

For more than 60 years, [Dow Building Solutions](#) has applied the science of thermodynamics to the building envelope - the structure that protects the internal space from the exterior environment. Organizations like the World Business Council for Sustainable Development (WBCSD) say the building envelope is the *starting point* for every energy efficient building. No other design factor has as much of an impact on the amount of energy that will be needed to heat, cool and ventilate a building.

Recent Dow innovations to maximize the thermal performance of the building envelope and make energy efficient design more accessible to architects, builders and owners include:

- Launched at Green Build 2008, the [THERMAX™ Wall System](#) is a new approach to steel stud wall construction that improves the energy efficiency and long-term performance of commercial buildings. By blanketing the exterior wall in continuous insulation, the THERMAX Wall System shields against thermal bridging and reduces potential for mold and mildew by moving the dew point to the exterior. It also blocks air infiltration by sealing gaps and cracks in the interior.

Because it provides a high system R-value† (R-9 to R-24), monthly energy bills are dramatically reduced and the payback continues for the life of the building. The reduced load on HVAC systems can enable use of a smaller unit, which reduces upfront and maintenance costs as well as GHG emissions.

- [STYROFOAM SIS™ Brand Structural Insulated Sheathing](#) is a first-of-its-kind wall system that combines structure, water resistance and continuous insulation into a single product. By adding the benefits of exterior insulation to what builders expect from wood sheathing and housewrap, STYROFOAM SIS makes building high performance, energy efficient homes more cost-effective for custom and production builders alike.

Builders are incorporating STYROFOAM SIS into “green” package options for their customers as a point of differentiation and strategy for driving sales in today’s economy. Made of up to 80 percent post-consumer recycled content by weight, STYROFOAM SIS is also ENERGY STAR-qualified and can save homeowners between \$200 and \$500 per year in energy bills (Depends on the heating/cooling system, geographical location, energy costs, wall assembly configuration and thickness of insulation installed). The reduced energy requirements lessen carbon emissions and may enable use of a smaller HVAC unit as well.

### **Dow’s Commitment to Sustainability**

Dow succeeded in converting its first facility that manufactures [STYROFOAM™ Brand Insulation](#) in Dalton, Ga., to its new zero ozone-depleting, no-VOC (volatile organic compound) [foaming agent technology](#). The manufacture of extruded polystyrene foam insulation at the Dalton facility relies on methane gas from a nearby landfill to reduce the amount of fossil fuels typically consumed during production. When properly installed in buildings, production capacity at Dalton of STYROFOAM™ Brand Insulation could save CO<sub>2</sub> emissions\*\* equivalent to:

- o Planting 700,000,000 trees
- o Taking 83,000 cars off the road for a year
- o Reducing vehicle travel by 1.4 trillion miles, or more than 56 million trips around the world
- o Saving approximately 70 billion gallons of gasoline or U.S. \$140 billion

Dow Building Solutions’ stand on sustainability is a direct reflection of its parent company – The Dow Chemical Company. The corporation reduced its energy intensity (the amount of energy required to create a unit of gross domestic product [GDP]) by 22 percent during 1995-2005, saving 900 trillion Btu, which is enough to power eight million homes for a full year. Since 1990, Dow has reduced its energy intensity by more than 38 percent. Dow intends to reduce its energy intensity an additional 25 percent between 2005-2015.