Plastics News

July 25, 2023 04:00 AM

Plastic pipes under fire as federal funds flow

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Getty Images

Plastic pipe producers are in a good position to meet increasing demand as U.S. cities update drinking water and wastewater systems, but that's also bringing a new wave of criticism from environmental groups as $55 billion of federal money is spent from the Infrastructure Investment and Jobs Act.

Beyond Plastics, a Bennington, Vt.-based group headed by a former U.S. Environmental Protection Agency regional administrator, began its push in April to build up a public outcry against use of taxpayer dollars on some plastic products.

So far, the group has published a 56-page report — "The Perils of PVC Plastic" — that calls for use of copper and recycled copper for the drinking water service lines connecting water mains under streets to household taps.

Some members also have written letters to the editors of their community newspapers.

In addition, Beyond Plastics has come out against a proposed PVC packaging and pipe plant in Lockport, N.Y., pointing to the recent train derailment in East Palestine, Ohio, as its reason to oppose the project.

Residents of Lake Wales, Fla., also are pointing to the incident as they raise concerns about a high density polyethylene pipe plant proposed by Hilliard, Ohio-based Advanced Drainage Systems Inc. that will create at least 65 jobs.

In response, plastic pipe trade groups are fielding some questions from end users, but in fact are seeing an increase in demand for products such as HDPE, cross-linked PE (PEX) and PVC, which cost less and are easier to install than legacy materials used in water and wastewater systems.

"We've received requests for information rebutting some of the outlandish claims made in the Beyond Plastics report but have seen no change in the use of PVC pipe from water and sewer utilities," Bruce Hollands, executive director of the Irving, Texas-based Uni-Bell PVC Pipe Association, said in an email.

In the meantime, Hollands said, "Uni-Bell has been coordinating the PVC pipe industry's response and collaborating with suppliers and other organizations to get the facts out about PVC pipe's health and safety benefits, low carbon footprint and best-in-class environmental attributes."

The Beyond Plastics campaign hasn't resulted in any backlash to date for producers of PE pipe, which also is used for service lines and other parts of water and wastewater systems, according to David Fink, president of the Irving, Texas-based Plastics Pipe Institute.

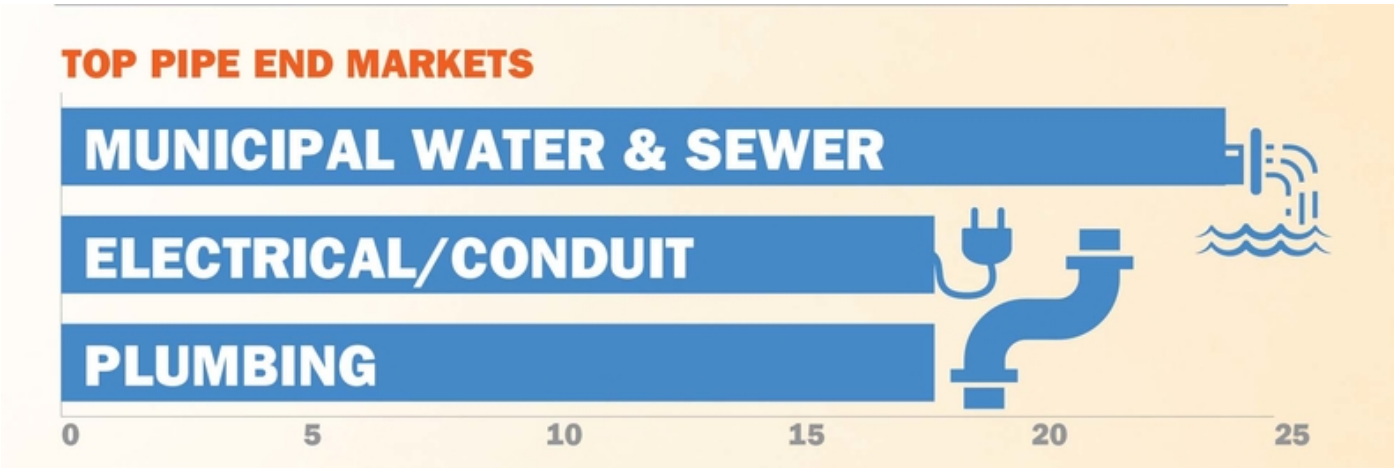
"Despite these negative campaigns based on false information, we have seen an increase in sales," Fink said. "Plastic piping systems have earned their right to belong. We have the lowest initial cost and the lowest life cycle cost. A lot of municipalities don't have much funding so cost effectiveness plays a key role. Plastic pipes are easy

and lightweight to install, so you use less heavy equipment for the installation process. There's a good overall picture we can paint for plastic piping moving forward and that's why more designers, owners and contractors are selecting our materials."

Plastic products continue to make up the largest share of pipe being installed, but Isabel Kezman, a municipal water market analyst with Boston-based Bluefield Research, said prolonged supply chain issues and higher prices have driven some preference away from PVC to other materials with better supply availability or price stability.

"In addition to general pandemic-related supply disruption, plastic resin production was significantly impacted by the Texas winter storm in February 2021. That caused a plastic shortage that took the market a decent amount of time to recover from, driving prices for plastic pipes and fittings up by double or triple digits over the past few years," Kezman said.

"On the HDPE side, there's been a growing demand for it vs. PVC as well as iron and steel due to HDPE manufacturers managing supply constraints better and having lower pricing," Kezman said.



Inventories improve

Uni-Bell, the trade group representing PVC pipe producers, doesn't formally track pricing or availability, but Hollands said he has heard that inventory levels have been increasing over the past year.

"Anecdotally, we know that PVC pipe has been the market leader in the sewer segment for decades and now leads all other materials in the water sector," Hollands said. "Overwhelmingly, new housing subdivisions are using PVC water and sewer piping and replacement programs typically go with PVC pipe. Ductile iron pipe's shrinking market share is mostly relegated to municipalities where iron pipe has traditionally been used and the bureaucracy doesn't allow consideration of alternative materials."

PE and polypropylene pipe producers were very busy throughout 2022 and 2023 got off to a fast pace in January through March, according to Fink.

"There continues to be a strong demand," he said. "Our industry has expanded over the last several years. New manufacturing plants have come on board. Manufacturers have added extrusion lines. Their challenge is hiring skilled labor so they can run their equipment 24/7/365."

Building up

No provisions in the IIJA or other funding programs selectively drive the use of one material type over another, but the need to meet Build America, Buy America (BABA) requirements established through the IIJA might.

Congress passed BABA in 2021 along with the infrastructure law to establish a preference program aimed at creating long-term opportunities for domestic manufacturers and workers while strengthening the U.S. supply chains for a wide range of products.

According to Fink, the majority of plastic pipes are produced domestically, while much of the copper tubing is imported.

For legacy materials, like iron and steel pipe, a large majority of the products are manufactured in the U.S. so Kezman said they're well positioned for BABA certification.

"With PVC production, it's more distributed across the U.S. and other countries. This may put PVC pipes at more of a disadvantage in comparison to legacy materials that have more domestic production," Kezman said.

Earlier this year, Brussels-based **Aliaxis SA publicly pursued Vantaa, Finland-based Uponor Oyj**, which extrudes HDPE and PEX pipe and has U.S. manufacturing sites in Apple Valley and Hutchinson, Minn., that operate as Uponor Inc.

Aliaxis owns Pineville, N.C.-based pipe extruder Ipex USA LLC and it has been increasing its U.S. presence and product line through acquisition in recent years to strengthen its position as a leader in water management solutions.

But Aliaxis didn't seal the deal. Schaffhausen, Switzerland-based Georg Fischer Ltd. offered more money for Uponor and ended up acquiring the company for 28.85 euros per share, trumping the 25.75-euro-per-share offer from Aliaxis.

The acquirer operates Georg Fischer Piping Systems in Irvine, Calif., which produces PVC and HDPE pipes for the gas and oil, industrial, municipal and plumbing markets.

Uponor Inc. had estimated North American pipe sales of $467.5 million.

With sales of $250 million, Georg Fischer ranks No. 25, according to *Plastics News'* latest ranking.

In another deal, Aliaxis acquired the manufacturing division of Valencia, Calif.-based Valencia Pipe Co. for $250 million to expand into the Western United States.

With $1.8 billion in sales, Ipex ranks No. 5 among North American pipe, profile and tubing extruders, according to *PN*'s updated rankings.

As the deals were falling apart and coming together, Aliaxis CEO Eric Olsen wooed prospective acquisition targets with talk of seizing an opportunity to "build a future-ready platform providing high quality products globally that are addressing the world challenges around water head on."

Questioning NSF

Ann Arbor, Mich.-based NSF is a certification body on a mission since 1944 to protect the health of people and the planet through impartial product testing, including plastic pipe.

However, Beyond Plastics notes the private organization is partially funded by pipe manufacturers and relies on some self-reported data from those processors. The group questions the soundness of the certification process and says standards set by a third party can't protect the public's health as well as the standards set by a regulatory agency with enforcement powers.

While manufacturers do submit product materials information, NSF officials have said the organization verifies everything. NSF staff conducts independent inspections of production facilities and undertakes extensive testing at its own laboratories.

Hollands said the ANSI/NSF 61 Standard ensures that drinking water pipes are safe and that all pipes are tested for safety equally. Before commercial use, the pipes are subjected to a variety of tests, including the leaching of chemicals or other substances into the water. After certification, NSF continues testing throughout production with audits done randomly twice a year to ensure quality control tests also are being done by the manufacturer.

"So much of their [Beyond Plastics] information is inaccurate and when you call into question an organization like NSF that serves all piping systems, it's frustrating," Fink said. "We've learned we have to get the truth to the general public."

In October, the Washington-based Plastics Pollution Coalition, which co-published the Beyond Plastics report, launched a campaign urging federal and local officials not to replace lead service lines with plastic pipe and to provide all households with options other than bottled water before, during and six months after lead lines are removed.

The coalition recommended all households be given options for filtered water, such as water filters certified to NSF/ANSI Standard 53, or government-funded reusable bottles, tanks or water buffaloes.

Plastics pipe trade group officials are wondering why Beyond Plastics members would push for water filters that meet NSF/ANSI standards while raising concerns about their products.

"It's interesting where they pick their battles," Fink said. "I have to believe competing materials are behind some of these organizations. Beyond Plastics, for example, the way they were promoting copper, they may as well have been the copper pipe association."

Potable water pipe

Demand for potable water pipe in the United States is forecast to reach $14.2 billion in 2026, increasing at an annual rate of 2.3 percent from $12.7 billion in 2021, according to Freedonia Group.

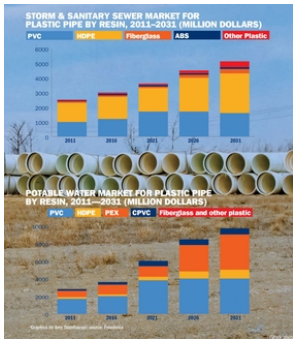
Plastic pipe sales will continue to outstrip metal and concrete pipe thanks to advantages like low initial cost, low life cycle cost, corrosion resistance, seismic resistance, freeze and thaw resistance, and ease of installation.

Sales of plastic potable water pipe — the leading material segment — are projected to expand 3.8 percent per year to $8.4 billion in 2026, making it the fastest growing potable water pipe material. Demand will be supported by municipal water projects on tight budgets seeking low-cost options, Freedonia Group says.

Water distribution pipe demand is expected to total $7.3 billion in 2026, remaining the leading potable water pipe application segment. Gains will be spurred by continuing consumer interest in kitchen and bathroom renovation projects, Freedonia Group says.

The major suppliers of plastic water pipe to the U.S. are JM Eagle, Ipex USA LLC, Advanced Drainage Systems, Atkore Inc., Performance Pipe, National Pipe & Plastics Inc., W.L. Plastics, Diamond Plastics Corp., Northern Pipe Products Inc., Infra Pipe Solutions, Pipeline Plastics and Georg Fischer Central.

Storms and sanitation



For storm and sanitary sewer pipe, U.S. demand is forecast to rise 3.1 percent per year to $8.2 billion through 2026, Freedonia Group says. That's equivalent to 707 million linear feet.

Growth in terms of value, however, is projected to decelerate slightly.

Those major spikes in PVC and steel prices in 2021 — caused by Texas ice storms, increased raw material prices, the highest inflation in decades and supply chain issues -- lead to a record year in terms of value. The average prices of PVC and steel sewer pipe surged 40 percent and 47 percent, respectively.

At the same time, residential building construction further increased pipe demand above the available supply.

Now pipe prices are moderating from highly inflated levels in 2021 while volume gains accelerate, Freedonia Group says.

The main volume drivers are water and sewer system construction projects made possible by the IIJA; increased highway repair and construction, which tends to coincide with sewer and pipe projects; and repair activity on buildings, especially in the commercial segment, where drainage pipe is needed to prevent water from accumulating in parking lots.

Also, some construction trends, including an increase in the number of bathrooms per building, will place pressure on the existing sewer infrastructure, promoting replacement, Freedonia Group says.

Plastic pipe also is expected to gain share in large-diameter sewer applications. The products dominate in storm and sanitary sewer applications because they are of light weight, easy to handle, and resist corrosion.

In many cases, civil engineers and sewer professionals select plastic pipe over traditional concrete or steel materials for repair and replacement projects because they cost less to buy and install and are more suitable for trenchless installation and rehabilitation processes.

While plastic has traditionally been uncompetitive in large diameters, Freedonia Group says improvements to resin formulations and processing will open new sales opportunities in these sizes.

Good outlook

For both water and sewer applications, PVC pipe continues to be used in larger and larger sizes so that 60-inch pipe is a common site at underground infrastructure projects across the North America, Hollands said.

"PVC pipe also is being used more and more in trenchless installations, which will only increase as utilities replace their legacy piping materials," he added.

All data points show that PVC pipe is durable, safe for drinking water and will continue to increase market share at the expense of old technology iron piping, according to Hollands.

Fink also is upbeat about the prospects for PE pipe.

"We're seeing more and more communities transition to polyethylene whether its California and seismic activity — our joints are fused and don't pull apart — or Florida and Texas, where you have acidic soils that attack ductile iron, we're really the best solution," Fink said.

Even in the northeast, water can freeze in PE pipe without it breaking like ductile iron and copper do, Fink added.

"We're seeing very good adoption throughout the country for cost effectiveness, ease of installation, ability to install trenchless and open cut — all of which bodes well for polyethylene pipe's growth for the future," Fink said. "Our industry continues to grow and can handle demand of future home growth, population growth in the US, and the rehabilitation of existing infrastructure that needs to occur. We're very well positioned to manage all of those."