Helping Your Customers
Perform Easy DIY Home Weatherization

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INTRODUCTION

No matter how well-built your customers' homes are, chances are they still have some drafty areas. Maybe they can feel wisps of hot, humid summer air when standing near the kitchen window. Maybe there's a new gap between the front door and the floor. Or maybe they get an urge to put on a sweater when standing near the wall between their living room and garage.

It can be tempting for homeowners to just ignore these trouble spots. But they'll be happier and realize benefits if they don't—and you can help them along the way. A well-insulated and well-sealed home can improve air quality, control humidity and moisture, minimize outside noise, repel insect and rodent invaders, and help prevent destructive ice dams on the roof in the winter.

Plus, a home that's weatherized will improve energy efficiency and save money. ENERGY STAR® estimates that sealing the air gaps in a home and adding extra insulation where needed can cut monthly heating and cooling costs by 15 percent. That amounts to significant savings for a simple fix.

Of course, hiring a professional to seal air gaps or add extra insulation can negate these cost savings. According to Fixr.com, a service provider charges between $350 and $600 to seal doors and windows in a 2,500-square-foot house.[2]

But the good news for customers is that many utilities offer incentives for professional weatherization, and do-it-yourself home weatherization doesn't have to be daunting or difficult. In fact, it's often as easy—and as inexpensive—as installing weatherstripping or busting out the caulk gun.

All it takes is a three-step plan:

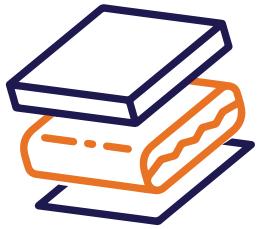
1. Identify a home's problem areas
2. Determine which materials are needed to weatherize those areas
3. Either install the materials or provide expert recommendations for customers willing to do it themselves

This e-book helps utilities and other professionals communicate the basics of weatherization with their customers, including how to explain its benefits and usefulness. Then, we'll provide easy-to-understand home weatherization steps that don't require construction expertise, or a significant amount of time or money.

CHAPTER ONE

Two Key Concepts Your Customers Need to Know

No matter your customers' level of expertise, there are two main areas to focus on when it comes to home weatherization: insulation and air sealing.



INSULATION 101

The outer walls of a house help protect its residents from the cold or hot air outside. But they can't do this very efficiently if they're poorly insulated. Insulation serves as a thermal buffer, sort of like an extra blanket on the bed. In a well-insulated home, less warm air escapes in the winter, and less cool air leaves in the summer.

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AIR SEALING 101

Unless your customer is Howard Hughes and has figured out how to hermetically seal their home, there are going to be gaps and cracks where outside air can leak in and inside air can leak out.

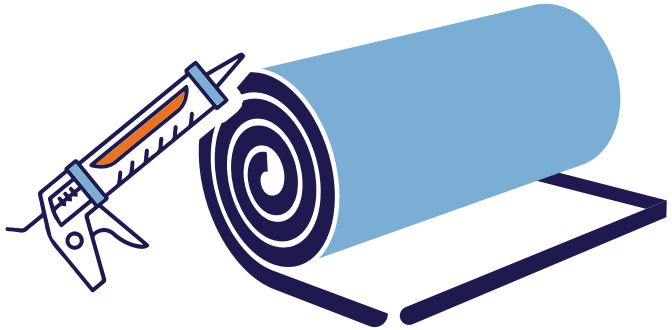
This not only reduces energy efficiency, but it can also increase the pollutants that flow inside a home and circulate. Too many air gaps in a home can substantially lower the air quality and increase the amount of pollen and dust, which can aggravate allergies, asthma and other breathing issues.

The dynamic duo of home weatherization

Improving the insulation and air sealing in a home boosts both the resident's comfort and their home's energy efficiency. But addressing one without the other may mean you'll just have to do the work all over again.

Insulating a home without air sealing means you risk letting hot or cold air leak in from the outside, through the insulation and directly into living areas. The insulation will help reduce this leakage, but it's not impenetrable.

Air sealing will help keep both outside and inside air from leaking through a home's walls, floors, ceilings, attics, ducts and other vulnerable areas. But without the right kind of insulating material in the right places, residents will still feel too cold or too hot—and waste plenty of energy. Even the most airtight walls need help from insulation to be an effective barrier between the inside and outside environments.



What your customers can do themselves

Communicate to your customers that it's best to consult a professional for whole-home insulation projects or when adding extra cellulose or fiberglass insulation to vulnerable areas, such as the attic. But for those who want to complete some quick and easy fixes themselves, using spray-foam insulation in targeted areas, like windows and doors, is a simple DIY weatherization option.

This is a great opportunity to promote certain items on your utility's marketplace—specifically products designed to insulate water pipes, hot water heaters, radiators, window air conditioners, and even light switch and outlet covers.

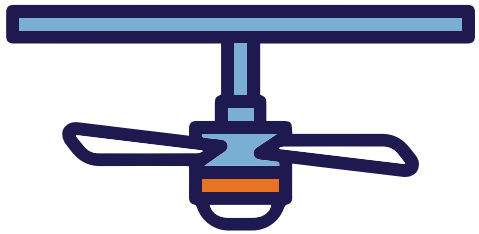
Homeowners can also complete sealing air leaks on their own. They may turn to your utility marketplace for door or window weatherstripping, door sweeps and shoes, caulks and sealants, tapes and matches, and materials to seal ducts inside and outside the home.

Be sure to let your customers know which weatherization products are available on your marketplace and how to access them.

CHAPTER TWO

Common Weatherization Trouble Spots

For a homeowner to detect a drafty area, such as a leaky window or door, it's sometimes as simple as walking around with bare feet or in shorts and a t-shirt, and noting where they feel warmer or colder. However, hidden air leaks can be tougher to discover without an expert. Here are some tips for uncovering hard-to-find air leaks without outside assistance.



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Besides windows and doors, common air-leak culprits include:[2]

- Ceiling fixtures, especially recessed lights
- Whole-house fans
- Air ducts
- Exterior light switches and electrical outlets
- Air vents
- Fireplace walls
- Garage/living space walls
- Chimney shafts/flues
- Attics and attic access
- Foundation and floor joists
- Spaces between flooring and baseboards

There are key signs that a particular space in a home is creating air leaks.[2, 3]

Attic. Your customers may have insulation or air seal problems in their attic if they have drafty rooms in the home, uneven temperatures between rooms, or ice dams on the roof in the winter. Also, if they have dirty spots in their insulation, that may be a sign of air leaks or mold. See Chapter 4 for tips on how to seal attic air leaks.

Basement or crawl space. If your customers' floors are cold, they have infestations of insects or rodents, or they have uneven temperatures between rooms, they may have issues in the spaces beneath the house. See chapter 4 for ideas on how to seal basement air leaks.

Wall, ceiling or floor connections. Instruct your customers to look for dirty spots on their ceiling paint and carpet. That may indicate air leaks where their walls and ceiling connect or where the walls and floor join together. These leaks can often be sealed with caulk or spray foam insulation.

Ducts. The key sign of air leakage around ducts is dust or smells coming from the attic, basement or crawl space. See Chapter 4 for information on how to seal leaky ducts.

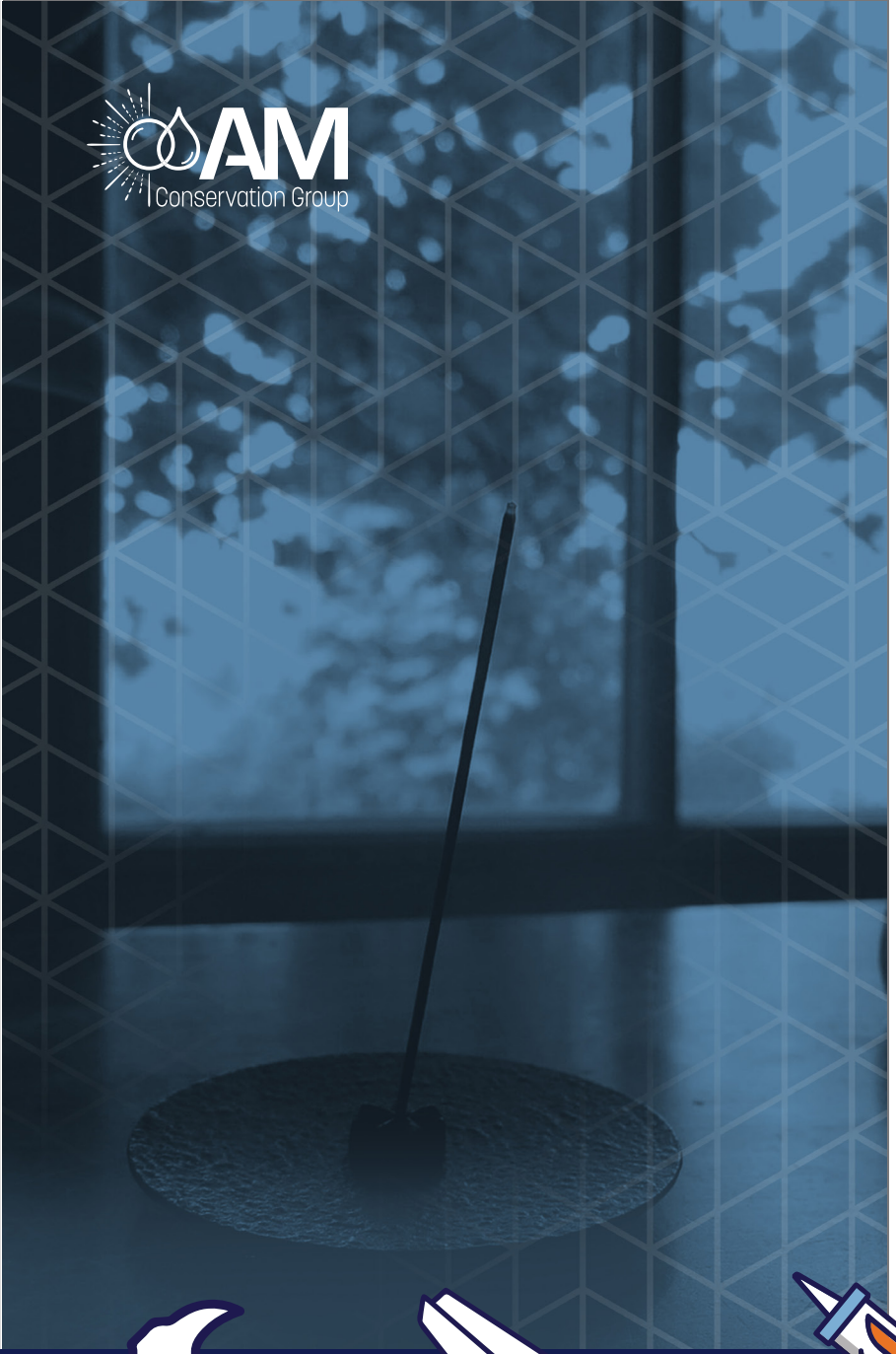
And, of course, high energy bills are a top sign that your customers have weatherization issues somewhere in their home. Showing customers how to solve these issues is an easy way to help engage them, improve their comfort and lower their monthly utility bill.

Simple techniques to find air leaks

Homeowners can use these recommendations from the U.S. Department of Energy to identify areas that may need weatherization.[4] Providing this information encourages customers to try a do-it-yourself approach to both weatherization and energy savings.

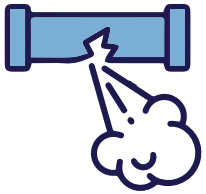
Take a walk. Inside the home, visually inspect the common air-leak or insulation culprits listed on pages 10-11. If you can rattle windows or doors, or see daylight seeping through their frames, they are likely sources of air leaks. And look for any daylight peeping in around window or door frames.

Outside, check for gaps or missing weatherstripping or caulk on all corners of your home, doors and windows, outdoor water faucets, electric and gas meter entrances, electrical outlets, and the areas where the foundation and the bottom of your home's brick or siding meet.



Channel your inner hippie. Light an incense stick and hold it near each edge of a window or door. If the smoke is pushed in a particular direction rather than rising in a steady stream, you likely have a leak.

Shine a light. When your lights are on in your home at night, go into your dark attic and basement and see if there are any areas where the light penetrates. Do the same thing with windows or outside doors.



Shut a door or window on a dollar bill. If you can easily pull the money out, you've got a leak that likely should be addressed.

Because air leaks or insulation problems in certain areas of the home can be hard to detect, encourage your customers to sign up for a home energy audit. Educate them on your utility's specific approach and make it a seamless process to register.

Communicating the steps of a home energy audit

A customer will only agree to participate in an expert-performed home energy audit if they know what to expect. Make sure to provide them with the necessary information to make an educated decision, including an outline of audit steps, such as:

Blower door testing. This entails placing a powerful fan in the frame of an exterior door. The fan pulls air out of the house, lowering the pressure inside. Then, the higher outside pressure forces air through any leaks in your home. The inspector uses a tool like a smoke pencil to detect those leaks—if the smoke wavers, you have a leak.

Thermal imaging. During this process, the inspector uses an infrared camera to reveal air gaps and leaks.

After the inspection is finished, review the recommendation report with the customer, then discuss if the weatherization issues can be addressed themselves or require professional assistance.

CHAPTER THREE

Weatherizing Windows and Doors

If you've identified gaps or leaks around windows and exterior doors, there are several easy and inexpensive fixes for your customers to undertake.

Sealing behind the trim

Even though this is the most difficult window and door weatherization project, it can offer the biggest bang for the buck by closing potentially large gaps. Plus, ENERGY STAR has an easy-to-follow, step-by-step guide.[5]

The first step is to remove the trim around the interior of the window or door. Then pull out the existing insulation between the window or door jamb and the framing.

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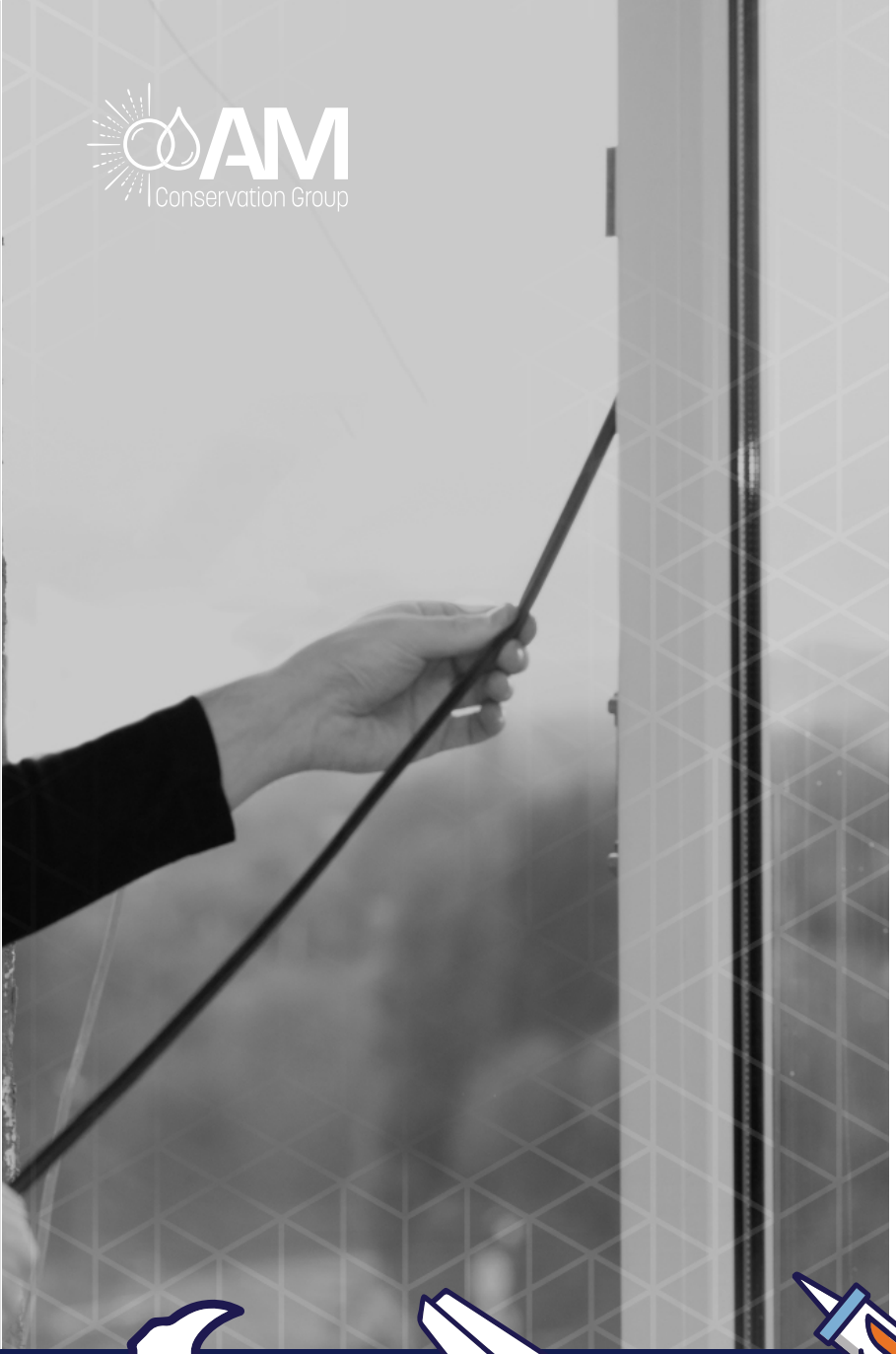
There are several options for homeowners to replace that insulation. If it's a big gap, they can cut strips of fiberglass insulation or backer rod (a cylindrical type of foam) and insert them into the opening. They must make sure not to force the materials into the space because that could bend the window or door frame.

Another option for a big gap is non-expanding, insulating foam sealant.[6] Users can simply spray it into the cracks, let it harden, and trim off any excess with a knife.

For gaps of a quarter inch or less, they can use a sealant or a caulk with a sealant. This combo keeps both air and moisture out, and can be painted to make it unnoticeable.

Once they've closed all gaps around the window or door, they can nail the trim back in place, fill up any nail holes with putty, and repaint or patch the existing paint.



Weatherstripping

If your customer would rather not remove window or door trim, applying new weatherstripping is an excellent option. The key, though, is to guide them in choosing the right type of material for their specific needs. The U.S. Department of Energy offers a handy guide, based on how they'll use the weatherstripping.[7]

Between the sash and frame of double-hung, casement or sliding windows. Users should opt for self-sticking vinyl weatherstripping, or for a classier look, they can choose metal (copper, aluminum or stainless steel). Both types create a tension seal that blocks drafts.

Vinyl weatherstripping requires a smooth, flat surface, and the applier must make sure the corners are snug. The window surface also needs to be at least 50 degrees for the weatherstripping to stick properly.

Metal stripping must be nailed in place, which makes it best for wood window frames. The nails will puncture the vinyl on vinyl-clad windows and are difficult to pound into metal windows. Metal stripping also may increase the resistance when closing the window or door.

Around a door or window or fitted into a door jamb. Felt weatherstripping, either made out of wool or reinforced with a flexible metal strip, is cheap and easy to install.

The disadvantage is that the felt must be stapled, glued or tacked into place and has low durability. It's also the least effective weatherstripping for reducing airflow.

Along the top and bottom of window sashes and doors. Tape made out of nonporous foam or rubber is good for covering corners or irregularly shaped cracks. It's easy to install but tends to have low durability.

On the bottom of doors. Metal door sweeps with a brush made of vinyl[8] are easy to install and can be adapted for uneven thresholds. If customers are worried about the brush dragging on carpet, opt for an automatically retractable version.

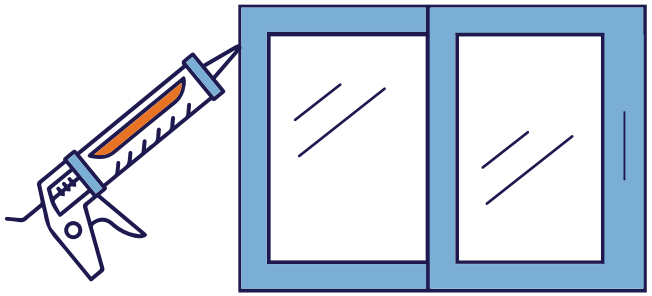
Another option is a door shoe,[9] but customers may not be familiar with this piece of equipment. You may need to educate them on what it is and where it's available for purchase on your marketplace. This is a particularly good option if your customer lives in a rainy climate, because the drip cap sheds water away from the door.

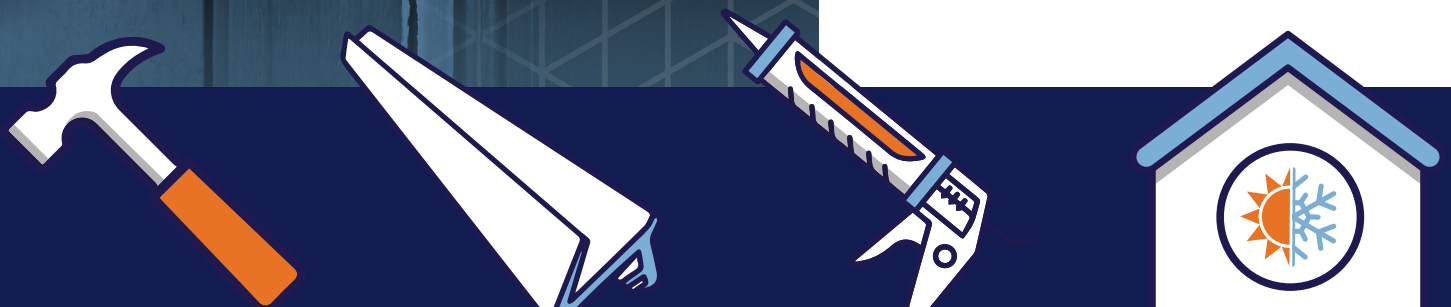
To determine how much weatherstripping is needed, customers should measure the perimeter of their doors and windows and then add 5 to 10 percent for waste. They must make sure the surfaces where they apply the weatherstripping are clean and dry.

Caulking

For small cracks in the joints of a window frame or the joints between a window or door and a wall, caulking is a good option[10]. According to the U.S. Department of Energy,[10] a user will need about half a cartridge of silicone, latex or acrylic caulk per window or door.

Silicone and acrylic caulk are multipurpose. Latex caulk is very water resistant, so it's a good option for the outside of windows and doors. But be sure your customers are aware it won't adhere to metal.





Here’s sound advice to give your customers when they apply caulk around windows and doors:

- Make sure the outdoor temperature is above 45 degrees so the caulk will adhere to surfaces and set properly. Try to avoid caulking when there’s high humidity.
- Clean and dry all areas you want to caulk.
- Hold the caulking gun at a 45-degree angle to get deep into the crack. This helps avoid air bubbles.
- Caulk in a continuous stream if possible. Stopping and starting may create unattractive joints.
- Make sure the caulk sticks to both sides of a crack and fills the crack completely.

CHAPTER FOUR

Weatherizing Other Areas of a Home

Weatherizing windows and doors is often cheap and easy. Other areas of the home may require more expertise and expense. But that doesn't mean your customers can't do plenty of DIY weatherization in their home's trouble spots. Here's what experts recommend.

Insulate and seal the attic

If an attic doesn't have any moisture, knob and tube wiring or vermiculite insulation (which contains asbestos), homeowners can seal leaks themselves, as long as they're not around hot spots like chimneys or heating ducts.[11]

Someone undertaking this project should begin by putting on protective clothing, like coveralls, and a dust mask. And it's important to place boards across the ceiling joists if they're going to walk around.

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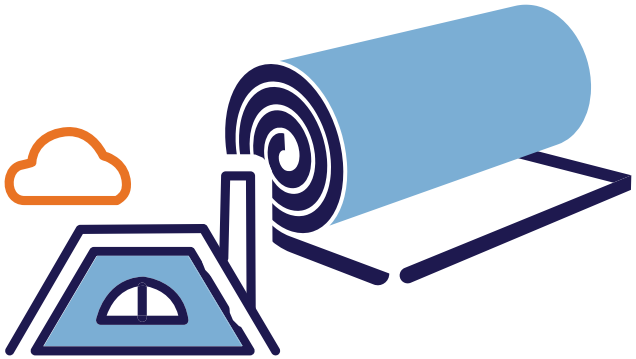
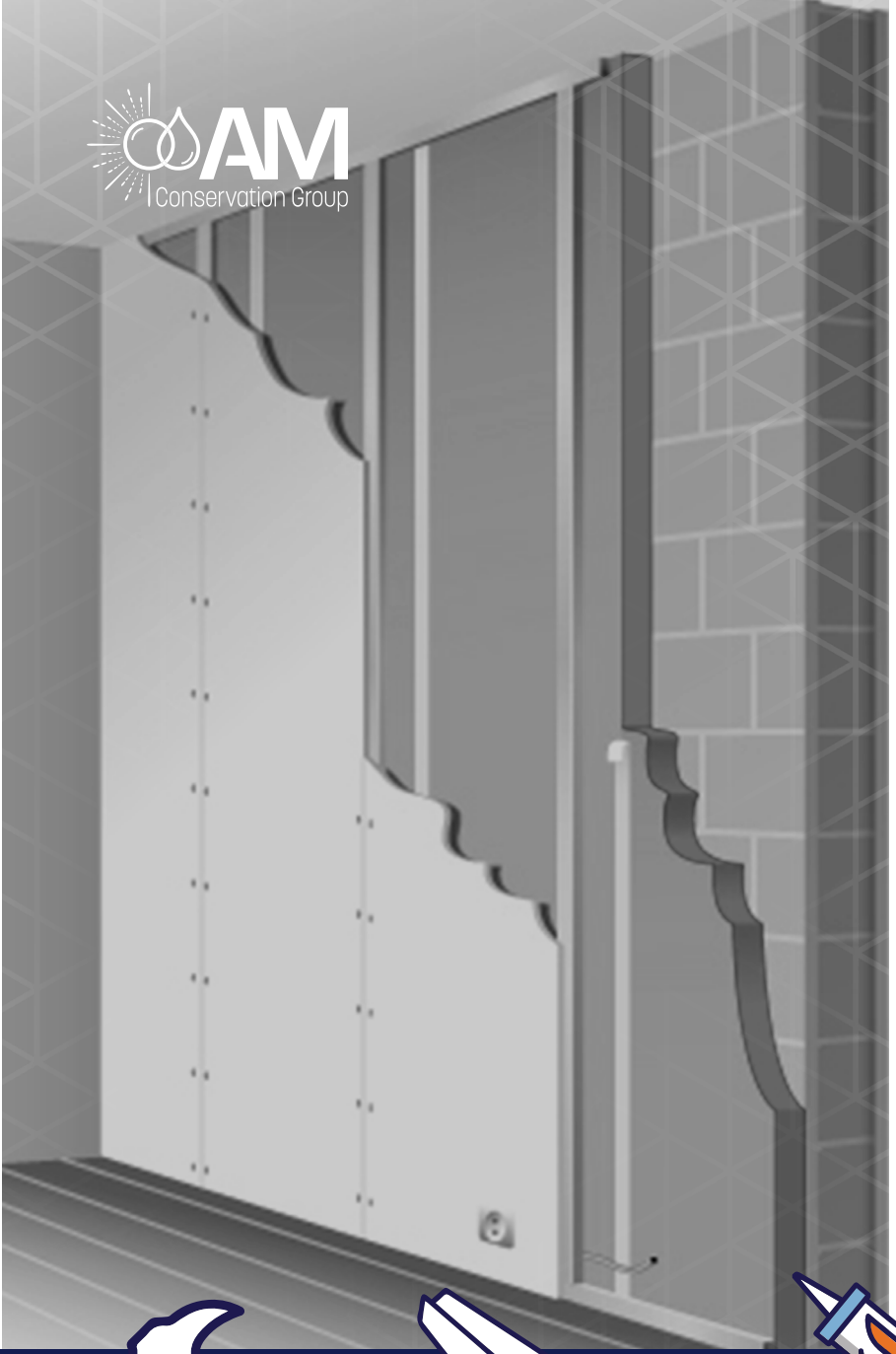
Then, look for areas where there may be air gaps—including holes around plumbing pipes or electrical wiring, and soffits for recessed light fixtures. Also look for gaps where the attic walls meet the home's ceiling. If some of these areas are covered by insulation, look for dirty spots, which can be a sign of dusty air leaking in from the living space.

Once a homeowner has identified any leaks, they must use weatherproof caulk to seal air gaps of less than a quarter inch, and spray foam insulation for bigger gaps. They can finish up by applying weatherstripping around the attic hatch to form a tight seal.

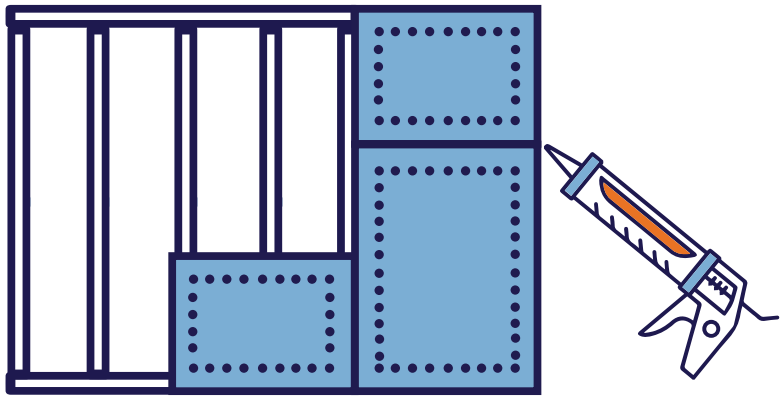




Batten down the basement

Walls made of cinderblock, concrete or drywall are easiest to air seal. Look for any gaps, especially around windows and doors, and caulk them shut. For windows, homeowners can use weatherstripping or Basement Window/ Wall and Pipe Patch Insulation, which is a pliable, adhesive-backed, polyethylene insulation that can be cut to size.[12]

Next, look for gaps around the holes where plumbing and electrical pipes and cables penetrate, and either caulk them or fill them with foam insulation. The homeowner can also insert pieces of foam block insulation in openings around joists, then spray foam insulation around the entire block.



Tighten the ducts

According to ENERGY STAR, a whopping 20 to 30 percent of the air that moves through a forced-air heating or cooling system escapes through leaks, holes or bad connections in the ducts.[14]

While your customers will need a professional to deal with duct holes or poor duct connections, you can guide them to easily fix most leaks around cooling ducts that are accessible through their attic, basement, crawl space or garage.

Ironically, they shouldn't use duct tape, which isn't long-lasting. Instead, they should use mastic sealant or metal tape.

Secure your switches

It's easy for homeowners to overlook exterior light switches and electrical outlets when weatherizing their home. But if these switches aren't properly insulated, they can be a direct conduit for cold or hot air leaks into their living space.

Fortunately, there's an easy fix. They can simply install foam gaskets to seal their outdoor electric receptacles.[15]

Takeaway

For customers, weatherizing their home can be one of the easiest and most inexpensive ways to increase their comfort, help the environment, lower their energy bills and improve their home's air quality.

Even if they've never wielded a caulk gun or have no idea what spray foam insulation looks like, your utility can guide them through the DIY process of weatherization. They'll be thrilled to find that their drafty windows, doors, attic and basement are things of the past, and they may even have a bit of fun along the way. They'll appreciate your utility's presence in ensuring their future is full of personal and financial comfort.

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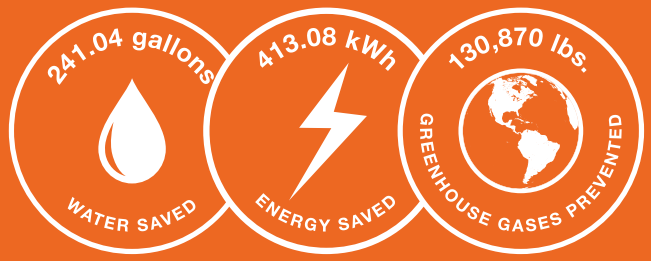
CONTACT US TO HELP YOU GUIDE YOUR CUSTOMERS DOWN THE PATH OF HOME WEATHERIZATION

RESOURCES

1. https://www.energystar.gov/campaign/seal_insulate/methodology
2. https://www.fixr.com/costs/air-leaks-sealing
3. https://www.energy.gov/energysaver/weatherize/air-sealing-your-home
4. https://www.energy.gov/energysaver/weatherize/air-sealing-your-home/detecting-air-leaks
5. https://www.energystar.gov/campaign/seal_insulate/sealing_window_door
6. https://amconservationgroup.com/dap-insulating-foam-sealant/?ctk=d3aa2446-ed54-48bc-844e-bd721b1ebd18
7. https://www.energy.gov/energysaver/weatherize/air-sealing-your-home/weatherstripping
8. https://amconservationgroup.com/browse-products/weatherization/door-sweeps
9. https://amconservationgroup.com/products.php?product=Door-Shoes
10. https://www.energy.gov/energysaver/weatherize/air-sealing-your-home/caulking
11. https://www.efficiencyvermont.com/tips-tools/guides/video-how-to-insulate-your-attic
12. https://amconservationgroup.com/basement-window-wall-and-pipe-patch-insulation/
13. https://www.energystar.gov/campaign/heating_cooling/duct_sealing
14. https://amconservationgroup.com/products.php?product=CADS-Fiber%252dReinforced-Duct-Mastic
15. https://amconservationgroup.com/switch-and-outlet-sealing-gaskets/

Digital Content Savings



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