

## **NRI University – Type B Level 1 Installer Course (TB1)**

### **About This Course:**

The NRI University TB1 training course has been designed to equip the student to utilize NRI's Engineered Composite Repair (ECR) systems for the repair of Type A and Type B defects on piping systems including straight pipe, elbows, and tees. Type A defects are defined by the ASME PCC-2 and ISO/TS 24817 documents as non-leaking defects. This includes, but is not limited to, external corrosion defects up to 80% wall loss, dents, gouges, wrinkle bends, and faulty welds. Type B defects are defined by the ASME PCC-2 and ISO/TS 24817 documents as leaking defects. This includes, but is not limited to, through-wall defects and internal corrosion which will result in wall loss below 0.04" (1mm). Successful completion of this course will require the student to pass a written test on the various aspects covered in the class (see Agenda Outline below) as well as perform repairs on a pipe section with external wall loss plus a 1" hole, an elbow with a ¼" hole, and a tee with a ¼" hole using two of NRI's ECR systems, Syntho-Glass® XT and Thermo-Wrap™, which must pass a hydro-pressure test of at least 1,200 psi (83 bar) once fully cured.

### **Who Should Attend:**

Anyone who wishes to install NRI composite repair systems for Type A and Type B defects on various pipe fitting geometries. Typical students include: pipeline maintenance contractors, painting/coating contractors, maintenance department personnel, leak-sealing specialists, and many others who may be required to apply a composite repair system for corrosion protection and rehabilitation of pipelines or piping systems.

### **Prerequisites:**

Successful completion through the TA2 course level, as well as three (3) successful and properly documented repairs with NRI material within the last 6 months. Students may not receive certification for the TB1 course with no prior composite training and experience without due consideration and authorization by NRI University.

### **Class Size:**

Minimum class size of 2 students. Recommended maximum class size of 6 students (consult your NRI Representative for special needs in this area).

### **Length of Course:**

Successful completion of this course should be completed within 1 and a half days. Depending on student ability and progress shown, additional time may be required and is at the sole discretion of the NRI University Trainer to determine if this is required.



## Responsibilities/Expectations:

### Of the Student:

- Show up to class before the scheduled start time
- Silence/Turn off all cell phones
- Be ready to listen, learn, and actively participate in group discussions and hands-on application
- Bring work clothes that will not be ruined by resins for use during hands-on application
- Dedicate full attention to the course program

### Of the Trainer:

- Start and end class on time
- Provide detailed training per the course description
- Answer any and all questions and concerns regarding the course content during the training course

## Agenda Outline:

This course will cover the following agenda items:

- NRI's engineering and design process
- ASME PCC-2 and ISO/TS 24817 requirements
- Surface preparation methods and requirements
- Proper application of Syntho-Glass XT for leaking defects on straight pipe, elbows, and tees (Viper-Skin carbon fiber system available as option upon request)
- Proper application of Thermo-Wrap for leaking defects on straight pipe, elbows, and tees (Thermo-Wrap CF carbon fiber system available as option upon request)
- QC requirements
- Practical application of above mentioned composite repair systems

## Course Tools:

The course includes the following items to be used by the student during the class and kept:

- NRI Composite Materials\*
- NRI-U – TB1 Training Manual
- Electronic media (includes TB1 Training Manual, Engineering Assessment Forms, QC Forms, etc.)

The course includes the following items to be used by the student during the class and returned to Trainer:

- NRI product visual and training samples (*not product used for hands-on application*)
- Training pipes for hands-on application (*unless supplied by sponsoring company*)
- NRI-Approved surface preparation power tools (*unless supplied by sponsoring company*)
- Surface preparation measurement/inspection tools
- Durometer – Type D (*unless supplied by sponsoring company*)
- Shore D hardness training blocks

*\*Product should be previously purchased or provided by sponsoring company and is not provided as part of this course registration. Contact your local NRI Representative for details and requirements.*

