40th CRCA Trade Show & Seminars
"Roofing Week in Chicago"
January 17-19, 2024

Low-slope roofing update on technical issues

Mark S. Graham
Vice President, Technical Services
National Roofing Contractors Association

1

This year's topics

- Industry market conditions
- Code update for Illinois
- 2024 I-codes
- PIMA's QualityMark^{CM} update
- RF interference
- Roof deck loading
- Other topics and questions

2

NEWS RELEASE
BUREAU OF LABOR STATISTICS
U.S. DEPARTMENT OF LABOR

Table A. Percent changes in CPI for All Urban Consumers (CPI-U): U.S. city average

	Seasonally adjusted changes from preceding month							Un-adjusted 12-mos. ended Dec. 2023
	Jun. 2023	Jul. 2023	Aug. 2023	Sep. 2023	Oct. 2023	Nov. 2023	Dec. 2023	
All items	0.2	0.2	0.6	0.4	0.0	0.1	0.3	3.4
Food	0.1	0.2	0.2	0.2	0.3	0.2	0.2	2.7
Food at home	0.0	0.3	0.2	0.1	0.3	0.1	0.1	1.3
Food away from home[1]	0.4	0.2	0.3	0.4	0.4	0.4	0.3	5.2
Energy	0.6	0.1	5.6	1.5	-2.5	-2.3	0.4	-2.0
Energy commodities	0.8	0.3	10.5	2.3	-4.9	-5.8	-0.1	-2.9
Gasoline (all types)	1.0	0.2	10.6	2.1	-5.0	-6.0	0.2	-1.9
Fuel oil[1]	-0.4	3.0	9.1	8.5	-0.8	-2.7	-5.5	-14.7
Energy services	0.4	-0.1	0.2	0.6	0.5	1.7	0.9	-1.1
Electricity	0.9	-0.7	0.2	1.3	0.3	1.4	1.3	3.3
Utility (piped) gas service	-1.7	2.0	0.1	-1.9	1.2	2.8	-0.4	-13.8
All items less food and energy	0.2	0.2	0.3	0.3	0.2	0.3	0.3	3.9
Commodities less food and energy commodities	-0.1	-0.3	-0.1	-0.4	-0.1	-0.3	0.0	0.2
New vehicles	0.0	-0.1	0.3	0.3	-0.1	-0.1	0.3	1.0
Used cars and trucks	-0.5	-1.3	-1.2	-2.5	-0.8	1.6	0.5	-1.3
Apparel	0.3	0.0	0.2	-0.8	0.1	-1.3	0.1	1.0
Medical care commodities[1]	0.2	0.5	0.6	-0.3	0.4	0.5	-0.1	4.7
Services less energy services	0.3	0.4	0.4	0.6	0.3	0.5	0.4	5.3
Shelter	0.4	0.4	0.3	0.6	0.3	0.4	0.5	6.2
Transportation services	0.1	0.3	2.0	0.7	0.8	1.1	0.1	9.7
Medical care services	0.0	-0.4	0.1	0.3	0.3	0.6	0.7	-0.5

Link

3

Producer Price Index, December 2023

	1-Month % Change	12-Month % Change	Change Since Feb 2020
Inputs To Industries			
Inputs to construction	-0.6%	1.2%	37.5%
Inputs to multifamily construction	-0.5%	2.0%	36.9%
Inputs to nonresidential construction	-0.4%	1.6%	38.6%
Inputs to commercial construction	-0.2%	1.4%	39.2%
Inputs to healthcare construction	-0.3%	1.5%	38.7%
Inputs to industrial construction	-0.5%	2.5%	34.6%
Inputs to other nonresidential construction	-0.6%	1.5%	38.4%
Inputs to maintenance and repair construction	-0.9%	0.4%	35.2%
Commodities			
Adhesives and sealants	0.0%	1.6%	33.7%
Brick and structural clay tile	0.0%	5.5%	25.2%
Concrete products	0.1%	7.3%	35.7%
Construction machinery and equipment	0.2%	7.6%	28.9%
Construction sand, gravel, and crushed stone	0.6%	8.5%	30.6%
Copper wire and cable	1.5%	0.7%	30.5%
Crude petroleum	-13.2%	-10.8%	37.7%
Fabricated structural metal products	1.6%	2.5%	55.8%
Gypsum products	0.5%	-1.7%	44.0%
Hot rolled steel bars, plates, and structural shapes	2.9%	-4.7%	56.4%
Insulation materials	0.1%	0.9%	36.6%
Iron and steel	4.3%	1.9%	57.3%
Lumber and wood products	0.1%	-4.4%	23.8%
Natural gas	1.5%	-60.5%	54.8%
Plumbing fixtures and fittings	0.2%	1.5%	18.7%
Prepared asphalt, tar roofing and siding products	0.3%	2.8%	41.6%
Softwood lumber	0.2%	-14.6%	5.0%
Steel mill products	3.3%	-2.0%	65.0%
Switchgear, switchboard, industrial controls equipment	0.2%	5.2%	40.1%
Unprocessed energy materials	-9.1%	-28.7%	55.6%

Source: U.S. Bureau of Labor Statistics

Link

4

ABC's Construction Backlog Indicator Inches Higher in December, Contractor Confidence Improves

January 16, 2024 | Construction Backlog Indicator, Construction Confidence Index, Construction Economics, News Releases 2024

WASHINGTON, Jan. 16—Associated Builders and Contractors reported today that its Construction Backlog Indicator increased to 8.6 months in December from 8.5 months in November, according to an ABC member survey conducted Dec. 20 to Jan. 4. The reading is down 0.6 months from December 2022.

View the full Construction Backlog Indicator and Construction Confidence Index data series.

The South, which remains the region with the lengthiest backlog, posted the largest monthly increase in December. Only the West, which historically reports the lowest backlog of any region, experienced a monthly decline.

Construction Backlog Indicator

	December 2023	November 2023	December 2022	1-Month Net Change	12-Month Net Change
Total	**8.6**	**8.5**	**9.2**	**0.1**	**-0.6**
Industry					
Commercial and institutional	9.1	8.6	9.4	0.5	-0.3
Heavy industrial	8.4	8.8	8.2	-0.4	0.2
Infrastructure	7.9	7.9	10.0	0.0	-2.1
Region					
Middle States	8.5	8.0	8.1	0.5	0.4
Northeast	8.0	8.0	8.9	0.0	-0.9
South	10.7	9.8	11.5	0.9	-0.8
West	6.6	7.4	7.2	-0.8	-0.6
Company Size					
<$30 Million	7.4	7.7	7.9	-0.3	-0.5
$30-$50 Million	11.1	9.4	13.1	1.7	-2.0
$50-$100 Million	12.3	12.0	11.1	0.3	1.2
>$100 Million	10.7	9.0	14.2	1.7	-3.5

© Associated Builders and Contractors, Construction Backlog Indicator

Link

5

ABC's Construction Confidence Index readings for sales, profit margins and staffing levels increased in December. All three readings remain above the threshold of 50, indicating expectations for growth over the next six months.

Construction Confidence Index

Response	December 2023	November 2023	December 2022
CCI Reading			
Sales	58.9	57.0	59.0
Profit margins	54.2	51.0	52.3
Staffing	61.6	59.9	60.9
Sales Expectations			
Up big	6.7%	5.1%	9.1%
Up small	47.4%	44.7%	44.6%
No change	23.9%	26.1%	24.6%
Down small	18.7%	21.4%	16.6%
Down big	3.4%	2.7%	5.1%
Profit Margin Expectations			
Up big	4.5%	2.3%	2.9%
Up small	32.8%	28.4%	36.0%
No change	40.3%	43.6%	35.4%
Down small	19.8%	22.2%	18.9%
Down big	2.6%	3.5%	6.9%
Staffing Level Expectations			
Up big	7.8%	2.3%	4.6%
Up small	43.7%	46.7%	50.9%
No change	37.3%	40.5%	31.4%
Down small	9.3%	9.3%	9.7%
Down big	1.9%	1.2%	3.4%

© Associated Builders and Contractors, Construction Confidence Index

6

Roofing professionals are invited to join industry trade associations representing contractors, consultants and manufacturers in the U.S. and Canada in taking part in a Quarterly Market Index Survey for Reroofing.

The purpose of the survey is to take the pulse of the reroofing industry on a quarterly basis and become a regular barometer of the industry's business conditions. Industry professionals have an opportunity to share their thoughts and experiences regarding reroofing as a sector of their businesses.

The survey is an industrywide effort to collect information about the reroofing market spearheaded by a coalition of trade associations, including the Asphalt Roofing Manufacturers Association, Canadian Roofing Contractors Association, Chemical Fabrics & Film Association Inc., EPDM Roofing Association, International Institute of Building Enclosure Consultants, Metal Construction Association, Metal Roofing Alliance, NRCA, National Women in Roofing, Polyisocyanurate Insulation Manufacturers Association, Roof Coatings Manufacturers Association and Single Ply Roofing Industry.

Take the Quarterly Market Index Survey for Reroofing now. Survey responses may be submitted through Jan. 22.

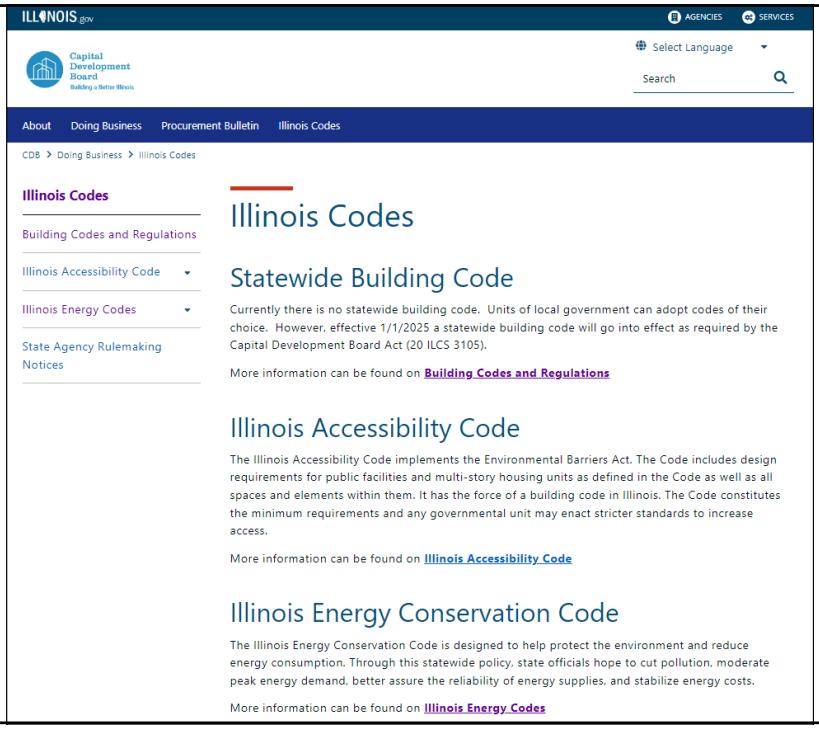
Link

7

Code update

- Illinois Capital Development Board (CDB):
  - New IL energy code – Effective 1/1/24
  - New IL "stretch" energy code being developed—Scheduled for 6/30/24
  - New statewide building code—Scheduled for 1/1/25
- International Code Council (ICC):
  - Most of the 2024 I-codes have already been published
  - IECC 2024 and IRC 2024 still pending/in ICC's appeals process

8



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9

Building Codes and Regulations

The State of Illinois recently passed legislation (**Public Act 103-0510**) changing the Capital Development Board Act to require statewide building codes effective 1/1/2025. Until then, units of local government such as cities and counties can adopt codes of their choice. The best and most accurate answers to building code questions must be answered by your city, village, or county code official.

The following paragraphs summarize major construction codes only. Please consult with your design professional on exceptions, exemptions and other codes that may apply to your project.

Commercial buildings in jurisdictions that have not adopted a building code AND state funded buildings.

- New or substantially improved buildings: IEBC[11] and IBC[6] (1/1/25 Incl. App G., Excl. Ch 11, 13, 29). Current edition or most recent preceeding edition.[1]
- NEC[11] Current edition or most recent preceeding edition.[1]
- Illinois Energy Conservation Code.[12]
- Starting 7/1/24 state buildings must comply with the Illinois Stretch Energy Code.[13]
- Illinois Accessibility Code.[14]
- Illinois Plumbing Code.[15]
- Fire Prevention and Safety Rules (includes NFPA 101[®]).[16] Click here for NFPA 101 applicability.
- Non-state buildings must be inspected by a qualified inspector stating the building complies with the above codes.[1] **Click here for more information.**

10

Commercial buildings in jurisdictions that have adopted building codes.

- Local codes and amendments.
- Starting 1/1/25 local codes must regulate the structural design in a manner that is at least as stringent as the IBC® for new buildings or IEBC® for existing buildings.[1]
- Illinois Energy Conservation Code.[2]
- Illinois Accessibility Code.[3]
- Illinois Plumbing Code.[4]
- Fire Prevention and Safety Rules (includes NFPA 101®).[5] **Click here for NFPA 101 applicability.**

[1]Required by 20 ILCS 3105/10.18. [2]Required by 20 ILCS 3125/15. [3]Required by 410 ILCS 25/5. [4]Required by Title 77 Part 890 Section 890.110. [5]Required by Title 41 Part 100 Section 100.3.

11

Residential buildings in jurisdictions that have not adopted a building code where NOT agreed to by the home purchaser and home builder.

- New construction: IRC© Current edition. (1/1/24 excluding IV and VII)[1]
- Illinois Energy Conservation Code.[1,2]
- Illinois Accessibility Code if owned, leased or financed by a governmental unit.[3]
- Illinois Plumbing Code.[4]
- Fire Prevention and Safety Rules (includes NFPA 101®).[5] **Click here for NFPA 101 applicability.**

[1]Required by 815 ILCS 670/15. [2]Required by 20 ILCS 3125/15. [3]Required by 410 ILCS 25/5. [4]Required by Title 77 Part 890 Section 890.110. [5]Required by Title 41 Part 100 Section 100.3.

Residential buildings in jurisdictions that have adopted a building code.

- Local codes and amendments.
- Starting 1/1/25 local codes must regulate the structural design in a manner that is at least as stringent as the IRC©. [1]
- Illinois Energy Conservation Code.[2]
- Illinois Accessibility Code if owned, leased or financed by a governmental unit.[3]
- Illinois Plumbing Code.[4]
- Fire Prevention and Safety Rules (includes NFPA 101®).[5] **Click here for NFPA 101 applicability.**

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12

COUNTY & MUNICIPAL CODE REPORTING

20 ILCS 3105/10.18 requires that all municipalities or counties adopting a new building code or amending an existing building code must provide an identification of the code by title and edition including local amendments to CDB at least 30 days before the effective date of the building code.

Use the **County Municipal Code Reporting Form** to notify CDB of your new or amended code.

BUILDING CODE QUESTIONS

To assist you, CDB provides two directories; one of local building codes and the other listing state regulations and statutes for your convenience.

- **Illinois City or County Local Code Directory**
- **Illinois Construction-Related Statutes and Rules Directory**

For more information see our **Building Codes & Regulations FAQs** or contact us at:

401 South Spring Street
3rd Floor, Stratton Building
Springfield, IL 62706
CDB.BuildingCodes@illinois.gov
Voice: 217-720-3021
TDD: 217-524-4449

13

City or County	Year	Code Type	Code Description	Local Amendments	Contact Name	Title	Contact Phone	Email	Website
Oak Brook	2020	Electrical Code	NFPA National Electrical Code	YES	Mark LaChappell	Chief Building Official	(630) 368-5110	mlachappell@oak-brook.org	www.oak-brook.org
Oak Brook	2021	Fuel/Gas Code	International Fuel Gas Code	YES	Mark LaChappell	Chief Building Official	(630) 368-5110	mlachappell@oak-brook.org	www.oak-brook.org
Oak Brook	2021	Existing Building Code	International Existing Building Code	YES	Mark LaChappell	Chief Building Official	(630) 368-5110	mlachappell@oak-brook.org	www.oak-brook.org
Oak Brook	2021	Residential Code	International Residential Building Code	YES	Mark LaChappell	Chief Building Official	(630) 368-5110	mlachappell@oak-brook.org	www.oak-brook.org
Oak Brook	2021	Building Code	International Building Code	YES	Mark LaChappell	Chief Building Official	(630) 368-5110	mlachappell@oak-brook.org	www.oak-brook.org
Oak Brook	2021	Plumbing Code	International Plumbing Code	YES	Mark LaChappell	Chief Building Official	(630) 368-5110	mlachappell@oak-brook.org	www.oak-brook.org
Oak Brook	2021	Fire Code	International Fire Code	YES	Mark LaChappell	Chief Building Official	(630) 368-5110	mlachappell@oak-brook.org	www.oak-brook.org
Oak Brook	2021	Property Maintenance Code	International Property Maintenance Code	YES	Mark LaChappell	Chief Building Official	(630) 368-5110	mlachappell@oak-brook.org	www.oak-brook.org
Oak Brook	2009	Elevator Code	Elevator Safety and Regulation Act (225 ILCS 312/1 et seq.)	NO	Mark LaChappell	Chief Building Official	(630) 368-5110	mlachappell@oak-brook.org	www.oak-brook.org
Oak Brook	2021	Mechanical Code	International Mechanical Code	YES	Mark LaChappell	Chief Building Official	(630) 368-5110	mlachappell@oak-brook.org	www.oak-brook.org
Oak Brook	2021	Miscellaneous Code	International Swimming Pool and Spa Code	YES	Mark LaChappell	Chief Building Official	(630) 368-5110	mlachappell@oak-brook.org	www.oak-brook.org

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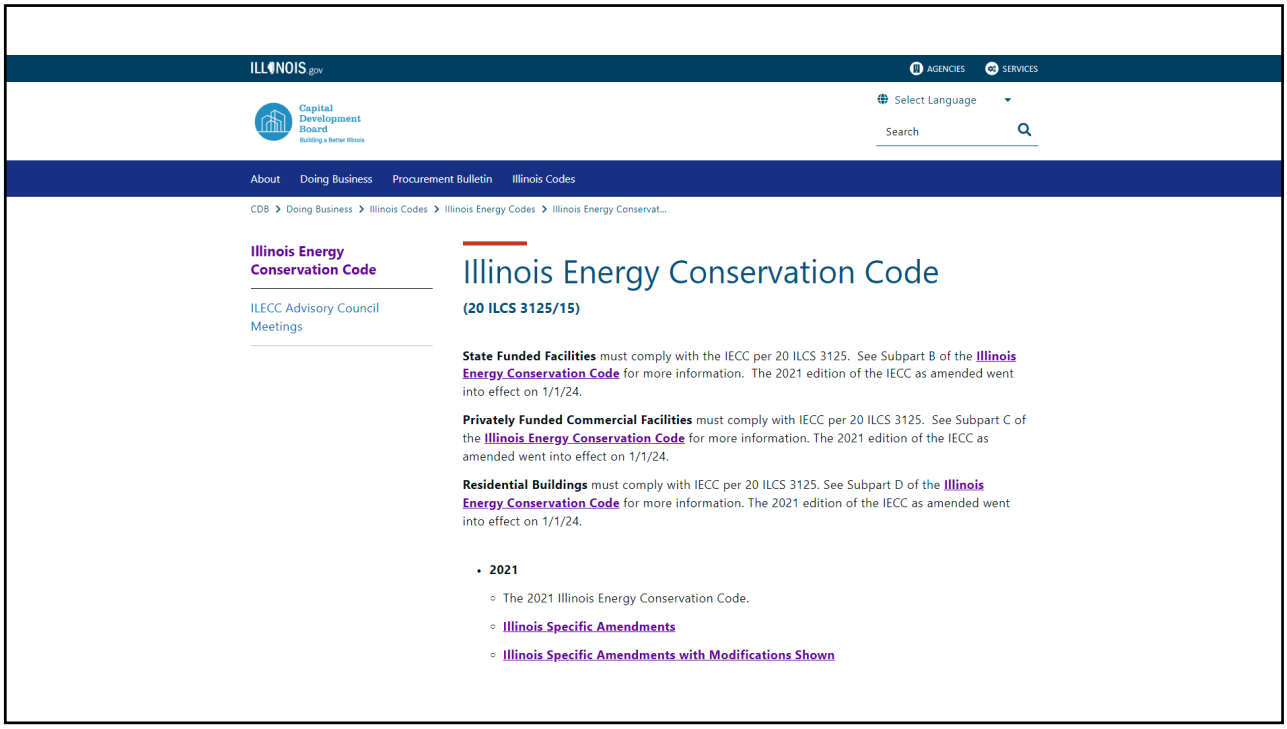
14



15

New Illinois energy code

Key points--Roofing

Commercial provisions (C):

- IECC 2021 basis
- Illinois-specific modifications:
  - "*approved source*"
- Previous "peel and replace" provision removed

Residential provisions (R):

- IECC 2021 basis – higher attic R-values
- Illinois-specific modifications:
  - "*approved source*"

16

Illinois energy code -- "approved source" provision

SECTION C503
ALTERATIONS

C503.2.1 Roof Replacement. *Roof replacements* shall comply with Section C402.1.3, C402.1.4, C402.1.5 or C407 where the existing roof assembly is part of the *building thermal envelope* and contains insulation entirely above the roof deck. In no case shall the *R*-value of the roof insulation be reduced or the *U*-factor of the roof assembly be increased as part of the *roof replacement*.

Exceptions: Where compliance with Section C402.1 cannot be met due to limiting conditions on an existing roof, an *approved* design shall be submitted with the following:

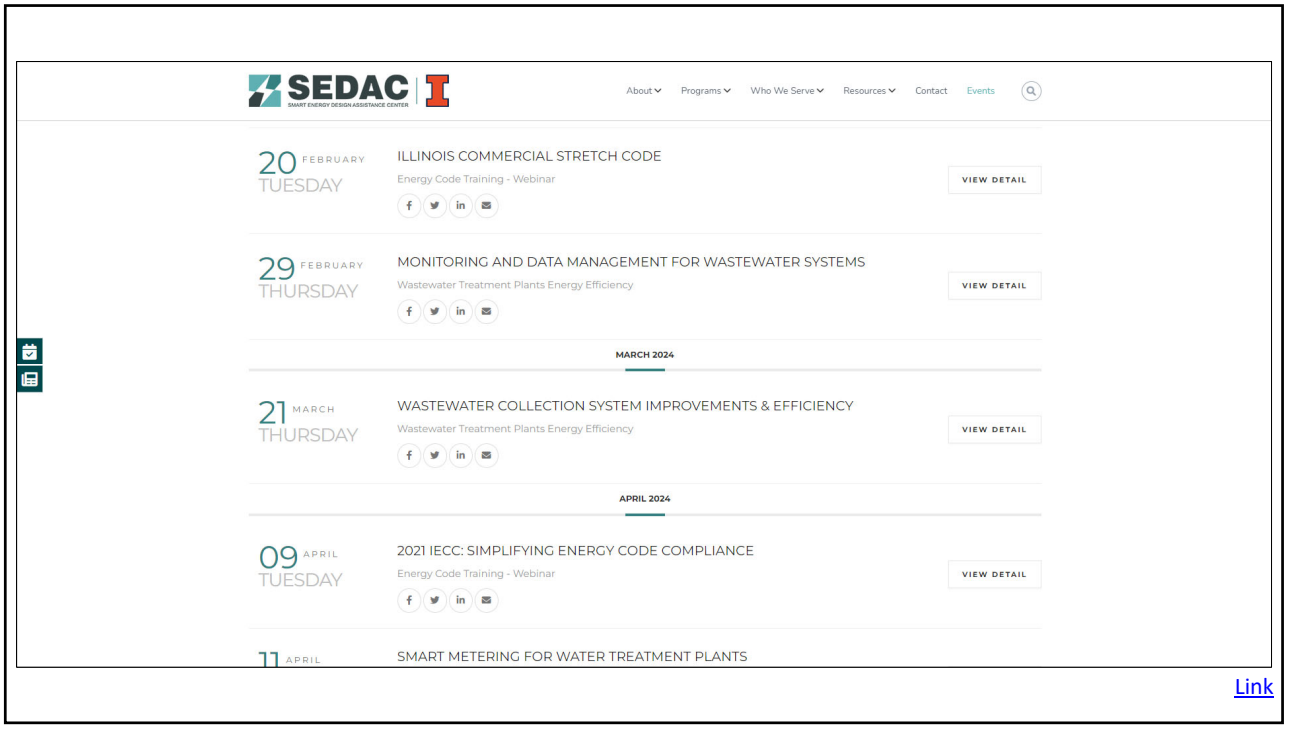
1. *Construction documents* that include a report by a *registered design professional* or an *approved source* documenting details of the limiting conditions affecting compliance with the insulation requirements.
2. *Construction documents* that include a roof design by a *registered design professional* or an *approved source* that minimizes deviation from the insulation requirements.

17

From IBC 2022:

[A] APPROVED SOURCE. An independent person, firm or corporation, *approved* by the *building official*, who is competent and experienced in the application of engineering principles to materials, methods or systems analyses.

18



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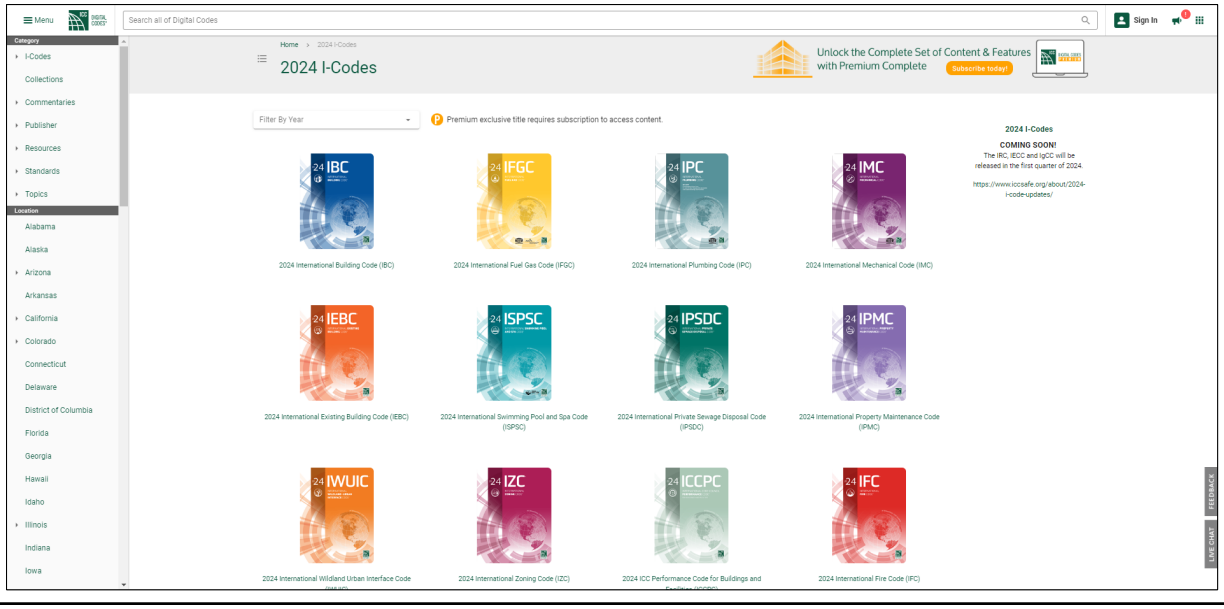
19

2024 I-codes

codes.iccsafe.org



20

2024 International Building Code (IBC) BASIC Upgrade to Premium

CHAPTER 15 ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

First Version: Aug 2023

CHAPTER 15 ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

User notes:

About this chapter: *Chapter 15 provides minimum requirements for the design and construction of roof assemblies and rooftop structures. The criteria address the weather-protective barrier at the roof and, in most circumstances, a fire-resistant barrier. The chapter is largely prescriptive in nature and is based on decades of experience with various traditional materials, but it also recognizes newer products. Section 1511 addresses rooftop structures, which include penthouses, tanks, towers and spires. Rooftop penthouses larger than prescribed in this chapter must be treated as a story under Chapter 5.*

Code development reminder: *Code change proposals to sections preceded by the designation [BF] or [P] will be considered by one of the code development committees meeting during the 2024 (Group A) Code Development Cycle. All other code change proposals will be considered by a code develoopment committee meeting during the 2025 (Group B) Code Development Cycle.*

SECTION 1501
GENERAL

1501.1 Scope.

The provisions of this chapter shall govern the design, materials, construction and quality of *roof assemblies*, and *rooftop structures*.

SECTION 1502
ROOF DRAINAGE

[P] 1502.1 General.

Design and installation of roof drainage systems shall comply with this section, Section 1611 of this code and Chapter 11 of the *International Plumbing Code*.

[P] 1502.2 Secondary (emergency overflow) drains or scuppers.

Where roof drains are required, secondary (emergency overflow) roof drains or *scuppers* shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason. The installation and sizing of secondary emergency overflow drains, leaders and conductors shall comply with Section 1611 of this code and Chapter 11 of the *International Plumbing Code*.

Premium Code Insights : Premium Answers

FEEDBACK
LIVE CHAT

21

CHAPTER 15

ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

User notes:

About this chapter: *Chapter 15 provides minimum requirements for the design and construction of roof assemblies and rooftop structures. The criteria address the weather-protective barrier at the roof and, in most circumstances, a fire-resistant barrier. The chapter is largely prescriptive in nature and is based on decades of experience with various traditional materials, but it also recognizes newer products. Section 1511 addresses rooftop structures, which include penthouses, tanks, towers and spires. Rooftop penthouses larger than prescribed in this chapter must be treated as a story under Chapter 5.*

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SECTION 1501—GENERAL

1501.1 Scope. The provisions of this chapter shall govern the design, materials, construction and quality of *roof assemblies*, and *rooftop structures*.

SECTION 1502—ROOF DRAINAGE

Scan for Changes b448b7f

[P] 1502.1 General. Design and installation of roof drainage systems shall comply with this section, Section 1611 of this code and Chapter 11 of the *International Plumbing Code*.

[P] 1502.2 Secondary (emergency overflow) drains or scuppers. Where roof drains are required, secondary (emergency overflow) roof drains or *scuppers* shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason. The installation and sizing of secondary emergency overflow drains, leaders and conductors shall comply with Section 1611 of this code and Chapter 11 of the *International Plumbing Code*.

1502.3 Gutters. Gutters and leaders placed on the outside of *buildings*, other than Group R-3, *private garages* and *buildings* of Type V construction, shall be of noncombustible material or not less than Schedule 40 plastic pipe.

SECTION 1503—WEATHER PROTECTION

Scan for Changes 94b2530

1503.1 General. *Roof decks* shall be covered with *approved roof coverings* secured to the *building* or *structure* in accordance with the provisions of this chapter. *Roof coverings* shall be designed in accordance with this code, and installed in accordance with this code and the manufacturer's *approved* instructions.

1503.2 Flashing. Flashing shall be installed in such a manner so as to prevent water from entering the wall and roof through joints in copings, through moisture-permeable materials and at intersections with *parapet walls* and other penetrations through the roof plane.

1503.2.1 Locations. Flashing shall be installed at wall and roof intersections, at gutters, wherever there is a change in roof slope or direction and around roof openings. Where flashing is of metal, the metal shall be corrosion resistant with a thickness of not less than 0.019 inch (0.483 mm) (No. 26 galvanized sheet).

1503.3 Parapet walls. Parapet walls shall be coped or covered in accordance with Sections 1503.3.1 and 1503.3.2. The top surface of the parapet wall shall provide positive drainage.

1503.3.1 Fire-resistance-rated parapet walls. *Parapet walls* required by Section 705.12 shall be coped or covered with weatherproof materials of a width not less than the thickness of the parapet wall such that the *fire-resistance* rating of the wall is not decreased.

1503.3.2 Other parapet walls. *Parapet walls* meeting one of the exceptions in Section 705.12 shall be coped or covered with weatherproof materials of a width not less than the thickness of the parapet wall.

1503.4 Attic and rafter ventilation. Intake and exhaust vents for ventilation of *attic* and enclosed rafter assemblies shall be provided in accordance with Section 1202.2 and the vent product manufacturer's installation instructions.

Exception: Unvented *attic* and unvented enclosed rafter assemblies in accordance with Section 1202.3.

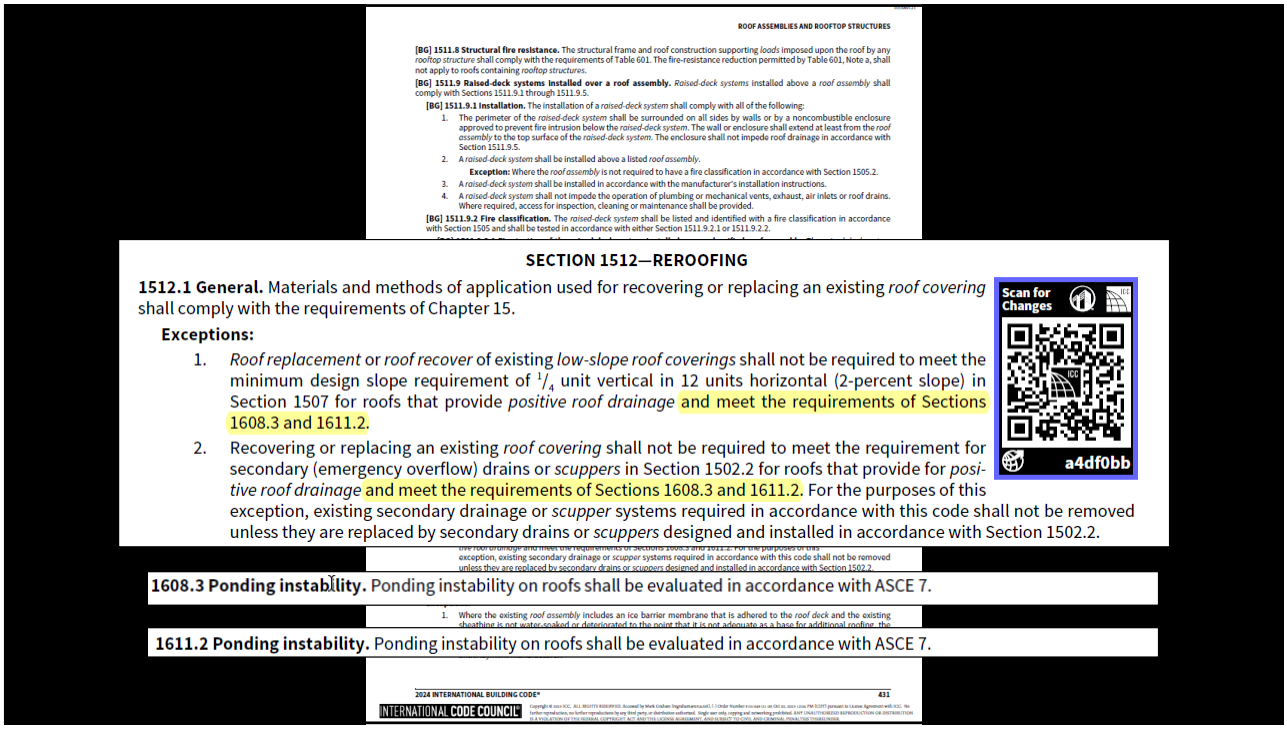
1503.5 Crickets and saddles. A cricket or saddle shall be installed on the ridge side of any chimney or penetration greater than 30 inches (762 mm) wide as measured perpendicular to the slope. Cricket or saddle coverings shall be sheet metal or of the same material as the *roof covering*.

Exception: *Unit skylights* installed in accordance with Section 2405.5 and flashed in accordance with the manufacturer's instructions shall be permitted to be installed without a cricket or saddle.

410 2024 INTERNATIONAL BUILDING CODE®

INTERNATIONAL CODE COUNCIL®

22



ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

[BG] 1511.8 Structural fire resistance. The structural frame and roof construction supporting *loads* imposed upon the roof by any *rooftop structure* shall comply with the requirements of Table 601. The fire-resistance reduction permitted by Table 601, Note a, shall not apply to roofs containing *rooftop structures*.

[BG] 1511.9 Raised-deck systems installed over a roof assembly. *Raised-deck systems* installed above a *roof assembly* shall comply with Sections 1511.9.1 through 1511.9.5.

[BG] 1511.9.1 Installation. The installation of a *raised-deck system* shall comply with all of the following:

1. The perimeter of the *raised-deck system* shall be surrounded on all sides by walls or by a noncombustible enclosure approved to prevent fire intrusion below the *raised-deck system*. The wall or enclosure shall extend at least from the *roof assembly* to the top surface of the *raised-deck system*. The enclosure shall not impede roof drainage in accordance with Section 1511.9.5.
2. A *raised-deck system* shall be installed above a listed *roof assembly*.
   Exception: Where the *roof assembly* is not required to have a fire classification in accordance with Section 1505.2.
3. A *raised-deck system* shall be installed in accordance with the manufacturer's installation instructions.
4. A *raised-deck system* shall not impede the operation of plumbing or mechanical vents, exhaust, air inlets or roof drains. Where required, access for inspection, cleaning or maintenance shall be provided.

[BG] 1511.9.2 Fire classification. The *raised-deck system* shall be listed and identified with a fire classification in accordance with Section 1505 and shall be tested in accordance with either Section 1511.9.2.1 or 1511.9.2.2.

SECTION 1512—REROOFING

1512.1 General. Materials and methods of application used for recovering or replacing an existing *roof covering* shall comply with the requirements of Chapter 15.

Exceptions:

1. *Roof replacement* or *roof recover* of existing *low-slope roof coverings* shall not be required to meet the minimum design slope requirement of $^1/_4$ unit vertical in 12 units horizontal (2-percent slope) in Section 1507 for roofs that provide *positive roof drainage* and meet the requirements of Sections 1608.3 and 1611.2.
2. Recovering or replacing an existing *roof covering* shall not be required to meet the requirement for secondary (emergency overflow) drains or *scuppers* in Section 1502.2 for roofs that provide for *positive roof drainage* and meet the requirements of Sections 1608.3 and 1611.2. For the purposes of this exception, existing secondary drainage or *scupper* systems required in accordance with this code shall not be removed unless they are replaced by secondary drains or *scuppers* designed and installed in accordance with Section 1502.2.

Scan for Changes a4df0bb

1608.3 Ponding instability. Ponding instability on roofs shall be evaluated in accordance with ASCE 7.

1. Where the existing *roof assembly* includes an ice barrier membrane that is adhered to the *roof deck* and the existing sheathing is not water-soaked or deteriorated to the point that it is not adequate as a base for additional roofing, the

1611.2 Ponding instability. Ponding instability on roofs shall be evaluated in accordance with ASCE 7.

2024 INTERNATIONAL BUILDING CODE® 431

INTERNATIONAL CODE COUNCIL

23

IBC 2024's revised Section 1512.1, Exceptions 1 and 2 language eliminates practical (and affordable) code acceptance of roof slopes less than ¼-in-12

Adding ¼-in-12 or greater tapered insulation satisfies IBC 2024's Section 1512.1, Exceptions 1 and 2, and makes Section 1608.3 and Section 1611.2 non-applicable

24

QualityMark Program Quarterly Conformance Report[1]
Reporting Period: Q2 2023 (April – June 2023)

Manufacturing Location		Manufacturer
City	State/Province	
High River*	Alberta	IKO Industries Ltd.
Phoenix	Arizona	Atlas Roofing Corporation
Vancouver	British Columbia	Atlas Roofing Corporation
Northglenn	Colorado	Atlas Roofing Corporation
Bristol	Connecticut	Holcim Building Envelope
Jacksonville	Florida	Holcim Building Envelope
Jacksonville	Florida	Johns Manville
Lake City	Florida	Carlisle Construction Materials
LaGrange	Georgia	Atlas Roofing Corporation
Statesboro	Georgia	GAF
Florence	Kentucky	Holcim Building Envelope
East Moline	Illinois	Atlas Roofing Corporation
Franklin Park	Illinois	Carlisle Construction Materials
Bremen	Indiana	Johns Manville
Hagerstown*	Maryland	IKO Industries, Ltd.
Fernley	Nevada	Johns Manville
Montgomery	New York	Carlisle Construction Materials
Cornwall	Ontario	Johns Manville
Toronto	Ontario	Atlas Roofing Corporation
Camp Hill	Pennsylvania	Atlas Roofing Corporation
Hazleton	Pennsylvania	Johns Manville
New Columbia	Pennsylvania	GAF
Smithfield	Pennsylvania	Carlisle Construction Materials
Youngwood	Pennsylvania	Holcim Building Envelope
Drummondville	Quebec	SOPREMA
Corsicana	Texas	Holcim Building Envelope
Diboll	Texas	Atlas Roofing Corporation
Gainesville	Texas	GAF
Hillsboro	Texas	Johns Manville
Terrell	Texas	Carlisle Construction Materials
Cedar City	Utah	GAF
Salt Lake City	Utah	Holcim Building Envelope
Tooele	Utah	Carlisle Construction Materials
Puyallup	Washington	Carlisle Construction Materials
DeForest	Wisconsin	Holcim Building Envelope

Published on January, 2, 2024. This report is published quarterly in January, April, July, and October. Current report available at www.polyiso.org/QUALITYMARK.

Link

25

Table Note 1:
The manufacturing locations listed below have recently been brought on-line. The time represented by the current reporting period was prior to the date the location either started commercial production or completed its initial LTTR-value certification. Results for these plants will be included in future reporting periods.

- Sikeston, Missouri – Carlisle Construction Materials

Disclaimer:
The information provided by the QualityMark Program is offered for the user's informational purposes only and is based on periodic testing of specific individual product samples. Nothing contained herein constitutes or represents a warranty or guarantee of product performance. Users should always consult the individual manufacturer's product materials, including but not limited to the manufacturer's installation instructions and datasheets, for information on product performance.

Questions:
For questions regarding the QualityMark Program, please contact PIMA using the "Contact Us" form on the website here.

Page 3 of 3

26

Radio frequency radiation

Rooftop cell phone transmitters

27

CRCA Advisory Bulletin

JUNE 2023

Radiofrequency Radiation and Electromagnetic Fields

The increased number of cellular antennas and other communication equipment that generates radiofrequency radiation (RF) and electromagnetic fields (EMF) may be exposing roofers and other contractors to harmful levels of radiations when working on rooftops, sides of buildings and other locations where RF generating antennas are located. This bulletin will focus on radiation types, safety limits and mitigating exposure.

With the ever-increasing use and development of communication technology, there is an increased risk for those working in and around communication devices and equipment that emit radiofrequency electromagnetic fields (EMF) such as smart meters, cell phone towers and equipment using 5G technology. Roof areas are often prime locations for this type of equipment and anyone accessing these roof areas for any reason should be aware of the Occupational Health and Safety requirements and the Safety Code 6. Consult with provincial and/or federal authorities having jurisdiction for further information/guidance for most stringent requirements.

What is Radiofrequency (RF) Radiation?

There are two types of radiation – ionizing radiation and non-ionizing radiation. Both are forms of electromagnetic energy, but ionizing radiation has more energy than non-ionizing radiation. Ionizing radiation, like x-rays or gamma rays, has enough energy to cause chemical changes by breaking chemical bonds. Sources of this type of radiation can be found in hospitals, nuclear energy plants, and nuclear weapons facilities. Non-ionizing radiation causes molecules to vibrate, which generates heat. RF radiation is a type of non-ionizing radiation and is the energy used to transmit wireless information. RF radiation is invisible and power levels of equipment and amount of RF radiation can fluctuate without warning.

About Safety Code 6

Health Canada publishes Safety Code 6[1] which sets out recommended safety limits for human exposure to radiofrequency electromagnetic fields (EMF) in the frequency range from 3 kHz to 300 GHz. This range covers the frequencies used by communications devices and equipment that emit radiofrequency EMF such as: Wi-Fi, cell phones, smart meters, cell phone towers, those using 5G technology.

Safety Code 6 is reviewed on a regular basis to confirm that it continues to provide protection against all known potentially adverse health effects. If new scientific evidence were to show that exposure to radiofrequency EMF below the levels found in Safety Code 6 poses a risk, the Government of Canada would take steps to protect the health of Canadians.

[1] https://www.canada.ca/en/health-canada/services/health-risks-safety/radiation/occupational-exposure-regulations/safety-code-6-radiofrequency-exposure-guidelines.html

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CRCA Advisory Bulletin

June 2023

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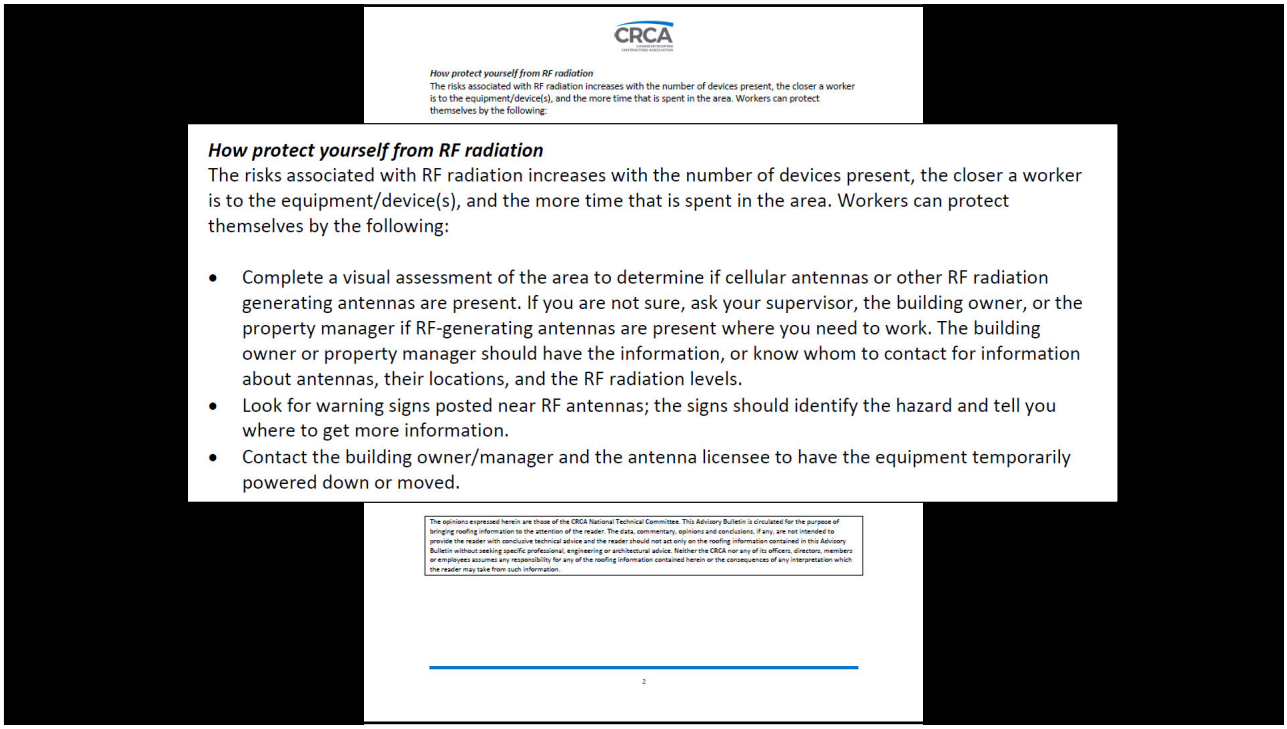
28



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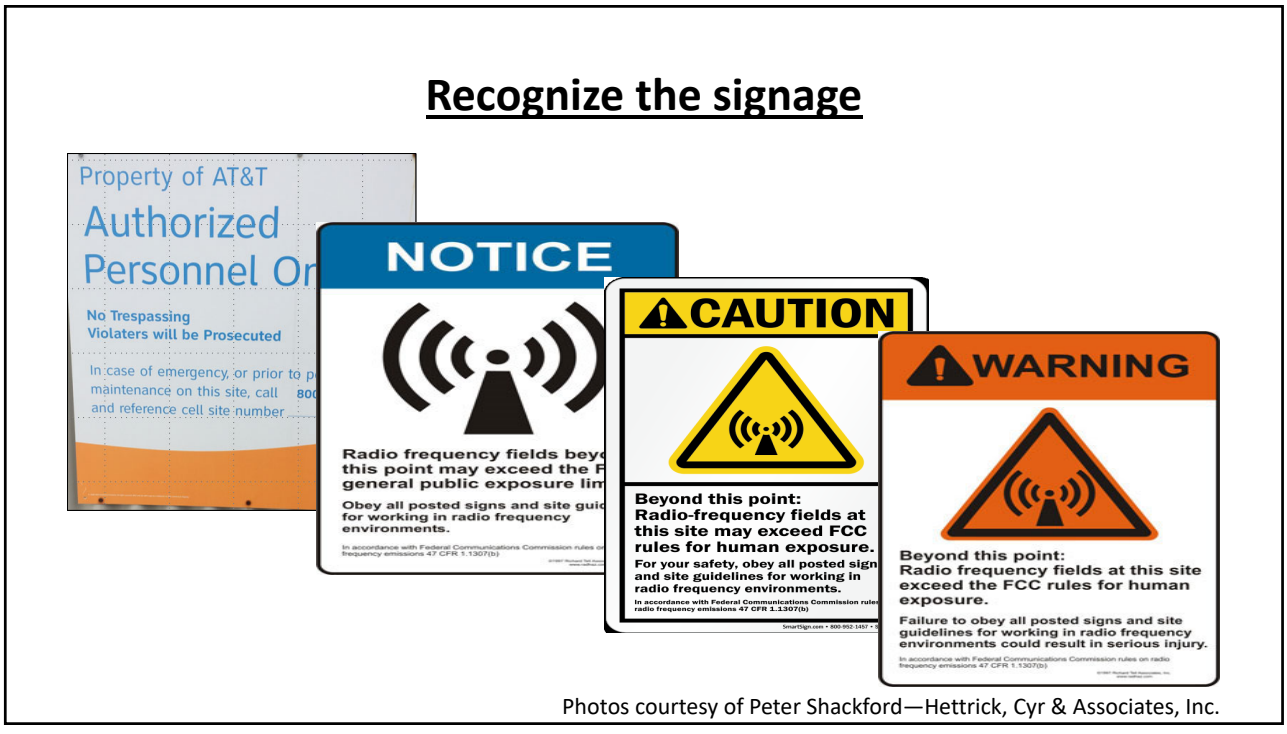


Photos courtesy of Peter Shackford—Hettrick, Cyr & Associates, Inc.

30

Some useful references

- CRCA Advisory Bulletin (Link)
- Health Canada's Safety Code 6 (Link)
- Federal Communications Commission (Link)
- Center for Construction Research and Training (Link)

31

Link

32

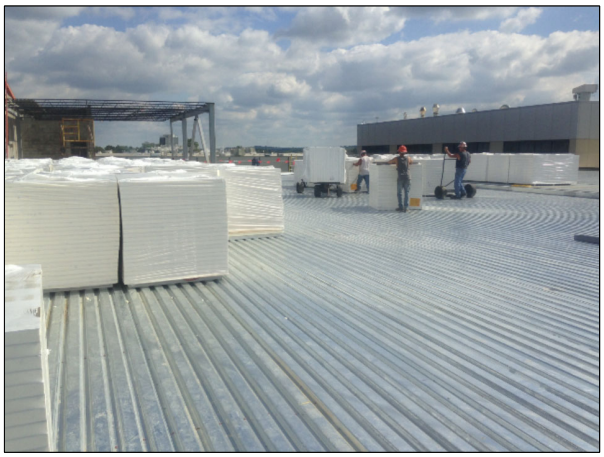
TOOLBOXTALKS

Radio frequency (RF) hazards

According to the Federal Communications Commission (FCC), radio waves and microwaves emitted by transmitting antennae are one form of electromagnetic energy that harm people. Harm from RF exposure will vary according to power levels, length of exposure time and distance from the antennae. Sources of RF energy on a rooftop often are not obvious and usually are not properly marked or defined as danger zones by warning signs. In many cases, antennae are hidden by building elements so workers may not be aware of their presence. Here are some important facts about RF energy and things that you can do to avoid it:

- High levels of RF may heat body tissue and increase body temperature, causing tissue damage because the body cannot cool quickly enough to prevent damage. This is called RF's thermal effects, and your eyes are the most vulnerable part of your body. Actual contact may cause a shock or burn.
- At lower, nonthermal levels of RF exposure, nervous system and immune system problems, kidney damage, neurological disorders and even some cancers may occur.
- Become familiar with what RF transmitters or antennae look like and the dangers of working near them. Be aware that warning signs for RF transmitters may not always be present on a roof.
- Your employer must inquire as to the presence of RF equipment and whether it may be shut down or shielded or other barrier device installed for the duration of the work period roofing workers will be in proximity to the transmitter.
- Symptoms of RF exposure often seem the same as physical exertion and can become heat exhaustion or heat stroke. Removing a worker from the area and cooling the body is important. Trained, professional medical care of the symptoms is critical.

33



Roof deck loading considerations

34

Some examples of roof loading

- Pallet of asphalt shingles (42 bundles): 2,500 to 4,200 lbs.
- Pallet of TPO membrane rolls: 1,400 to 3,450 lbs.
- Pallet of MB cap sheet (20 rolls): About 2,500 lbs.
- Pallet of glass-faced gypsum board (4 x 4): 1,600 to 2,400 lbs.
- Pallet of bonding adhesive (45 pails): 1,800 lbs.
- Bundle of polyiso. (4 x 8): 250 to 500 lbs.

35

Some initial considerations

Roof deck loading concerns

- Roofing operations may exceed live load capacity
- Note joist/framing orientation
- Consider avoiding adjacent load placement
- Position loads across joists/framing
- Consider added dunnage across framing
- Also consider rooftop equipment weight

36

37

Other topics and your questions

38

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39