

# Pella® Entry Doors: Fiberglass and Steel

Owner's Manual







**Congratulations** on the purchase of your entry door from Pella! You have joined a select group of homeowners who have made their homes more beautiful and comfortable with Pella® products for nearly 100 years. Our fiberglass and steel Pella® Entry Doors offer more beauty, performance and value than any other door.

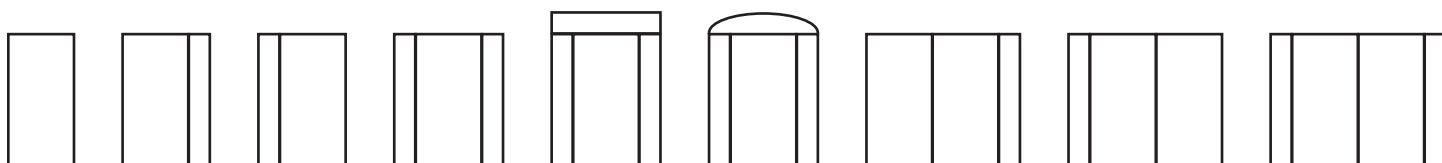
With proper installation, care and operation, your entry door will provide years of enjoyment. Read this manual thoroughly during your first few days of ownership so you feel comfortable operating, cleaning and maintaining your entry door. Then refer to it in the future, should a question arise.

Entry door systems from Pella offer elegant decorative glass, stylish hardware and a variety of finishes. But the real beauty of our fiberglass and steel entry doors is their outstanding performance, energy efficiency and low-maintenance features that make your life easier.

Finally, rest assured that Pella will be here for you today ... and for years to come. Your complete satisfaction is of utmost importance to us. If you have any questions or concerns – or would like to learn more about exclusive options available for your entry door – help is as close as your local Pella Window and Door Showroom or [pella.com](http://pella.com). A commitment to service that's as strong as our windows and doors.

# How to use your Pella® Entry Doors: Fiberglass and Steel owner's manual

The Pella Entry Door Owner's Manual contains specific information for troubleshooting and preventive maintenance to keep your entry door system operating smoothly for years to come.



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Go to [pella.com/warranty](http://pella.com/warranty).



# Quick Reference Guide

This diagram will help you identify the components of your entry door.

**Frame.** It's the framework that surrounds and supports the entire door system.

- Our innovative, low-maintenance frame system for fiberglass and steel entry doors is rot resistant and provides years of exceptional energy efficiency and performance.

**Frame corner construction.** Frame corners are a coped joint with metal fastener for exceptional strength and performance.

**Pella Unit ID.** To help save you time if your door ever needs service or repair, Pella products include a special identification number. On your entry door from Pella, you'll find the Pella Unit ID Number on the top hinge.

**Insulated foam core.** This insulation material inside the door panel contributes to the door's energy efficiency.

**Steel deadbolt reinforcement plate.** It provides added security by reinforcing the deadbolt and strengthening the door frame.

**Optional multipoint locking system.** Pella's multipoint lock features three dual-action deadbolts that extend into the door frame when engaged for added security.

**Sill/threshold.** This is the bottom of the frame that rests on the floor.

**Door sweep.** This energy-efficient and weather-resistant weatherstripping system at the bottom of the door forms a seal against air and water infiltration between the door and the sill.



# Operation

## Multipoint locking system

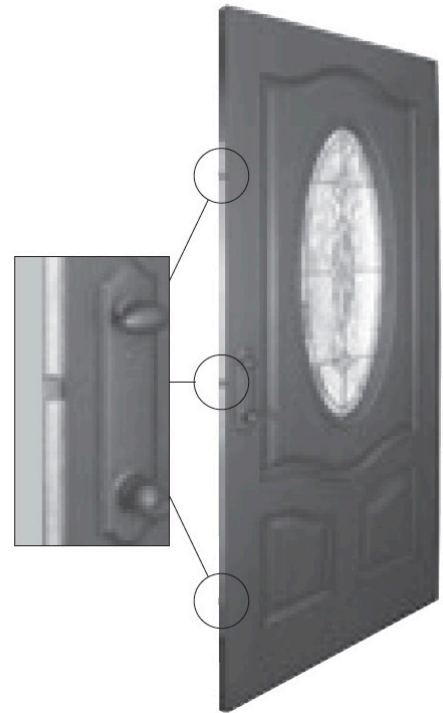
Available on fiberglass entry doors.

Pella's multipoint lock features three dual-action deadbolts that extend into the door frame when engaged. When disengaged, the deadbolts function as latches – disengage from the interior by pressing down on the interior handle. If your door is equipped with an entrance-grip handle set, squeeze the "trigger" to operate.

To engage the deadbolts, twist the thumbturn lock on the inside or turn the keylock on the outside. The three latches will extend to their deadbolt position.

The multipoint lock includes a "panic" feature, which allows you to disengage the deadbolts and operate the door with one smooth motion by pressing down on the interior handle. From the exterior, insert the key into the keylock and turn to disengage.

**CAUTION:** Make sure the door is completely closed before engaging the multipoint deadbolts. Failure to do so may damage the door's finish or frame.



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## Blinds-between-the-glass

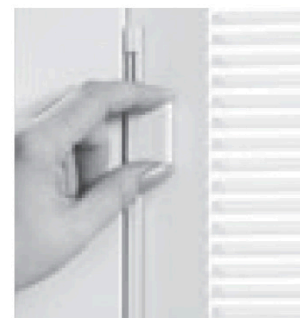
Available on select Pella entry doors

The aluminum blinds-between-the-glass are permanently installed between panes of glass so they stay clean and never need to be removed.

Move the operators up and down in a slow and steady motion. The operators are attached to the operating mechanism with high-powered magnets. Moving the operators abruptly could cause them to become disengaged from the magnet.

**NOTE :** If a handle becomes disengaged from the operator and remains attached to the track, slide the operator up and down until the magnet reengages. Slowly slide the handle all the way to the top of the track to fully engage the handle with the operator.

**NOTE :** If the blind does not completely lower on one side, using the tilt operator, ensure the slats are in the open position, then raise and lower the blind.



# Cleaning

## Cleaning the glass

To wash the glass:

1. Use a premixed vinegar-based cleaning solution (or make your own with one part white vinegar to 10 parts water), and apply to a soft, clean, lint-free microfiber cloth or paper towel. Or you may use an ammonia-free glass cleaner such as Windex® (clear liquid) or Sparkle® (purple liquid). Feel free to be generous with the amount of cleaner you apply, but avoid getting any cleaning solution on the door panel as it may discolor the finish.
2. Rub from several different directions.
3. Rinse with clear water if streaks remain after cleaning

**CAUTION:** Do not use glass cleaners that are ammonia- or alcohol-based. They may leave streaks or produce a film that attracts moisture or dust.

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## Spot-cleaning stubborn materials on all glass

To remove any markings from grease, oil, tape adhesive, crayons or paint, or marks from plastics that may have come in contact with the glass:

1. Apply a small amount of a nonabrasive cleaner such as Bar Keepers Friend® (SerVaas Laboratories) to a clean, wet cloth – or apply a solvent such as acetone or mineral spirits to a clean, dry, lint-free microfiber cloth or paper towel.
2. Rub on the areas of glass that need spot-cleaning. Avoid getting any cleanser or solvent on the door panel as it may discolor the finish.
3. Wipe clean using a clean, dry, lint-free microfiber cloth or paper towel.
4. Then clean the glass as instructed above.

**CAUTION:** Do not use a razor blade to scrape off stubborn materials – doing so may leave permanent marks on the glass or scratches that could cause glass breakage. Contact the Pella Window and Door Showroom nearest you for special cleaning instructions.



## Cleaning the door panel

A warm, damp cloth and mild soap may be used on all Pella® fiberglass or steel entry door panels.

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## Cleaning hardware finishes

A soft cloth and mild cleaner may be used on most hardware finishes for entry doors from Pella.

# Finishing

## Overview

If your entry door from Pella was delivered without an interior or exterior finish (paint or stain), you must finish it within 30 days to protect your investment. Painting or staining and sealing help ensure your entry door will beautify and protect your home the way it was designed to. **Please note that failure to finish your Pella® products in a timely manner may void their warranty.** The Pella warranty does not cover issues associated with improper finishing. Please refer to the warranty at [pella.com/warranty](http://pella.com/warranty).

Pella Corporation is recognized as a quality manufacturer of entry doors. However, your local paint professional is the best source for expert advice on finishing your door. Whether you choose to stain your new entry door or paint it to match your interior décor, be sure to consult your local finishing professional and follow the recommendations in this manual to achieve maximum beauty and performance from your entry door.

**NOTE :** For a professional-looking painted finish, it's important to use quality brush or spray techniques. Contact your local paint professional for recommendations.

**NOTE :** Installation of a steel entry door within five miles of a seacoast is not recommended due to the risk of corrosion, and it will void Pella's steel entry door warranty.

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## Before you begin

Before finishing your entry door system from Pella, you must know whether your entry door panel and sidelights are fiberglass or steel. If you're unsure if your entry door is made of fiberglass or steel, place a small magnet on your door – if it sticks, it is most likely steel. Your Pella packaging and/or sales invoice should indicate the door type, or check with your Pella representative for specific information on your product.

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## Fiberglass vs. Steel

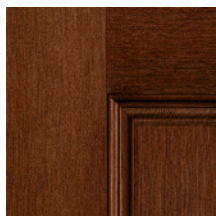
- **Oak-, Fir-, and Mahogany-grain fiberglass entry doors** and sidelights can be gel-stained for the beautiful look of wood or painted to complement the colors of your home's exterior or interior trim. Finishing is required.
- **Smooth fiberglass doors** and sidelights can be painted but not stained. Painting is required.
- **Steel doors** are factory-primed and can be painted but not stained.
- **Exterior frames** for fiberglass or steel panels feature an innovative composite material, which is available Smooth or in a Wood Grain texture that is similar to Mahogany grain. The Wood Grain frames can be painted or stained, whereas the Smooth frames can only be painted. Please consult your Pella retailer if you need assistance identifying the frame texture.

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## Pella® Entry Doors: Fiberglass and Steel



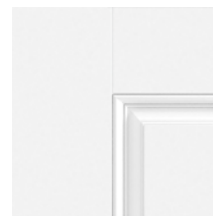
Oak-Grain  
Fiberglass



Fir-Grain  
Fiberglass



Mahogany-Grain  
Fiberglass



Smooth  
Fiberglass



Smooth  
Steel

## Finishing questions

Your local paint/finish store representative can best address your specific finishing needs.

Here are some questions you should ask:

- What are my finish options?
- Which finishes perform best in my region of the country?
- How does the temperature and humidity level at the time of finishing affect my results?
- Should I use an interior or exterior product?
- What do I need to know about product compatibility – for example, between the pre-stain, stain and finish coats?
- What else should be considered to obtain the best results?

**CAUTION:** To maintain proper product performance, DO NOT remove factory-installed weatherstripping, dust pads or gaskets when finishing your products. Air and water leakage may result and will void the warranty if factory-installed items are removed. Instead, we recommend taping off these items to protect them during the finishing process.

**NOTE :** Always wear protective personal equipment when sanding, and read and follow the manufacturer's directions for proper use and disposal of paint, stain or other finishing materials.



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## Finishing tips

- Only stain, paint or apply topcoat when the temperature is between 50° F (10° C) and 90° F (32° C) and humidity is between 30% and 70%.
- Only apply finishes in a well-ventilated area.
- Paint, stain and apply topcoat to all exposed unfinished edges and surfaces of the door and frame.
- **All exterior exposed surfaces should be finished within 30 days of initial exposure.**
- **Do not apply finish of any kind in direct sunlight.**
- Do not sand the fiberglass door.

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## Cleaning the door panel and sidelights

Using a clean, dry rag, wipe the entire surface of the door with mineral spirits or acetone for fiberglass and steel panels. Allow the door to dry completely. Then mask all hinges, glass and weatherstripping to prevent the finish from coming in contact with these components. Mask all areas on the unit that you do not wish to finish. Remove or mask any additional hardware on the door (handle, kick plate, etc.) prior to finishing.

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## Testing the stain

Prior to finishing your panel, color-test the stain. After stirring the stain well, apply it to a skin sample with a lint-free cloth; then use a 3" brush to brush out the stain to the desired shade. If you do not like the shade of stain, use mineral spirits and a clean rag to remove the stain and repeat stain application until desired look is achieved – then allow six to eight hours for stain to dry. When you have achieved the desired shade of stain, set the practice piece to the side and keep it to match to the final product.

**NOTE :** A stain shade can be controlled by the amount of dry time before brushing out the stain and the amount of pressure used to brush out the stain. Apply stain lightly at first. An additional coat of stain may be applied after eight hours. The more stain you apply, the darker the stain will look.



## Staining fiberglass

If a stained wood appearance is desired on wood-grain fiberglass door panels, sidelights and glass frames, apply gel stain and clear finish according to the stain manufacturer's directions. For best results, always apply stain in the direction of the grain. Be sure to finish door edges.

1. Stir stain well.
2. Using a stain sponge or brush, apply the stain to the components of the door first. The components that may be stained include the door edges, brickmould, jambs, mullions, and glazing frames (see "Finishing the frames" on page 4.5).
3. For the panel, work the stain first into the flat portions of the grain and then into the grooves surrounding them by rubbing stain in a circular motion with a stain sponge.
4. Stain all the interior-most section(s) of the door panel, and gradually work toward the outside of the panel.
5. Stain all sections perpendicular to the interior section(s) just stained.
6. Stain the outermost sections of the door panel.
7. After the entire door has been covered with stain, use your sponge and lightly drag it in the same direction as the grain in each section to remove any swirl marks in the stain.
8. Add texture to the stain for a natural look.
  - Oak-, Fir-, and Mahogany-grain fiberglass entry doors. After the desired color has been achieved, but before the stain has dried, "feather" the stain in the direction of the grain using a clean, dry 3" bristle brush to remove any blotchy areas and blend areas of heavy or light stain. Dab brush in corners and crevices to pull out excess stain.
9. Allow stain to dry completely (at least eight hours) before proceeding.
10. Remove excess stain on brush by wiping brush on a dry cloth.
11. Clean brush with mineral spirits when finished.

**NOTE :** Optimal drying conditions are between 50° and 90° F and between 30% and 70% humidity. Since drying time varies depending on temperature and humidity levels, drying time may increase if staining is done in lower temperatures and/or higher humidity than suggested.

12. If a darker stain color is desired, repeat Steps 3 - 8 to apply a second coat.

**NOTE :** Be sure to clean brush thoroughly if it will also be used to apply the clear topcoat. Otherwise, dispose of brush.

13. Dispose of waste according to local regulations

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## Topcoat application - Stain

Allow the stain to dry at least 48 hours prior to applying topcoat. To test for dryness, get stain sample done prior to staining door and place a piece of masking tape over stain. Rub tape onto surface, and in one quick motion, remove tape. If no stain is removed, the stain is dry. It is recommended that the door panel is recoated with topcoat every 18 - 24 months. Failure to do so may void manufacturer's warranty. Please see your manufacturer's warranty information for more details.

**NOTE :** A minimum of two coats is recommended. For exterior exposures, a minimum of three coats is recommended.

1. Stir topcoat well.
2. Wet only the tip of the brush, and apply one thin coat. Brush in the direction of the grain.
3. Apply topcoat to various door components and door panel parts in the same sequence as the stain was applied.
4. Clean brush with mineral spirits or paint thinner.
5. Wait at least six hours between each application of the topcoat. Finish must be completely dry before applying the next coat.

**Do not sand between coats.**

6. Repeat Steps 1 - 4 for each additional coat applied.

## Painting - Selecting your door paint

If you are going to paint your entry door panel, be sure to ask a qualified paint/finishing professional to recommend a paint with good blocking resistance. Don't rely on a paint's price or brand name in making your selection – an expensive paint may not necessarily offer good blocking resistance. Failure to use a high-quality paint with good blocking resistance may result in a door that sticks shut even after the paint has dried.

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## Painting fiberglass

Promptly paint all exterior surfaces, including door panel edges, with two coats of quality exterior paint with good blocking resistance. Then paint all interior surfaces with two coats of quality interior paint with good blocking resistance.

1. Stir paint well.
2. Wet only the tip of the brush, and apply one thin coat.
3. Apply paint to various door components first, such as the door edges, brickmould, jambs, , mullions, and glazing frames. Then paint the panel.
4. Clean brush.
5. Wait at least six hours between each coat application of the paint. Finish must be completely dry before applying the next coat  
**Do not sand between coats.**
6. Repeat Steps 1 - 4 for each additional coat applied.

**NOTE :** A primer may be necessary to get proper adhesion. Contact your local paint supplier to determine if a primer is necessary with the selected paint.

**CAUTION:** Finish all exposed door panel edges, including the top edge. This helps reduce the chance of warping. After finishing the entry door system, allow the door to dry completely, in accordance with the paint manufacturer's directions, before closing it.

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## Painting steel

Steel doors are factory-primed and do not need additional priming. They must be painted promptly after wiping the door clean with a solvent such as acetone or mineral spirits. Allow the cleaning solvent to dry completely - until there is no residual odor. Once wiped clean, the door must be lightly sanded with a 220-grit sandpaper. After sanding, the door must be washed with a mild detergent in warm soapy water, rinsed and then dried. Paint all exterior surfaces and door panel edges with two coats of quality exterior paint with good blocking resistance. Paint all interior surfaces with two coats of quality interior paint with good blocking resistance. Paint can be either brushed or sprayed on.

1. Stir paint well.
2. Wet only the tip of the brush, and apply one thin coat.
3. Apply paint to various door components first, such as the door edges, brickmould, jambs, mullions. Then paint the panel.
4. Clean brush.
5. Wait at least six hours between each coat application of the paint. Finish must be completely dry before applying the next coat.  
**Do not sand between coats.**
6. Repeat Steps 1 - 4 for each additional coat applied.

**CAUTION:** Finish all exposed door panel edges, including the top edge; this helps reduce the chance of warping. After finishing the entry door system, allow the door to dry completely, in accordance with the paint manufacturer's directions, before closing it.

## Finishing the frames

Pella's complete panel and frame system is engineered to be exceptionally energy efficient. The system does not absorb moisture and is rot resistant.

If you ordered the composite frame unfinished, be sure to clean the surface and paint or stain all surfaces promptly. Paint or stain all surfaces with two coats of quality paint or stain on the interior and exterior surfaces.

**NOTE:** Wood grain composite frames can be painted or stained, whereas the smooth composite frames can only be painted. Please consult your Pella retailer if you need assistance identifying the frame texture.

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## Touch-up and repairs - Stain and topcoat

**NOTE :** Do not sand damaged area.

1. Wipe damaged area using a clean cotton swab or cotton rag damp with mineral spirits. Allow area to completely dry before applying stain.
2. Make sure the color-matched stain is shaken/mixed well before using for touch-up.
3. Apply stain to damaged area using an artist brush. DO NOT over-brush the area.
4. Dab at the freshly applied stain with a cotton swab until color match is achieved.

**NOTE :** Repeat stain application and dabbing until desired look is achieved. Allow newly stained area to dry before applying topcoat.

5. Using a polyurethane varnish, apply a fine coat of topcoat over the restained area with a clean artist's brush. Blend as necessary.

**NOTE :** The size of touch-ups should be kept to a minimum.

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## Touch-up and repairs - Paint

**NOTE :** Do not sand damaged area.

1. Wipe damaged area using a clean cotton swab or cotton rag damp with water. Allow area to completely dry before applying paint.
2. Make sure the color-matched paint is shaken/mixed well before using for touch-up
3. Apply a thin layer of color-matched paint to damaged area using an artist's brush.

**NOTE :** Use a finer brush for smaller scratches or scuffs.

### CAUTIONS:

- Avoid inhalation of fumes or ingestion of stains, topcoats or paints. Follow material-specific safety instructions if necessary.
- Only use materials in a well-ventilated area.
- Keep all materials out of the reach of children.
- Close all containers when not in use.

# Recommended Maintenance

## Overview

Pella recommends you inspect your entry door at least annually as part of a home checkup. Recommended maintenance can prolong the life of your entry door and will help ensure maximum warranty coverage. It is recommended that the door panel be recoated with a topcoat every 18 - 24 months. Failure to do so may void manufacturer's warranty. Please see your manufacturer's warranty information for more details. As needed, clean, repaint or restain your entry door, and recaulk around it to help maintain optimal performance. Also, be sure to regularly check for leaks and improper drainage above or around vents and sprinkler systems that may subject your entry door to prolonged water exposure. With recommended care, entry doors from Pella can reward you with decades of beauty and performance.

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## Maintaining the interior

At least once a year, inspect the interior finish of your entry door to make certain that the painted or stained finish is in good condition. Ultraviolet rays from the sun can break down the finish and compromise its protective features.

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## Maintaining the exterior

An annual checkup can help preserve and maintain the beauty of your Pella® products for years to come. Inspect the sealant/caulking on the exterior perimeter of your entry door and frame at least once a year. The sealant/caulking helps create a watertight seal between the door frame and the exterior siding (whether it is vinyl, cedar, aluminum, brick, etc.). It is extremely important that the sealant/caulking remains intact and in good condition at all times. The sealant material should not be cracked, broken or missing – or it may cause premature failure of your entry door or other parts of your home. Deterioration that occurs as a result of improper or insufficient maintenance is not covered by the Pella warranty. At the same time, check the exterior paint for corrosion, peeling and/or cracking. If the exterior surface indicates any deterioration, problem areas must be touched up as soon as possible to prevent further damage.

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## Salt spray environments

The seacoast environment is extremely hard on all sorts of products (automobiles, recreational vehicles, building products, etc.). Any product used in a seacoast location will require more frequent inspection and maintenance to help it last as long as possible in this harsh environment. Entry doors are no different from other products in this respect.

If your home is in a coastal environment and is subjected to wind-driven salt spray or salt fog, use a mild detergent soap and water to clean exterior and operating hardware at least quarterly – and more often, if necessary – to prevent salt or other abrasive materials from building up.

**CAUTION:** Do not power-wash.

**NOTE :** Installation of a steel entry door within five miles of a seacoast is not recommended due to the risk of corrosion, and it will void Pella's steel entry door warranty.



# Troubleshooting

## Overview

If you have a concern with your entry door from Pella or need additional assistance from an experienced professional, go online and visit [pella.com](http://pella.com) and look under "Where To Buy," or consult your Yellow Pages (under "Windows") for the Pella Window and Door Showroom nearest you.

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## Glass breakage or damage

In the event of glass breakage, consult the Pella Window and Door Showroom nearest you for assistance. Be sure to have your Pella Unit ID Number handy (see "Pella Unit ID: Service made simple" on page 7.1). For safety reasons and to ensure optimum performance, we strongly advise you consult a professional for glass replacement.

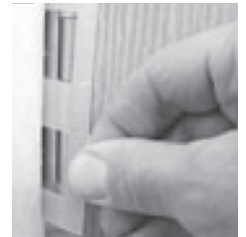
Most U.S. and Canadian local codes require the use of tempered glass in doors and other specific applications. Tempered glass can withstand greater impact than ordinary glass, but it is sensitive to scratches. Scratches can cause immediate or delayed breakage. If the glass is tempered, it will break into small, rounded pieces. If tempered glass is broken, likely by law it must be reglazed or replaced with tempered glass.

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## Difficult operation

### Frame adjustment

Another possibility is that the frame is not square. Measure the diagonal dimensions. If the two measurements are more than 1/8" in difference, the door may need to be reinstalled or panels may need to be adjusted accordingly.



### Door adjustment

- **Hinge shim adjustment** - If the screws are loose at the hinge areas, tighten up all screws at the hinges. You may have to replace or add plastic shims as needed in each hinge. Additional adjustments can be provided by your Pella service specialist at the Pella Window and Door Showroom nearest you.
- **Threshold adjustment** – The door panel may have an adjustable threshold at the sill. Using a straight blade screwdriver, turn all the screws counterclockwise to loosen the screws so the threshold can be lifted off the sill, or clockwise to tighten the screws so the threshold lowers closer to the sill. Some sills may have covers over the adjusting screws. These covers must be removed prior to making any adjustments. Use a stiff blade putty knife to pry the covers from the threshold. Repeat for each adjustment screw. Check for sufficient weatherstrip contact between the bottom weatherstrip and the threshold. Close the door on a dollar bill or sheet of paper located above an adjustment screw; light friction should be felt when pulling the paper out indicating a good seal is being made. If more clearance is needed, adjust the shims between the frame and rough opening.

**NOTE :** DO NOT raise the threshold height > 1/4", due to threshold likely not being secured firmly to the sill.

## Water and air infiltration

- **Loose, brittle or damaged weatherstrip** - Roll the weatherstrip back into the frame if it is loose; replace the weatherstrip if it's brittle or damaged. Also make sure that the weatherstrip joints at the head and jambs are closed. If not, remove the jamb weatherstrip and reinstall it higher up the jamb.
- **Loose, brittle or damaged door bottom seals** - If the panel door bottom seals are missing, misplaced, brittle or damaged, they must be replaced. Contact your Pella service specialist.
- **Frame or panel not square**- Infiltration can also be caused by a frame that is not square, preventing adequate slab-to-frame contact. Try tightening or loosening the hinge screws or adding or subtracting shims. You may replace the current weatherstrip with a long-reach frame weatherstrip in the head and lock jamb. Check corner pads to ensure these are properly placed on the frame corners.

If the door panel appears to be bowed, stretch a string from top to bottom straight along the panel. If there's a 1/4" or larger gap between the door leaf and the string, the panel has bowed sufficiently to cause operational problems.

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## Preventing roomside condensation

### Understanding condensation

Moisture is present in all homes, but when it becomes excessive, homeowners need to take an active role in protecting their investment.

### Humidity and condensation

Humidity is a measure of the amount of water vapor in the air.

Condensation is water that forms when warm, moist air hits a cooler surface. In homes, it might occur on surfaces such as windows, doors, mirrors, bathroom walls and cold-water pipes.

When interior humidity levels are high, relative to cooler outdoor temperatures, condensation can form on the coldest surface in a room –often the glass in a window or door. While windows and doors do not cause condensation, they may be one of the first places it shows up.

### Causes of condensation

Excess humidity is typically the cause of condensation. There are many sources for moisture in a home: showers, dishwashers, clothes washers and dryers, house plants, humans and pets, among others. In newly built homes, additional moisture may escape from building materials such as lumber, plaster and masonry for up to three heating seasons, even with proper airflow and temperature management.

### Older vs. newer homes

Condensation may be less of an issue in older homes if conditions allow for more air exchange between indoors and out, often from around aging, loose or poorly installed windows and doors. However, the tradeoff is higher energy costs. When replacement windows and doors are properly installed and the airflow around them decreases, condensation may form on the glass of the new windows and doors.

Newer homes, on the other hand, are more airtight and energy-efficient. Many have vapor barriers – plastic within the wall cavity blocking moisture passage in either direction. With tighter-fitting windows and doors, vapor barriers and increased insulation, energy costs are lower, but humidity levels must be monitored more closely.

No matter when your home was built, the key is to strike the right balance when it comes to humidity levels. Air that's too dry can cause the following: furniture to dry out and crack; joints and studs to shrink and twist; paint and plaster to crack. Excessive moisture in the home can cause paint to peel and insulation to deteriorate, and condensation on windows and doors can damage sills and trim.

## Measuring and controlling humidity

To determine how much humidity is present in your home, you can purchase a humidity gauge from a hardware store or home center. Invest in a quality unit for greater potential accuracy in assessing humidity levels, or consult an expert. Another way to monitor the interior humidity level is to watch your windows and doors. When interior condensation begins to form, wipe it off. To reduce the humidity, open windows, run exhaust fans or dehumidifiers, or minimize sources of moisture.

## Maximum recommended humidity levels

Outside Temperature	Inside Temperature
20° F to 40° F	Not over 40%
10° F to 20° F	Not over 35%
0° F to 10° F	Not over 30%
-10° F to 0° F	Not over 25%
-20° F to -10° F	Not over 20%
-20° F or below	Not over 15%

Based on engineering studies at 70° F conducted at the University of Minnesota Laboratories.

## Exterior condensation

Exterior condensation on windows and doors occurs primarily in the morning when days are warm and humid, but nights are cool. Typically, it clears as the day warms. Exterior condensation can occur at any time, especially in warm, humid climates where interior temperatures are cooler than outdoor conditions. Exterior condensation means that windows and doors are doing their job properly. However, if you spot excessive condensation on the inside of your windows or doors, check your inside humidity – it may be a signal of potential problems if not addressed.

## Tips for wintertime moisture management

- Open window coverings – such as blinds, shades, drapes and curtains – during daylight hours to increase airflow over the glass.
- Closely monitor the furnace humidifier and any other humidifying devices.
- Be sure louvers and vents for the attic, basement and/or crawl space are open, adequately sized and cross-ventilated.
- Run exhaust fans for kitchen, bathroom and laundry rooms for longer periods.
- Make sure exhaust fans vent directly outside, not into attics or crawl spaces.
- Be sure chimneys are free and clear so moisture in combustion gases can escape.
- Follow the manufacturer's instructions for venting gas appliances. In most cases, that will mean directing vents to the outside of the home.
- Make sure your furnace is in proper working order and is serviced regularly.
- Store firewood outside or in the garage – as wood dries, it gives off moisture.
- Install energy-efficient products, such as those that have earned the ENERGY STAR® rating.

## For more information on condensation in the home, consult the following:

- Home Moisture Problems (Series 1437), published by the Oregon State University Extension Services, <http://extensionoregonstate.edu/catalog/>. Search for "condensation."
- The University of Minnesota Extensions: <http://extensions.umn.edu>. Search for "condensation."
- Window and Door Manufacturer's Association: [www.wdma.com](http://www.wdma.com). Search for "condensation."
- University Wisconsin Extensions: [www.uwex.edu](http://www.uwex.edu). Search for "condensation."
- Efficient Windows Collaborative: [www.efficientwindows.org](http://www.efficientwindows.org). Search for "condensation."

**NOTE** : Condensation that forms in between the panes of insulating glass is not considered "roomside" condensation. Instead, this is an indication of glass seal failure, which cannot be corrected. Contact your Pella representative if this occurs.

