

Life Cycle Analysis

Owens Corning has prepared a comprehensive Life Cycle Analysis surrounding the manufacture and use of our foam-board insulation product and the net environmental impact of our proposed Gresham facility. Used over a 30-year time period, foam insulation produced each year at Gresham would save over 1.3 million tons of CO2 Equivalent as applied in residential and commercial buildings in climate zone 5.

This is equal to:

- More than 250,000 passenger cars not driven for one year or
- More than 30 million tree seedlings grown for 10 years or
- Nearly 135 million gallons of gasoline saved or
- About 2.7 million barrels of oil saved

The energy savings calculation for a climate zone 5 building is based on the Home Energy Saver tool developed by the Environmental Technologies Division of the Lawrence Berkeley National Laboratory (<http://hes.lbl.gov/>) for a residential building, and the EQuest energy program used by the U.S. Department of Energy (www.doe2.com/equest/) for a commercial building.

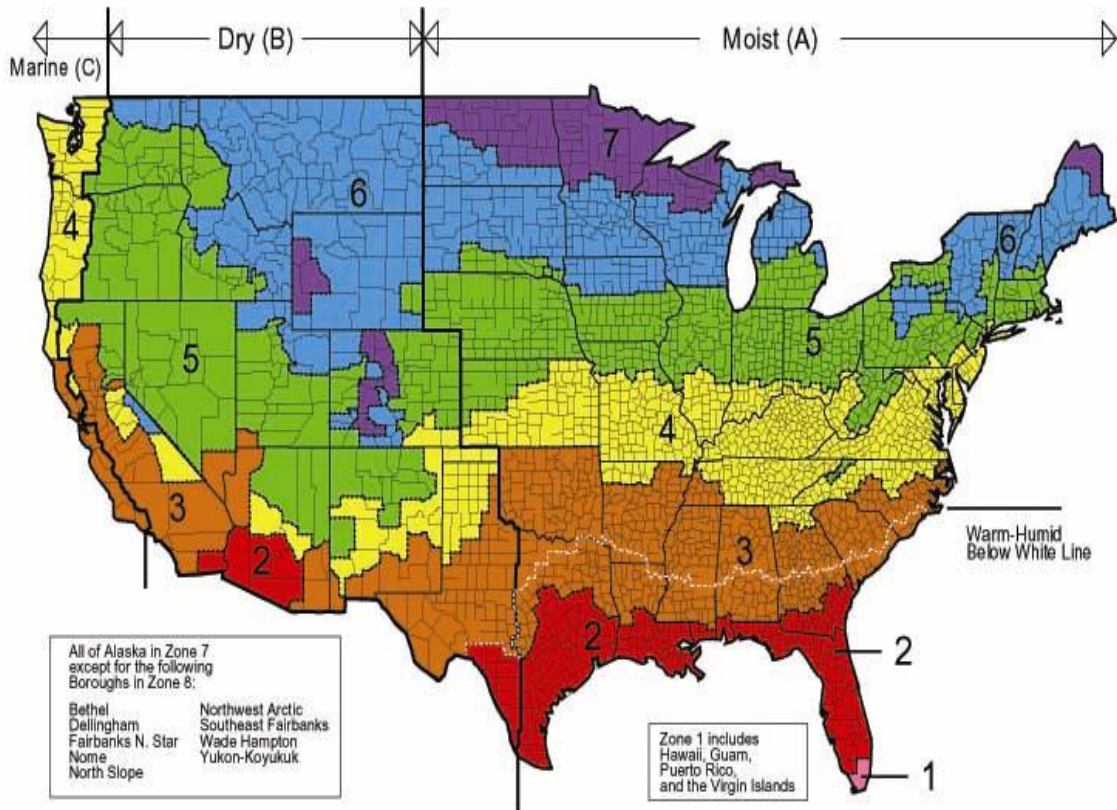
The global warming potential due to the blowing agent is based on the global warming factors as listed by the Intergovernment Panel on Climate Changes (www.ipcc.ch/) and also mandated by the U.S. EPA. The savings is based on unit savings from the respective building's energy savings multiplied by the number of buildings insulated based on the amount of foam insulation produced and installed in one year, minus the global warming impact of a 100% loss of all foam blowing agents at the end of 30 years.

In addition, shipping foam insulation to the customers in the Northwest from a Gresham facility versus shipping product from the Midwest facilities to the Northwest would save at least 500 tons of CO2 Equivalent per year. This is equal to:

- Savings with 60 million Board Feet Shipped
 - 112 cars not driven for a year or
 - 13,305 tree seedlings grown for 10 years or
 - 59,101 gallons of gasoline or
 - 1207 barrels of oil
- Savings with 120 million Board Feet Shipped
 - 225 cars not driven for a year or
 - 26,611 tree seedlings grown for 10 years or
 - 118,203 gallons of gasoline or
 - 2,414 barrels of oil

Climate Zone 5 – The figures used in this Life Cycle Analysis are based on Climate Zone 5 as categorized by the U.S. Department of Energy (see map below). The United States is divided into seven climate zones defined by the average cooling degree day (CDD) and the average heating degree day (HDD) that characterizes each region.

Map of DOE's Proposed Climate Zones



March 24, 2003

CO₂ Equivalent – One measure from this Life Cycle Analysis is CO₂ Equivalent. This is a measure used to compare the emissions from various greenhouse gases based upon their global warming potential (GWP).* CO₂ Equivalent provides the most useful measure of comparability.

* Carbon dioxide equivalents are commonly expressed as 'million metric tons of carbon dioxide equivalents (MMTCDE)'. The carbon dioxide equivalent for a gas is derived by multiplying the tons of the gas by the associated GWP. MMTCDE = (million metric tons of a gas) * (GWP of the gas). For example, the GWP for methane is 21 and for nitrous oxide 310. This means that emissions of 1 million metric tons of methane and nitrous oxide respectively is equivalent to emissions of 21 and 310 million metric tons of carbon dioxide.