Cracking the Code.
Getting durable, energy-efficient homes down to a science.
ENTER
The science behind a more energy-efficient and longer-lasting wall.

DuPont is known for the products and people who are dedicated to helping you build better homes. DuPont™ Tyvek® Weatherization Products have set the industry standard for air, water and thermal management for over 30 years. And the DuPont™ Tyvek® Specialist Network is always there to help you choose the right DuPont™ Tyvek® Weatherization System. But there's much more to DuPont building science than that.

Today buildings account for 40% of all energy consumption. And by 2030, the world will consume 60% more energy than it does today. That's why building more energy-efficient and durable homes is more important than ever. It's why government agencies and building and energy code regulatory bodies are developing requirements that aim to dramatically improve energy efficiency.

We're here to help you navigate the ever-changing and more demanding building and energy codes, showing you how to take advantage of the latest weatherization technologies from DuPont. And we are collaborating with contractors, architects and building organizations around the world to develop innovative solutions to energy and efficiency challenges. As a result, we've created new resources like the DuPont™ Building Knowledge Center and tools like the DuPont™ CodeSense™ Durable Wall Builder. And this is just the start.
Now that the world's population has reached seven billion, we face unprecedented challenges. Science holds the answer to many of these issues, but providing for the food, energy and protection needs of a growing population will require more than DuPont science. That's why we're building alliances with people, companies and governments around the world in an effort to improve the lives of people everywhere. We call this The Global Collaboratory™.

Building science is a critical part of this initiative. We're working with key industry stakeholders such as scientists, engineers, builders, architects, governments and code regulators to help identify the solutions that will lead to more comfortable, sustainable and energy-efficient homes and buildings. And we'll continue to innovate by creating products and solutions that help make the world and the homes you build even better. Learn more.
How to meet building and energy codes, standards and certifications today and tomorrow.

No one needs to tell you that energy and building codes are changing quickly and becoming more challenging and complex. The fact is that the building codes you are subject to are becoming more stringent. Higher air leakage standards, mandatory air infiltration testing, and R-value requirements as high as R-25 may be required in some climate zones as 2009 and 2012 building and energy codes are adopted. Some building scientists believe R-value requirements for exterior walls could reach R-30 or higher by 2030 in many climate zones.

It helps to have an ally who can help you make sense of current and future codes and who can translate all of this into practical, science-based construction practices, so you have more time to build your business. At DuPont, we’re using our building science to bring you innovative products and service—new tools such as the DuPont™ CodeSense™ Durable Wall Builder—that not only help you meet and exceed code, but also help you continue to build high-quality homes.
Codes are changing. Are you ready?

Will you have to change the way you build? Meeting or exceeding the new requirements of building and energy codes requires a thorough understanding of what changes are coming.

The following links will take you to more information:

www.iccsafe.org  
http://reca-codes.org  
www.energycodes.gov
The energy efficiency improvement requirements in current and future building and energy codes will affect nearly every aspect of home construction. Residential builders will be required to install more insulation, reduce air leakage through the building envelope, conduct mandatory air infiltration testing and comply with many other measures designed to boost energy efficiency.

To help builders navigate changing building and energy codes and learn how to integrate the latest DuPont™ Tyvek® Weatherization Products into residential walls, DuPont has created the comprehensive DuPont™ CodeSense™ Durable Wall Builder. This digital tool takes the code and code year (International Residential Code®, International Building Code® or International Energy Conservation Code® 2006, 2009 or 2012), the climate zone where a house is to be built, and the house’s façade type, and generates reports that detail that code’s air, water and thermal requirements. Additionally, a CodeSense™ report also offers DuPont guidance on how to build code-compliant durable wall assemblies using the latest DuPont™ Tyvek® Weatherization Systems.

To consult with a DuPont™ Tyvek® Specialist and get a customized report for your project, click here.
Quality weatherization solutions.

For years, builders who care about quality have turned to DuPont for the products and solutions that help them build comfortable, energy-efficient homes. They recognize that DuPont™ Tyvek® Weatherization Systems provide integrated air, water and thermal management solutions that help them meet or exceed code requirements without sacrificing a building’s durability.

Soon, with the adoption of new codes that will affect almost all US climate zones, residential wood-framed wall systems (under 5 stories) will be required to have considerably higher R-values. Many builders plan to meet this enhanced insulation requirement by using 2x6 stud construction with R-20 cavity insulation, or 2x4 stud construction with R-13 cavity insulation and an additional R-5 attained through the use of continuous exterior foam insulation (climate zones 6 and 7 may require R-20 cavity plus R-5 exterior insulation, or R-13 cavity plus R-10 exterior insulation).

If exterior rigid foam insulation is used as an air and water barrier, it can lead to air and water penetration overtime. This makes using a properly installed Tyvek® weather barrier system with exterior rigid foam insulation a must. Whatever construction practice you use—a hybrid wall system with cavity and exterior insulation or a wall system with cavity insulation—there is a DuPont™ Tyvek® Weatherization System solution to help build durable, energy-efficient walls.

Complete, integrated weatherization systems and building science.

DuPont offers a complete range of weatherization systems that are easy to install, provide dimensional stability and have the optimal balance of air and water holdout and permeability. They help the wall stay drier, inside and out, by increasing the thermal performance of the wall’s interior insulation while enhancing the durability of the wall.

The DuPont™ portfolio of weatherization products includes:

**Weather Barriers**
- DuPont™ Tyvek® HomeWrap®
- DuPont™ DrainWrap™
- DuPont™ StuccoWrap®
- DuPont™ ThermaWrap®

To learn about DuPont™ Tyvek® weather barriers, click here.

**Advanced Flashing System products**
- DuPont™ StraightFlash™
- DuPont™ StraightFlash™ VF
- DuPont™ FlexWrap™ NF
- DuPont™ Flashing Tape

To learn about DuPont™ flashing products, click here.
Why it’s critical to use a weather barrier with exterior rigid foam insulation.

In some climate zones, the use of exterior rigid foam insulation will increase in order to meet higher R-value wall requirements. It has been suggested that exterior rigid foam insulation panels with taped seams can perform as an effective air and water barrier. But this is not the case.

In residential construction, XPS, EPS and polyisocyanurate foam boards are installed with butt joints. As the boards expand and contract over time, taped butt joints are taxed, which can cause the taped seams to fail, allowing water and air to easily penetrate into the wall cavity. Another issue occurs because of reverse shingling at horizontal tape joints. The taped foam joints cannot be lapped in order to properly shed water. As a result, water can enter into the top of the taped seam and continue into the wall system. This increases the chances of mold growth and wood rot as water accumulates in the wall system. Ultimately this can impact structural integrity and the wall’s thermal performance. In short, exterior rigid foam is a good insulator, but a poor long-term air and water barrier.

Using a complete DuPont™ Tyvek® Weatherization System with exterior rigid foam insulation solves all of these problems. The use of DuPont™ Tyvek® Weatherization System products over or under exterior insulation helps maintain a wall’s R-value by providing an air- and water-resistant barrier, resulting in improved structural durability and energy efficiency throughout the life of the home.

And Tyvek® Weatherization Systems are proven to contribute to tighter thermal envelopes. New codes will include stronger home air leakage requirements. For instance, the 2012 IECC will require all homes to have substantially reduced air leakage demonstrated by mandatory testing. Air leakage is required not to exceed 5 ACH50 (Air Changes per Hour at 50 pascals) for climate zones 1–2 and 3 ACH50 for the remaining climate zones.

A DuPont™ Technical Bulletin is available to help you learn more about the importance of integrating Tyvek® Weatherization Systems with exterior rigid foam board and the steps you can take to ensure your homes have high R-value walls that meet or exceed codes.

To download the Technical Bulletin, click here: Tech talk – weather barriers are a must with exterior foam sheathing. To view videos on installing Tyvek® Weatherization Systems over or under rigid foam insulation, click here.
Support wherever you need it.

DuPont building science means more than applying innovative ideas to create superior products—it’s also about applying innovative technology on the job site. The unique nationwide DuPont™ Tyvek® Specialist Network and DuPont™ Tyvek® Certified Installer Network let you tap into the knowledge and experience of highly trained industry experts. They're the people who can help you solve your weatherization challenges and work directly with your crew to ensure proper installation of all DuPont™ Tyvek® Weatherization Systems.

Working with DuPont means much more than purchasing superior products. From The Global Collaboratory™, which is tackling the toughest issues the world faces, to sharing in-depth knowledge on changing codes and building better buildings through the DuPont™ Building Knowledge Center and the DuPont™ CodeSense™ Durable Wall Builder, DuPont is developing the solutions that can help you build a better wall and a higher-quality home. And it all starts by putting the right information in your hands.
The DuPont™ Building Knowledge Center.

The DuPont™ Building Knowledge Center is where DuPont building scientists and residential and commercial construction professionals can collaborate on new ideas and evaluate weatherization solutions that will lead to construction practices that will yield more energy-efficient and durable homes.

DuPont building scientists work with the people, companies, governments and organizations that are shaping the future of the construction industry. The Building Knowledge Center has resources such as the DuPont™ Tyvek® Specialists Network, industry experts who work closely with you and your team on and off the job site to help provide quality weatherization solutions that help make buildings more durable, energy efficient and comfortable.

To learn more, click here.
The unique DuPont™ Tyvek® Specialist Network lets you tap into the knowledge and experience of highly trained building science and construction professionals at DuPont. They're the people who can help you stay current on changing codes, industry trends, technology and best practices to help you solve your weatherization challenges, while offering on-site instruction for the proper installation of all DuPont™ Tyvek® Weatherization Systems.

Tyvek® Specialists are also trained to use the DuPont™ CodeSense™ Durable Wall Builder to generate detailed reports that point out the code requirements for wherever you are building homes. Our Specialists can provide DuPont building science-based recommendations on how to use our products to help you build code-compliant, durable walls.

To locate a Tyvek® Specialist near you, click here.
Our Certified Installer Network delivers on-site DuPont™ Tyvek® product installer expertise to ensure your building envelope is sealed properly. These installation experts receive classroom and on-site training on the proper installation techniques for DuPont™ Tyvek® Weatherization Products and must pass written and hands-on installation tests to become part of the DuPont™ Tyvek® Certified Installer Network.

To locate a Certified Installer in your area, click here.
Sharing building knowledge.

Use the following links to look deeper into all the topics covered in this eBrochure.

- **Contact a DuPont™ Tyvek® Specialist** who is trained to use the DuPont™ CodeSense™ Durable Wall Builder to help you understand the new air, water and thermal code requirements for residential construction and how to utilize the latest DuPont™ Tyvek® Weatherization Systems technologies to help you build durable, energy-efficient homes.
- To view Tyvek® Weatherization System installation videos, [click here](#).
- Learn more about how **The Global Collaboratory™** is working to solve the world’s toughest challenges in food, energy and safety.
- Go to the source for information on the latest building and energy codes: [www.energycodes.gov](http://www.energycodes.gov), [www.internationalcodes.net](http://www.internationalcodes.net), [www.iccsafe.org](http://www.iccsafe.org)
- To find out about all the DuPont™ Tyvek® Weatherization System products, [click here](#).