


GREEN STEEL™



The Steel Construction Industry

The construction industry represents nearly 12 percent of Canada's Gross Domestic Product and significantly impacts the environment, health and well being of all Canadians. Construction is the single largest North American market for steel. It utilizes roughly 50 million tons per year and represents the greatest growth opportunity in Canada for value-added sheet steel product applications. The greatest challenge for steel in construction applications is distinguishing itself within the industry as the clear environmental choice versus competitive materials such as concrete, wood, and masonry. "Green" construction has always been a concern to the design community however with increasing mandates to reduce ozone emissions, recycle products at the end of their service lives; sustainable construction will be discussed more frequently on new construction and building renovation projects in Canada. And steel has a great story to tell...

The Steel Industry and the Environment

The Canadian steel industry has been active for many years in reducing the environmental impacts of its activities such as:

- Reducing carbon dioxide emissions by more than 20 percent since 1990
- Reducing sulfur dioxide emissions by 77 percent since 1990
- Reducing polycyclic aromatic hydrocarbons (PAH) emissions by 74 percent since 1993
- Improving energy efficiency by 25.4 percent between 1994 and 2002
- Reducing waste going to landfill by 52 percent between 1994 and 2002

Nearly 15 percent of the industry's capital spending is designated towards its environmental facilities; a clear indication that it is committed towards environmental sustainability.

The iron-making cycle is a recycling process that dates back thousands of years. Steel's recycling rate is greater than 75 percent. It is the most recycled material in the world! Steel is naturally recyclable and retains all of its physical properties after being recycled. Scrap steel provides a high economic value for Canada's infrastructure and other markets where recovery and reprocessing of scrap metal exists.

According to the Steel Recycling Institute (SRI), more than 70 million tons per year of steel are recycled in North America (over 40 million tons derived from construction and demolition waste). Recycling also aids to spread some of the energy impact from mining and manufacturing for generations of new steel production.

Steel Process Stream

There are two predominant steel making technologies used by Canadian steel producers to supply the steel construction industry. The traditional Basic Oxygen Furnace (BOF) technology uses raw materials (iron ore, coal, and approximately 30 percent recycled scrap) to produce new steel whereas the Electric Arc Furnace (EAF) technology uses approximately 95 percent recycled scrap as its feedstock. It must be understood that even though two out of every three pounds of new steel are produced from old steel, due to steel's durability and lifespan it is necessary to continue mining and extracting virgin ore to meet the demand for new steel. Both BOF and EAF technologies complement the dynamics of steel making, product manufacturing, scrap generation and recycling.

For more information concerning specific recycled content values, contact U. S. Steel Canada

Green Construction, GREEN STEEL™!

In response to the greater concern and direction towards "greener" construction, the Canadian Green Building Council (CaGBC) has adopted the voluntary green building rating system titled LEED® Canada (Leadership in Energy and Environmental Design) rating system. The LEED® program provides architects, engineers, and designers the necessary framework for sustainable construction. The system places high emphasis on site selection criteria such as brownfield versus greenfield, design parameter (materials, density, drainage, etc...), transport issues and heat island effects. Steel's environmental characteristics provide key credits in areas where other materials can't compete. A document is available that provides guidance in areas covered by LEED Canada where steel has the necessary attributes to qualify for LEED credits¹.

Promoting Sustainability

The Canadian steel industry appreciates the necessity for a strong, economically stable, and healthy future for Canada and its citizens by continually improving its processes and products.

¹ LEED™ing with Steel by Dr. Gorgolewski, School of Architecture, Ryerson University, available at www.cssbi.ca
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