

ANVIL SOLUTIONS FOR
GREEN BUILDING DESIGN



BUILDING CONNECTIONS THAT LAST

Anvil International is the world's largest and most complete manufacturer of piping connections and support systems. For over 150 years, Anvil's products, services, and representatives have earned them a reputation for building dependable, lasting connections — pipe to pipe and people to people.

We are committed to growing as an organization, as well as enhancing our offerings to meet the needs of our customers. Anvil continues to expand our product line with innovative, forward-thinking solutions.

Because a concern for the environment is a strong part of our legacy, we are proud members of the U.S. Green Building Council (USGBC). As part of the USGBC, we can help building owners achieve points toward LEED certification with our extensive selection of products made from 90% recycled materials. In this brochure, you will learn more about Anvil products and how LEED certification can benefit your company and community.

Sinai Renaissance Educational Campus

Anvil's products and Design Services Team played a valuable role in the first LEED Silver building in the Detroit area — the \$100 million dollar Sinai Renaissance Education Campus which opened in 2005. Helping to save on money, labor, and time, Anvil's team reviewed and improved upon the initial designs for the project's two mechanical rooms by proposing a flexible system which prevented a costly rebuild. In addition, Anvil's product line helped the building owner achieve points toward LEED certification.

BUILDING GREEN WITH ANVIL

Energy Efficiency. Adaptability. Sustainability. Recent trends reveal that the interest in and demand for green building designs, materials, and products has greatly increased — and will only continue to do so — in the coming years. If you are a builder, engineer, building owner, and/or developer in the construction industry, you must keep up-to-date and informed on the latest green building design methods and requirements.

Anvil understands this growing focus on sustainable buildings, and we will provide you with helpful, straightforward guidance — as well as comprehensive piping solutions — to help you build successful green projects that will substantially benefit your company and community for many years to come.

If you are questioning to what extent green design will influence your projects now and in the future, you may want to consider the following industry statistics*:

- LEED-New Construction (LEED-NC) project registrations rose to over 1,000 in 2005, with an increase of more than 130 million gross square feet of green building project area.
- Every branch of the U.S. military has adopted mandates, orders, incentives, and initiatives to promote green building projects, with the areas of government and education leading in terms of most growth in green building projects. In addition, over a dozen states and more than three dozen localities have enacted incentives for green building.
- By 2010, the U.S. market in non-residential green buildings is expected to grow up to 10%, creating a market of close to \$20 billion.
- 85% of all architects, engineers, and contractors are involved in green building projects, and close to 60% specify products for green building.
- **Mechanical systems are the third highest product specified by architects, engineers, and contractors.**

To assist you in becoming part of these growing green trends in the construction industry, Anvil representatives can help you identify the right products to suit your green building projects. We also offer advice on Anvil's LEED submittal forms to help building owners earn points toward LEED certification.

Sinai Renaissance Educational Campus
DETROIT, MICHIGAN



* Source: HPAC Engineering Insider Newsletter, March 2006 issue.



GREEN ORGANIZATIONS

Whether your building involves New Construction or Existing Buildings, Anvil can consult with you on incorporating the right products and design elements to achieve maximum energy efficiency and water savings.

What is the USGBC?

The United States Green Building Council (USGBC) is the country's leading coalition of experts from every sector of the building industry working to promote buildings that are environmentally sustainable and responsible, economically profitable, and physically healthy places for people to live and conduct business.

Working with research organizations and representatives across multiple industries and governmental agencies, the USGBC is helping to change how buildings are constructed. For more information, visit www.usgbc.org.



Anvil is a proud member of the USGBC.

What is the CaGBC?

The Canadian Green Building Council (CaGBC) promotes the design and construction of environmentally sustainable buildings in Canada.

The council is made up of representatives from the design and building industry that set standards and offer guidance for the creation of green buildings. For more information, visit www.cagbc.org.



What is LEED?

Developed using a consensus process and in collaboration with non-USGBC members, the United States Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System® serves as a national standard for voluntary development of green buildings that are environmentally sustainable.

LEED has been adopted widely by cities, states, and government agencies as a construction standard for their buildings. Architects, developers, builders, and manufacturers use LEED as a trusted resource for expertise on project certification, professional accreditation, and training. For more information, visit www.usgbc.org/leed.



LEED GREEN BUILDING RATING SYSTEM

LEED-NC NEW CONSTRUCTION

First launched in 1998, the New Construction rating system (LEED-NC) applies green design principles to commercial, institutional, and government building projects. LEED-NC is based on the idea of an integrated design approach from the beginning of a project to its conclusion. By examining the environmental impacts of materials and site selection, as well as demolition and construction, LEED-NC identifies low-cost strategies that offer green benefits for builders, occupants, owners, as well as the environment. For more information, please visit www.usgbc.org/leed/nc.

LEED-EB EXISTING BUILDINGS

The LEED rating system for Existing Buildings (LEED-EB) promotes operational efficiency with minimal environmental impact. Through well-established, performance-based benchmarks, building owners and operators can consistently measure operations, improvements, and maintenance over the course of a building's lifetime. LEED-EB principles promote affordable, environmentally sustainable ways to build healthy buildings, including options for certification and re-certification. For more information, please visit www.usgbc.org/leed/eb.

LEED-NC CERTIFICATION LEVELS

52-69 pts	Platinum
39-51 pts	Gold
33-38 pts	Silver
26-32 pts	Certified

LEED-EB CERTIFICATION LEVELS

64-85 pts	Platinum
48-63 pts	Gold
40-47 pts	Silver
32-39 pts	Certified

SUSTAINABLE SITES

Existing Buildings promotes reuse of existing buildings and/or sites, protection of natural and agricultural areas, support for alternative transportation, as well as the protection and/or restoration of natural sites whenever possible.

New Construction promotes similar goals, as well as the development of appropriate sites and reduction of the need for automobile use.

WATER EFFICIENCY

Goals of New Construction and Existing Buildings include reduction of a building's water quantity needs and the burden placed on municipal water supplies, including water treatment efforts.

ENERGY AND ATMOSPHERE

Optimization of energy efficiency and system performance are among the primary goals of New Construction and Existing Buildings, as well as encouragement toward renewable and alternative energy sources, and the support of ozone protection protocols.

MATERIALS AND RESOURCES

Goals of New Construction and Existing Buildings include the use of materials with less environmental impact, reduction and management of waste, and the overall reduction of the amount of materials needed on a project.

With Anvil products made from 90% recycled materials as well as our materials selection services, we can help building owners achieve LEED certification in this area. LEED points can also be earned if a project site is located within a 500-mile radius of our plants in Columbia, PA and Henderson, TN.

INDOOR ENVIRONMENTAL QUALITY

New Construction and Existing Buildings promote good indoor air quality, the elimination, reduction, and management of the sources of indoor air pollution, the attainment of thermal comfort and systems controllability, and provisions for occupant connection to the outdoor environment.

NEW CONSTRUCTION – INNOVATION IN DESIGN

EXISTING BUILDINGS – INNOVATION IN UPGRADES, OPERATIONS, AND MAINTENANCE

Goals of New Construction and Existing Buildings include the recognition of exceptional performance in any achieved LEED credit, as well as exceptional innovation in green building categories beyond those addressed by LEED.

ADDITIONAL LEED CATEGORIES LEED also provides additional rating systems, including: LEED-ND for Neighborhood Developments, LEED-H for Residential Homes, LEED-CI for Commercial Interiors, and LEED-CS for Core and Shell. **Please visit www.usgbc.org/leed for more information.**

ANVIL'S PRODUCT LINE

Anvil manufactures an extensive line of products composed of 90% recycled materials that can help building owners earn points toward achieving LEED certification. Our representatives will work closely with you to help you find the right solutions for your green building projects.



EARNING LEED-NC and LEED-EB POINTS: MATERIALS AND RESOURCES

Within the LEED-NC and LEED-EB Materials and Resources category, building owners can earn points toward certification with Anvil's help by meeting certain goals.

LEED NC: MR 4.1 – 4.2: RECYCLED CONTENT AND MATERIALS

GOAL:

To use building products that are made from 90% recycled materials and that require fewer new materials in their production, causing less negative impact on the environment.

HOW ANVIL CAN HELP YOU:

Anvil produces ductile iron castings composed of 90% recycled materials purchased from outside sources.

LEED NC: MR 5.1 – 5.2: LOCALLY MANUFACTURED MATERIALS

GOAL:

To use building products manufactured within a 500-mile radius of the building site to help contribute to the local economy and reduce the need to haul and transport materials over long distances.

HOW ANVIL CAN HELP YOU:

Anvil products made from 90% recycled materials are conveniently manufactured at our plants in Columbia, PA and Henderson, TN. If a building site is located within a 500-mile radius of either of these plants, the building owner will be able to earn additional LEED points.

LEED EB: MR 2.1 – 2.5: OPTIMAL USE OF ALTERNATIVE MATERIALS

GOAL:

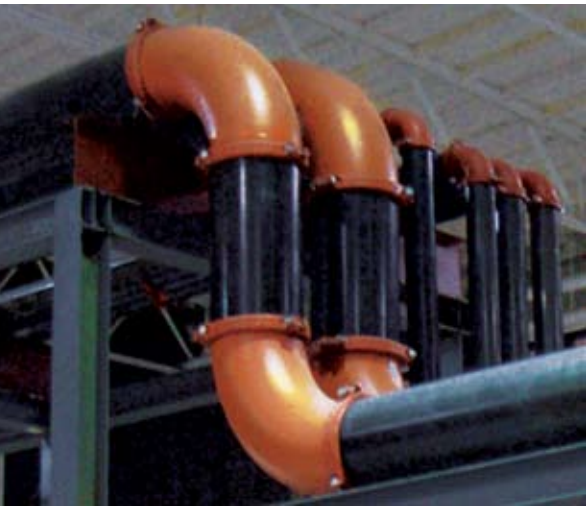
To use building products that contain at least 10% post-consumer or 20% post-industrial materials and that contribute at least 10% and up to 50% of total alternative material purchases.

HOW ANVIL CAN HELP YOU:

Anvil products made from 90% recycled materials contain anywhere from 10% to 20% post-consumer and/or post-industrial materials. Find out more about how Anvil products can help building owners achieve LEED certification by visiting www.anvilintl.com.



*Gruvlok® Couplings, Fittings, and Flanges
Anvil Cast and Malleable Threaded Fittings
Anvil Cast Iron Flanged Fittings
Anvil Pipe Hangers and Supports*



FAQS

Some of the most common questions we hear about LEED are listed here.

For more information, please contact the USGBC by visiting: www.usgbc.org, e-mail: leedinfo@usgbc.org, or call: (202) 82-USGBC (828-7422).

FREQUENTLY ASKED QUESTIONS & TIPS FOR GREEN BUILDING DESIGN

CAN A SINGLE BUILDING PRODUCT ACHIEVE POINTS IN THE LEED RATING SYSTEM? WHAT PART DO BUILDING MATERIALS PLAY IN THE LEED RATING SYSTEM?

Most building materials can only contribute to a building owner's ability to achieve LEED points. To meet LEED's performance-based requirements, it must be demonstrated that the products used in a project have the proper characteristics. While some LEED points require that certain minimums or limits are met, other points require the gathering of specific product data in order to calculate the aggregate environmental or health value of a given selection of products. In the Materials and Resources LEED category, products with any recycled content can help earn LEED points. Review the LEED guidelines to find out how to earn points in addition to those for using materials with recycled content.

HOW CAN BUILDING PRODUCTS BECOME LEED CERTIFIED?

Building products cannot be LEED certified. LEED certification applies to buildings and is in part based on the building products used in a building's construction. Only a small number of LEED points depend on third-party certification or proving a given standard is met. Consult the manufacturer of the building products used for more complete information on their environmental impact.

HOW CAN USING ANVIL PRODUCTS HELP A BUILDING ACHIEVE LEED CERTIFICATION?

The building materials selected can prove significant in the total number of LEED points that a building owner earns. Anvil, a member of the USGBC, has experience helping builders and specifying engineers identify the right products made from recycled materials to best suit a project. We can help building owners obtain LEED certification points by providing our submittal form indicating that Anvil products are made from 90% recycled content. In addition, we can also help building owners earn LEED points if a building site is located within a 500-mile radius of our plants in Columbia, PA and Henderson, TN. Please contact an Anvil representative for assistance with your submittal forms.

HOW CAN A BUILDING ACHIEVE LEED CERTIFICATION AND WHAT ARE THE BENEFITS?

Depending on the type of building being designed, there are certain standards for LEED certification that can be achieved by accumulating points. For a complete list of all the point categories, please visit the USGBC or CaGBC Web sites.

Not only does the entire community environment benefit from choosing to build green, there are the additional benefits of less maintenance and long-term cost-savings. In some cases, there are tax incentives available by choosing sustainable design practices.

For More
Information on
Green Building
Design with
Anvil go to:

www.anvilintl.com

- LEED Submittals
- Anvil Recycled Certifications
- USGBC Certifications





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East Pennsylvania, Rhode Island, Vermont, Virginia

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Minnesota, Nebraska, North and South Dakota, Ohio,
West Pennsylvania, West Virginia, Wisconsin

750 Central Avenue
University Park, IL 60466

Tel: 708-885-3000
Fax: 708-534-5441
Toll Free: 1-800-301-2701

Southern Region

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Mississippi, Missouri, Oklahoma, Tennessee, Texas

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Grand Prairie, TX 75050

Tel: 972-343-9206
Fax: 972-641-8946
Toll Free: 1-800-451-4414

Western Region

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Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon,
Utah, Washington, Wyoming

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