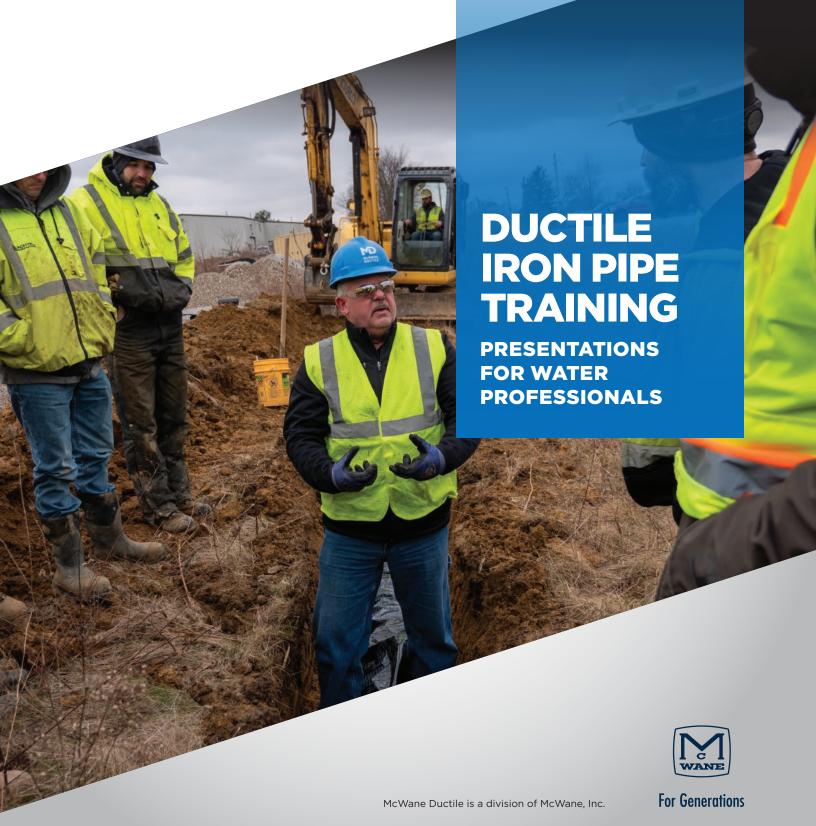


IRON STRONG



TRAINING CLASSES OFFERED BY MCWANE DUCTILE

Ductile 101: Introduction to Ductile Iron Pipe A comprehensive overview of the use of Ductile iron pipe for water and sewer applications.
Ductile Iron Pipe Design: Internal and External This presentation brings the math alive with easy to follow graphics and pictures, permitting quick assessments towards making your most effective pipeline materials selection.
Basics of Corrosion and Protections for Ductile Iron Pipe: Guided by the Updated DIPRA-Corrpro Design Decision Model (DDM) A balanced introduction to corrosive environments typically encountered by buried pipelines that will give attendees all the information they need to make an informal decision on utilizing available pipeline protection mechanisms, if needed.
Preliminary Engineering Report (PER) Template This presentation covers the development and usage of a Preliminary Engineering Report (PER) to assist engineers and municipalities on the road to gaining USDA funding with data that justifies the use of Ductile iron pipe.
Internal Corrosion Prevention for Ductile Iron Pipelines Internal corrosion can, and often is, simply the result of an aggressive fluid being transported within the pipeline. This presentation teaches how it differs from external corrosion and how it effects Ductile iron pipe.
Ductile Iron Pipe Restrained Joints: Basics and Design This presentation outlines how and why gaskets provide less than 100-psi worth of longitudinal resistance towards preventing joint separation in shallow or above-ground assemblies. This is through discussion of the forces, features, and functions of restrained joint Ductile iron pipe.
Bridges, Casings, and JointsOh My! This presentation examines the various joint systems of Ductile iron pipe for use in aerial spans and installations through casing or other carrier pipes.
Sustainable Pipeline Design / Life Cycle Cost Analysis This presentation explores the development of a model published by researchers from the University of Michigan in Ann Arbor that allows utilities and engineers to evaluate the total life cycle cost associated with a water transmission and distribution pipeline.

	Envision and Ductile Iron Pipe The Envision Rating System has often been described as the ASCE version of the highly- regarded Green Building Council LEED Program as evidenced in their general mission statement which declares "the purpose of Envision is to initiate a systemic change to transform the way infrastructure is designed, built, and operated."		
	The Total Cost Equation of Pipeline Material Selection		
	Using the Total Cost Equation (TCE) to responsibly evaluate bid proposals for different pipeline materials often reveals the true cost differential between various pipeline materials involves much more than just the initial per foot bid price of the material itself.	EARN PDH, CEU, AND TCH CREDIT HOURS!	
	DI Pipe, PCCP, HDPE, PVC, and FRP — A Comparative Narrative		
	Proper selection of pipeline materials for any utility system or portions thereof should be be on a wide variety of factors, not just price alone. Based on actual material properties and t related values, along with experiences through the years.		
	Horizontal Directional Drilling Using Ductile Iron Pipe		
	Horizontal Directional Drilling (HDD) installation is utilized when an open-cut trench installs deemed not practical or even possible, such as across a waterway, a lake, an area of unground, or where disruption of the roadway or other structures above the intended pipeline is unacceptable.		
	Ductile Iron Pipe Certifications: What They Provide In the case of Ductile iron pipe, these certifications capture all the pertinent quality assurance information related to a reliably small window of a pipe casting period.		
	Generational Attitudes in the Utility Workplace Given confirmations, there are steps we can take to minimize the potentially conflicting value systems of people interacting within an organization, for the betterment of not only the organization, but the individuals who comprise it as well.		
	Seismic Resilience for Buried Pipelines Original design incorporation or retrefitting for seismic resilience of	on play a major role is	
	Original design incorporation or retrofitting for seismic resilience can play a major role in mitigating the potential damage of buried pipelines from seismic events or merely unstable seismic hazards include ground displacement, ground deformation, ground subsidence, or even liquefaction.		

CONTACT OUR STAFF TODAY TO ARRANGE YOUR TRAINING SESSIONS. SEE THE BACK PAGE FOR MORE INFORMATION.

HELPING BUILD IRON STRONG UTILITIES FOR GENERATIONS

At McWane Ductile, we appreciate our nation's essential water services built by hard-working water professionals. Here at McWane Ductile, we offer various educational resources and training opportunities that are held virtually, in an on-site classroom, or through hands-on

job site instruction. The training sessions are nationwide on pipeline manufacturing, design, installation, testing, failures, specialty designs, corrosion, and more.

McWane Ductile instructors has managed small and large water utility systems, some have served in engineering consulting firms, and all bring decades of experience in solving field issues dealing with pipeline construction and operations.

Please contact us today, to confirm PDH, CEU, and TCH credit availability in your area.

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