



July 1992

Dear Colleague:

I am pleased to introduce the enclosed premier issue of PROfile, a periodic newsletter designed to communicate important information about PVC pipe. It has been developed by PRO, the Pipe Resource Organization of The Vinyl Institute, for specifying engineers, utility managers, contractors and others with an interest in the use of PVC in water and sewer pipe and related applications.

The newsletter is designed to complement and reinforce PRO's other marketing and communications efforts to educate current and prospective users and specifiers about PVC pipe and to correct misperceptions about its performance.

As with all of our efforts, we welcome any comments or questions you might have and we encourage you to let us know if you would like additional copies for customers, sales or marketing personnel or others in your organization. Please contact me or Bob Burnett, Vinyl Institute executive director, at the address at the top of this letterhead.

Sincerely,

Michael K. Barish
Chairman, Pipe Resource Organization

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Published by
the Pipe Resource Organization
of the Vinyl Institute

Welcome to this premier issue of **PROfile**, a periodic newsletter designed to communicate significant and timely information about the use of PVC (polyvinyl chloride) pipe in water distribution, waste water handling and plumbing applications. The newsletter is being developed and distributed by PRO, the Pipe Resource Organization, an operating unit of the Vinyl Institute, the national trade association representing the leading manufacturers of PVC plastics including feedstocks, additives and film and sheet products. PRO serves as a clearinghouse for information about the use of PVC pipe. It works closely with the Uni-Bell PVC Pipe Association, the Plastic Pipe and Fittings Association (PPFA) and the Plastics Pipe Institute (PPI) on projects ranging from technical research, marketing programs, market development work and public information initiatives. In this and future issues, we'll touch on new product developments, code matters, case histories and other related subjects. We welcome any comments, questions or news items you might have.

Hydrogen Sulfide Corrosion Severe in Sewer Pipe, Systems

According to a U.S. EPA Report to Congress, the problem of hydrogen sulfide corrosion in non-plastic sewer pipe and related wastewater collection and treatment systems is severe, not only in this country but in other developed nations as well.

"Corrosion due to the presence of hydrogen sulfide is a well known phenomenon in wastewater systems," the Report states. "Its effects can range from poor reliability and premature replacement of electrical systems to sewer pipe failures and street collapses." Some highlights:

- The geographical distribution of severe corrosion problems is widespread and is not limited to areas having warm climates. Severe corrosion was observed in Wyoming, Idaho, Wisconsin and Washington as well as in California, New Mexico, Louisiana, Texas and Florida.
- Severe hydrogen sulfide corrosion may reduce the 50 to 100 year life expectancy of an infrastructure to less than 10 years.
- Educational programs are necessary to disseminate information on corrosion detection and monitoring to municipalities.
- Hydrogen sulfide corrosion problems in sewers have been reported by at least 20 foreign countries.

Among the techniques to minimize corrosion when sulfide generation is anticipated, the EPA suggests that municipalities "Utilize corrosion resistant pipe materials such as PVC (and) specify corrosion resistant PVC or PE liners for concrete pipe, junction structures, etc."

Uni-Bell Publishes Revised Handbook of PVC Pipe

Now available from the Uni-Bell PVC Pipe Association is a completely updated, third edition "Handbook of PVC Pipe".

The handbook contains over 470 pages with 300 illustrations, tables, equations and photographs covering the engineering, design and installation of under-

ground PVC piping systems. Applications include potable water transmission and distribution, sanitary sewers, storm sewers, sewer forcemains and highway culverts.

Chapters are devoted to such subjects as history, raw materials, manufacturing and testing, fittings and hydraulics.

Copies are available for \$40. To order, contact Uni-Bell at 214-243-3902.

Report Updates PVC Pipe Drinking Water Safety

A two-page technical report on PVC pipe and drinking water safety is available from PRO, the Pipe Resource Organization of the Vinyl Institute.

The report features an overview of PVC pipe in water distribution applications and of CPVC (chlorinated polyvinyl chloride) pipe in hot and cold water systems.

Included are findings from four scientific studies confirming PVC's and CPVC's drinking water safety. Other

performance properties of PVC pipe including durability, ease of installation and economics are also discussed.

Copies of the report (PRO1-1) are available by writing the Vinyl Institute at the address indicated in the upper left corner of this newsletter's mailing panel.

Burnett Named Vinyl Institute Executive Director

Robert H. Burnett has been named executive director of the Vinyl Institute, succeeding Roy T. Gottesman, the Institute's executive director since its establishment in 1982.

Burnett had served as the Institute's associate director since May 1991. Previously, he was the recycling program manager for Hoechst Celanese Corporation responsible for the company's resource recovery program.

Gottesman, regarded as one of the vinyl industry's top experts, will remain an active spokesman regarding vinyl and technical issues and has assumed a consulting role for the Institute.

CASE HISTORY

With PVC Pipe, City Finds 'Fountain of Youth'

Nearly 500 years after Ponce de Leon first laid eyes on what is today the state of Florida, people around these parts are still searching for water. The difference is that the water they seek is 400 to 500 feet straight down in the Lower Hawthorne Aquifer, not in the fountain of youth that legend says the Spanish explorer was trying to find.

Without fresh water, Cape Coral and other communities like it throughout Florida would experience limited growth. The city just completed a \$28 million expansion program that nearly doubled the size of its water system. Fully 90 percent of the 300 miles of new pipe on the project was PVC, including all sizes from 2 to 20 inches in diameter.

"I know PVC pipe is being used successfully in even larger diameters in other parts of the country," said William Geertse, city construction manager. "I look forward to the day when local standards will permit us to do the same. Then there would be a good chance that we might use nothing but PVC to take advantage of the weight savings, ease of installation and other factors."

One reason PVC was specified for the Cape Coral job is the extremely corrosive nature of the environment, both in the saltiness of the water coming out of the aquifer and in the corrosive nature of the soil in which the pipe must be laid, Geertse says.

Cape Coral operates the world's largest reverse osmosis system. High-pressure pumps force salty water through permeators. Desalinized (salt-free) water is discharged one way and the salty water is flushed back into salt water areas.

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Case History continued

"It's not a desalination plant taking direct sea water and we are able to use about 85 percent of the water we get from our wells," Geertse says. "Because of this and the salt content of the soil, PVC stands up better than cast iron. It is also a lot easier to handle and quicker to install."

Finding enough water has become a management skill as important to cities like Cape Coral as managing the budget or other resources. That's why Cape Coral chose PVC pipe. Although not a fountain of youth, the pipe, through its ability to resist corrosion, will never grow old the way metal pipe does. It offers Cape Coral a viable alternative for years to come.



Trench excavation proceeds just ahead of the installation of 12-inch PVC pipe as part of a \$28 million expansion of Cape Coral, Florida's water system.

PVC Replaces Another "Ancient" Pipe Material

PVC pipe literally helped make history recently in Santa Cruz, California.

As part of an infrastructure renewal project following an earthquake on October 17, 1989, the city unearthed a portion of its original piping system, constructed of hollowed-out redwood logs.

According to published reports, the system, originally installed in 1859, was mostly rotted, but some lengths were still in good condition and probably capable of carrying water today. It was not clear, however, how engineers sealed the logs together at their joints.

The city replaced the redwood pipes in the late 1800s with cast iron, but in keeping with modern times is currently replacing the cast iron with PVC.

Directory of PVC Pipe Technical Information Available

A revised listing of technical information covering everything from specifications for PVC pipe used in highway drainage systems to thawing procedures for water mains is available from PRO, the Pipe Resource Organization of the Vinyl Institute.

The publication, which lists more than 70 research reports and technical papers, contains the titles and numerical designations of a variety of documents available from the American Society for Testing and Materials, the American Water Works Association, the Uni-Bell PVC Pipe Association, the Plastics Pipe Institute (PPI), the Plastic Pipe and Fittings Association (PPFA) and the Vinyl Institute. An earlier version of the listing was published in 1989.

Copies of the directory (PRO1-2) are available by writing the Vinyl Institute at the address indicated in the upper left corner of this newsletter's mailing panel.

Updated Study Confirms Cost Savings of PVC Pipe

Contractors can save up to 40 cents on every dollar by using PVC pipe when they install plumbing systems, a recently completed study by a leading independent research firm shows.

The same study found that PVC used in drain, waste and vent (DWV) applications can result in savings of up to 42 cents per dollar over competitive materials.

The study, based on 1991 material and installation costs and labor rates in estimating the savings advantages of PVC pipe, was conducted by IFT Technical Services, Berkeley, California.

Updating an earlier cost/benefit report completed several years ago, the study looked at actual building costs in Atlanta, Boston, Cleveland, Houston, San Francisco and Seattle. Plumbing and DWV systems were evaluated for four types of structures: a wood frame townhouse, a strip shopping center, a high-rise residential building and a high-rise office building.

"This study reconfirms that there are significant cost advantages in using PVC pipe," said Robert H. Burnett, executive director of the Vinyl Institute, which funded the IFT study. "Further, it is significant to note that vinyl's cost advantages endure over time. Our original report, based on data gathered in 1988, showed cost savings which ranged from 23 to 44 percent in plumbing installations and from 16 to 37 percent in DWV installations."

Copies of an executive summary of the study (PRO1-3) are available by writing the Vinyl Institute at the address indicated in the upper left corner of this newsletter's mailing panel.