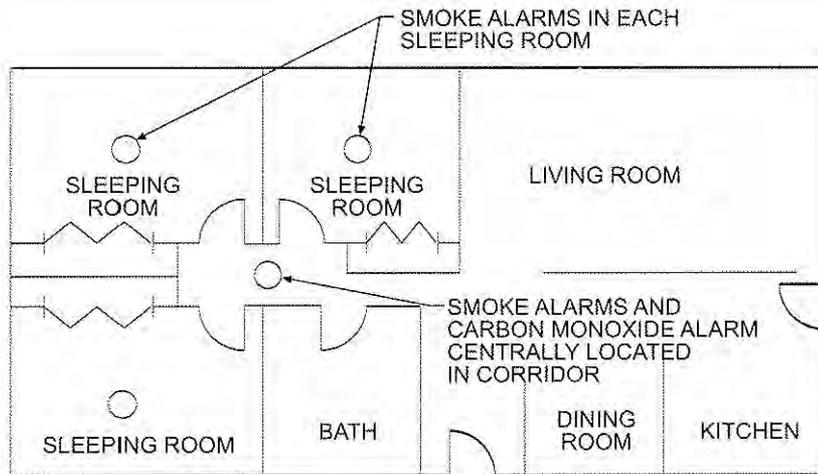
## Carbon Monoxide Alarms

- Carbon monoxide alarm shall be installed in new construction on each habitable level of dwelling units where fuel-fired appliances are installed and in **dwelling units with attached garages**
- Carbon monoxide alarm can be a combo unit



## Carbon Monoxide Alarms

- Where work requiring a permit occurs in existing dwellings that have attached garages or fuel-fired appliances carbon monoxide alarms shall be provided in accordance with R315.1



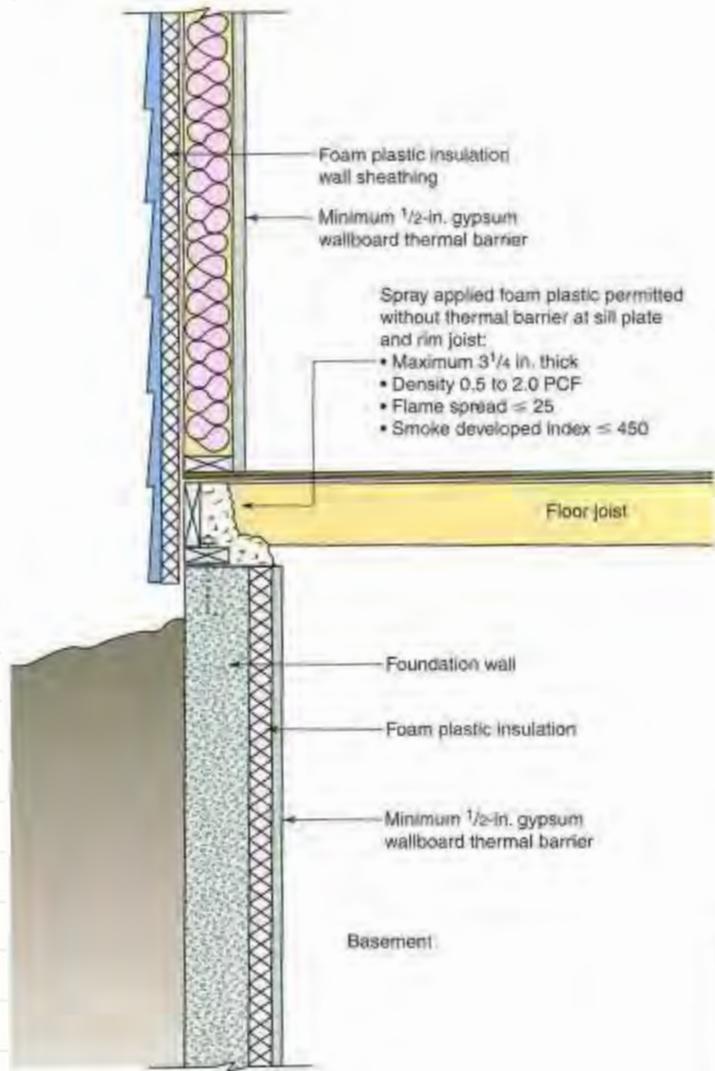
CARBON MONOXIDE ALARMS REQUIRED OUTSIDE EACH SLEEPING AREA

# Foam Plastic Thermal barrier

## R316.4

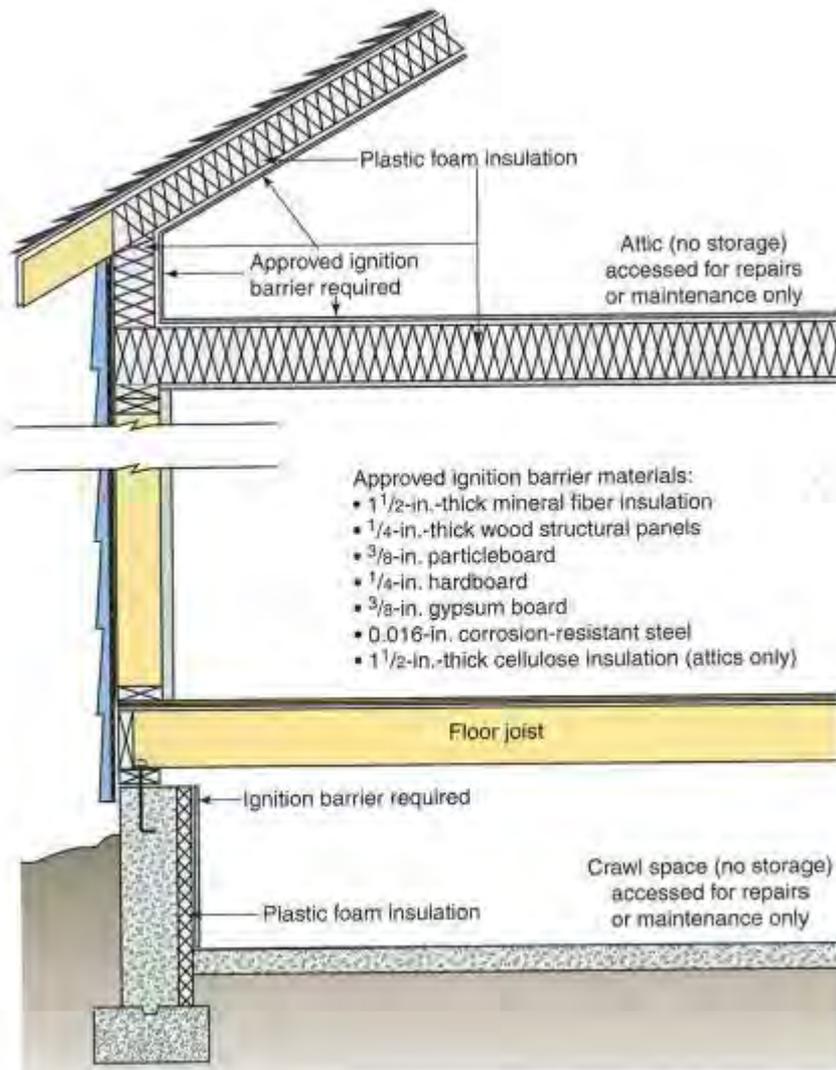
### Thermal Barrier

- Where there is usable space, foam plastic insulation need thermal barrier minimum 1/2" gypsum wallboard



# Foam Plastic Thermal barrier

R316.5/R316.5.4



## Ignition Barrier

➤ In attics and crawl spaces, not required where **all** the following apply:

- Access is required by code
- Space is entered only for the purpose of repairs or maintenance (no storage)
- Foam plastic insulation is protected against ignition by 1-1/2" mineral fiber or 1/4" structural panel



## **Testing**

- Upon approval, some foam plastic insulation does not require an ignition barrier when tested using NFPA 286, FM4880, UL 1040, or UL 1715
- If foam plastic insulation is used, provide following information:
  - Listing for verification
  - Installation instructions with plan review and at the time of inspection on the job site



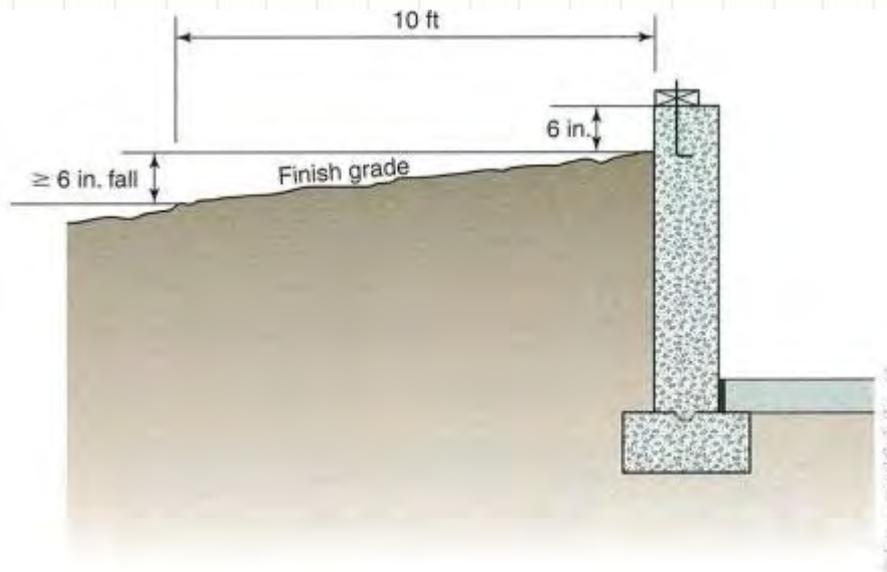
## CHAPTER 4

# FOUNDATIONS



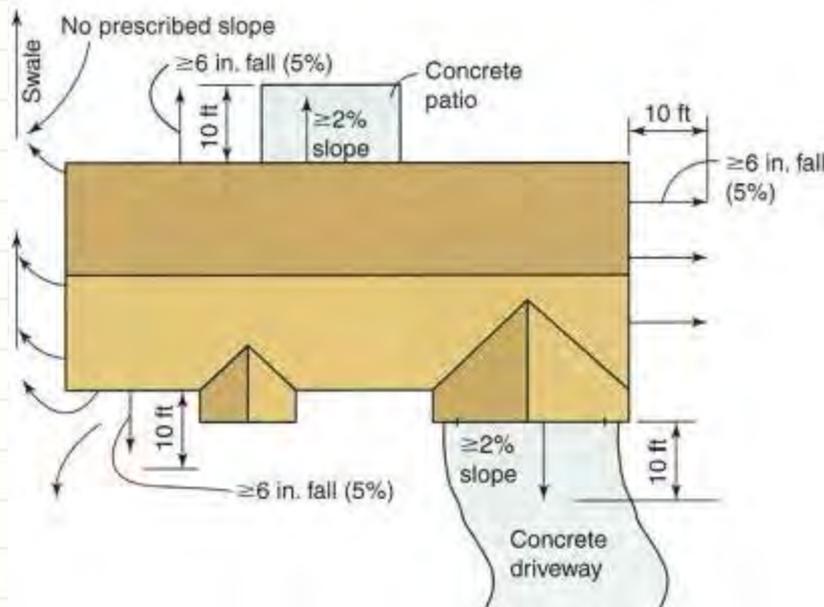
### Foundation Drainage and Grading

- 6" minimum to finished grade
- If foundation is 26" total, 6" above and 20" below for frost
- *This leaves no room for error*



### Foundation Drainage and Grading

- The site plan should include distance of building to the property lines. It should include proposed drainage plan and exterior wall dimensions.

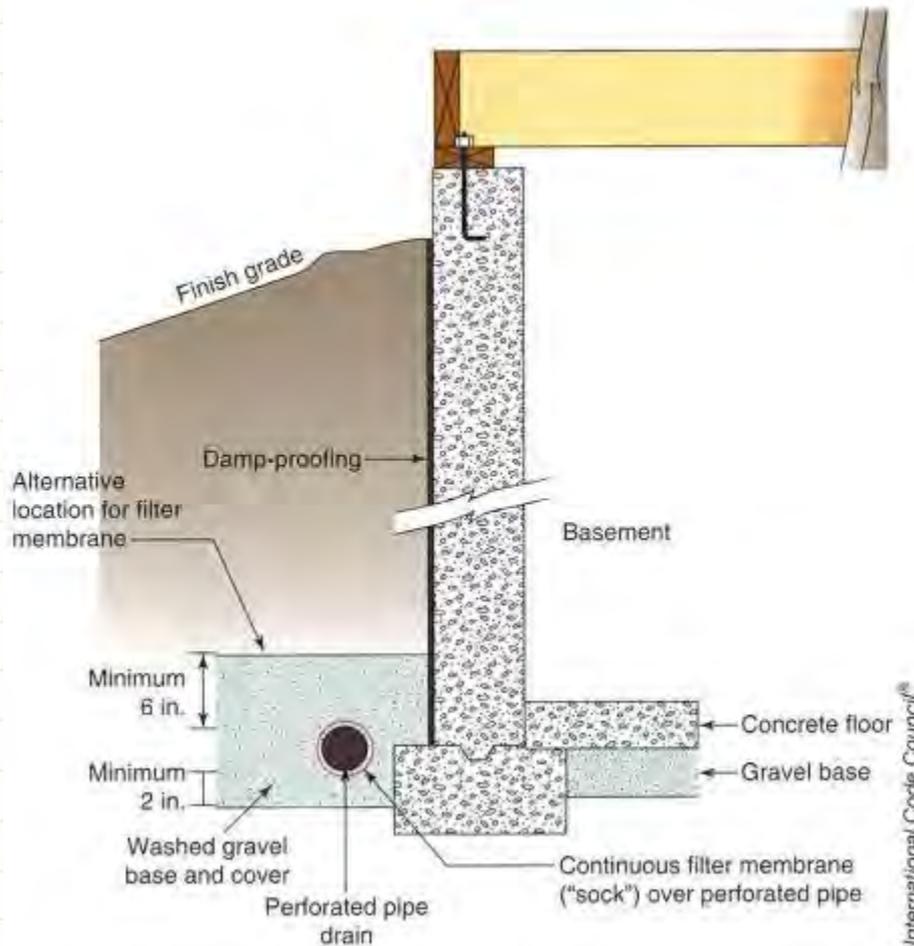


# Foundation Drainage Concrete or masonry foundations

R405.1

## Damp Proof Crawl Space Waterproof Basement

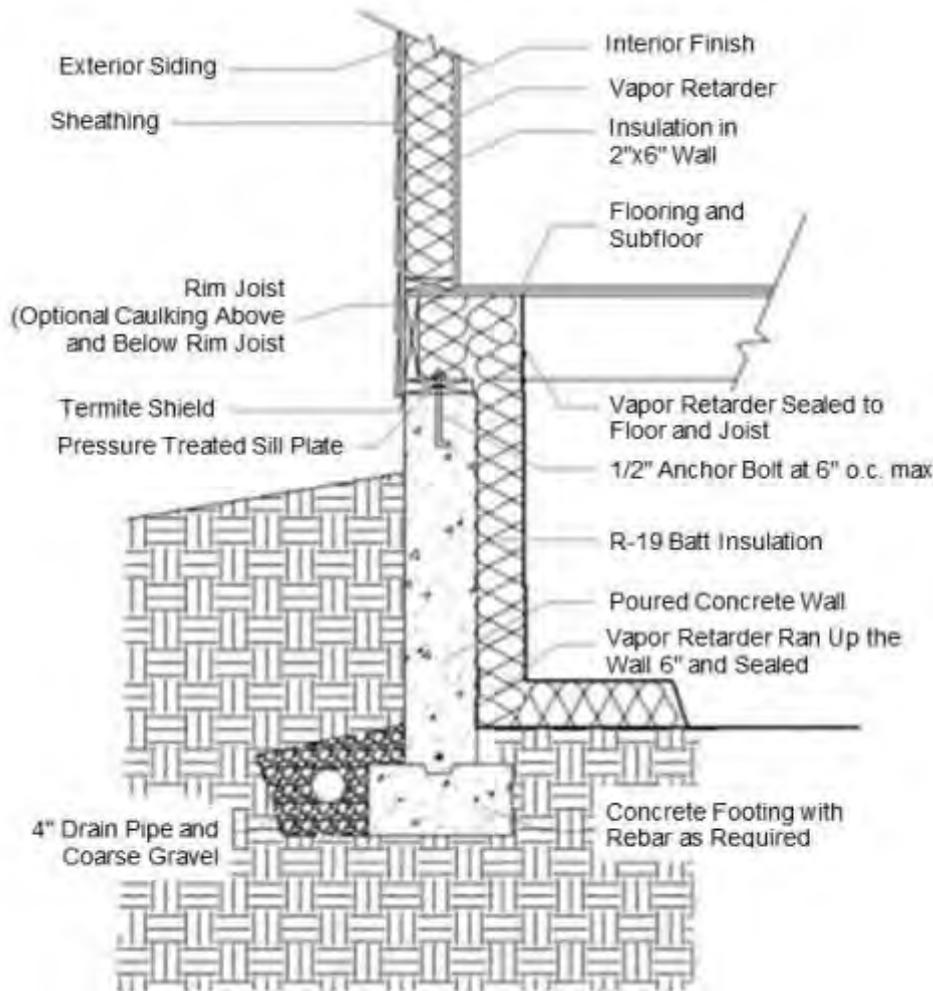
- One coat asphalt emulsion is damp proof
- Two coats asphalt emulsion is waterproof
- Asphalt emulsion should be puddled at cold joint between footer and stem wall



# Under-Floor Space

## Unvented crawl space

**R408.3**



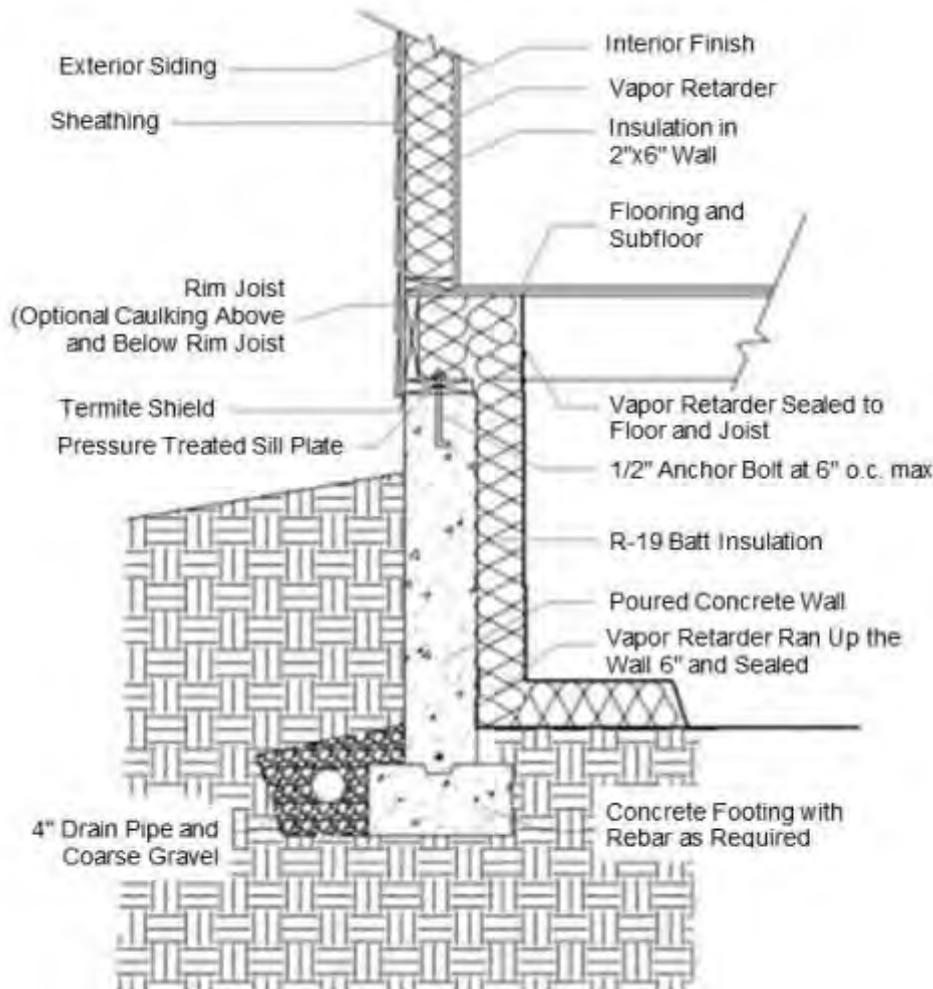
## Unvented Crawl Space

- Exposed earth is covered with Class I vapor retarder; joints lapped 6" and taped. Must run up stem wall 6" minimum and be taped or sealed.

# Under-Floor Space

## Unvented crawl space

R408.3



## Unvented Crawl Space (*continued*)

- Continuous exhaust fan 1 cfm per 50 SF and transfer grill to a common area
- Conditioned air supply at 1 cfm per 50 SF and transfer grill
- Under floor plenum for existing buildings only





## CHAPTER 5

# FLOORS

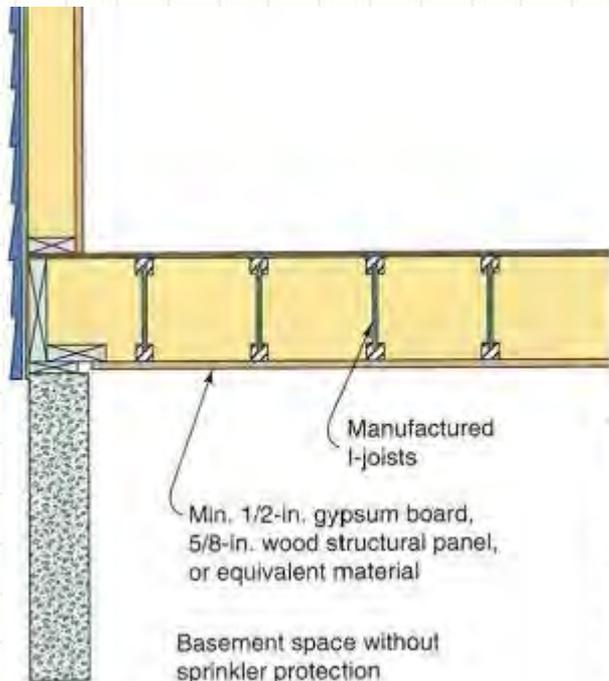


# General Fire protection of floors

R501.3

## Exceptions

- Floors over fire sprinkled areas
- Floors over crawl space



- Floors unprotected when complying with:
  - Total area not to exceed 80 SF per story
  - Fire blocking installed to separate from remainder of house
- Wood floors  $\geq 2" \times 10"$



# Decks

## Deck ledger connection to band joist

**R507.2**

# Fastener Spacing for Southern Pine or Hem-Fir Deck Ledger and 2" solid-Sawn Spruce-Pine-Fir Band Joist

Joist Span	6'-0" and Less	6'-1" to 8'-0"	8'-1" to 10'-0"	10'-1" to 12'-0"	12'-1" to 14'-0"	14'-1" to 16'-0"	16'-1" to 18'-0"
<b>Connection Details</b>	<b>On-Center Spacing of Fasteners</b>						
1/2" diameter lag screw with 15/32" maximum sheathing	30	23	18	15	13	11	10
1/2" diameter bolt with 15/32" maximum sheathing	36	36	34	29	24	21	19
1/2" diameter bolt with 15/32" maximum sheathing and 1/2" stacked washers	36	36	29	24	21	18	16

[Ref. Table R507.2]

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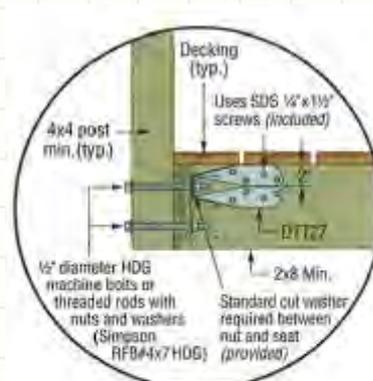
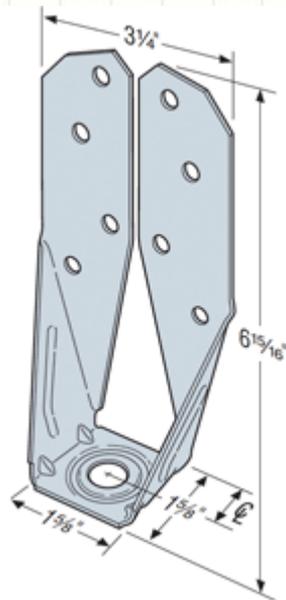
# Decks

## Deck ledger connection to band joist

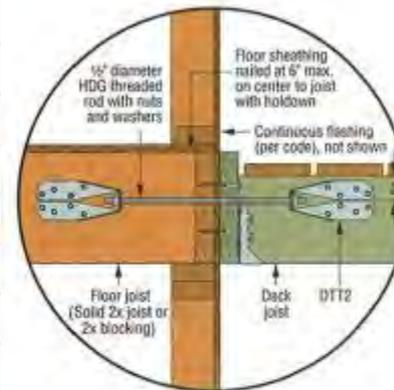
R507.2.3

### Deck Lateral Load Connections

- Install hold-down tension devices not less than two locations per deck
- Stress design capacity not less than 1500 pounds



**DTT2 installed as a lateral connector for a deck guardrail post.**  
For more information on guardrail post connections, see technical bulletin T-GRDRLPST.



**Typical Deck-to-House Lateral Load Connection**





## CHAPTER 6

# WALL CONSTRUCTION

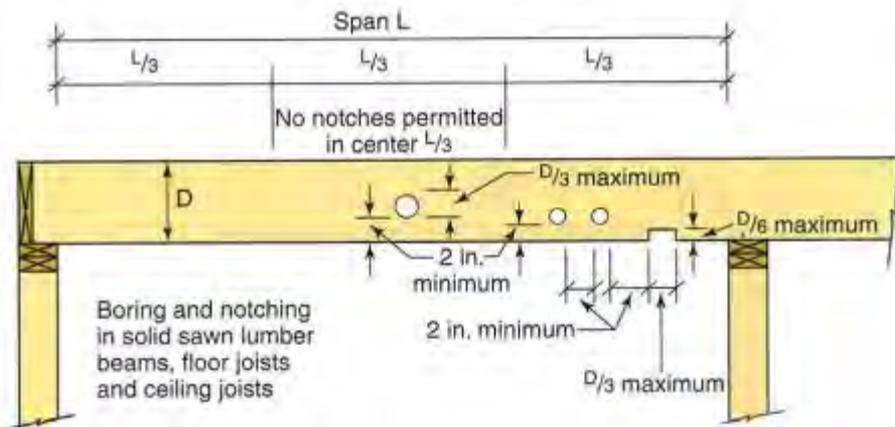
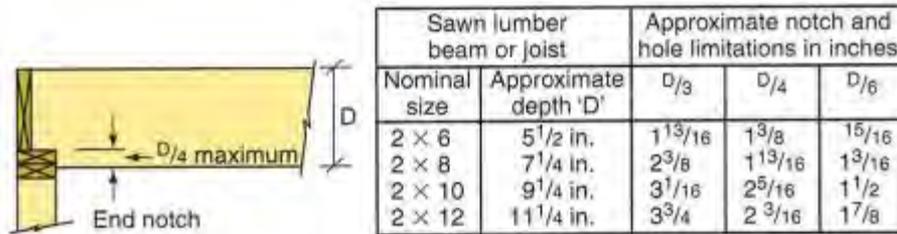


# Wood Wall Framing

## Drilling and notching of studs

**R602.6**

# Solid Sawn Beams, Floor Joists, and Ceiling Joists



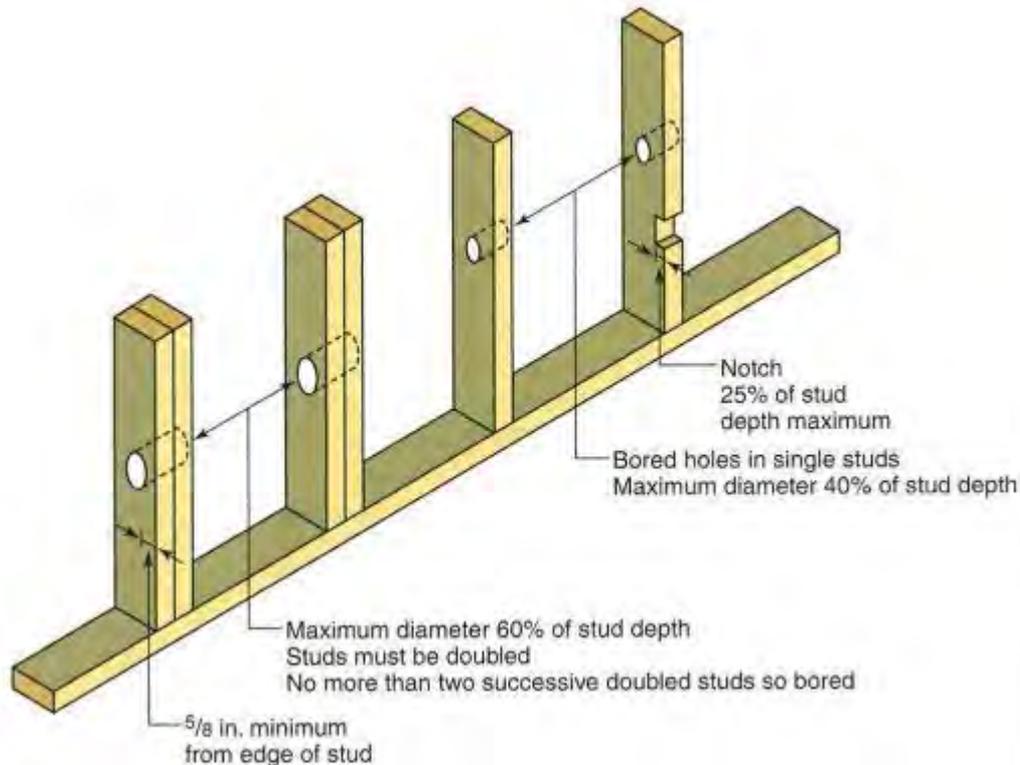
# Wood Wall Framing

## Drilling and notching of studs

R602.6

### 2"x6" Plumbing Walls or Strap and Stud Shoe

- Exterior wall or interior bearing wall
- Stud shoe is the exception



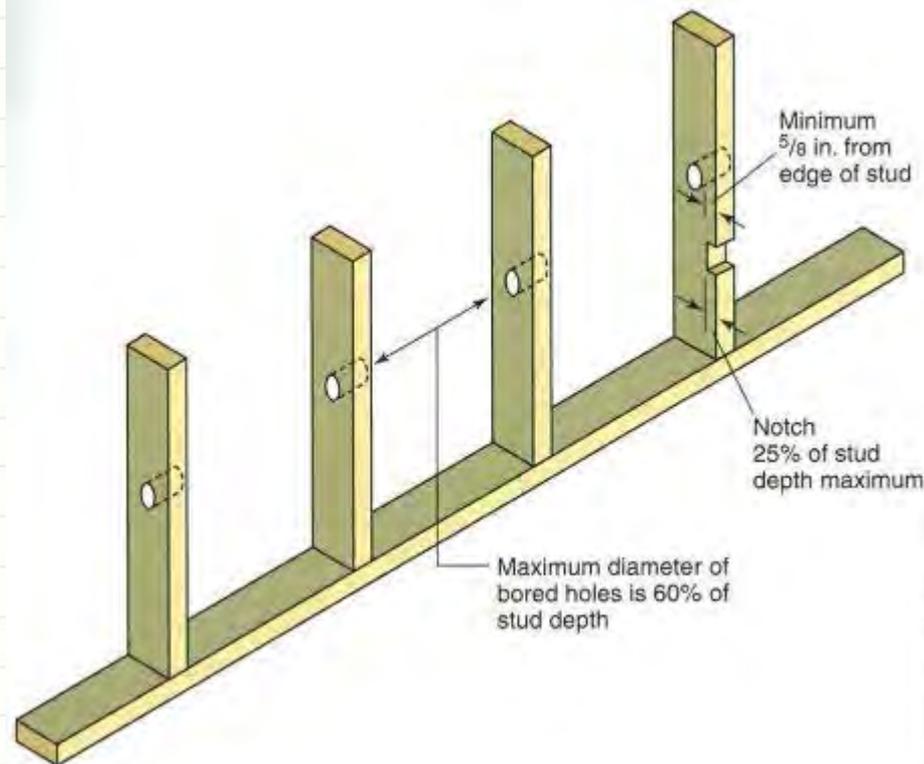
# Wood Wall Framing

## Drilling and notching of studs

R602.6

## 2"x6" Plumbing Walls or Strap and Stud Shoe

- Interior nonbearing wall



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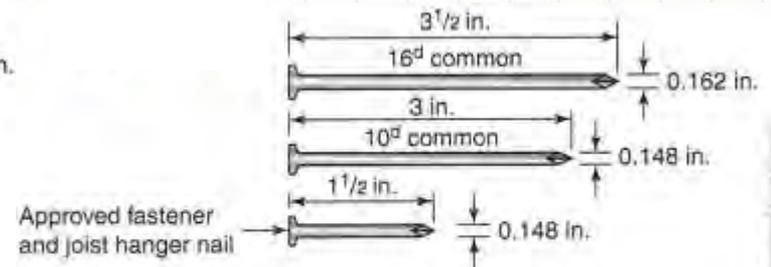
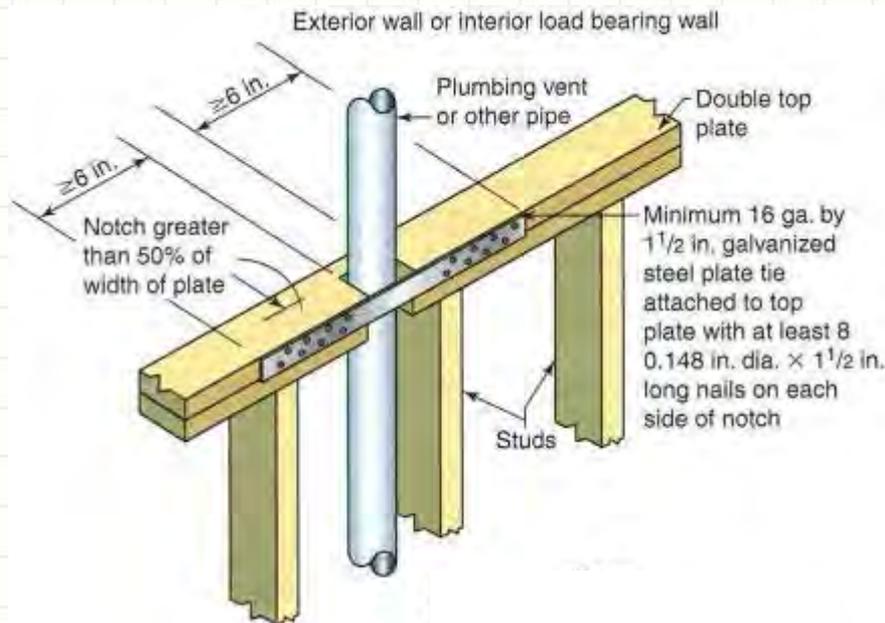


# Wood Wall Framing Drilling and notching of studs

R602.6.1

## 2"x6" Plumbing Walls or Strap and Stud Shoe

### ➤ Notching



Metal tie required at notched top plate

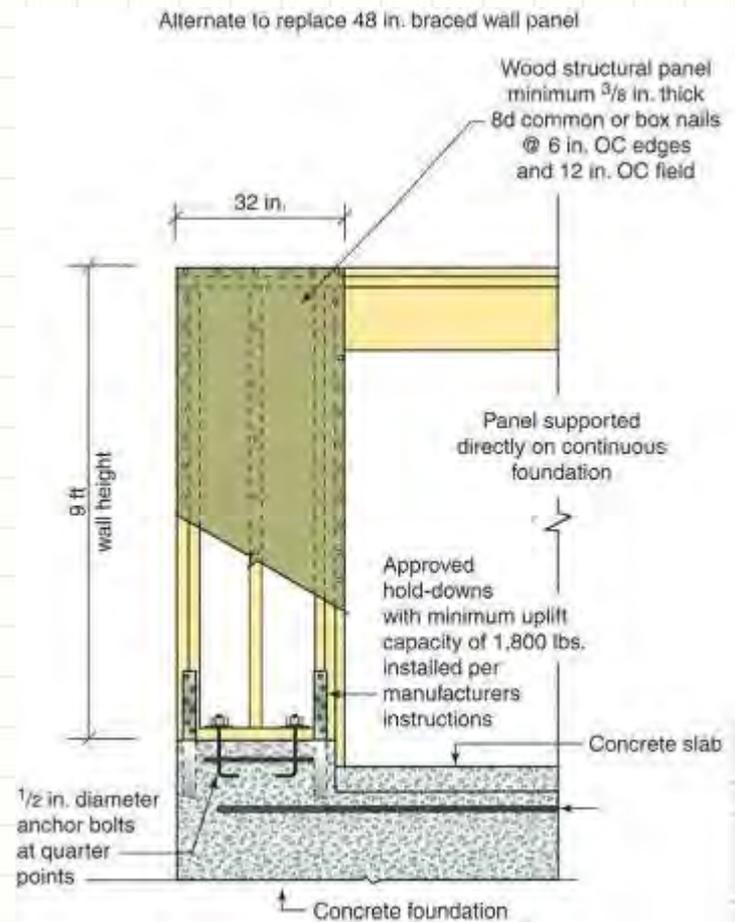


# Wood Wall Framing

## Wall bracing

R602.10

## Soft Walls

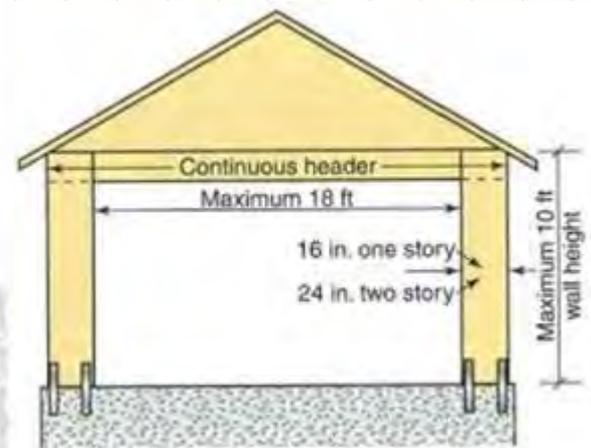
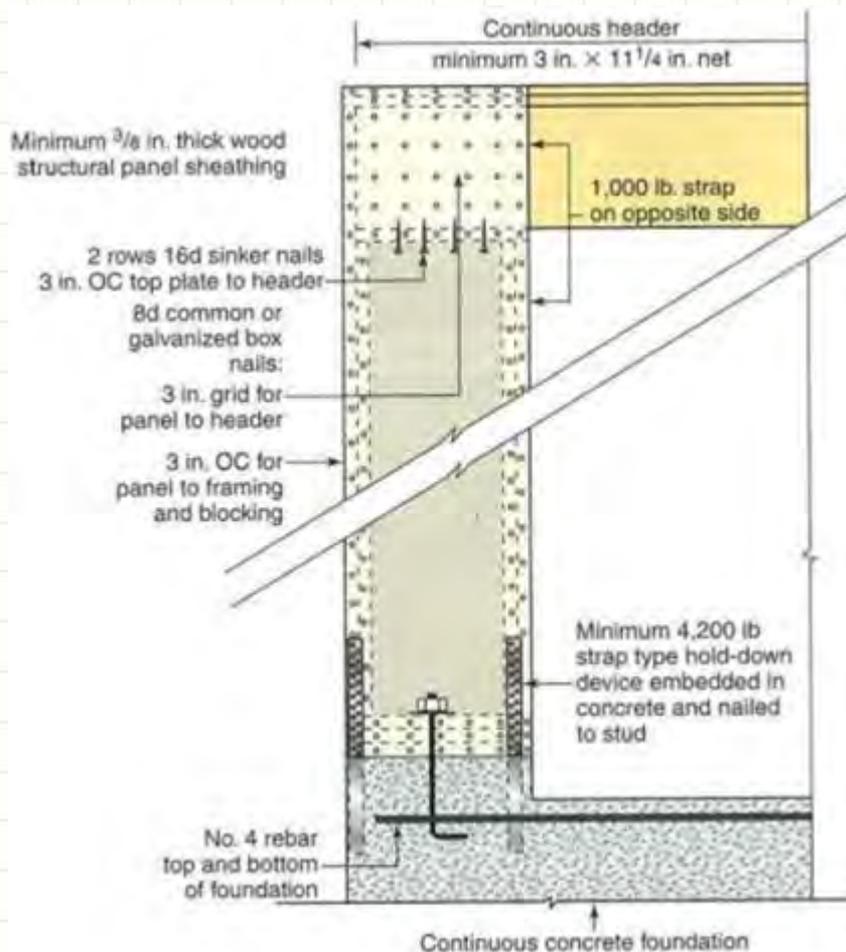


# Wood Wall Framing Wall bracing

**R602.10**

## Soft Walls

- For our area, continuously sheeted shear bracing is not as critical
- For areas with higher seismic and/or wind loads, check with AHJ





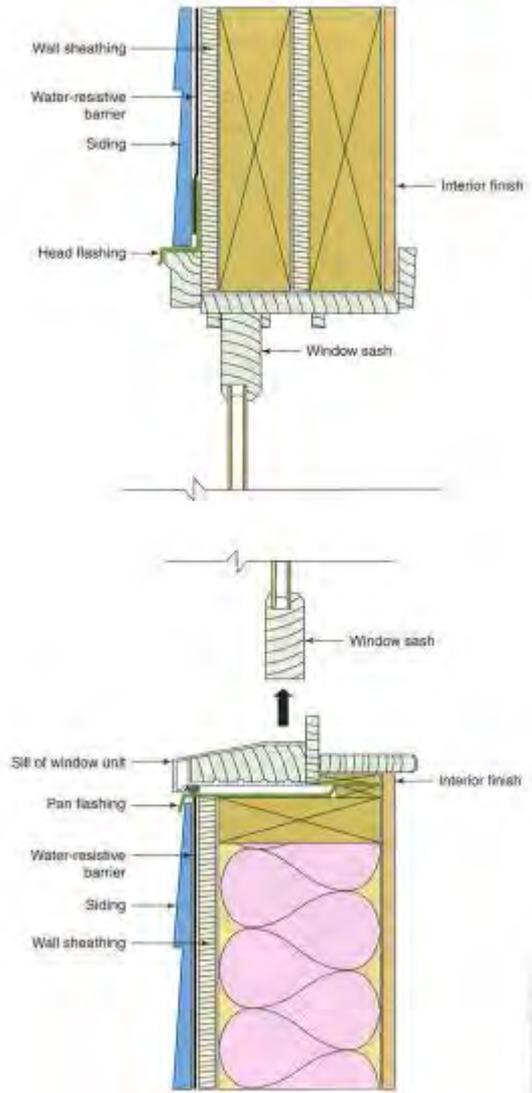
## CHAPTER 7

# WALL COVERINGS



# Exterior Covering Flashing

R703.8



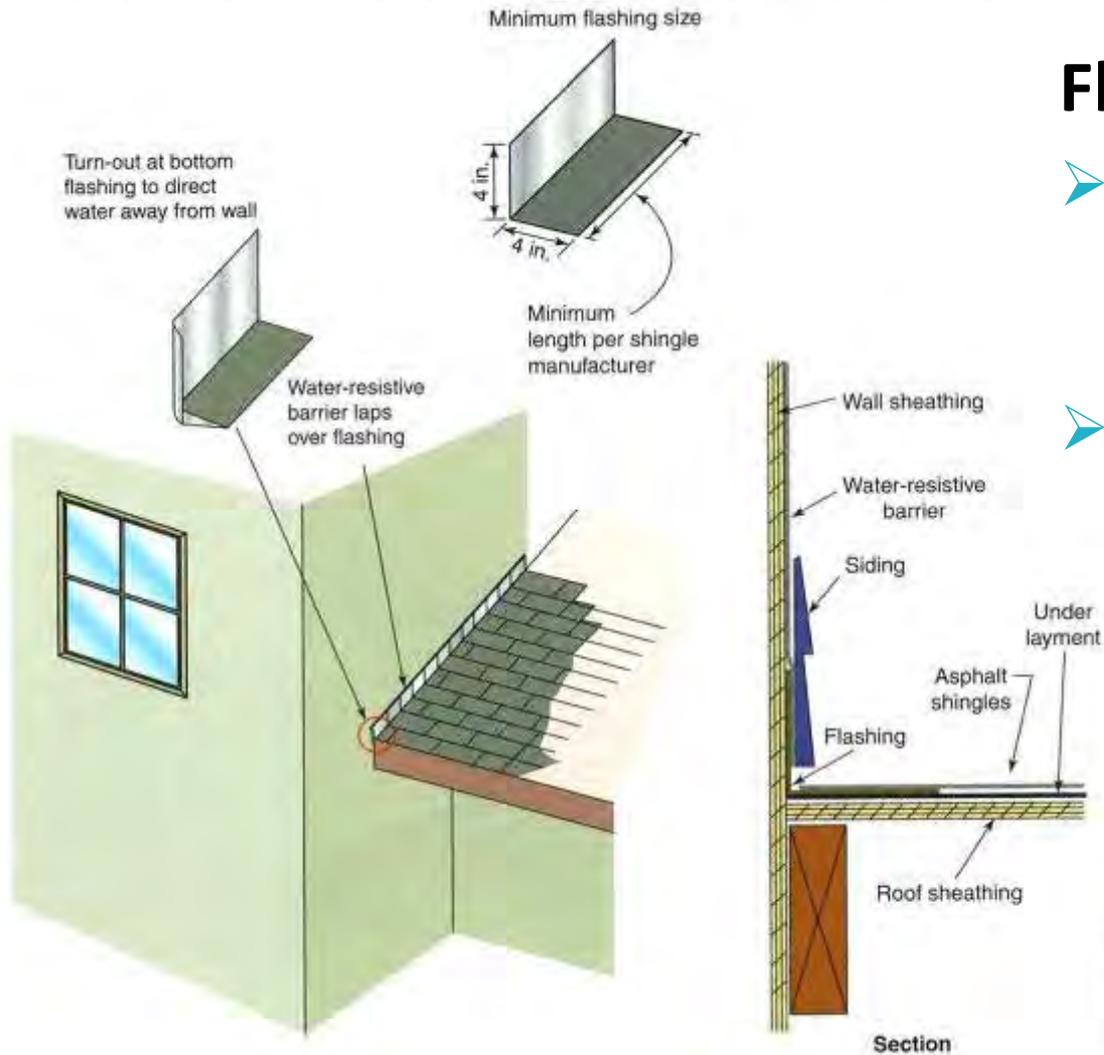
## Flashing #1

- Installed per window manufacturer's instructions



# Exterior Covering Flashing

R703.8



## Flashing #2

- Step flashing and counter flashing is required
- Caulk is not counterflashing

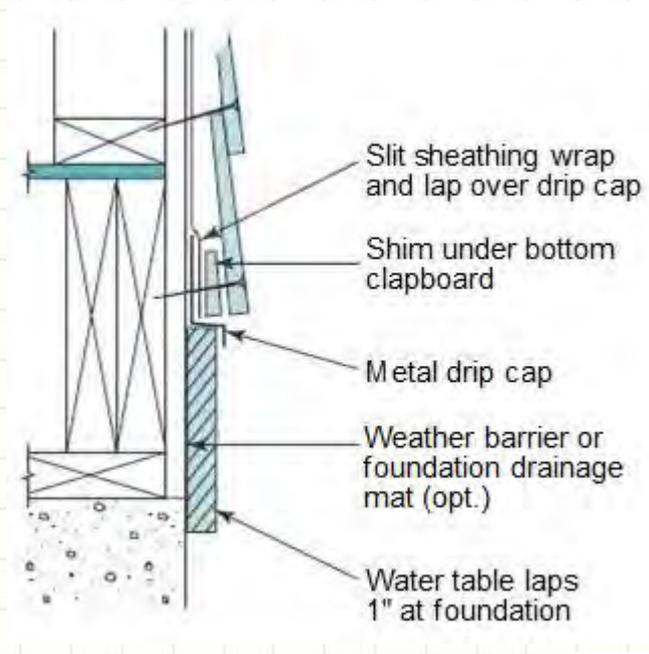


# Exterior Covering Flashing

R703.8

## Flashing #3

- Projecting wood trim



## Flashing #4

- Drip cap or Z-flashing with top flange tucked under weather barrier and drip leg at the bottom

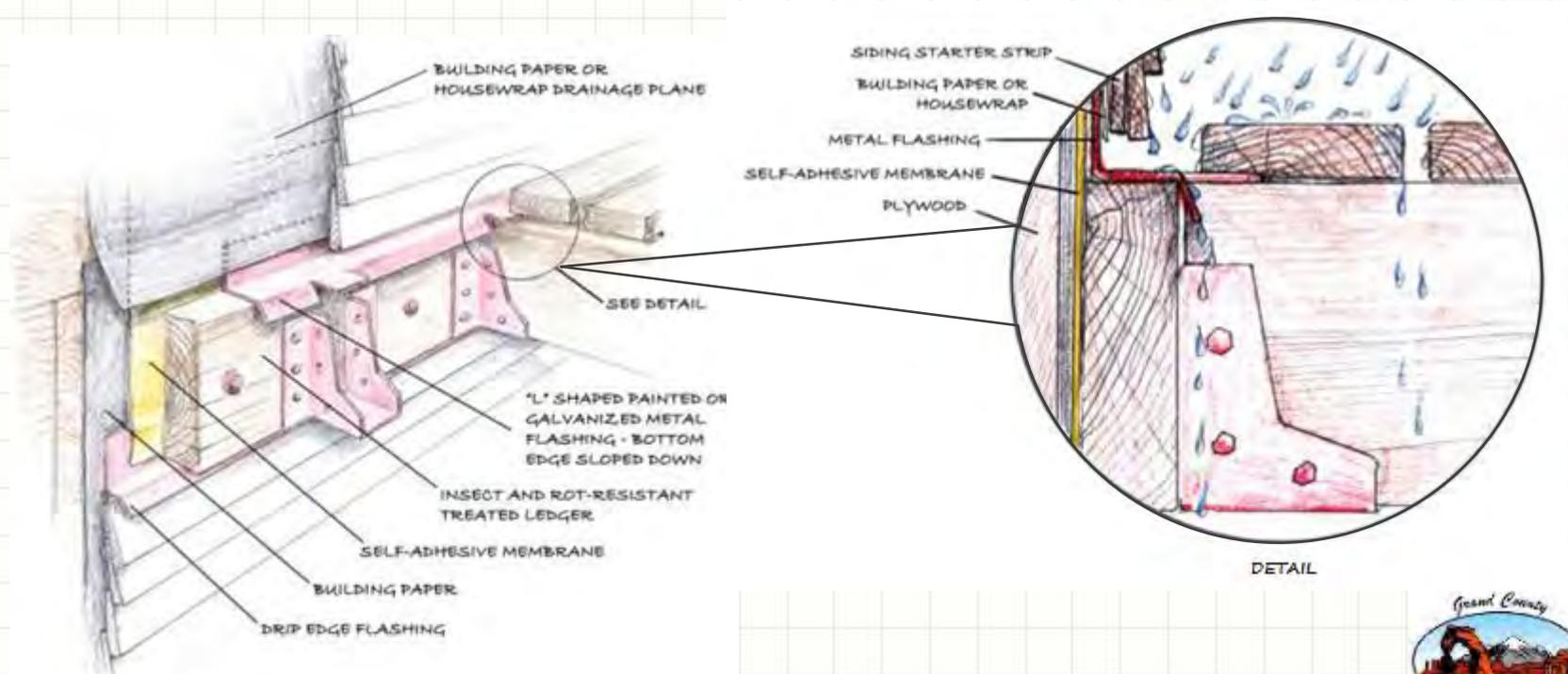


# Exterior Covering Flashing

R703.8

## Flashing #5

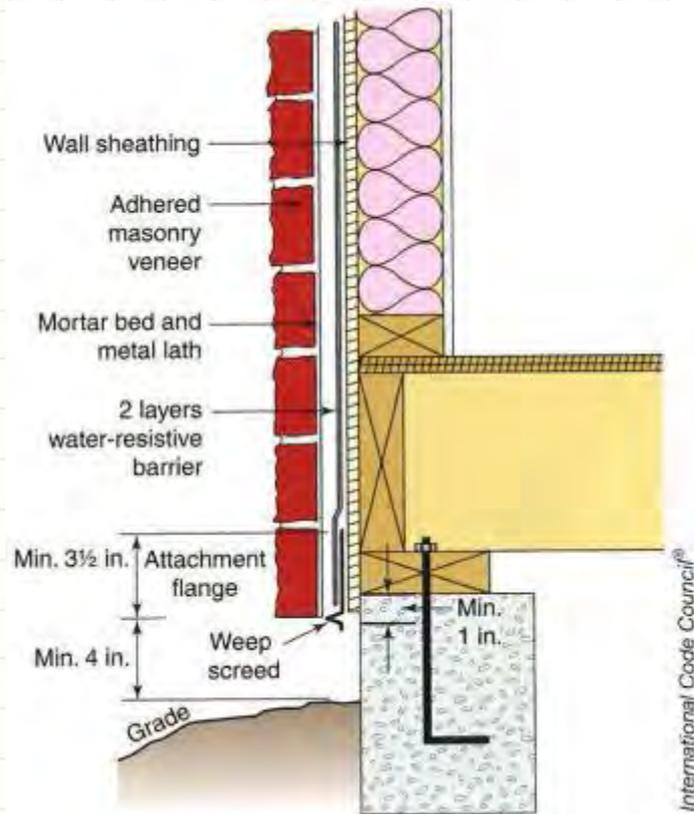
- Flashing is required where porches, decks, or stairs attach to the walls



# Exterior Covering

## Adhered masonry veneer installation

R703.12



## Weep Screed and Clearances

- This is lumpy stucco; all the same requirements apply



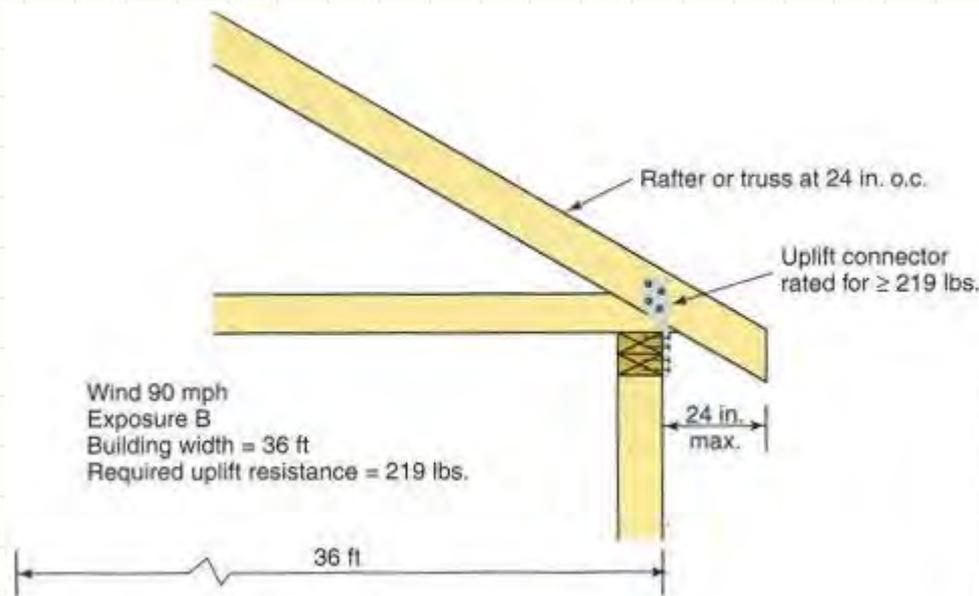
## CHAPTER 8

# ROOF-CEILING CONSTRUCTION



## Truss Uplift Resistance

- Uplift connectors are required 4' o.c. maximum on both ends



# Roof Ventilation

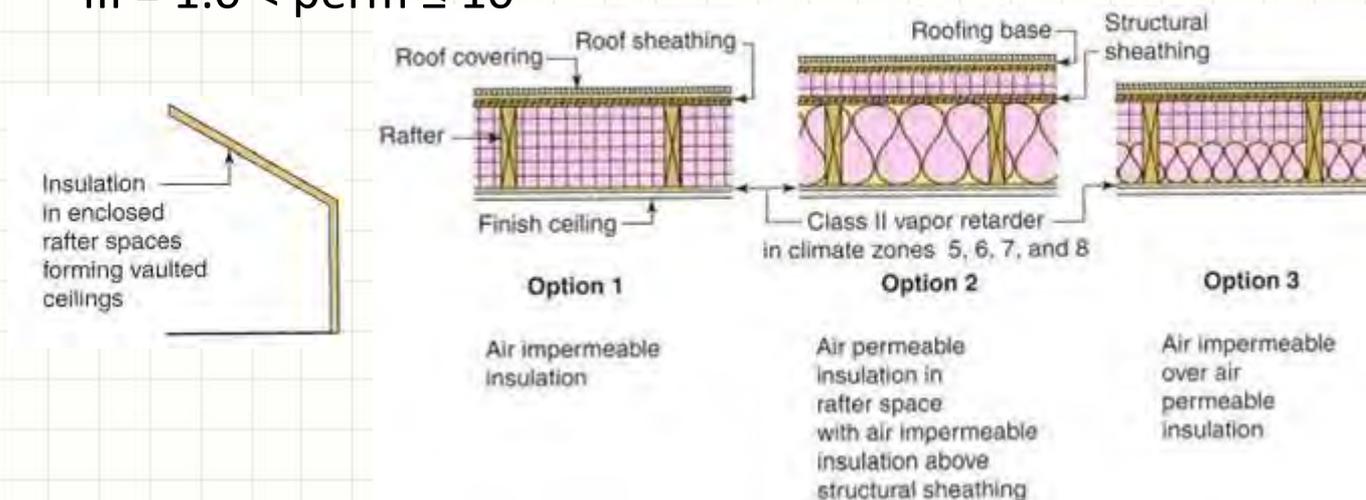
## Unvented attic/enclosed rafter assemblies

**R806.5**

### Unvented Attic

➤ Class 1 vapor retarder is not allowed on interior side at ceiling level, including polyurethane and full-faced insulation

- I = 0.1 perms or less
- II = 0.1 < perm ≤ 1.0
- III = 1.0 < perm ≤ 10





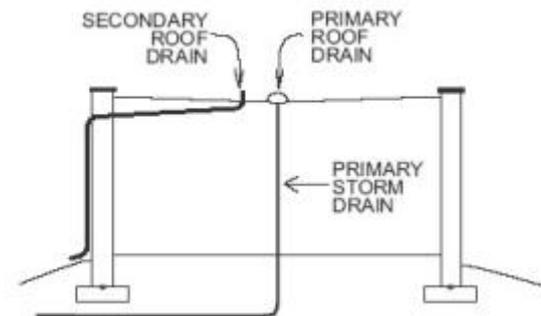
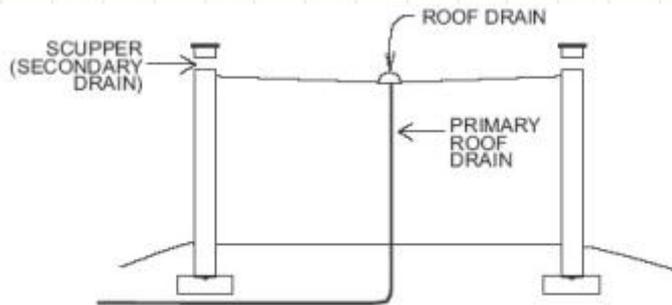
## CHAPTER 9

# ROOF ASSEMBLIES



## **Flat Roofs with Parapet Require Roof Drains**

- Where roof drains are required, a secondary emergency overflow 2" above inlet to main drain is required and discharge must be to a conspicuous location to alert the occupant of a blockage

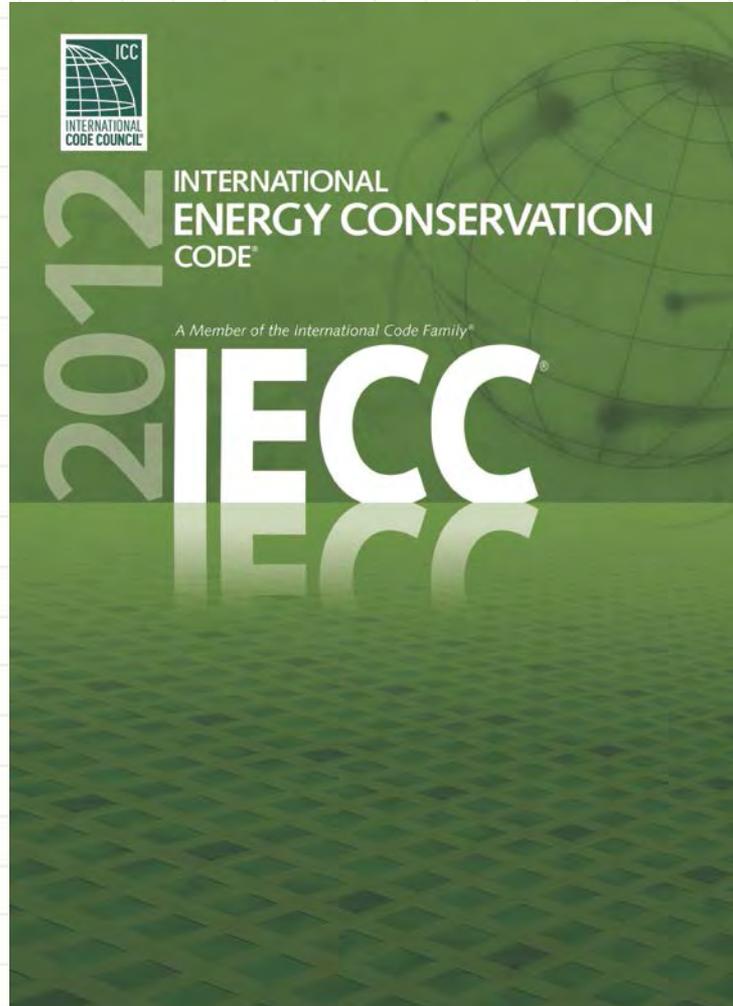




## CHAPTER 11

# ENERGY EFFICIENCY





## 2012 Energy Code

- Nothing is official yet; some of the proposed changes will include the following information

## Envelope Requirements Same as 2006

### Table 402.1.1

#### Insulation and Fenestration Requirements by Component (for Zone 5 and Marine 4 only)

- Fenestration  $U$ -Factor = 0.35
- Skylight  $U$ -Factor = 0.60
- Glazed Fenestration SHGC = NR
- Ceiling  $R$ -Value = 38
- Wood Frame Wall  $R$ -Value = 19 or 13+5
- Mass Wall  $R$ -Value = 13
- Floor  $R$ -Value = 30
- Basement Wall  $R$ -Value = 10 / 13
- Slab  $R$ -Value & Depth = 10, 2 ft
- Crawl Space Wall  $R$ -Value = 10 / 13



# Energy Efficiency General

## N1101-1105.6.3 UTAH STATE AMENDMENT

**2009 IECC Section 402.4.2.2—Envelope Leakage Visual Inspection**

Date: \_\_\_\_\_ Name of Evaluator(s): \_\_\_\_\_

Building Name & Address: \_\_\_\_\_ Conditioned Floor Area: \_\_\_\_\_ ft<sup>2</sup>

Building Contact: Name \_\_\_\_\_ Phone \_\_\_\_\_ Email: \_\_\_\_\_

Compliance Approach:  Prescriptive (402.1 or 402.1.3)  UA Trade-Off (402.1.4)  Building Performance (404)

State: \_\_\_\_\_ Jurisdiction: \_\_\_\_\_

Building Type:  1- and 2-Family, Detached  Single Family  Modular  Townhouse  
 Multifamily  Apartment  Condominium

Project Type:  New Construction  Addition to existing building  Existing building renovation

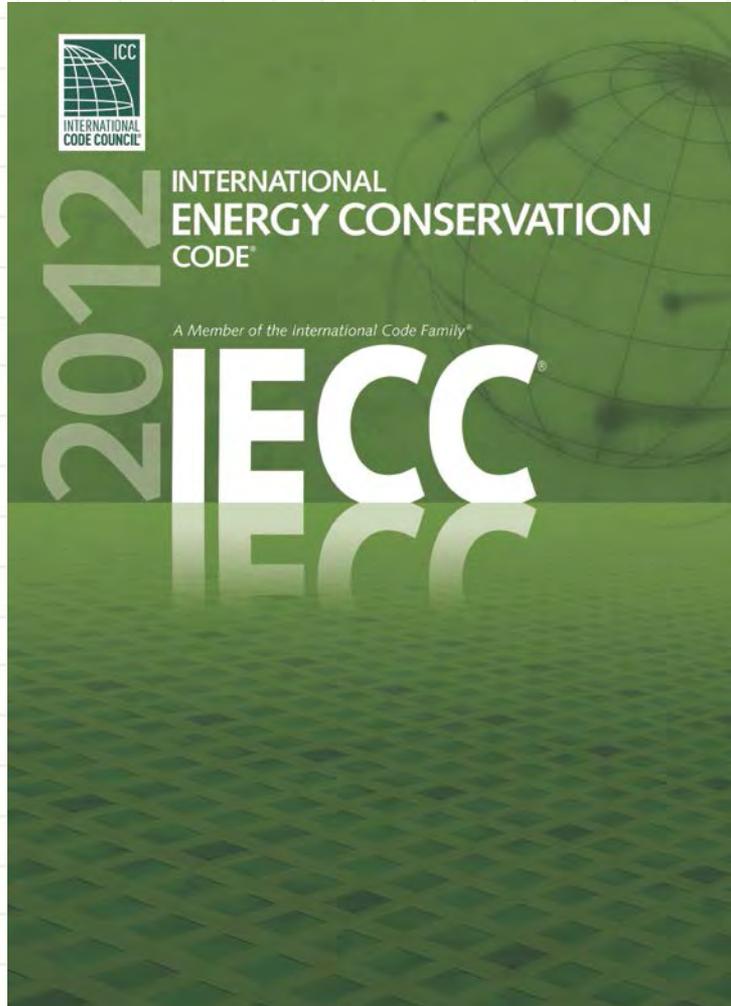
COMPONENT	CRITERIA	PLAN REVIEW			SITE INSPECTION		
		Y	N	N/A	Y	N	N/A
Air barrier w/thermal barrier	Exterior thermal envelope insulation for framed walls is installed in substantial contact and continuous alignment with building envelope at joints.	<input type="checkbox"/>					
	Seams or joints in thermal barrier are filled or repaired.	<input type="checkbox"/>					
	As permissible insulation is not used as a air barrier material.	<input type="checkbox"/>					
Listed/Title	As permissible insulation is made of an air barrier.	<input type="checkbox"/>					
	Air barrier in air dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed.	<input type="checkbox"/>					
Roof	Air barrier in air dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed.	<input type="checkbox"/>					
	Air barrier in air dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed.	<input type="checkbox"/>					
Windows, skylights and doors	Spaces between windows, door jambs and framing is sealed.	<input type="checkbox"/>					
R/R Joints	R/R joints are sealed and sealed as air barrier.	<input type="checkbox"/>					
Floors (including above garage and cantilevered floors)	Insulation shall be installed to maintain permanent contact with underside of subfloor decking. The air barrier shall be installed at any exposed edge of insulation.	<input type="checkbox"/>					
Crawl space walls	Insulation is permanently attached to walls.	<input type="checkbox"/>					
Shafts penetrations	Exposed joints in oriented-crawl spaces is covered with Class I vapor retarder with overlapping joints lapped.	<input type="checkbox"/>					
	Each shaft, utility penetration, knee wall and flat shaft, opening to exterior or unconditioned space are sealed.	<input type="checkbox"/>					
Walls/casities	Walls in masonry, cavity are cut to fit, or masonry cavities are filled by sprayed/blown insulation.	<input type="checkbox"/>					
Garage-separation	Air sealing is provided between the garage and conditioned spaces.	<input type="checkbox"/>					
Unseal led/lit	Recessed light fixtures are air tight, R-rated, and sealed to drywall. Exceptions: fixtures in conditioned spaces.	<input type="checkbox"/>					
Walls/insulation	Insulation is placed between outside and pipes. This insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation is used behind piping and wiring.	<input type="checkbox"/>					
Show/hub on exterior wall	Showers and tubs on exterior walls have insulation and air barrier separating them from the exterior wall.	<input type="checkbox"/>					
Electrical/phone box on exterior walls	Air barrier extends behind covers or is sealed tape boxes are installed.	<input type="checkbox"/>					
Common wall	Air barrier is installed in common wall between dwelling units.	<input type="checkbox"/>					
HVAC register/boiler	HVAC register/boiler that penetrates building envelope is sealed to interior or exterior.	<input type="checkbox"/>					
Piercing	Piercing walls include an air barrier.	<input type="checkbox"/>					

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Testing

- Building Envelope and Mechanical Equipment for Air Leakage (can be visual)





## Hot Water Piping Insulated to R-3

- Piping larger than 3/4" in diameter
- Piping serving more than one dwelling
- Piping located outside conditioned space
- Piping from water heater to manifold
- Piping located under floor slab
- Buried piping
- Supply and return in recirculation systems





## CHAPTER 15

# EXHAUST SYSTEMS



# Clothes Dryer Exhaust Duct installation

M1502.4.2

## Clothes Dryer Exhaust

- Dryer exhaust duct to be sealed and mechanically fastened
- Screws or similar fasteners shall not protrude more than 1/8" into the inside of duct
- Two wraps of UL-181 B-tape, rubbed tight for a good seal, will be accepted



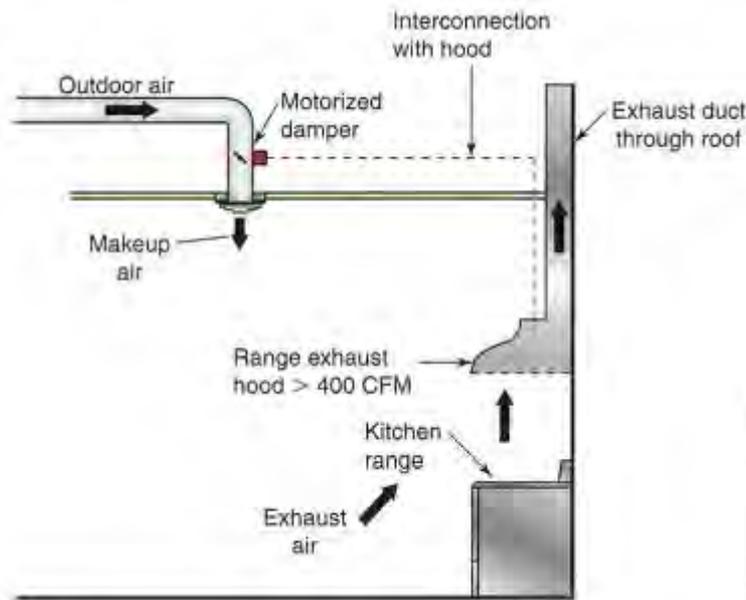
# Range Hoods

## Makeup air required

M1503.4

## Kitchen Range Hoods

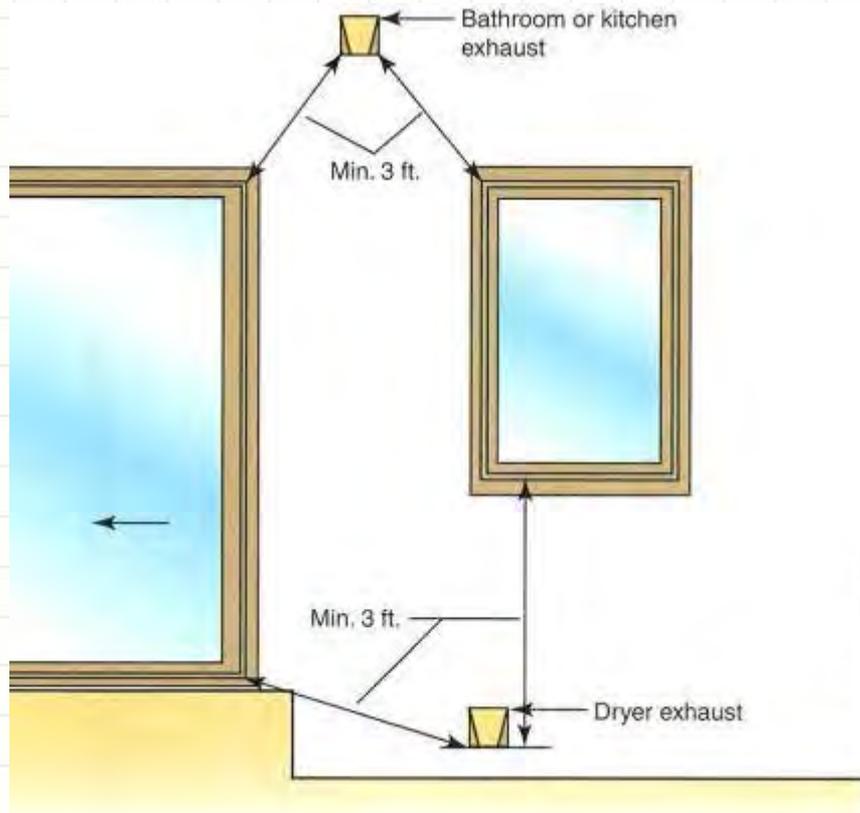
- Makeup air for exhaust over 400 cfm
- Must provide approximately same amount as exhausted
- Requires a damper
- Automatically controlled to start and operate simultaneously



# Exhaust Ducts and Exhaust Openings

## Exhaust openings

M1506.2



## Exhaust and Openings

- Minimum clearance
  - 3' from property line
  - 3' from operable or nonoperable openings into the building
  - 10' from mechanical air intakes unless 3' above



## CHAPTER 24

# FUEL GAS



## Corrugated Stainless Steel Tubing Gas Piping

- Bonded to electrical service grounding electrode system
- Connect bonding jumper to metallic pipe or fitting between point of delivery and first downstream CSST fitting
- Jumper  $\geq 6$  AWG copper wire



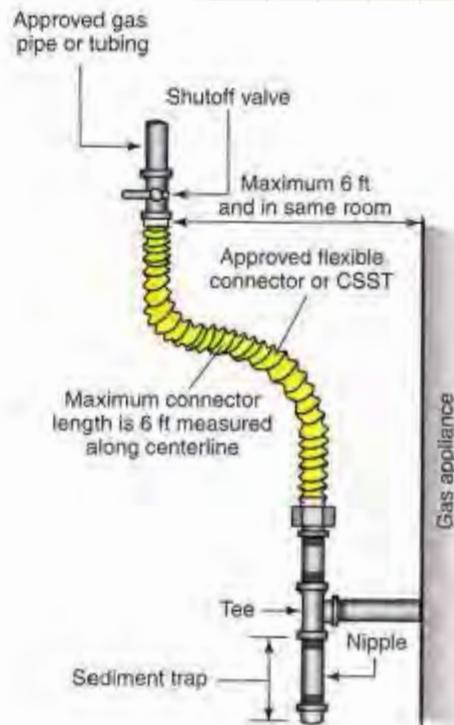
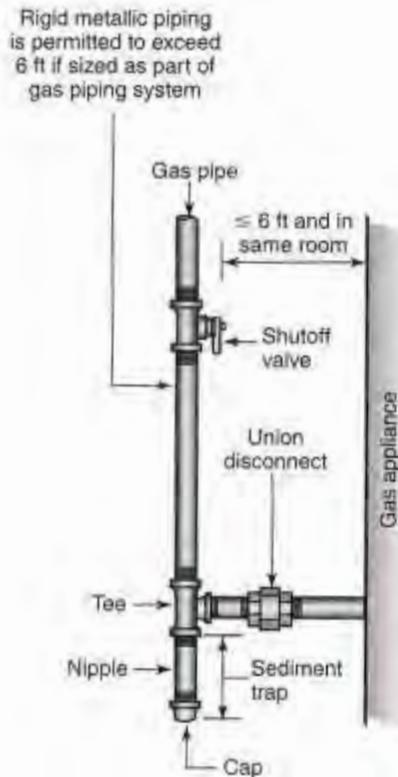
# Gas Shutoff Valves

## Appliance shutoff valve

G2420.5

### Appliance Connections and Shutoff Valve

- Gas appliance connection, shutoff valve, and sediment trap
- Install downstream of shutoff valve

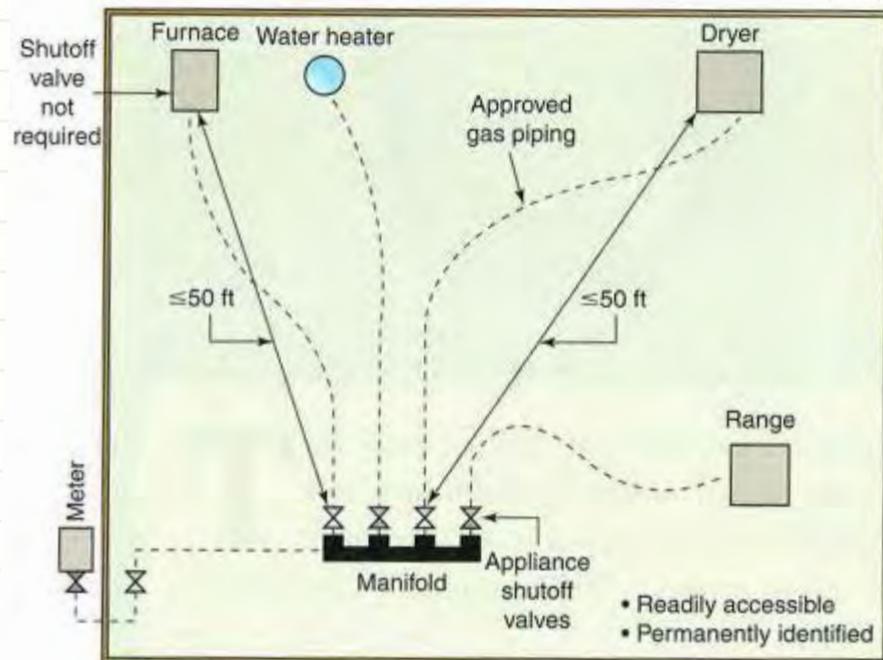


- Change in direction
- Trap leg must always be in the run of the tee



## Appliance Connections and Shutoff Valve

- If piping to appliance is accomplished through a manifold, the shutoff can be within 50' if readily accessible and permanently labeled
- Otherwise, it shall be in the same space and within 6'

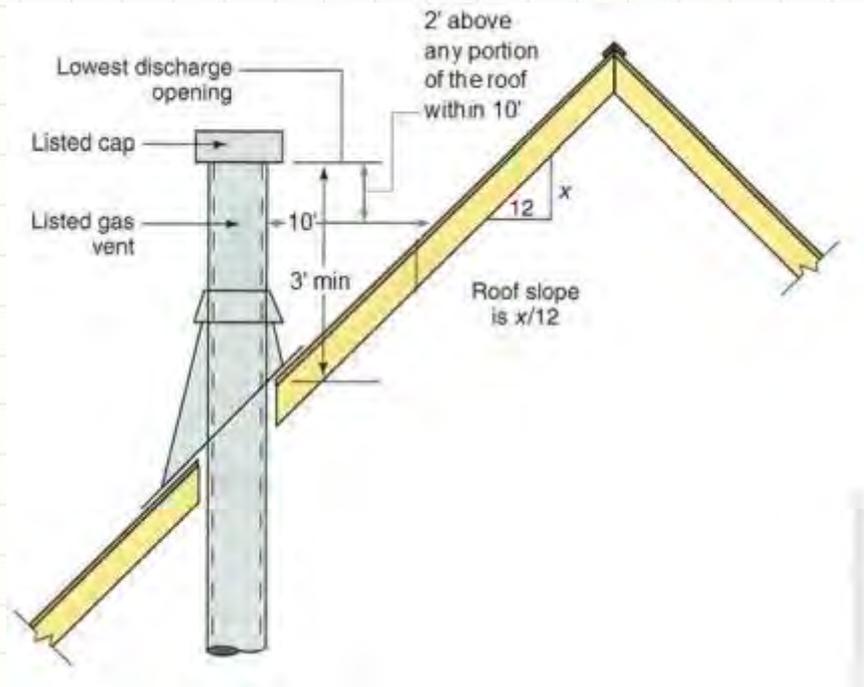


# Venting of Appliances

## Gas vent termination

G2427.6.3

### Gas Vent Roof Termination





## PLUMBING

# GENERAL PLUMBING REQUIREMENTS AND SANITARY DRAINAGE

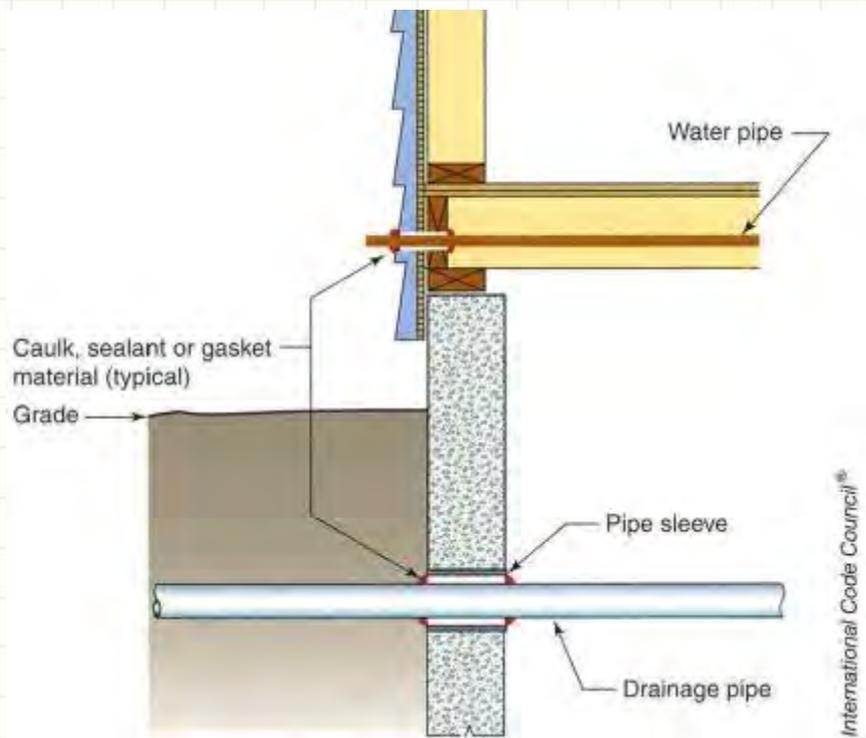


# Penetrations Sealing of annular spaces

P2606.1

## Frost Protection

➤ 32" minimum



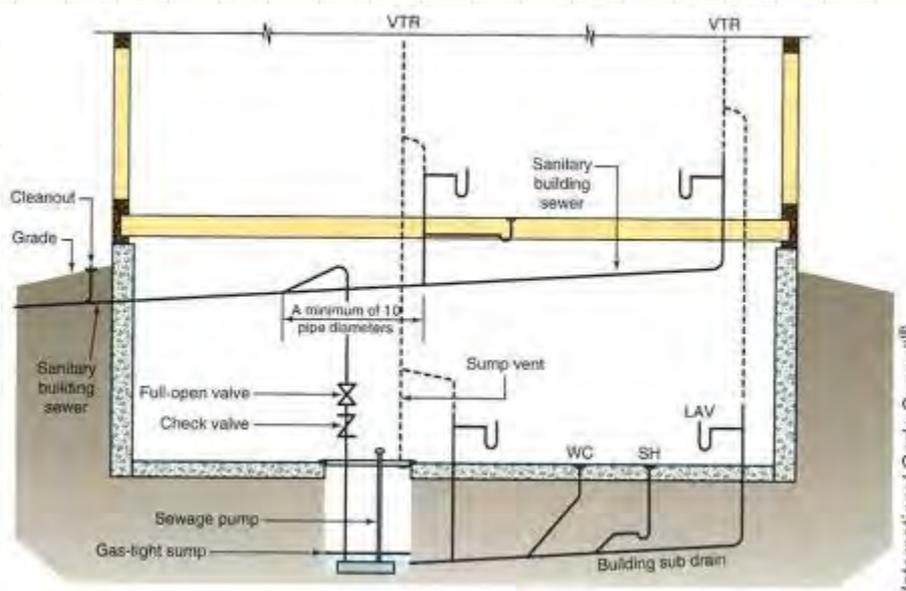
# Sumps and Ejectors

## Ejector connection to the drainage system

P3007.3.5

### Ejector Connection

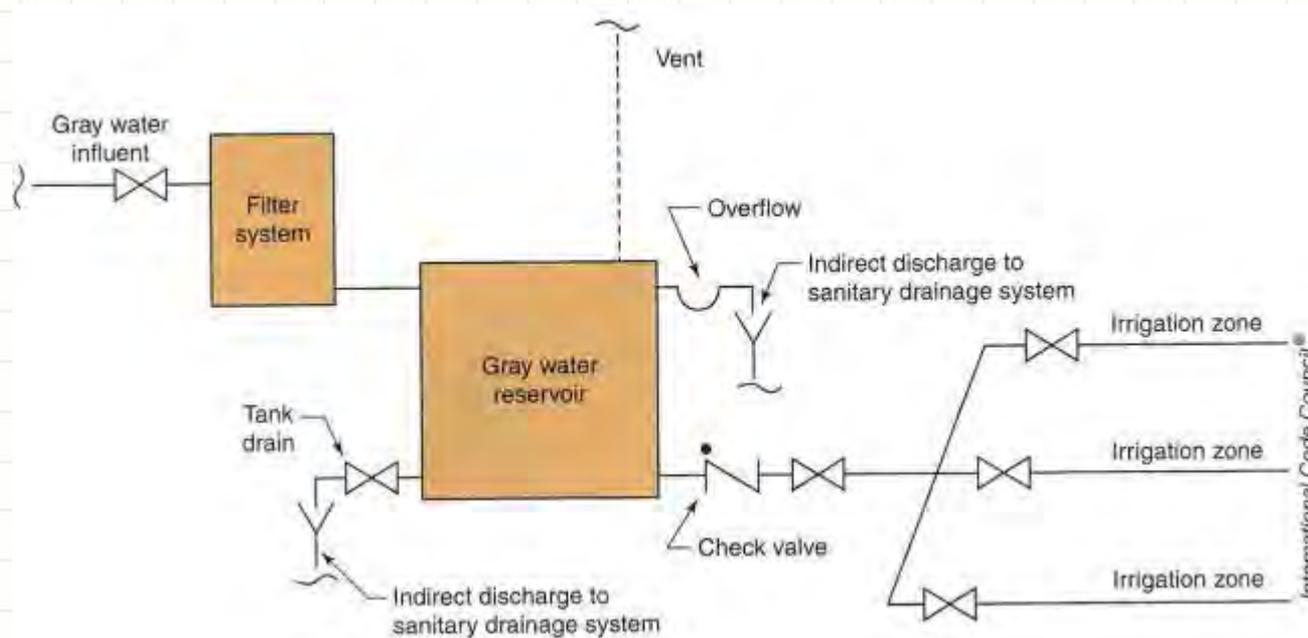
- All drainage piping that can gravity drain cannot drain through ejector
- Ejector drain pipe needs to connect into the top of the building drain/sewer



# Gray-Water Recycling Systems Scope

P3009.1

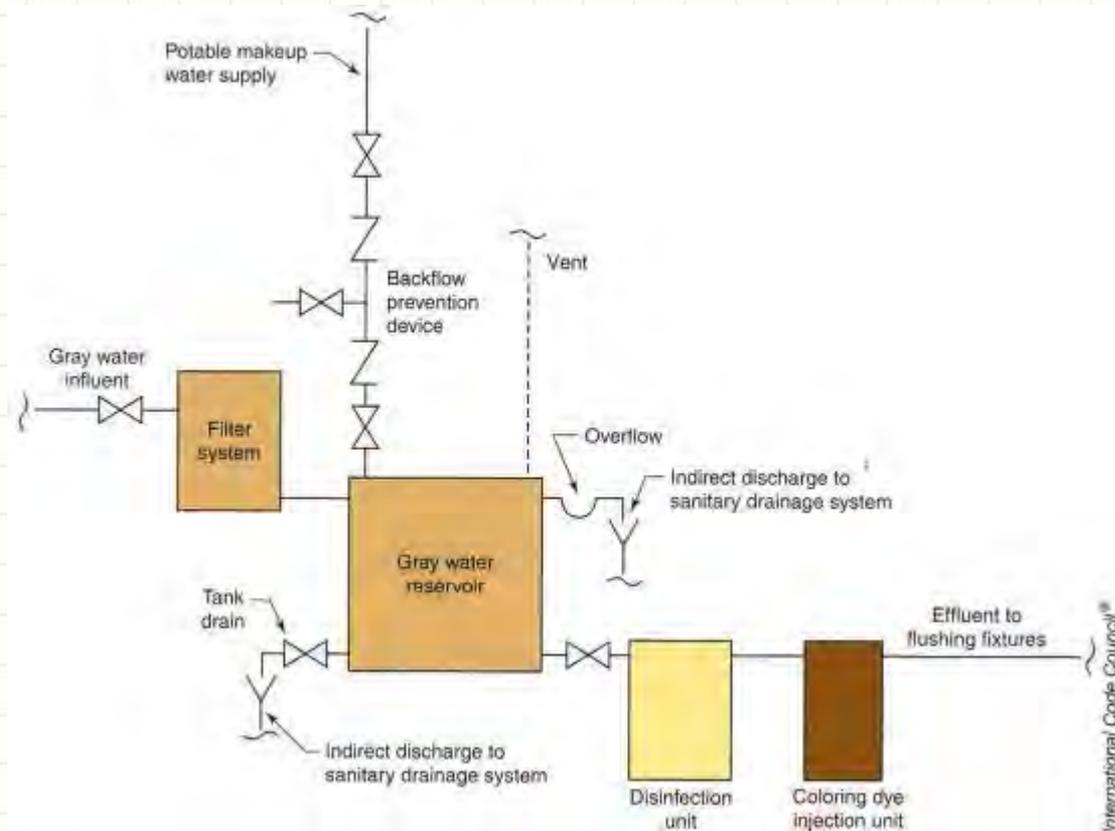
## Gray Water for Landscaping



# Gray-Water Recycling Systems Scope

P3009.1-14.11

## Gray Water for Flushing Water Closets and Urinals





## **ELECTRICAL**

**SERVICES, POWER AND  
LIGHTING DISTRIBUTION,  
DEVICES AND  
LUMINAIRES, APPLIANCE  
INSTALLATION, AND  
SWIMMING POOLS**

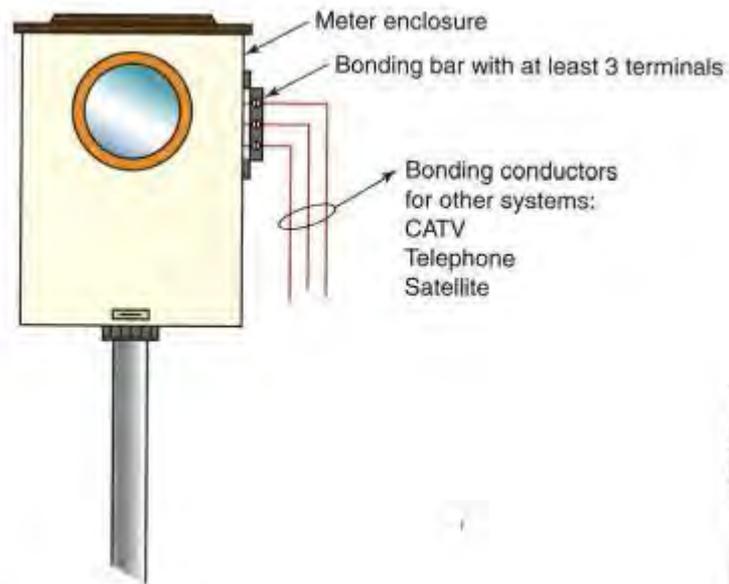


# Bonding

## Bonding for other systems

E3609.3

## Intersystem Bonding Termination

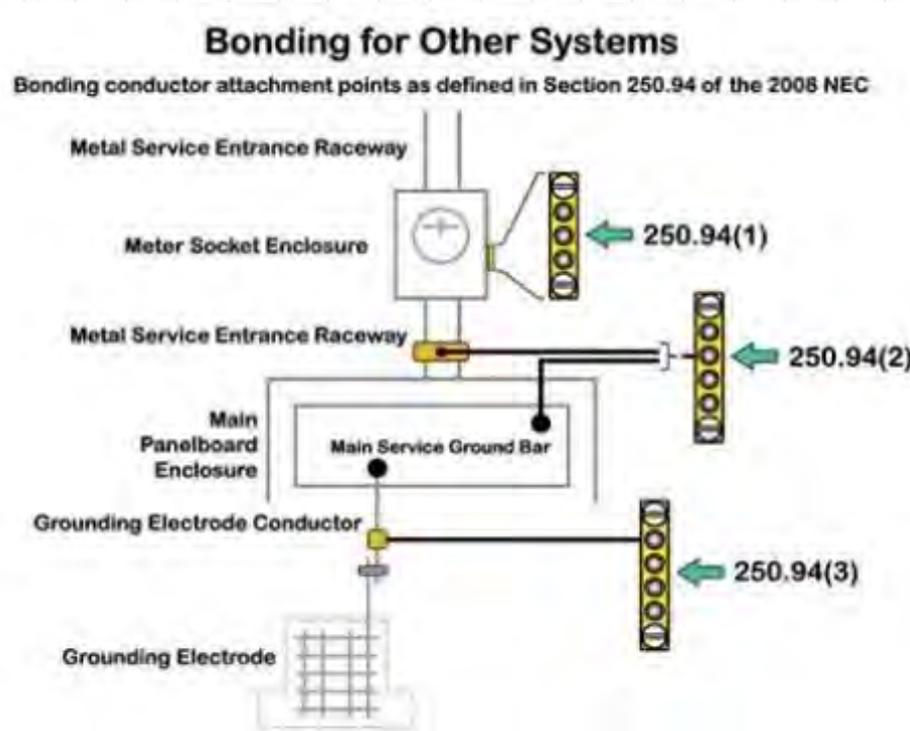


# Bonding

## Bonding for other systems

E3609.3

# Electrical Bonding for Other Systems



### Grouping

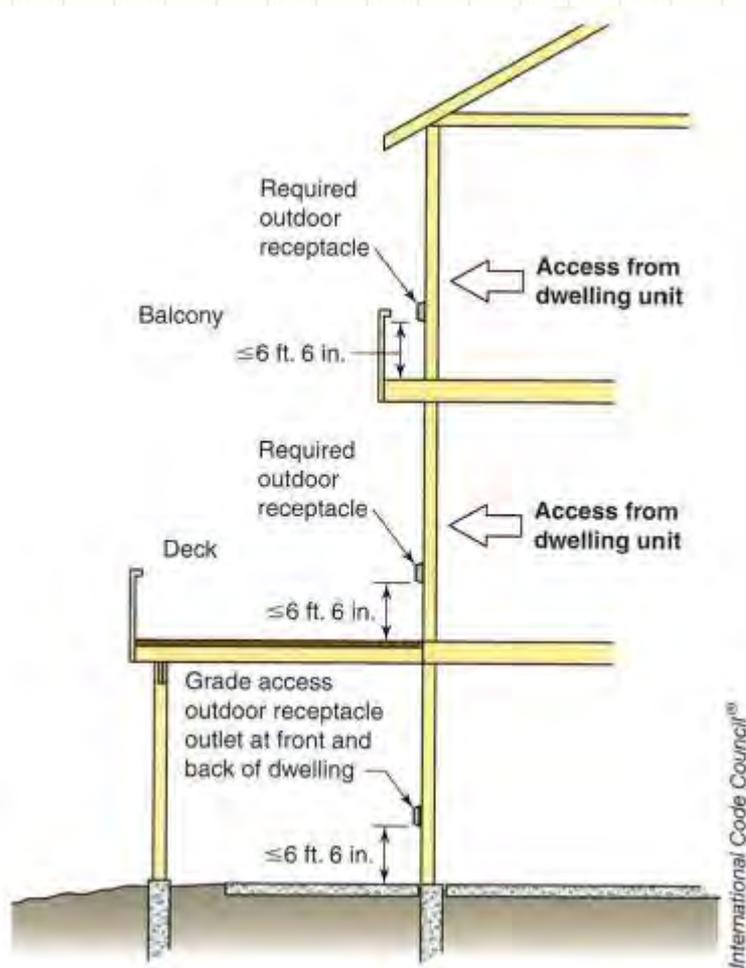
- Group the ungrounded and grounded circuit conductors of each multiwire branch circuit by cable ties or similar means in at least one location within panelboard or other point of origination
- **EXCEPTION:** Grouping shall not be required where the circuit conductors enter from a cable or raceway unique to the circuit, thereby making the grouping obvious.



# Receptacle Outlets

## Outdoor outlets

E3901.7



## Outdoor Outlets

- GFCI protection required
- When in use, weatherproof cover required where subject to driving rain



# Receptacle Outlets Foyers

E3901.11

## Foyers

- Foyers over 60SF require a receptacle on each wall over 3" in width (*Grand County will only required one*)



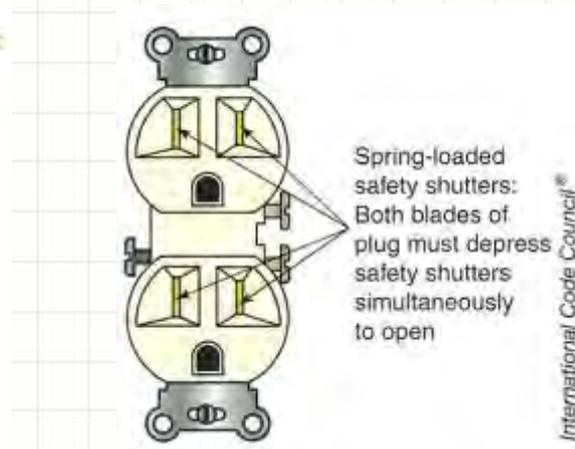
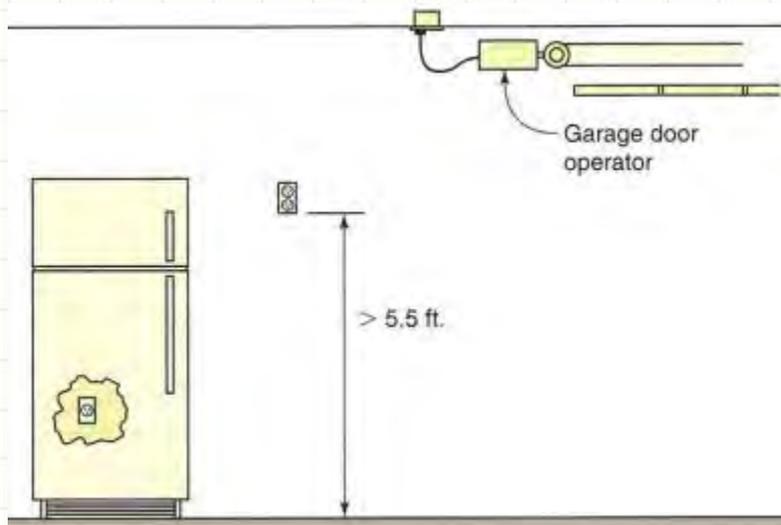
# Receptacles

## Tamper-resistant receptacles

E4002.14

### Tamper Resistance Exception

- Located >5.5' above floor
- Receptacle is part of light fixture
- Receptacle is dedicated to an appliance NOT easily moved

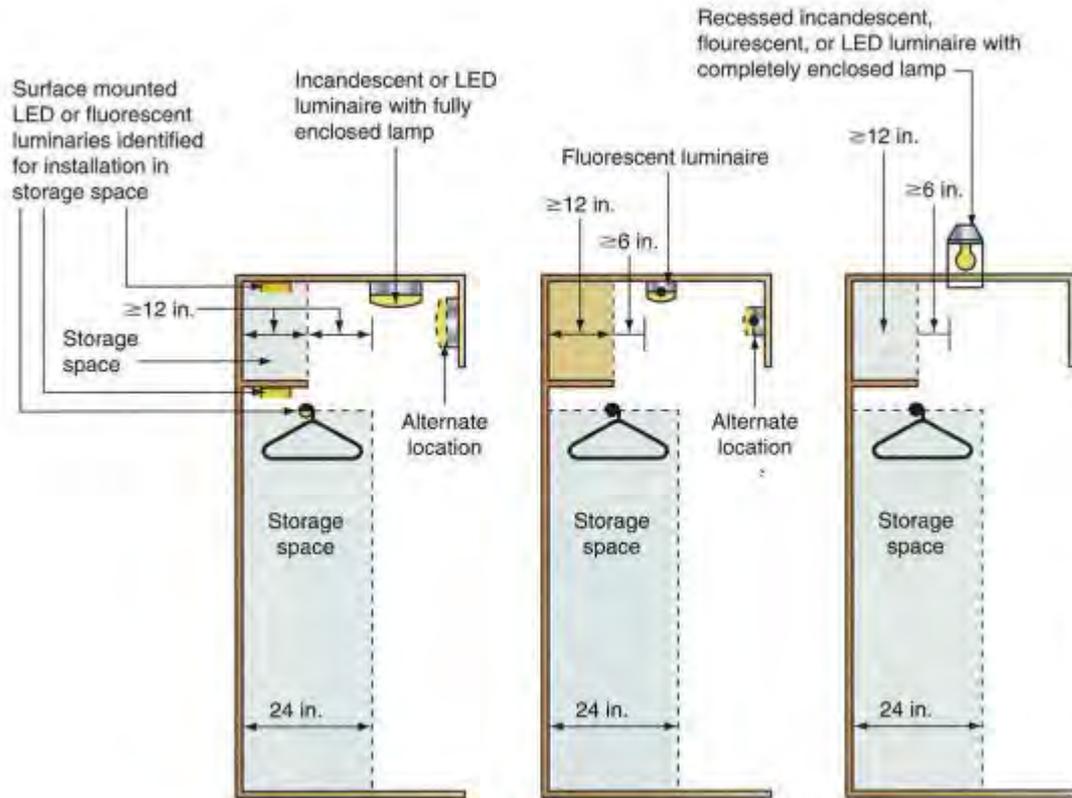


# Fixtures Luminaires in clothes closets

E4003.12

## Luminaires

### ➤ Luminaires in clothes closets





## APPENDIX G

# SWIMMING POOLS, SPAS, AND HOT TUBS

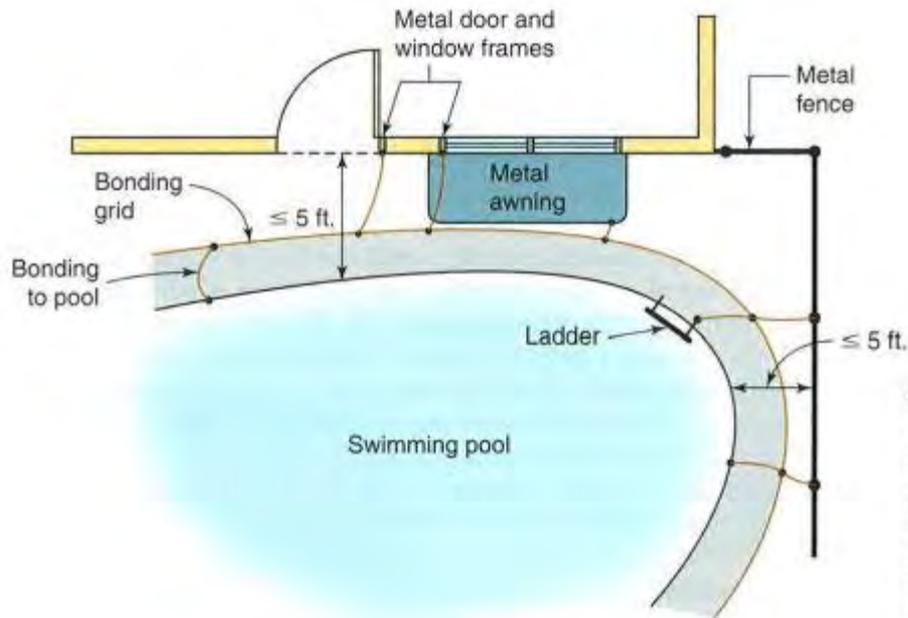


# Bonding Bonded parts

# E4204.2

## Swimming Pool Bonding

- Bonding of fixed metal parts

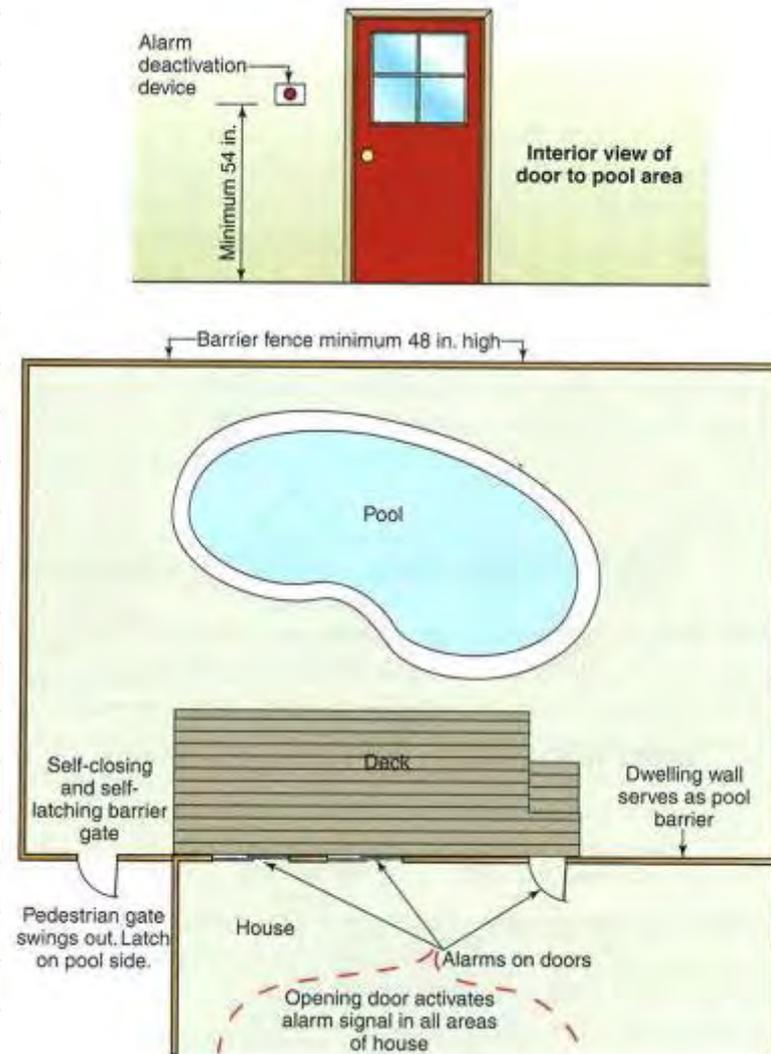


International Code Council®



# Barrier Requirements Outdoor swimming pool

AG105.2



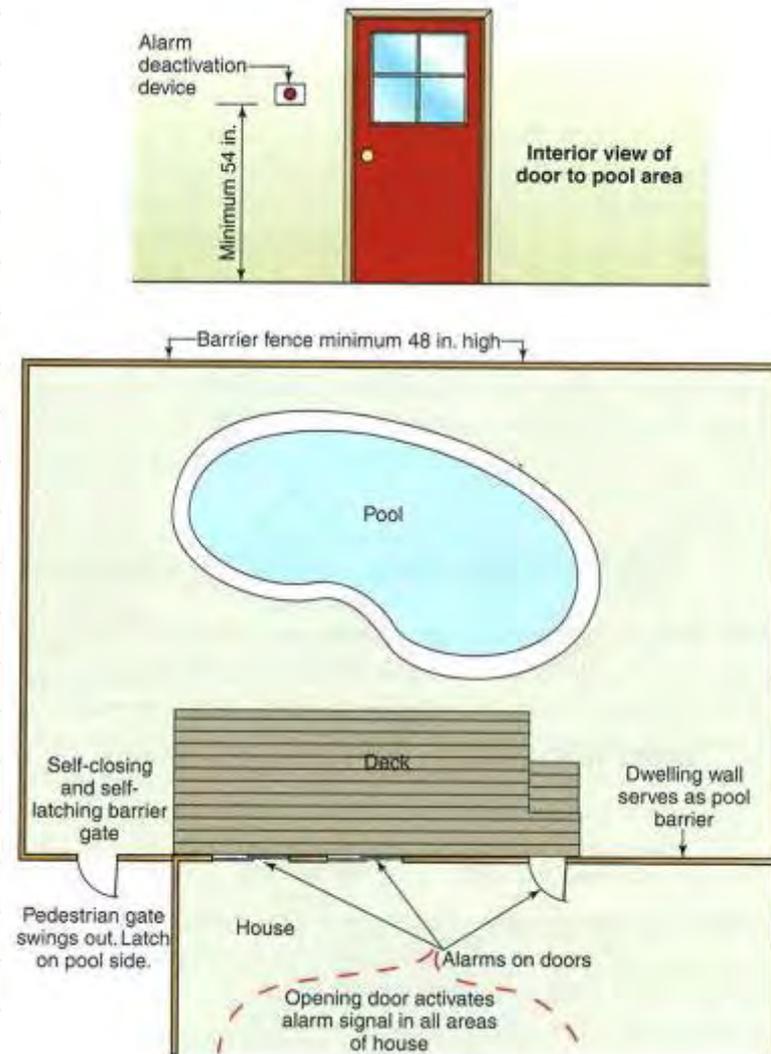
## Pool Barrier and Door Alarm Requirements

- Minimum 48" measured from side facing away from pool
- Openings shall not allow 4" sphere to pass through
- Solid barriers shall not have climbable indentations



# Barrier Requirements Outdoor swimming pool

AG105.2



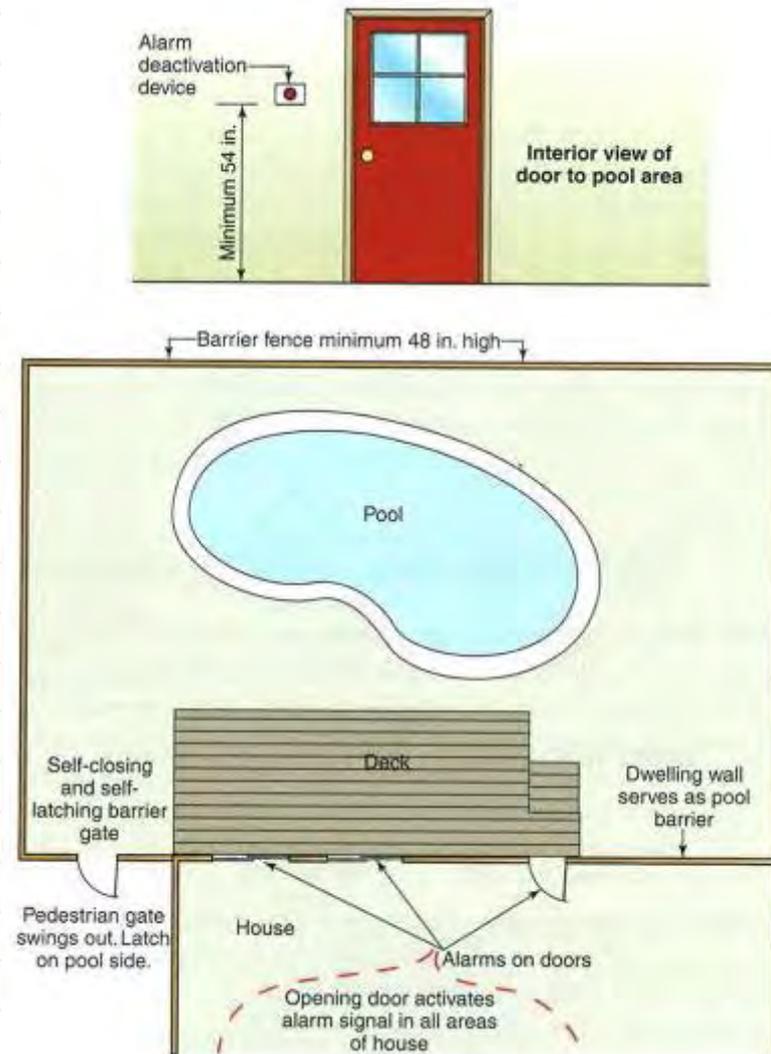
## Pool Barrier and Door Alarm Requirements

- Horizontal members located on pool side of fence when  $<45''$
- Spacing between vertical members  $\leq 4''$  when horizontal  $>45''$
- Chain link fence mesh size  $2\text{-}1/4''$  square
- Diagonal openings in fence  $\leq 1\text{-}3/4''$



# Barrier Requirements Outdoor swimming pool

AG105.2



## Pool Barrier and Door Alarm Requirements

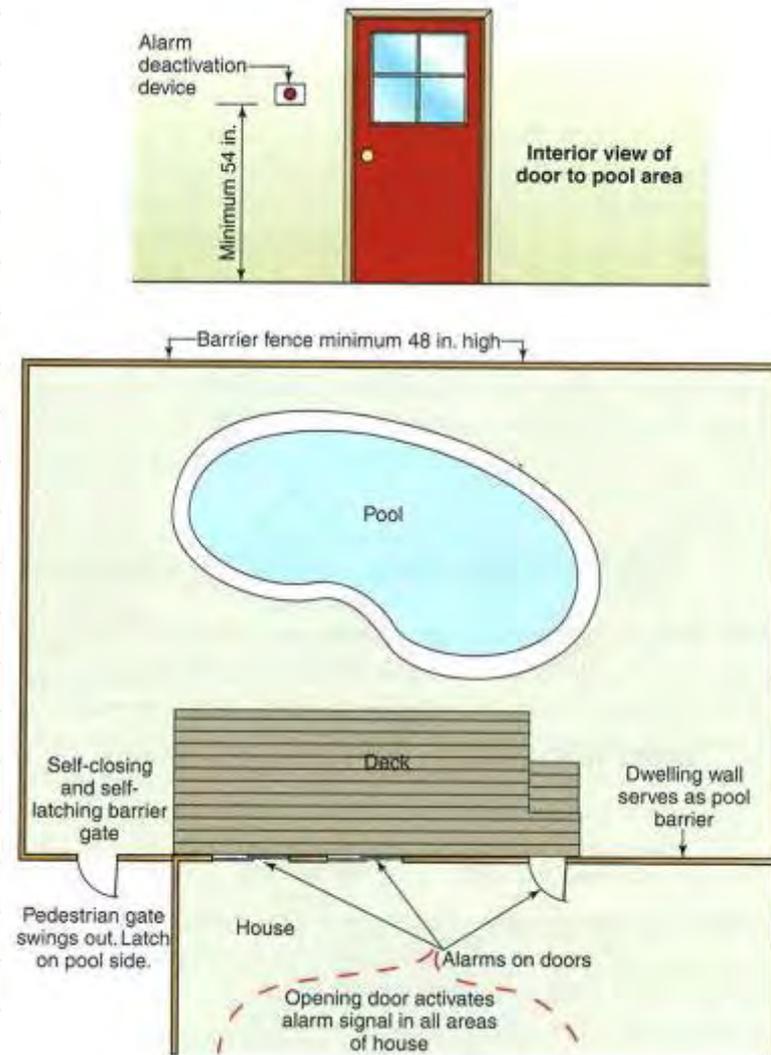
➤ Locking device on access gates; pedestrian gates open outward, self closing, and self latching; others self latching; release mechanism located <54" from gate bottom:

- Located 3" below top
- No openings >1/2" within 18"



# Barrier Requirements Outdoor swimming pool

AG105.2



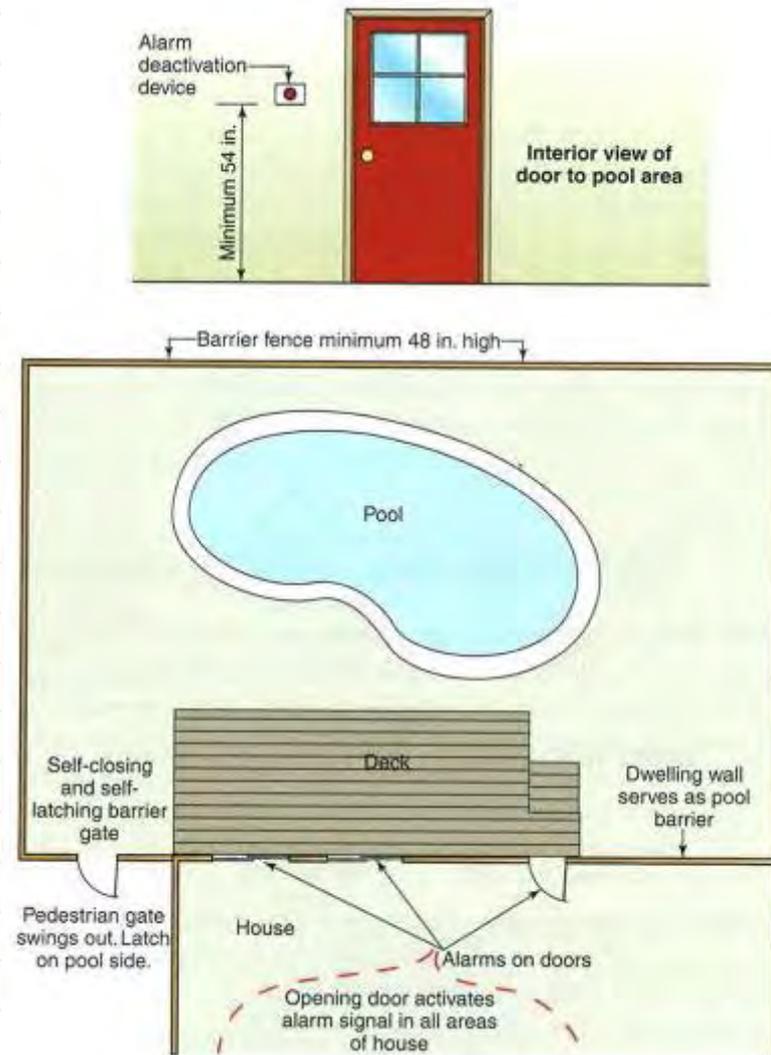
## Pool Barrier and Door Alarm Requirements

- Wall of dwellings serves as part of barrier
  - Pool equipped with powered safety cover or alarm on doors with direct access to pool
  - Other approved means of protection



# Barrier Requirements Outdoor swimming pool

AG105.2



## Pool Barrier and Door Alarm Requirements

- Ladder for above-ground pool structure
  - Secured, locked, or removed to prevent access
  - Surrounded by barrier; shall not allow passage of 4"-diameter sphere





QUESTIONS?

