dipra
Ductile Iron Pipe
Research Association

Strength and Durability for Life®

GENERAL

# Seminars & Lectures

Last Revised:
May 2016

Since its inception in 1915, an essential service of the Ductile Iron Pipe Research Association (DIPRA) has been extensive field research and testing. Drawing largely on data and other findings from such research, DIPRA has for years conducted seminars and presented numerous lectures throughout North America, mostly to consulting and utility engineers. Since 1968, DIPRA has offered the Concentrated Consulting Engineering Program (ConCEP), a collection of lectures on a variety of topics that can be easily tailored to address the needs and concerns of specific groups. Also popular since 1972 has been DIPRA's one-day Corrosion Control Seminar. ConCEPs and the Corrosion Control Seminar are conducted by DIPRA's Regional Engineers, each of whom is a Registered Professional Engineer and a highly trained expert in all aspects of cast and Ductile Iron Pipe design and use. In addition, most are NACE-certified corrosion specialists.

## ConCEP Presentations

Since the ConCEP program began, DIPRA's Regional Engineers have made more than 40,000 ConCEP presentations. The content, depth, and scope of these slide-illustrated lectures can be tailored specifically for your group — whether it consists of seasoned engineers or individuals with less experience. Although designed for consulting and utility engineers in the water and wastewater fields, these programs can also benefit others, such as construction and maintenance personnel, and inspectors, utility officials, industry groups, and associations. The ConCEPs are presented in an atmosphere that encourages open dialogue among participants and the DIPRA Regional Engineers conducting the presentations. The exchange of questions and ideas is encouraged. You can arrange for one or a combination of several ConCEP lectures, each of which last 30 minutes to 1 hour.

## Primary ConCEP Lectures

Your DIPRA Regional Engineer can fashion ConCEP lectures so that they address your group's specific needs. Along with numerous specialty presentations, DIPRA offers the following 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 manufacturing of Ductile Iron Pipe, its properties, and characteristics, as well as a look at available pipe sizes, joints, fittings and linings. This ConCEP also has an orientation to the complete series of ANSI/AWWA and ANSI/ASTM Standards that cover Ductile Iron pipe.

**Ductile Iron Pipe Design** provides a thorough review of the thickness design criteria for Ductile Iron Pipe as embodied in the American National Standard for the Thickness Design of Ductile Iron Pipe (ANSI/AWWA C150/A21.50). It also reviews design theory and includes discussions of considerations made for water hammer, earth load, trench requirements, and safety factors. This program can include sample design thickness problems and comparisons of required pipe thicknesses as they relate to various trench conditions.

**Ductile Iron Pipe Installation** includes handling of pipe prior to installation, excavating and backfilling trenches, jointing and cutting, service connections, testing, and disinfection. This program focuses on the relationship between design considerations and construction and installation procedures. It has proved especially valuable to design engineers, construction and maintenance personnel, and inspectors.

**Thrust Restraint Design for Ductile Iron Pipe Systems** reviews solutions to thrust force problems. Internal hydrostatic pressure results in unbalanced forces — known as thrust forces — at various locations in a piping system. These locations must be provided with sufficient thrust restraint. This program reviews design procedures for thrust blocks, restrained joints, and other restraining techniques.

**Corrosion: Its Causes, Effects, and Prevention** includes discussion of ways to identify corrosive environments and ways to protect pipe in these environments. It also outlines the development and performance of polyethylene encasement as the recommended corrosion protection system for Ductile Iron Pipe and the introduction of V-Bio®, Enhanced Polyethylene Encasement that is infused with a biocide and a corrosion inhibitor. Also presented in this lecture is a review of the type of research that led to the adoption of the American National Standard for Polyethylene Encasement for Ductile Iron pipe Systems (ANSI/AWWA C105/A21.5) and numerous case histories that establish the efficacy of polyethylene encasement.

**All Pipe Materials Are Not Equal** compares the differences between Ductile Iron Pipe and substitute materials such as PVC pipe, steel pipe, HDPE, or concrete cylinder pipe. Discussions offer a relative comparison of the design, features, and installation of these different materials.

**Horizontal Directional Drilling with Ductile Iron Pipe** provides information and examples of the trenchless installation of Ductile Iron Pipe using horizontal directional drilling ("HDD"). The advantages of HDD are reviewed, as are the advantages that Ductile Iron pipe brings to this method of installation.

**Ductile Iron Pipe on Supports** reviews the pertinent design considerations for both above ground and underground Ductile Iron Pipe-on-supports installations. This discussion covers such topics as flexural, ring and beam-bending stresses; beam deflection; and proper sizing and location of the support.

**Hydraulic Analysis** demonstrates the importance of considering the actual inside diameter of a pipe when calculating headloss. The actual inside diameter of Ductile Iron pipe is typically larger than its nominal size and larger than the inside diameters of substitute pipe materials. The savings in energy that results from headloss comparisons between different pipe materials is examined, as well as how lower energy consumption can be reflected as a savings in cost and in a reduction in greenhouse gas emissions.

## Corrosion Control Seminar

The Corrosion Control Seminar is a basic introduction to pipeline corrosion that offers practical solutions to corrosion problems. This 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.

Seminar topics typically include: features of Ductile Iron Pipe; the basic corrosion cell; resistivity; soil testing; corrosion of other materials; polyethylene encasement, V-Bio® Enhanced Polyethylene Encasement, and other coatings; 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. Also, you will 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 of the DIPRA Regional Engineers conducting this seminar have years of practical field experience with corrosion and corrosion protection. All are members of NACE International, with most being Certified NACE International Corrosion Specialists. Each participant is provided a useful reference notebook, and, after completing the seminar, is eligible for Professional Development Hours (PDHs). Participation in this seminar does require a small fee.

## 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. And the ConCEP lectures and Corrosion Control Seminar are just some of the services offered. DIPRA's Regional Engineers also assist utilities and consulting engineers with specific design and installation problems, corrosion control, and investigate problems with pipe in service.

For more information about ConCEP presentations, the Corrosion Control seminar, or other DIPRA programs, call your DIPRA Regional Engineer or DIPRA Headquarters at 205.402.8700. Or write for information to DIPRA: P.O. Box 19206, Golden, Colorado, 80402. **www.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.

P.O. Box 190306
Birmingham, AL 35219
205.402.8700 Tel
www.dipra.org


**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/videos,** 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.

**Member Companies**

AMERICAN Ductile Iron Pipe
P.O. Box 2727
Birmingham, Alabama 35202-2727

Canada Pipe Company, Ltd.
1757 Burlington Street East
Hamilton, Ontario L8N 3R5 Canada

McWane Ductile
P.O. Box 6001
Coshocton, Ohio 43812-6001

United States Pipe and Foundry Company
Two Chase Corporate Drive
Suite 200
Birmingham, Alabama 35244

**Ductile Iron Pipe is** SMART certified



**Strength** and **Durability** for **Life**®

dipra
Ductile Iron Pipe
Research Association