

**Strength** and **Durability** for **LiFe**<sup>®</sup>

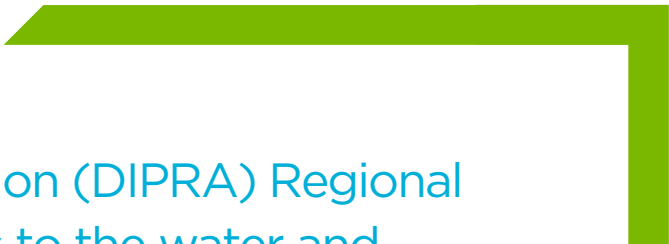


**EDUCATION**

# **Knowledge Pipeline Program**



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Ductile Iron Pipe Research Association (DIPRA) Regional Engineers provide essential services to the water and wastewater industry. Drawing largely on data and other findings from extensive research and testing, our Regional Engineers, all highly trained experts in all aspects of Ductile iron pipe design and use, conduct seminars and present lectures throughout North America to consulting and utility engineers.

Our Knowledge Pipeline, a free online enrichment program, includes courses valuable to the water and wastewater industry. Those who subscribe to the program are encouraged to schedule a follow-up in-person or online “deep dive” lecture with a Regional Engineer after viewing any given course.

DIPRA Regional Engineers can fashion follow-up Knowledge Pipeline lectures so that they address your group’s specific needs. DIPRA also provides numerous specialty presentations.

DIPRA’s half- or full-day programs on the features of Ductile iron pipe and corrosion control are also popular, as well as seminars that provide in-depth training intended to help water and wastewater professionals get a more complete appreciation of the true value of proper design and installation of their Ductile iron pipelines.

## Knowledge Pipeline Courses

To give you a feel for the type of information you can receive in an in-person or online presentation, DIPRA produces free, downloadable online courses that have been pre-recorded through our Knowledge Pipeline enrichment program. These condensed versions of more in-depth presentations provide an overview of the various topics that we offer. You are encouraged to contact your local DIPRA Regional Engineer to arrange for a live presentation that goes into greater detail on any given course topic.

The courses available in our Knowledge Pipeline touch on virtually every aspect of the application of Ductile iron pipe, including:

- Horizontal Directional Drilling with Ductile Iron Pipe
- Material Preferences: Ductile Iron vs. Substitute Materials
- Corrosion Control: The Design Decision Model for Ductile Iron Pipe
- Ductile Iron Pipe on Supports and Bridge Crossings
- Pipe Wall Thickness Design: Selecting the Proper Class of Ductile Iron Pipe

We encourage you to subscribe to our [Knowledge Pipeline](#), and grow your engineering know-how.

## Lectures

DIPRA's Regional Engineers have made thousands of presentations as part of lunch-and-learn programs, day-long sessions or technical programs at conferences. The content, depth and scope of these lectures can be tailored specifically for your group—from seasoned engineers to young professionals to operations personnel. Originally designed for consulting and utility engineers in the water and wastewater fields, these lectures can also benefit construction and maintenance personnel and inspectors, utility officials, industry groups and associations.

These lectures are presented in an atmosphere that encourages open dialogue between participants and the DIPRA Regional Engineers conducting the presentations. You can arrange for one or a combination of several Knowledge Pipeline lectures, each of which lasts 45 minutes to one hour. As a bonus, Professional Development Hours (PDHs) certifications can be provided for attendees. Beyond our Knowledge Pipeline lecture program, DIPRA Regional Engineers offer these primary presentations:



- **Features of Ductile Iron Pipe** provides an introductory overview of Ductile iron's most common applications for water and wastewater systems. Material covered includes the manufacture of Ductile iron pipe, its properties and characteristics. We will look at available pipe sizes, joints, and fittings, and cover DIPRA's research and recommendations for corrosion control. This presentation also covers ANSI/AWWA Standards for Ductile iron pipe.
- **Ductile Iron Pipe Design** provides a thorough review of the thickness design criteria for Ductile iron pipe as embodied in ANSI/AWWA C150/A21.50, "Thickness Design of Ductile Iron Pipe." It reviews design theory and discusses considerations made for internal pressure and external loads, including water hammer, earth and live loads, trench requirements and safety factors.
- **Ductile Iron Pipe Installation** includes handling of pipe prior to installation, excavating and backfilling, proper installation of V-Bio<sup>®</sup> enhanced polyethylene, cutting pipe in the field, deflecting joints to change direction, pressure testing, disinfection and proper tapping for service connections. This lecture focuses on the relationship between design considerations and construction and installation procedures, and has proved to be especially valuable to design engineers, construction and maintenance personnel and inspectors.
- **Thrust Restraint Design for Ductile Iron Pipe Systems** reviews solutions to thrust forces in underground pipelines. We discuss the causes of thrust and how those forces can be mitigated through thrust blocks, restrained joints, and other restraining techniques.
- **Hydraulic Analysis** demonstrates the importance of considering the actual inside diameter of a pipe when calculating head loss. The actual inside diameter of Ductile iron pipe is typically larger than its nominal size and larger than the inside diameters of alternate pipe materials. The savings in energy that results from head loss

comparisons between different pipe materials is examined, and how lower energy consumption results in a savings in cost and in a reduction in greenhouse gas emissions.



## Seminars

In 1968 DIPRA began to offer the Concentrated Consulting Engineering Program (ConCEP), a group of lectures on a variety of topics that can be easily tailored to address the needs and concerns of specific groups. Also popular are DIPRA's half- or full-day Features of Ductile Iron Pipe and Corrosion Control seminars that provide in-depth training intended to help water and wastewater professionals get a more complete appreciation of the true value of proper design and installation of their Ductile iron pipelines.

DIPRA's Corrosion Control Seminar is unique in that it primarily addresses corrosion problems related to Ductile iron piping systems, which differ greatly from steel, concrete, and other types of piping materials. By attending, you'll have the opportunity to observe laboratory demonstrations and become familiar with equipment and procedures used in corrosion testing.

Topics in the Corrosion Control Seminar typically include:

- Features of Ductile iron pipe;
- The basic corrosion cell;
- Soil testing;
- Corrosion of other materials;
- Recommendations to mitigate corrosion through the Design Decision Model (DDM®)
- Cathodic protection; and
- Stray current/bonded joints

The seminar is designed to provide a better understanding of corrosion and its associated terminology, especially with respect to Ductile iron pipe. It will show you how to properly identify corrosive environments and implement practical methods of corrosion control. You also develop an understanding of the relationship between corrosion and other problems pertaining to pipelines. Along with consulting and utility engineers, this seminar is of particular value to design engineers, utility management personnel, and individuals who are currently active in the study and prevention of corrosion.

All the DIPRA Regional Engineers conducting this seminar have years of practical field experience with corrosion and corrosion protection. All are members of AMPP, with most being Certified Corrosion Specialists. Each participant is provided a useful reference notebook, and is eligible for Professional Development Hours (PDHs) after completing the seminar. Reach out to our Regional Engineers to [schedule](#) your seminar today.

## Rely on the Experience of DIPRA's Regional Engineers

Since 1960, DIPRA's Regional Engineers have assisted piping specifiers and users in the proper design and applications of Ductile iron pipe. Along with their professional qualifications, many of DIPRA's Regional Engineers previously worked for years with utilities or as consulting engineers, receiving invaluable experience along the way. Beyond the courses, lectures and seminars mentioned here, DIPRA Regional Engineers also assist utilities and consulting engineers with specific design and installation problems and corrosion control; and investigate problems with pipe in service.

For more information about DIPRA's Knowledge Pipeline courses and seminars or other DIPRA programs, contact your [DIPRA Regional Engineer](#). Contact information is available through our website at [dipra.org](http://dipra.org).

# For more information contact DIPRA or any of its member companies.

## Ductile Iron Pipe Research Association

An association of quality producers dedicated to the highest pipe standards through a program of continuing research and service to water and wastewater professionals.

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[www.dipra.org](http://www.dipra.org)

## Member Companies

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P.O. Box 2727  
Birmingham, Alabama 35202-2727  
[www.american-usa.com](http://www.american-usa.com)

Canada Pipe Company, Ltd.  
55 Frid St. Unit #1  
Hamilton, Ontario L8P 4M3 Canada  
[www.canadapipe.com](http://www.canadapipe.com)

McWane Ductile  
P.O. Box 6001  
Coshocton, Ohio 43812-6001  
[www.mcwaneductile.com](http://www.mcwaneductile.com)

U.S. Pipe  
Two Chase Corporate Drive  
Suite 200  
Birmingham, Alabama 35244  
[www.uspipe.com](http://www.uspipe.com)

## Social Media

Get in the flow with Ductile iron pipe by connecting with us on [Facebook](#), [Twitter](#), and [LinkedIn](#).

Visit our website, [www.dipra.org](http://www.dipra.org) and click on the YouTube icon for informational videos on Ductile iron pipe's ease of use, economic benefits, strength and durability, advantages over PVC, and more.

