



*Vinyl, Polypropylene, and Insulated Siding*

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# THE 2015 I-CODES

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HOW THE I-CODES REGULATE THESE PRODUCTS





## INTRODUCTION

This document is designed to help you understand how vinyl siding, polypropylene siding, and insulated vinyl siding are regulated by the I-Codes. It was researched and written by the Vinyl Siding Institute (VSI), the trade association for cladding manufacturers.

### THE PURPOSE OF VSI IS TO FURTHER THE DEVELOPMENT AND GROWTH OF THE VINYL SIDING AND OTHER POLYMERIC SIDING INDUSTRY BY:

- Maintaining and expanding markets for vinyl and other polymeric siding.
- Addressing regulatory issues, including material restrictions, monitoring of building codes, and the education of building code developers and regulators.
- Helping develop material, product and performance standards by working through standards-making organizations and code bodies.
- Sponsoring certification programs that improve the quality of siding and its installation.
- Providing a forum for issues of interest to the vinyl siding industry.
- Using VSI resources to share information with the industry and its customers on the benefits of vinyl and other polymeric siding.
- Engaging in product stewardship and outreach activities to enhance the image of the industry and its products.

*Vinyl Siding, Polypropylene Siding, Insulated Vinyl Siding*

# AMERICA'S #1 CHOICE

*Properly installed certified vinyl siding, as required by code, can withstand high winds, resist heat, cold, and moisture.*

Vinyl siding, insulated vinyl siding, and polypropylene siding meet the stringent requirement of building codes across the United States (and Canada). These codes require that vinyl siding, insulated vinyl siding, and polypropylene siding be certified to their respective ASTM standards. This ensures that when manufactured to the appropriate material standard and installed properly, they meet the demands of these regulations, such as providing protection from the elements. For example, properly installed certified vinyl siding, as required by the code, can withstand high winds—110 miles per hour or more—and resists heat, cold, and moisture. And although the codes don't address warranties, the durability of vinyl siding has enabled vinyl siding manufacturers to offer warranties that are among the longest and strongest in the cladding industry.

**ENERGY EFFICIENT** Insulated siding, an innovation that has been added into the codes recently, is vinyl siding with rigid foam insulation laminated or permanently attached to the panel. It helps increase the exterior wall's R-Value and contributes to a home's energy efficiency by providing continuous insulation making it a great option for energy efficiency compliance.

**CERTIFIED** These code-recognized products and colors (although color certification is not a code requirement) are also certified to meet or exceed industry standards through a program administered by an independent, accredited quality control agency.

## DEFINING THE PRODUCTS

VINYL  
SIDING

> Cladding made principally of polyvinyl chloride (PVC)

INSULATED SIDING

> General category for cladding that provides continuous insulation with an R-Value of 2.0 or greater

INSULATED  
VINYL SIDING

> Insulated siding using vinyl siding combined with foam plastic insulation, to produce an R-Value of 2.0 or greater

POLYPROPYLENE  
SIDING

> Cladding made principally from polypropylene polymer

# WHAT ARE THE I-CODES?

*I-Codes provide the regulatory framework for the construction of homes and buildings.*



The International Codes, or I-Codes, published by the International Code Council, provide the regulatory framework for the construction of homes and buildings and are adopted by every state and/or jurisdiction in the United States. Some states will amend the I-Codes, but generally speaking, the sections on siding (Chapter 7 IRC, Chapter 14 IBC) are not modified.

I-CODES INCLUDE CONSIDERATIONS FOR SOUND CONSTRUCTION AND SAFE USE OF CLADDING AND ITS ROLE IN PROTECTING AGAINST:



**WATER** Both bulk and vapor



**WIND** Ability to perform at necessary wind environments depending on location of building (i.e., coast vs. inland)



**FIRE** When determined by the code by risk, building size, and occupancy type, be a part of an assembly that provides necessary determined fire protection and/or performance (i.e., flame spread, hourly rated assemblies, radiant heat release)



*The four I-Codes that affect vinyl siding, polypropylene siding, and insulated vinyl siding and the buildings they provide regulations for are:*

- > International Residential Code (IRC) One- and two-family dwellings, including townhouses
- > International Building Code (IBC) Other than one- and two-family dwellings, including apartments and hotels
- > International Energy Conservation Code (Energy Code) Energy efficiency
- > International Wildland-Urban Interface Code (IWUIC) Communities that are built in areas prone to wildfires/forest fires

# INTERNATIONAL RESIDENTIAL CODE



*IRC Chapter 7 provides general product and installation requirements for siding.*

## PRODUCT REQUIREMENTS (IRC R703)

Products must be certified and labeled to show they conform to their established ASTM standard:



INSULATED VINYL SIDING  
ASTM D7793



POLYPROPYLENE SIDING  
ASTM D7254



VINYL SIDING  
ASTM D3679

## INSTALLATION REQUIREMENTS

IRC Table R703.3 (1) Provides prescriptive and performance installation requirements:

- › In general, vinyl and insulated vinyl siding are installed 16 inch on center using roofing nails, although variations are allowable
- › Polypropylene siding is typically installed at 16 inches or less on center intervals and must be installed over some type of wood sheathing, according to the manufacturer's installation instructions



## LIMITATIONS

- In general, vinyl siding, polypropylene siding, and insulated vinyl siding are not limited in their application with homes built under the IRC.
- In two instances, performance measures related to high density construction and fire will apply.
- IRC R302 General.
- IRC Table R302.1 (1) places requirements of a 1-hour-tested assembly according to ASTM E119 on exterior walls that are 5 feet or closer to the property line.
- Vinyl siding is a part of many UL rated E119 assemblies.

### Polypropylene Siding

IRC R703.14.2 places a limitation on the use of polypropylene siding of a 5 feet separation distance and 10 feet separation for buildings on the same lot. Of course, this provision does not apply to walls that are perpendicular to the line used to determine the separation distance (example: front and rear elevations of townhouse construction).

# INTERNATIONAL BUILDING CODE



Insulated Vinyl Siding is not recognized in the IBC. Building officials may rely on code compliance reports for verification based on the established standard for the product category ASTM D7793.

IBC Chapter 14 provides general product and installation requirements for siding.

## PRODUCT REQUIREMENTS (IBC 1404)

Products must be certified and labeled to show they conform to their established ASTM standard:



INSULATED VINYL SIDING



POLYPROPYLENE SIDING  
ASTM D7254



VINYL SIDING  
ASTM D3679



## INSTALLATION REQUIREMENTS

- > IBC 1405 provides prescriptive and performance installation instructions
- > In general, vinyl siding is installed 16 inch on center using roofing nails, although variations of this can be done
- > Polypropylene siding is typically installed at 16 inch or less on center intervals and must be installed over some type of wood sheathing, according to the manufacturer's installation instructions

## LIMITATIONS

- In general, the use of vinyl siding is allowed in Type V and V-B construction and other types of construction when certain test results are demonstrated according to IBC 1406.
- Vinyl siding is allowed on buildings where the ultimate wind speed does not exceed 100 mph and the building height is 40 feet or less. **Note:** If the building exceeds these conditions then documentation may be provided to show necessary adequate performance.
- Polypropylene siding has the same limitations as vinyl siding, except it is only allowed on Type V-B construction.
- Insulated vinyl siding limitations will be listed in the code compliance report.
- IBC Table 602 and IBC 705.5 place certain fire resistive ratings on walls depending on the occupancy, type and size of building based on ASTM E119 tests.
- Vinyl siding is a part of many UL rated E119 assemblies. In addition vinyl siding is allowed to be part of IBC 722's calculated fire resistive approach.
- IBC 1406 allows the use of vinyl siding (and other combustible cladding) with Types I, II, III, IV under certain conditions as long as its application is 40 feet or less height above plane.
- If combustible vinyl siding is used with Types I, II, III, IV construction, it must be tested in accordance with NFPA 268 (IBC 1406.2.1.1) and perform to certain levels depending on the fire separation distance (density) of the building.



# ENERGY CODE & IWUIC

*Insulated siding can be used to meet the R-Value/U-factor requirements of the IECC.*



## INTERNATIONAL ENERGY CONSERVATION CODE

*The IECC prescribes insulated siding as a building material that can be used as continuous insulation outside of the building framing to provide the required total wall R-Value.*

Insulated siding can be used to meet the R-Value/U-factor requirements of the IECC.

IRC N1102.1.3 (R402.1.3) of the 2015 IECC allows the R-Value of insulated siding to be used as part of the prescriptive R-Value computation approach and may be used to satisfy the R-Value insulation requirements of IRC N1102.1.3 (R402.1.3) Table 402.1.2.



## INTERNATIONAL WILDLAND-URBAN INTERFACE CODE

*Vinyl siding is allowed for use under this code in all conditions with certain performance requirements.*

IWUIC Table 503.1 shows that there are three different types of risk categories that impact the requirement for the type of Ignition Resistant (IR) wall construction. In the most stringent IR wall construction (IR1 and IR2) vinyl siding may be used so long it is a part of a 1-hour UL E119 rated assembly and can exhibit a flame spread index no greater than 25. When an IR3 condition applies, there are no requirements on specific type of wall construction or cladding.



# QUICK REFERENCE CHART

	VINYL SIDING	INSULATED VINYL SIDING	POLYPROPYLENE SIDING
INTERNATIONAL RESIDENTIAL CODE	<b>PRODUCT REQUIREMENTS (IRC R703)</b> Products must be certified and labeled to show they conform to their established ASTM standard		
	ASTM D3679	ASTM D7793	ASTM D7254
	<b>INSTALLATION REQUIREMENTS</b> IRC Table R703.3 (1) Provides prescriptive and performance installation requirements		
	In general, vinyl siding is installed 16 inch on center using roofing nails, although variations of this can be done	In general, insulated vinyl siding is installed 16 inch on center using roofing nails, although variations of this can be done	Typically installed at 16 inches or less on center intervals and must be installed over some type of wood sheathing, according to the manufacturer's installation instructions
	<b>LIMITATIONS</b> In general, vinyl siding, polypropylene siding and insulated vinyl siding are not limited in their application with homes built under the IRC.		
			IRC R703.14.2 limits the use of polypropylene siding in certain high density applications.
INTERNATIONAL BUILDING CODE	<b>PRODUCT REQUIREMENTS</b> Products must be certified and labeled to show they conform to their established ASTM standard		
	ASTM D3679	Not Recognized*	ASTM D7254
	<b>INSTALLATION REQUIREMENTS</b> IBC 1405 provides prescriptive and performance installation instructions		
	In general, vinyl siding is installed 16 inch on center using roofing nails, although variations of this can be done	Not Recognized*	Typically installed at 16 inches or less on center intervals and must be installed over some type of wood sheathing, according to the manufacturer's installation instructions
	<b>LIMITATIONS</b> In general, the use of vinyl siding is allowed in Type V and V-B construction and other types of construction when certain test results are demonstrated according to IBC 1406.		
	Allowed on buildings where ultimate wind speed does not exceed 100 mph and the building height is 40 feet or less.***	Will be listed in the code compliance report	Same limitations as vinyl siding except it is only allowed on Type V-B construction
INTERNATIONAL ENERGY CONSERVATION CODE		Can be used as continuous insulation outside of the building framing to meet the R-Value/ U-factor requirements**	
INTERNATIONAL WILDLAND-URBAN INTERFACE CODE	Vinyl siding is allowed for use under this code in all conditions with certain performance requirements.		

\* Building officials may rely on code compliance reports for verification based on the established standard for the product category ASTM D7793

\*\* IRC N1102.1.3 (R402.1.3) of the 2015 IECC allows the R-Value of insulated siding to be used to comply with the energy code.

\*\*\*If the building exceeds these conditions then documentation may be provided to show necessary adequate performance. IBC Table 602 and IBC 705.5 place certain fire resistive ratings on walls depending on the occupancy, type and size of building based on ASTM E119 tests.



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*FOR MORE INFORMATION  
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