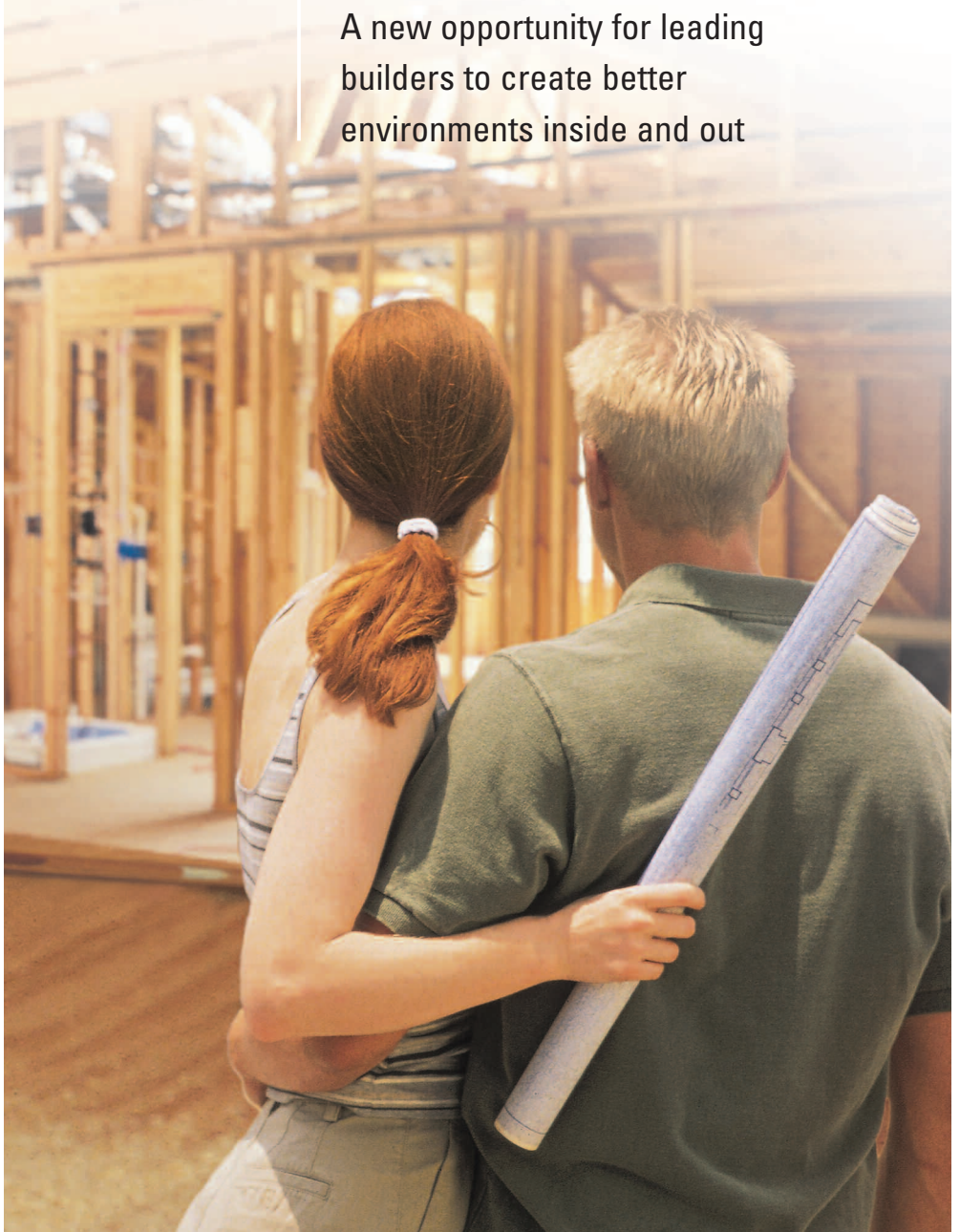




# STEP UP TO THE ENERGY STAR® INDOOR AIR PACKAGE

A new opportunity for leading  
builders to create better  
environments inside and out



# WHY DOES INDOOR AIR QUALITY MATTER?

People are increasingly concerned about mold, radon, carbon monoxide, and toxic chemicals commonly found in homes. In fact, U.S. Environmental Protection Agency (EPA) studies show that levels of air pollution inside the home are often two to five times higher than outdoor levels. And poor indoor air quality is associated with a host of health problems, including eye irritation, allergies, headaches, and respiratory problems such as asthma.

In addition, indoor air quality is having a sizable financial impact on the home building industry. Litigation associated with mold and other indoor air quality related concerns and the rising cost of liability coverage have cost builders across the country billions of dollars.

## WHY DESIGN AND BUILD WITH THE ENERGY STAR INDOOR AIR PACKAGE?



Builders can employ a variety of construction practices and technologies to decrease the risk of poor indoor air quality in their new homes. According to surveys, consumers are willing to pay up to \$5,000 more for these improvements.

EPA created the ENERGY STAR Indoor Air Package to help builders meet the growing consumer preference for homes with improved indoor air quality and energy efficiency. By constructing homes that meet EPA's stringent specifications, forward-thinking builders can distinguish themselves by being among the first to offer homes designed to deliver lower utility costs, greater comfort, better durability, and reduced risk of indoor air problems.\*

*\* The construction practices and technical specifications that comprise the ENERGY STAR Indoor Air Package are designed to contribute to improved indoor air quality in new homes compared to code-built homes. However, these measures alone will not guarantee that homebuyers will not experience air quality problems in their homes. Rather, the Indoor Air Package should be viewed as a way to reduce the likelihood of experiencing such problems. For example, factors such as unforeseen construction issues and homeowner behavior may negatively impact the home's indoor air quality and the performance of the measures specified in the ENERGY STAR Indoor Air Package.*



## HOW DO HOMES EARN THE LABEL FOR THE ENERGY STAR INDOOR AIR PACKAGE?

### **Start with ENERGY STAR**

A home must first be designed and built to earn the ENERGY STAR—the government-backed symbol for energy efficiency. The result is a home that is significantly more energy efficient than a code-built home.

### **Add indoor air improvements**

More than 70 additional home design and construction features are included in the Indoor Air Package to help protect qualified homes from moisture and mold, pests, combustion gases, and other airborne pollutants.

Some builders already include many of these features in their homes.

### **Complete the package with independent testing and verification**

The home's energy performance and many key features of the Indoor Air Package are inspected by an independent third-party to ensure that the builder has properly followed EPA's rigorous guidelines for energy efficiency and specifications for indoor air quality.

# WHAT DISTINGUISHES NEW HOMES WITH THE ENERGY STAR INDOOR AIR PACKAGE?

With the ENERGY STAR Indoor Air Package, EPA is challenging builders to step up to a new level of excellence by building homes with the following design and construction features:

**Moisture Control:** Build in added protection from mold and other moisture damage with water managed roofs, walls, and foundations that include drainage planes, flashing details, air sealing, foundation drain tile and coatings, and proper grading.

**Pest Management:** Provide a first-line defense against pest problems with screens at openings that cannot otherwise be fully sealed or caulked, concrete slab reinforcements to avoid cracking, and termite shields at the top of foundations in areas of the country subject to termite infestation.

**Heating, Ventilation, and Cooling (HVAC) System:** Improve indoor air quality with best practice installation of ducts and equipment to minimize condensation problems, whole-house and spot ventilation to help dilute and exhaust indoor pollutants, and air filtration to remove airborne particulates.

**Combustion-Venting Systems:** Protect residents from potential exposure to combustion gases by installing direct-vented or power-vented gas- and oil-fired equipment, properly vented fireplaces, garages fully sealed from living spaces and equipped with a continuously operated exhaust fan, and carbon monoxide alarms in each sleeping area.

**Building Materials:** Reduce sources of pollutants by protecting materials stored on-site from weather damage, selecting and installing materials to minimize the risk of moisture damage, meeting specifications for reduced chemical content, and ventilating homes prior to occupancy where installed materials are likely to emit airborne pollutants.

**Radon Control:** Provide radon-resistant construction in high-risk radon regions, including gravel and plastic sheeting below slabs, fully sealed and caulked foundation penetrations, plastic vent pipe running from below slab through the roof, and an attic junction box for easily adding an electric powered fan to the vent pipe if needed.



**Quality Assurance and Homeowner Education:** Help ensure that homes operate as designed by inspecting air-handling equipment and ductwork to be sure they are clean and free of debris and provide adequate air-flow,

verifying that all necessary testing has been performed, providing radon test kits for homes located in high-risk radon areas, and providing a manual to educate owners about their new home's indoor air quality features.

# IS YOUR COMPANY READY TO BUILD HOMES WITH THE ENERGY STAR INDOOR AIR PACKAGE?

## **1. Benchmark**

Download the Indoor Air Package specification from the ENERGY STAR Web site, compare current building practices to the required specifications, and identify the changes that will need to be adopted. Be sure to involve all relevant business partners such as architects, construction managers, and subcontractors.

## **2. Partner with EPA**

Download the "Indoor Air Package Commitment Form" from the ENERGY STAR Web site and return it signed to EPA. Partners will have access to the new ENERGY STAR Indoor Air Package logo, marketing and technical resources, and recognition from EPA.

## **3. Work with a Home Energy Rating System (HERS) Rater**

Contact a HERS rater who can offer assistance in adopting new measures and building practices, provide subcontractor training, conduct required field verification, label qualifying homes, and report builders' accomplishments to EPA.

## **4. Label Homes**

Incorporate and verify all required indoor air measures and ensure that qualifying homes receive the ENERGY STAR Indoor Air Package label.

## **5. Enjoy the Competitive Advantage**

Integrate the ENERGY STAR Indoor Air Package into marketing messages and materials, and educate sales staff to effectively communicate the features and benefits of homes with EPA-recommended indoor air improvements to new homebuyers.

**For more information or to review EPA's Indoor Air Package Specifications, visit [www.energystar.gov/homes](http://www.energystar.gov/homes)**

# WHAT IS ENERGY STAR?

ENERGY STAR is the government-backed symbol for energy efficiency, helping businesses and individuals protect the environment through superior energy efficiency. It identifies new homes, buildings, and more than 40 types of products that are energy efficient and offer the features, quality, and performance today's consumers expect. Products earning the ENERGY STAR label include appliances, lighting, vent fans, home office equipment, consumer electronics, and heating and cooling equipment. The ENERGY STAR label on a new home means that it is independently verified to be at least 15% more efficient than homes built to the 2003 IECC.

ENERGY STAR is a voluntary partnership between the government and more than 7,000 organizations, including over 2,500 of the nation's homebuilders. Together with the homebuilding industry, ENERGY STAR is working to achieve a common goal—protecting the environment for future generations by changing to more energy-efficient practices today.



Homes with the ENERGY STAR Indoor Air Package are at least 15% more energy efficient than homes built to the 2003 International Energy Conservation Code (IECC) and are designed to have improved indoor air quality compared to code-built homes.



United States Environmental Protection Agency  
Office of Air and Radiation (6202J)  
EPA 430-E-05-003