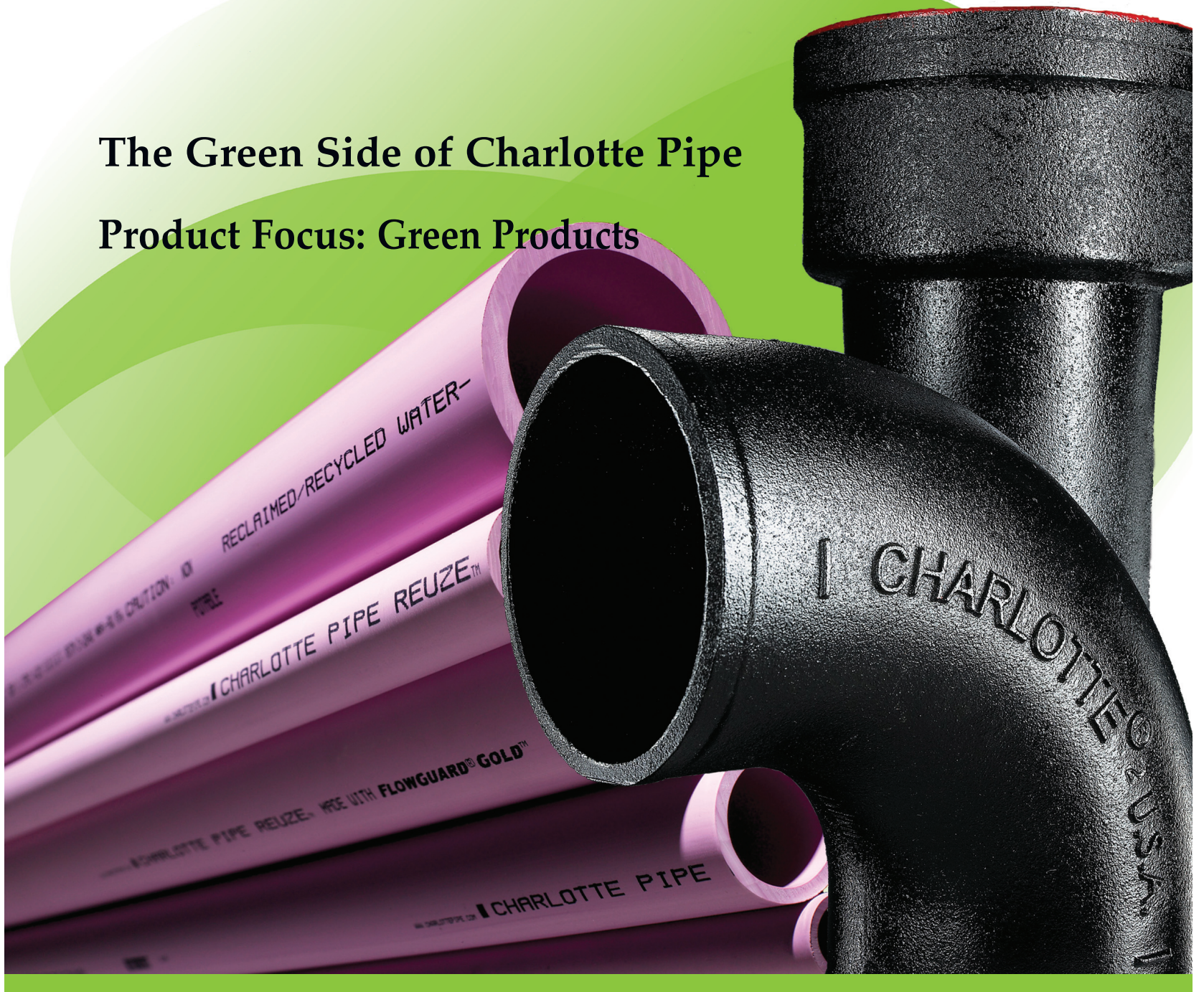


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The Green Side of Charlotte Pipe Product Focus: Green Products



CHARLOTTE
PIPE AND FOUNDRY COMPANY

The Green Side of Charlotte Pipe

Green is catching on and it has everyone looking for ways to reduce, reuse and recycle. And while this concept may be new to some, Charlotte Pipe and Foundry has been doing this for decades. Just take the manufacturing of their cast iron pipe and fittings. They are made from 100 percent recycled content, which has resulted in the recycling of millions of tons of scrap iron over the last several decades. Everything from refrigerators to car engines are melted in their cupola and made into cast iron soil pipe and fittings.

Of course recycling that much scrap iron is good, but cast iron pipe and fittings also offer many benefits in installation and everyday living. During installation no cleaning fluids or solvent cements are needed, eliminating exposure to volatile organic compounds (VOCs) during the installation process and from the air we breathe. For underground installation, cast iron piping can handle earth load with no deflection. This means there is less digging on the front end and a trench can be as narrow as an installer decides. Also, it does not need the compaction of the sidefill to support the wall or special bedding.

For above ground installations, fewer hangers are needed (plastic must be supported by metal hangers every four feet in horizontal installations while cast iron needs support within 18 inches of each joint and every 10 feet).

Since cast iron is noncombustible, it removes the need for the more extensive firestopping required with plastics. Plus, it has a long life, being used in

some cases for over 100 years. At the end of the life of a building the cast iron piping can be recovered and recycled again to make new cast iron pipe and fittings. Also, many engineers choose to reuse the systems in renovation projects, reducing the amount of project waste and construction costs.

Cast iron piping can improve the quality of indoor living, too. Since cast iron is twice as quiet as an all-plastic system it eliminates the sound of water from fixtures on floors above flowing down behind the walls.

This unique acoustic feature is the basis of Quiet House®, a Charlotte Pipe system that incorporates cast iron and plastic pipe and fittings.

Typically, the noise in plumbing systems results from a combination of the vibration of the system and of airborne noise passing through the pipe wall. A study by MJM Acoustical Consultants, Inc. of Canada has shown that cast iron soil pipe and fittings, because of their dense molecular structure and rubber gasket joints, are 750 percent more effective in reducing plumbing noise over other plumbing materials.

Charlotte Pipe is also embracing the use of non-potable water indoors with its newest product offering, ReUze®. Non-potable water sources include



Cast iron pipe and fittings from Charlotte Pipe are made from 100% recycled scrap iron.

rainwater, reclaimed/recycled water and gray water. While non-potable water is not appropriate for human consumption, it can be used in myriad other applications, such as doing laundry, toilet and urinal flushing, and cooling tower make-up water. In fact, cooling tower make-up water in some cases represents the majority of water consumed in a building.

Launched in August, ReUze was created as an answer to engineers and contractors looking for a better way to distribute non-potable water inside of a structure.

Until now, some engineers that have specified systems for non-potable water use inside of a building have had the contractor paint copper pipe purple and

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then do some sort of field marking. ReUze answers this dilemma and it is more cost-effective than copper.

ReUze is manufactured using a new purple CPVC compound because in areas where non-potable water systems have been in use for a substantial period of time (Europe, Australia, Canada), the universal color code for “do not drink” is purple. In the US this color scheme has been adopted for PVC pipe used for the distribution of non-potable water outside of a building, for irrigation and for municipal reclaimed distribution systems.

Charlotte’s ReUze pipe is marked with two lines of type clearly identifying the contents as “WARNING: NON-POTABLE WATER DO NOT DRINK”. The type is 180° apart so that no matter what angle you view the piping system there can be no mistake that the pipe is carrying non-potable water. This is extremely important in ensuring that water lines fit for human consumption are not crossed with non-potable water lines.

ReUze is listed with NSF International and bears the mark “NSF-rw”. It meets all of the same require-



Charlotte Pipe’s cast iron pipe and fittings are twice as quiet as an all-plastic system and can improve the indoor environmental quality of buildings and homes by reducing water noise.

ments as our FlowGuard Gold CTS CPVC domestic water piping systems (NSF 14 listing, pressure/temperature handling capability and superior flame and smoke characteristics).

ReUze is available in various CTS sizes and can be installed using currently available low VOC FlowGuard Gold® single step solvent cements and existing CTS fittings, including the well-respected Charlotte Pipe transition fittings featuring integral brass threads. It carries the same 400 psi @ 73°F pressure rating as our domestic water piping system.

While there are no direct points for pipe and fitting products, both their cast iron and ReUze systems may contribute to LEED points.

Cast iron may contribute to the following credits:

- Sustainable sites (SS) Credit 5.1 Since cast iron requires narrower trenching, it protects the native environment from disturbance around the construction site.
- Materials and Resources (MR) Credit 2.1 & 2.2 Any unused pipe and/or fittings can be sold, diverting it from landfills.
- Indoor Environmental Quality (EQ) Credit 4.1 No adhesives or sealants are required for installation.

Cast iron and its noise abatement quality is also an asset to indoor environmental quality, or IEQ. IEQ is one of the criteria of the USGBC’s



ReUze pipe helps utilize non-potable, reclaimed water for applications such as toilet and urinal flushing.

LEED-H rating system that addresses the subtle issues that influence how occupants feel in a space.

IEQ is addressed by the Environments for Living Certified Green program in an optional acoustical package. Builders choosing this option can elect to install an acoustical package that is intended to result in a sound transmission coefficient performance of 37 to 39. Some counties have also included a section in the healthy indoor environments section of their Green Building Guidelines regarding noise pollution.

The importance of noise abatement has also been recognized by the Green

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ReUze® from Charlotte Pipe is a complete CPVC CTS piping system for the distribution of reclaimed water, rainwater and gray water.

Building Industry. One example is the U.S. Green Building Council's (USGBC) LEED for Schools rating system announced in December 2007, which references to ANSI S12.60-2002 and offers as many as two points for noise control in K-12 school buildings. In addition, some counties have included a section in the healthy indoor environments section of their Green Building Guidelines regarding noise pollution.

As for ReUze, the use of non-potable water can contribute up to 10 LEED points on a project, an astounding 25 percent of the points needed to achieve a LEED certified building. And available points are even higher if any of these credits are deemed a regional priority by the USGBC regional council or chapter.

Credits include:

- Water Efficiency (WE) Credit 1 Non-potable water systems may limit or eliminate the use of potable water or other natural surface or subsurface water resources available on or near the project site for landscape irrigation.
- Water Efficiency (WE) Credit 2 Non-potable water systems may reduce wastewater generation and potable water demand while increasing the local aquifer recharge.
- Water Efficiency (WE) Credit 3 Non-potable water systems may further increase water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.
- Water Efficiency (WE) Credit 4 Non-potable water systems may maximize water efficiency within buildings to

reduce the burden on municipal water supply and wastewater systems.

LEED points are awarded not only for the reduction in potable water use but also for diversion and reuse of storm and waste water that in conventional construction would leave the site.

Charlotte Pipe has LEED AP certified associates that are available to assist with green building projects.

In addition to their product offerings, Charlotte Pipe has also adapted green-friendly practices into its manufacturing. Charlotte Pipe is a major recycler in the state of North Carolina, preventing more than 350 million pounds of scrap iron and steel from entering overcrowded landfills annually. Cast iron scrap materials are recycled internally, resulting in little to no waste from the manufacturing process.

Also, 100 percent of inert slag, a manufacturing byproduct, is recycled into cinder blocks and road materials. This is material that used to be sent to landfills. And the sand used in the foundry process is recycled numerous times.

In addition, the company has a wastewater treatment system that pre-treats all wastewater used in the foundry process. The system has helped decrease the Foundry's consumption of city water from 100 million gallons a year to 33 million gallons, discharging less than 9 million gallons into the city sewer.

Charlotte Pipe has received a Charlotte-Mecklenburg Blue Thumb Award and a Charlotte-Mecklenburg Environmental Excellence in Industry Award for its continued efforts at reducing city water demand and recycling 100 percent of its treated process water. ■