

## **Metal Answers the Call for More “Green” Roof, Wall Systems**

Metal roofing and siding panels are made with the highest recycled content from the most recycled materials on earth. Consequently, someone’s old car, soup can or washing machine could end up in a new roof.

Some states are mandating energy-saving requirements for buildings, or giving tax breaks and other rewards for energy-efficient and energy-saving construction products. For example, New York, Pennsylvania and California are leading the parade of states offering energy-saving initiatives, using the LEED® (Leadership in Energy and Environmental Design) rating system to certify “green” buildings under the system created and promulgated by the U.S. Green Building Council.

Though recyclability is not part of the LEED rating system, LEED does properly recognize recycling for projects that involve demolition. By being recycled when their useful life ends, metal panels contribute to the recycled content of future products.

### **Steel Recycling**

Steel is the world’s most recycled material, with almost 76 million tons of steel recycled in the U.S. in 2006. Every ton of steel that is recycled saves 2,500 pounds of iron ore, 1,400 pounds of coal and 120 pounds of limestone. New steel made with recycled material uses as little as 26 percent of the energy required to make steel from raw materials extracted from nature. (For more information, see “Steel Takes LEED® With Recycled Content” at [www.recycle-steel.org](http://www.recycle-steel.org).)

### **Aluminum Recycling**

Aluminum is also recycled extensively and provides a valuable component for most municipal recycling efforts. According to a recent survey, the recycled content of domestically produced, flat-rolled aluminum products used in commercial construction ranges from 80 to 85 percent. In addition, at the end of their useful life, aluminum roofing and siding panels can be repeatedly recycled into roofing and siding products without loss of quality.

Producing aluminum from recycled material requires only 5 percent of the energy required to produce aluminum from bauxite ore, and every ton of recycled aluminum saves four tons of bauxite. In addition, using recycled aluminum instead of raw materials reduces air pollution generation by 95 percent, and water pollution by 97 percent.

### **Copper Recycling**

Copper is also a routinely recycled metal and it has the highest scrap value of any building metal. Copper’s relatively high cost makes it an ideal product for sale to nonferrous-scrap recycling companies. The scrap is melted down and re-formed into a new product such as copper roofing, which contains 75 percent scrap, of which nearly 50 percent comes from discarded consumer products.

### **Zinc Recycling**

More than 30 percent of zinc used in all applications worldwide comes from recycled zinc products. In building applications, especially those in Europe, more than 90 percent of old, rolled zinc products are recovered and generally recycled into other types of zinc products. At the end of their life, rolled zinc products used in zinc commercial construction have an attractive residual value of up to 75 percent of the price of new zinc. The average recycled content of zinc in building products is estimated at less than 9 percent.

The amount of energy used to product zinc from ore is the lowest of all non-ferrous metals on the market. Energy consumption is even lower when zinc is produced from recycled material – between 0.49 percent and 19.7 percent of the energy used to produce zinc from ore.

### **Conclusions**

The high-recycled content of and recyclability of steel, aluminum, copper, zinc, and other metals enable metal construction products to be routinely included in listings for “green” or sustainable building materials. The LEED program recognizes the importance of the weighted total recycled content of a building project’s materials. Use of recycled metal can contribute significantly toward a building acquiring LEED certification points.