



# pennsylvania

DEP at Home

## Build a Sustainable PA



### **Fiber Cement Siding**

This siding contains 30 percent post-industrial recycled material, which prevents millions of pounds of waste from being landfilled. It is also very durable and requires little maintenance. The majority of wood fiber pulp used in this siding is supplied from sustainably managed forests.

### **Insulated Concrete Forms (ICFs)**

ICFs have high insulation values and use about 44 percent less energy to heat and 32 percent less energy to cool than traditional wood-framed homes. The ICFs contain up to 45 percent recycled materials. They can withstand earthquakes and a three second gust of 150 mph wind.

### **Denim Insulation**

Insulation made from jeans! Denim insulation contains 80 percent post-consumer recycled content. There is a natural fire retardant used in this material which also prevents mold and mildew.

### **Rubber Roof Shingles**

These shingles contain up to 80 percent recycled post-industrial rubber and plastic. The post-industrial materials include waste like car bumpers and baby diaper production remnants. Manufacturing the shingles prevents these materials from ending up in landfills.

### **Cellulose Insulation**

Insulation made from newspaper! This cellulose insulation is made of 86 percent recycled newsprint. It is natural, non-toxic, non-corrosive and permanently flame-resistant. This product is manufactured in Pennsylvania, so there is less fuel used and fewer emissions to transport this material to a local home.

### **Spray Foam Insulation**

A two-component mixture comes together at the tip of an applicator to form an expanding foam that is sprayed onto roof tiles, concrete slabs, into wall cavities or through holes drilled in a finished wall cavity. Buildings treated with spray foam typically insulate up to 50 percent better than traditional insulation products.

### **Gypsum Drywall Panel**

These panels are used in exterior steel or wood-framed construction as a backup for siding, brick veneer and much more. They are composed of a fire-resistant gypsum core encased in recycled natural-finish face paper and recycled liner paper. This product is manufactured in Pennsylvania, so there is less fuel used and fewer emissions to transport this material to a local home.

### **Caulk Tube**

Air can leak into a home through windows, doors, plumbing vents, attic hatches and much more. This costs owners countless dollars in lost energy. Homes can be sealed using caulk that is low in volatile organic compounds. It's safe, and it will improve the home's efficiency.

## Low VOC Adhesive

This adhesive can be used in a variety of places and is non-toxic. Compared to traditional adhesives, it is low in volatile organic compounds, which means less harmful chemicals will off-gas into the room during and after application.

## Uniform Construction Code

The Uniform Construction Code provides minimum requirements for efficient design and construction for new and renovated residential and commercial buildings. Energy codes help to save money; protect the home from high utility bills and shoddy construction; ensure safety; provide quality and comfort; are a cost-effective investment; reduce pollution; increase reliability; and help consumers make informed decisions.

## Home Cooling

If your central air conditioning unit is more than 12 years old, replacing it with an ENERGY STAR qualified model could cut your cooling costs by 30 percent. **ENERGY STAR qualified central air conditioners** have higher seasonal energy efficiency ratio (SEER) and energy efficiency ratio (EER) ratings, making them over 15 percent more efficient than conventional models. **ENERGY STAR** certified ductless heating and cooling systems are an increasingly popular, cost-effective solution to replace inefficient baseboard electric heating and window air conditioners in older homes. Ductless split-system air conditioners and heat pumps, sometimes call mini-splits, are air conditioners or heat pumps that do not use ductwork for an air distribution systems. They are also used in new construction, home additions, multi-family (condo or apartment) housing, and to improve comfort in poorly heated or cooled rooms.

## Home Heating

ENERGY STAR qualified boilers have annual fuel utilization efficiency (AFUE) ratings of 85 percent or greater, making them 6 percent more efficient than models that simply meet the federal minimum standard for energy efficiency. Certified gas furnaces in the northern half of the U.S. are up to 16 percent more energy efficient than baseline models and can save an average of \$94 dollars in energy costs per year. Certified oil furnaces are up to 4 percent more energy efficient than baseline models and can save an average of \$66 in energy costs per year.

## Fun Facts

- Heating and cooling a home account for 45 percent of energy costs.
- U.S. residents spend 90 percent of their time indoors. Homes should be built with less toxic chemicals to ensure healthy indoor air quality.
- The greenest building is the one that's already built. In other words, make energy efficient upgrades and renovate an existing home with green materials instead of buying a new home.
- Green labels such as Energy Star or LEED for Homes on a single-family home provide a market premium of 9 percent compared to a similar home without a label.
- Currently in the U.S., there are 14,699 residential units and lots that have been Green Certified by the National Association of Homebuilders Research Center's National Green Building Certification Program.
- Currently in the U.S., over 21,000 residences have received LEED for Homes certification.
- Green homes comprised 17 percent of the overall residential construction market in 2011 and are expected to comprise 29 to 38 percent of the market by 2016.
- Consumers choose to build green homes because of the high quality materials used and concerns about rising energy costs.
- Builders heavily involved in green construction report that the average increased cost to build a green home is only 5 percent.