

# Fiberglass Reinforced Plastics Institute, Inc.

## Syllabus

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**Course Name:** FRP833 – Field Inspection of Process Piping and Ductwork

**Duration:** One (1) day totaling eight (8) hours, with continuing education PDH credit opportunity.

**Description:** This course provides a review and discussion of essential information pertaining to inspection of Fiberglass Reinforced Plastic (“FRP”) process piping and ductwork that is in operation, whether in or out of service. Concepts taught build on FRPI SP8310 Part 2.1 Inspection Procedures incorporating FRPI SP1010 Laminate Identification, SP1020 Visual Imperfections, SP1030 Damage Mechanisms and SP1040 Integrity and Leak Testing as they apply within the framework of the API 570 Piping Inspection Code. Inspection procedures draw in elements of FRP equipment design under ASME NM.2 Piping Systems, B31.1 Power Piping and B31.3 Process Piping, Contact-Molded ASTM D6041 Pipe, D3982 Ductwork and D5421 Flanges plus mass-produced commodity ASTM D2996 Filament Wound Pipe, D2997 Centrifugally Cast Pipe and D4024 Machine Made Flanges. Courses are conducted in a training and demonstration theater setting, with maximum of twelve (12) participants per one (1) instructional leader. The extra-large projection screen, supplemented by hands on demonstrations integrating actual production materials plus laminate specimens extracted from new and used equipment, provides for an interactive learning involvement.

**Key Learning Objectives:** After attending this course, participants should be able to:

1. Initiate material verification and traceability for custom and mass-produced commodity pipe.
2. Investigate common pipe system failure modes.
3. Evaluate condition of support system design and thermal expansion/contraction effects.
4. Perform in service inspection of butt wrap, adhesive, flanged and threaded joints.
5. Choose integrity and leak testing options based on advantages, disadvantages and limitations.
6. Determine remaining useful life and suitability for continued service.
7. Establish inspection intervals based on findings.
8. Implement minimum reporting and record keeping procedures.

**Who Should Attend:**

- Pipe System and Ductwork Inspectors
- FRPI 8310 Inspectors and RIT's
- API 570 Authorized Piping Inspectors
- Designers, Engineers and PE's
- Specification Writers
- Asset Mechanical Integrity Managers
- Maintenance Planners and Operators
- Shop and Field Technicians
- Resident Engineers
- Owners / End Users

**Prerequisites:** Fluent in the English language. Registrants are required to present upon request their FRPI course completion certificate received for their successful participation in either FRP301, FRP401 or FRP831. This course completion certificate prerequisite may be waived for registrants holding other FRPI recognized fiberglass training certificates or with a minimum of one (1) year full time professional fiberglass experience within the past five (5) years. Purchase and review of FRPI “Aboveground Storage Tank Inspector Certification and Licensing Manual”. Course participants will be required to present a Manual copy at time of course check in, with their name included in original authentic unaltered license stamp. Total of all participants from a given employer shall not exceed number of Manual copyright licenses employer has purchased. Although not required, it is highly recommended that participants obtain and review standards referenced within the Manual plus pipe design standards listed in course description above. Prior understanding of FRP industry standards, laminate design, manufacturing and inspection may result in establishing a broader and deeper learning experience.

**Recognition:** A course completion certificate will be issued to all attendees who participate in entire program, with eight (8) Professional Development Hours ("PDH's") recorded for professional engineers. FRPI has been vetted and is recognized by RCEP ([www.rcep.net](http://www.rcep.net)) since 2011 as a provider of continuing education for licensed professional engineers. Participants desiring PDH credits will be given a program evaluation survey at the end of course and required to complete it. See Terms and Conditions of Course Registration for more information pertaining to PDH credit opportunities.

**Skills Assessment:** A interactive quiz will be conducted at the conclusion of the day, with answers discussed live within the group as an ungraded learning confirmation exercise.

**Instructional Leader:** Gary L. Arthur – FRPI Executive Director and President (see [Bio/CV](#))