

Connecticut Technical High School System
Connecticut State Department of Education

PLUMBING
APPRENTICESHIP
INFORMATION PACKET

2013-14

Covering the following licenses:

P-2 Plumbing Mechanic

J-2 Pump Servicer and Installer

J-4 Lawn Sprinkler Installer and Maintainer

P-6 Sewer, Storm and Water Lines Installer

P-8 Gasoline Tank Installer and Repairer

The following section, **Apprentice Responsibilities**, is taken from the **Apprentice Handbook & Progress Report**, which is given to each apprentice at the beginning of their training by the Office of Apprenticeship Training, Connecticut State Labor Department.

Apprentice Responsibilities:

- 1. Work safely.**
- 2. Avoid absenteeism and tardiness at work and at school.**
- 3. Attend and participate in related instruction and maintain the highest possible grades.**
- 4. Be involved and show dedication to your training (both on the job and in the classroom).**
- 5. Keep track of your training hours, (either in the form of work records or logbook) and advise your supervisor of any deficiencies in your apprenticeship training.**
- 6. Show dedication and interest in learning the trade.**
- 7. Show respect to the skilled journeypersons training and supervising you.**
- 8. Comply with the provisions of the Apprentice Agreement.**
- 9. Follow your sponsor's written work rules and policies.**
- 10. You must be accompanied by a journeyperson while on the job site.**

Concerning related classroom instruction, each apprentice student is expected:

- To purchase the textbooks required for each course
- To complete all instructor assigned quizzes and exams as well as any academic reinforcement activities.

NOTE: A minimum grade of 75% is necessary to pass each course.

Regional Apprenticeship Representatives

Office of Apprenticeship Training

Department of Labor

860-263-6085

Region 1: Paul Femia, paul.femia@ct.gov

(860) 263-6128

Towns Served:

Andover	Griswold	New London	Sterling
Ashford	Groton	North Stonington	Stonington
Bozrah	Hampton	Norwich	Thompson
Brooklyn	Hebron	Old Lyme	Tolland
Canterbury	Killingly	Plainfield	Union
Chaplin	Lebanon	Pomfret	Voluntown
Columbia	Ledyard	Preston	Waterford
Coventry	Lisbon	Putnam	Willington
East Lyme	Lyme	Scotland	Windham
Eastford	Mansfield	Sprague	Woodstock
Franklin	Montville	Stafford	

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Region 2: Larry Satchell, larry.satchell@ct.gov

(860) 263-6084

Towns Served:

Bloomfield	Glastonbury	South Windsor
Bolton	Granby	Suffield
East Granby	Hartford	Vernon
East Hartford	Manchester	Wethersfield
East Windsor	Newington	Windsor
Ellington	Rocky Hill	Windsor Locks
Enfield	Somers	

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Region 3: Owen Golding, owen.golding@ct.gov

(860) 263-6083

Towns Served:

Avon	Goshen	Oxford	West Hartford
Barkhamsted	Hartland	Plymouth	Winchester
Bethel	Harwinton	Roxbury	Woodbury
Bethlehem	Kent	Salisbury	
Bridgewater	Litchfield	Sharon	
Brookfield	Middlebury	Sherman	
Burlington	Morris	Simsbury	
Canaan	New Fairfield	Southbury	
Canton	New Hartford	Thomaston	
Colebrook	New Milford	Torrington	
Cornwall	Newtown	Warren	
Danbury	Norfolk	Washington	
Farmington	North Canaan	Watertown	

Regional Apprenticeship Representatives

Region 4: Gina Knox, gina.knox@ct.gov

(860) 263-6277

Towns Served:

Ansonia	Greenwich	Ridgefield	Westport
Bridgeport	Milford	Shelton	Wilton
Darien	Monroe	Stamford	
Derby	New Canaan	Stratford	
Easton	Norwalk	Trumbull	
Fairfield	Redding	Weston	

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Region 5: Tammie Whiting, tammie.whiting@ct.gov

(860)263-6154

Towns Served

Bethany	East Haddam	Killingworth	North Haven	Westbrook
Branford	East Hampton	Madison	Old Saybrook	Woodbridge
Chester	East Haven	Marlborough	Orange	
Clinton	Essex	Middlefield	Portland	
Colchester	Guilford	Middletown	Salem	
Deep River	Haddam	New Haven	Seymour	
Durham	Hamden	North Branford	West Haven	

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Region 6: Keri Lamontagne, keri.lamontagne@ct.gov

(860) 263-6129

Towns Served:

Beacon Falls	Meriden	Southington
Berlin	Naugatuck	Wallingford
Bristol	New Britain	Waterbury
Cheshire	Plainville	Wolcott
Cromwell	Prospect	

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Department of Consumer Protection

Plumbing & Piping Licenses: Licenses Expire annually: October 31st

Section 20-330 of the Connecticut General Statutes

"Plumbing and piping work" means the installation, repair, replacement, alteration or maintenance of gas, water and associated fixtures, laboratory equipment, sanitary equipment, other than subsurface sewage disposal systems, fire prevention apparatus, all water systems for human usage, sewage treatment facilities and all associated fittings within a building and shall include lateral storm and sanitary lines from buildings to the mains, swimming pools and pumping equipment, and shall include making connections to back flow prevention devices, and shall include low voltage wiring, not exceeding twenty-four volts, used within a lawn sprinkler system, but on and after July 1, 1984, shall not include solar work, except for the repair of those portions of a solar hot water heating system which include the basic domestic hot water tank and the tie-in to the potable water system and on and after April 1, 1989, shall not include the installation, repair, replacement, alteration or maintenance of fire prevention apparatus within a structure, except for standpipes which are not connected to sprinkler systems.

"Irrigation work" means making the connections to back flow prevention devices, and low voltage wiring, not exceeding twenty-four volts, used within a lawn sprinkler system.

"Solar work" means the installation, repair, replacement, alteration or maintenance of an active, passive or hybrid solar hot water heating system.

P-1 Contractor Unlimited

The holder of this license may perform all plumbing and piping work as defined in Section 20-330 of the General Statutes.

P-2 Unlimited Journeyperson

The holder of this license may do the same work as the P-1 licensee, but only while in the employ of a contractor licensed for such work.

P-7 Contractor (Limited to Sewer, Storm and Water Lines)

The holder of this license may perform the installation, replacement, alteration, or repair of sewer lines, storm water lines, water lines, and services. This license DOES NOT permit any work on septic tank systems or inside a structure.

P-6 Journeyperson (Limited to Sewer, Storm and Water Lines)

The holder of this license may do the same work as the P-7 licensee, but only while in the employ of a contractor licensed for such work.

P-9 Contractor -

The holder of this license may perform the installation or repair of gasoline tanks and piping & pumping equipment.

P-8 Journeyperson -

The holder of this license may do the same work as the P-9 licensee, but only while in the employ of a contractor licensed for such work.

J-1 Contractor (Limited to Water Pump and Water Conditioning Equipment)

The holder of this license may perform the installation or repair of water pumps, water conditioning equipment and related piping and equipment from the supply of a water well to the main shut-off valve which shall be within three feet of the supply tank. Installation and repair of water conditioning equipment piping shall include making the connection from and to the existing water line.

J-2 Journeyperson (Limited to Water Pump and Water Conditioning Equipment)

The holder of this license may perform the same work as the J-1 licensee, but only while in the employ of a contractor licensed for such work.

EFFECTIVE JANUARY 1, 2008
P-2 PLUMBING APPRENTICESHIP
COURSE SEQUENCE AND PREREQUISITES

Related Instruction- 720 Hours

OJT - 8000 Hours

Courses	Course number	Semester	Course Length	Prerequisites
FIRST YEAR COURSES:				
Basic Math Computations	A0001	1	36 Hours	
Blueprint Reading	A0031	1	36 Hours	
Intro to Plumbing	A0700	2	36 Hours	
OSHA 30	A0099	2	36 Hours	
Plumbing Math	A0014	2	36 Hours	A0001
SECOND YEAR COURSES:				
Brazing, Cutting and Metallurgy	A2113	1	36 Hours	
Drain Waste Vent I	A0706	1	36 Hours	
Drain Waste Vent II	A0746	2	36 Hours	A0706
Gasoline Tank, Piping and Pump	A0749	2	36 Hours	
Sewer, Storm and Water Lines	A0754	2	36 Hours	
THIRD YEAR COURSES:				
Water Supplies	A0705	1	36 Hours	
Wells, Pumps and Piping I	A0750	1	36 Hours	
Plumbing Code Part I	A0711	2	36 Hours	
Fixtures, Appliances and Installation	A0708	2	36 Hours	
Wells, Pumps and Piping II	A0751	2	36 Hours	A0750
FOURTH YEAR COURSES:				
Water Treatment	A0752	1	36 Hours	
International Mechanical Code	A0729	1	36 Hours	
Special Piping	A0709	2	36 Hours	
Plumbing Code Part II	A0741	2	36 Hours	A0711
Related Codes and Standards	A0730	2	36 hours	

J-2 WELL PUMPS & PIPING APPRENTICESHIP
COURSE SEQUENCE AND PREREQUISITES

Related Instruction- 288 Hours

OJT - 4000 Hours

COURSES	Course number	Semester	Course Length
FIRST YEAR COURSES:			
Basic Math Computations	A0001	1	36 Hours
OSHA 30	A0099	1	36 Hours
Blueprint Reading	A0031	2	36 Hours
Wells, Pumps and Piping I	A0750	2	36 Hours
SECOND YEAR COURSES:			
Wells, Pumps and Piping II	A0751	1	36 Hours
Water Treatment	A0752	1	36 Hours
Water Supply	A0705	2	36 Hours
Plumbing Code II	A0741	2	36 Hours

P-6 SEWER STORM & WATER APPRENTICESHIP
COURSE SEQUENCE AND PREREQUISITES

Related Instruction- 180 Hours

OJT - 2000 Hours

COURSES	Course number	Semester	Course Length
FIRST YEAR COURSES:			
Basic Math Computations	A0001	1	36 Hours
OSHA 30	A0099	1	36 Hours
Blueprint Reading	A0031	2	36 Hours
Sewer, Storm and Water Lines	A0754	2	36 Hours
Plumbing Code II	A0741	2	36 Hours

P-8 GASOLINE TANK PIPING APPRENTICESHIP
COURSE SEQUENCE AND PREREQUISITES

Related Instruction- 144 Hours

OJT - 2000 Hours

COURSES	Course number	Semester	Course Length
FIRST YEAR COURSES:			
Basic Math Computations	A0001	1	36 Hours
OSHA 30	A0099	1	36 Hours
Blueprint Reading	A0031	2	36 Hours
Gasoline Tank, Piping and Pump	A0749	2	36 Hours

J-4 LAWN SPRINKLER INSTALLER AND MAINTAINER APPRENTICESHIP
COURSE SEQUENCE AND PREREQUISITES

Related Instruction- 144 Hours

OJT - 2000 Hours

COURSES	Course number	Semester	Course Length
FIRST YEAR COURSES:			
Basic Math Computations	A0001	1	36 Hours
Blueprint Reading	A0031	1	36 Hours
Plumbing Math	A0014	2	36 Hours
Water Supply	A0705	2	36 Hours

P-2 PLUMBING APPRENTICESHIP
COURSE SEQUENCE AND PREREQUISITES

**P-2 Plumbing Curriculum Requirements for Apprentices registered for
classes *before* the start of the Spring 2008 semester**

Related Instruction- 576 Hours

OJT - 8000 Hours

COURSES	Course number	Semester	Course Length
FIRST YEAR COURSES:			
Basic Math Computations	A0001	1	36 Hours
Business Math	A0007	1	36 Hours
OSHA 30	A0099	2	36 Hours
Gas Heating Systems	A0728	2	36 Hours
SECOND YEAR COURSES:			
Blueprint Reading	A0031	1	36 Hours
Science I	A0703	1	36 Hours
Plumbing Blueprint Reading	A0036	2	36 Hours
Drain-Waste-Vent and Design Systems	A0706	2	36 Hours
THIRD YEAR COURSES:			
Science II	A0704	1	36 Hours
Water Supplies	A0705	1	36 Hours
Fixtures, Appliances and Installation	A0708	2	36 Hours
Basic Electricity	A0710	2	36 Hours
FOURTH YEAR COURSES:			
Special Piping and Installation	A0709	1	36 Hours
Plumbing Code Part I	A0711	1	36 Hours
Plumbing Code Part II	A0741	2	36 Hours
Heating Code	A0729	2	36 hours

Technical High School System
P-2 Plumbing Apprenticeship
Revised curriculum crossover chart

Related Instruction:

- **Old curriculum 576 Hours**
- **New curriculum 720 Hours**

OLD COURSES	Course number	NEW COURSES	Course number
Basic Math Computations	A0001	Basic Math Computations	A0001
Business Math	A0007	None	
OSHA 30	A0099	OSHA 30	A0099
Basic Electricity	A0710	None	
Blueprint Reading	A0031	Blueprint Reading	A0031
Science I	A0703	None	
Science II	A0704	None	
Plumbing Blueprint Reading	A0036	None	
Drain-Waste-Vent and Design Systems*	A0706	Drain-Waste-Vent I	A0706
Special Piping and Installation	A0709	Special Piping and Installation	A0709
Water Supplies	A0705	Water Supplies	A0705
Fixtures, Appliances and Installation	A0708	Fixtures, Appliances and Installation	A0708
Gas Heating Systems	A0728	None	
Plumbing Code Part I	A0711	Plumbing Code Part I	A0711
Plumbing Code Part II	A0741	Plumbing Code Part II	A0741
International Mechanical Code	A0729	International Mechanical Code	A0729

*** Note: Grandfathered plumbing apprentices needing Drain Waste Vent and Design from the old curriculum will need to take both Drain-Waste-Vent I and Drain Waste Vent II from the new curriculum.**

New courses:

Intro to Plumbing	A0700
Plumbing Math	A0014
Brazing, Cutting and Metallurgy	A2113
Drain Waste Vent II	A0746
Gasoline Tank, Piping and Pump	A0749
Wells, Pumps and Piping I	A0750
Wells, Pumps and Piping II	A0751
Water Treatment	A0752
Related Codes and Standards	A0730

When substituting new courses for the dropped old courses, the grandfather apprentices must include the following courses:

Related Codes and Standards	A0730
Plumbing Math	A0014
Drain Waste Vent II	A0746

Table of Contents

NOTE: Each apprentice student is expected to complete all instructor assigned quizzes and exams as well as any academic reinforcement activities. A minimum grade of 75% is necessary to pass each course.

Course: Basic Math Computations A0001 36 Hours

- A. Computations Using Real Numbers**
- B. Computations Using Fractions**
- C. Computations Using Decimal Fractions**
- D. Base, Rate, and Portion**
- E. Computation of Area and Volume**
- F. Units of Measurements**

Course: Blueprint Reading A0031 36 Hours

- A. Application of Building Codes and Standards**
- B. Introduction to Blueprint Reading**
- C. Alphabet of Lines and Symbols**
- D. Orthographic Projection Drawings**
- E. Construction Dimensions and Construction Materials**
- F. Reading Plot Plans and Contour Maps**
- G. Footings, Foundations and Floor Blueprint**
- H. Structural Steel, Framing Blueprints**
- I. Plumbing System Blueprints**
- J. H.V.A.C. System Blueprints**
- K. Electrical Systems Blueprints**

Course: Introduction to Plumbing A0700 36 Hours

- A. The Plumbing Trade**
- B. Job Site Safety**
- C. Plumbing Math**
- D. Plumbing Materials**
- E. Plumbing Tools and Equipment**

Course: OSHA-30 A0099 36 Hours

- A. Introduction to OSHA – 2 hours**
- B. Managing Safety and Health – 2 hours**
- C. OSHA Focus Four Hazards – 6 hours**
 - a. (1) Falls (minimum one hour and 15 minutes)**
 - b. (2) Electrocution**
 - c. (3) Struck-By (e.g., falling objects, trucks, cranes)**
 - d. (4) Caught-In or Between (e.g., trench hazards, equipment)**
- D. Personal Protective and Lifesaving Equipment – 2 hours**
- E. Health Hazards in Construction – 2 hours**
- F. Stairways and Ladders – 1 hour.**
- G. Electives - 12 hours**
 - a. Concrete and Masonry Construction**
 - b. Confined Space Entry**
 - c. Cranes, Derricks, Hoists, Elevators, & Conveyors**
 - d. Ergonomics**
 - e. Excavations**
 - f. Fire Protection and Prevention**
 - g. Materials Handling, Storage, Use and Disposal**

- h. Motor Vehicles, Mechanized Equipment and Marine Operations; Rollover Protective Structures and Overhead Protection; and Signs, Signals and Barricades
- i. Powered Industrial Vehicles
- j. Safety and Health Programs
- k. Scaffolds
- l. Steel Erection
- m. Tools - Hand and Power
- n. Welding and Cutting

Course: Plumbing Math **A0014** **36 Hours**

- A. Basic Fundamental
- B. Pipe Length Calculations
- C. Volumes, Pressures and Capacities
- D. Physics

Course: Brazing, Cutting and Metallurgy **A2113** **36 Hours**

- A. Brazing, Braze Welding & Soldering
- B. Cutting Operations
- C. Pipe Welding
- D. Welding Metallurgy
- E. Metal Identification
- F. Weldability of Carbon & Alloy Steels
- G. Weldability of Tool Steels and Cast Iron
- H. Weldability of Stainless Steel
- I. Weldability of Nonferrous Metals
- J. Distortion Control
- K. Materials & Fabrication Standards & Codes

Course: Drain, Waste and Vent I **A0706** **36 Hours**

- A. Joining, Installing and Support Pipe
- B. Sanitary Drainage, Vent and Storm Water Drainage

Course: Drain, Waste and Vent II **A0746** **36 Hours**

- A. Sizing Sanitary Drainage and Vent Piping
- B. Plumbing Traps

Course: Gasoline Tank, Piping and Pump **A0749** **36 Hours**

- A. Installation of Underground Liquid Storage Systems
- B. Installation of Aboveground Storage Systems for Motor Vehicle Fueling
- C. Testing Electrical Continuity

Course: Sewer, Storm and Water Lines **A0754** **36 Hours**

- A. General Installation Methods
- B. Concrete Pipe Installation
- C. Ductile Pipe Installation

Course: Water Supply **A0705** **36 Hours**

- A. Sizing Water Supply Piping
- B. Protecting the Potable Water Supply
- C. Connecticut Cross Connection Control Manual

Course: Wells, Pumps and Piping I **A0750** **36 Hours**

- A. Well Fundamentals
- B. Pumps
- C. Components

Course: International Plumbing Code Part I **A0711** **36 Hours**

- A. International Plumbing Code, Chapters 1 thru 5, 8 & 10

Course: Fixtures, Appliances Installation and Repairs **A0708** **36 Hours**

- A. Plumbing Fixtures and Appliances
- B. Testing and Inspecting Plumbing Systems
- C. Customer Service and Plumbing System Repairs

Course: Wells, Pumps and Piping II **A0751** **36 Hours**

- A. Service
- B. Water Quality Assurance
- C. Electric Safety and Controls
- D. Community Water Systems, Shared Wells and Groundwater Heat Pumps

Course: Water Treatment **A0752** **36 Hours**

- A. Filtration Processes
- B. Aeration Processes
- C. Adsorption Process
- D. pH Modification and Neutralization Processes
- E. Ion Exchange Water Softening Process
- F. Iron, Manganese and Hydrogen Sulfide Treatment
- G. Multifunctional Treatment Systems
- H. Drinking and Cooking Water Quality
- I. Water Ailments- Symptoms, Causes and Remedies

Course: International Mechanical Code **A0729** **36 Hours**

- A. Administration of the International Mechanical Code

Course: Special piping and Installation **A0709** **36 Hours**

- A. Copper Tubing
- B. Plastic Piping
- C. Gas Piping

Course: International Plumbing Code Part II **A0741** **36 Hours**

- A. International Plumbing Code Chapters 6, 7, 9, 11 & 12

Course: Related Codes and Standards **A0730** **36 Hours**

- A. International Residential Code
- B. National Fire Protection Association Standards

Required Booklist for Plumbing Apprentice Students:

Following are the required textbooks that each student must purchase for each course.

For Basic Math Computations (A0001):

- Applied Mathematics, R. Jesse Phagan, Goodheart-Willcox Company, Inc. ISBN 1-56637-995-4
- Workbook: Applied Mathematics, R. Jesse Phagan, Goodheart-Willcox Company, Inc., ISBN 1-56637-996-2

For Plumbing Mathematics (A0014):

- Textbook: Mathematics for Plumbers and Pipefitters, Lee Smith, Delmar Learning, ISBN 1-4283-0461-4

For Blueprint Reading (A0031):

- Print Reading for Construction, Residential and Commercial by Walter C. Brown and Daniel P. Dorfmueller, Goodheart-Willcox Company, Inc., ISBN 1-59070-347-2.

For OSHA 30 (A0099):

- OSHA 1926 CFR 29

For the following courses:

Introduction to Plumbing (A0700)

Drain, Waste and Vent I (A0706)

Drain, Waste and Vent II (A0746)

Water Supply (A0705)

Fixtures, Appliances Installation and Repairs (A0708)

- Textbook: Plumbing Design and Installation, American Technical Publishers^{3rd}(or latest edition)
- NFPA 54, National Fuel Gas Code, National Fire Protection Association (NFPA)
- Connecticut Cross Connection Control Manual, Connecticut Department of Health

For Brazing, Cutting and Metallurgy (A2113)

- Textbook: Welding Skills, 3rd Edition, Moniz and Miller, American Technical Publishers

For Wells, Pumps and Piping I and II (A0750 & A0751)

- Water Systems Handbook, Water Systems Council

For Water Treatment (A0752)

- Water Processing, #3rd Edition, Water Quality Association

For Sewer, Storm and Water Lines (A0754)

- Pipe & Excavation Contracting by Dave Roberts: Craftsman Book Company
- Concrete Pipe Installation, American Concrete Pipe Association
- Installation Guide for Ductile Iron Pipe, Ductile Iron Pipe Research Association

For Special Piping and Installation (A0709)

- The Copper Tube Handbook, Copper Development Association, www.copper.org
- Plumbing Apprentice Training Manual for Plastic Piping Systems, Plastic Piping Educational Foundation
- National Fuel Gas Code Handbook, National Fire Protection Association (NFPA)

For Gasoline Tank, Piping and Pump (A0749)

- Recommended Practices for Installation of Underground Liquid Storage Systems, Petroleum Equipment Institute
- Recommended Practices for Installation of Aboveground Liquid Storage Systems for Motor Fueling, Petroleum Equipment Institute
- Recommended Procedure for Testing Electrical Continuity of Fuel-Dispensing Hanging Hardware, Petroleum Equipment Institute
- NFPA 30A Code for Motor Fuel Dispensing Facilities and Repair Garages, National Fire Protection Association (NFPA)

For Plumbing Code I & II (A0711 & A0741)

- International Plumbing Code 2003, International Code Council

For International Mechanical Code (A0729) and Related Codes and Standards (A0730)

- International Mechanical Code Book 2006, International Code Council
- International Residential Code Book 2006, International; Code Council
- NFPA 30 Flammable and Combustible Liquids
- NFPA 31 Standard for the Installation of Oil Burning Equipment
- NFPA 54 National Fuel Gas Code
- NFPA 85 Boiler and Combustion Systems Hazards Code
- NFPA 90A Standard for the Installation of Air Conditioning and Ventilation Systems
- NFPA 90B Standard for the Installation of Warm Air heating and Air Conditioning Systems
- NFPA 96 Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations
- NFPA 99C Standard on Gas and Vacuum Systems

APPRENTICE PROGRAM
BOOK PUBLISHERS PHONE ORDER NUMBERS & WEBSITES

<u>Book Publishers</u>	<u>Phone Numbers</u>	<u>Website</u>
Goodheart-Willcox	1-800-323-0440	www.goodheartwillcox.com
Thomson Delmar Learning	1-800-347-7707	www.delmarlearning.com
National Fire Protection Association (NFPA)	1-800-344-3555	www.nfpa.org/index.asp
American Technical Publishers	1-800-323-3471	www.go2atp.com
International Code Council (ICC)	1-800-786-4452	www.iccsafe.org/e/category.html
CRC Press	1-800-272-7737	www.crcpress.com/default.asp
Amazon Bookstore	1-800-201-7575	www.amazon.com
Prentice Hall	1-800-282-0693	http://vig.prenhall.com/catalog/
Petroleum Equipment Institute	1-918-494-9696	www.pei.org
Plastic Piping Educational Foundation	1-630-858-6540	www.ppfahome.org
Copper Development Association	212-251-7200	www.copper.org
Water Systems Council	1-202-625-4387	www.watersystemcouncil.org
Craftsman Book Company	1-800-829-8123	http://craftsman-book.com
American Concrete Pipe Association	1-972 506-7216	http://www.concrete-pipe.org
Ductile Iron Pipe Research Association	1-251-990-4984	http://www.dipra.org/
Water Quality Association	1-630-505-0160	http://www.wqa.org/