



## IN QUAL - Telecom Quality Installation Process

**Length:** 4.5 Days

### Overview

IN QUAL is a course that will provide instruction on the most current industry standards for telecommunications equipment installations. The terminology and methods discussed in this course are consistent with wireline and wireless industry accepted guidelines i.e.; AT&T, Verizon, Telcordia and National Electrical Code (NEC).

Implementing the appropriate installation standards in a telecommunications environment is essential for installers, engineers, quality auditors, maintenance technicians, supervisors and others involved in an installation project over-site capacity. A comprehensive understanding of the current installation standards is necessary in order to ensure that the installation processes used to install telecommunications equipment are attaining the quality installation standards demanded in today's environment.

IN QUAL provides broad instruction into the technical and visual aspects of industry accepted installation guidelines required for the installation of telecommunications equipment. To help reinforce the comprehensive installation guidelines discussed, casework / lab activities are included. Upon completion you will leave with the ability to recognize installation items that do not comply with today's industry standards.

**Who should attend:** IN QUAL is recommended for all personnel involved in system installation, and for those responsible for implementing and overseeing installation project activities. Installation and maintenance technicians, as well as engineers, auditors and managers can benefit from the topics discussed.

Throughout the course, knowledge assessments are used to reinforce the topics discussed. At the completion of the course you will be tested to document your knowledge. Successful completion of this test will earn TPI Trainers Certification. The test results will also provide you with an appreciation of your attained knowledge through classroom participation. The results will also help to determine areas for further study.

**Note:** When IN QUAL is delivered at your location (client-site), our instructors can enhance your learning experience by performing an installation audit at your site, thereby specifically targeting the lessons learned in the classroom.

**Customization:** IN QUAL depicts the current industry standards and can be customized to meet the needs of your specific work group. To discuss the need to customize this course you can contact Vicki Johnson by calling 1-630-607-9302.

## Course Outline

- Installation Skill Level
  - competency
  - critical activity
  - network elements
  - installer skill levels
  
- Job Documentation
  - start notifications
  - planning
  - MOP
  - JIM (Job Information Memorandum)
  - in-process report
  - completion reports
  - acceptance process
  
- Generic Installation Activities
  - quality objectives and quality
  - building and workmanship requirements
  - common tools
  - job documentation and co-ordination
  - safety
  - site surveys
  
- Fire-Stopping Considerations
  - Penetrations
    - cable holes
      - floor
      - wall
    - cable slots
  - labeling & designations
  - fire stopping specifications
  - methods of installation –
    - intumescent
    - sheets
    - blocks
    - caulk
    - putty
  - protection of fiber optic pathways

- Ironwork, Framing & Equipment Designations
  - NEBS requirements
  - general assembly
  - fastening requirements
    - auxiliary framing
    - cable racking
    - equipment framework
    - conduit
    - lighting
    - AC outlets
  - equipment designations
  
- Cabling & Wiring
  - cable distribution system (CDS)
  - cable installation hazards
    - repairing of damaged cables
    - polymer creep
    - dangers of armored cable (BX) in a cable rack
  - cable installation - general requirements
    - protection
    - routing
    - securing
    - supporting
  - connecting cables
    - switchboard
    - power
    - grounding
  - verification of cable and conductors
  
- Bonding & Grounding
  - ground system
  - conductors
    - routing technique
    - connections
  - CBN (Common Bonding Network)
  - IBN (Isolated Bonding Network)
    - SPCB physical requirements
    - isolated AC circuits
  - AC system grounding
  - electrostatic discharge

- Hazardous Material
  - workmanship
  - compliance to requirements
    - hazardous material
    - regulated material
    - hazardous waste
  - laws and acts
  - warnings
  - forms
  
- Corrective Actions
  - immediate corrections
  - maintenance memorandum
  - quality defect list
  - engineering complaints

### **Hands-On Exercises and Activities**

For public sessions IN QUAL provides a slide presentation that is used to conduct a virtual installation audit, thereby reinforcing the lessons learned in the classroom.

When IN QUAL is delivered at your location (client-site), our instructors can enhance your learning experience by performing an installation audit at your site, thereby specifically targeting the lessons learned in the classroom. Where applicable, hands-on lab exercises include:

- Visiting a telecommunication site and conducting an installation survey using checklists based on the latest industry installation guidelines or your company's installation guidelines.
- Documenting any examples of quality installation defects found.
- Recommend corrective actions for the defects found based on:
  - cost
  - risk
  - safety
  - service

### **Take Home Materials:**

A complete course manual will be provided. You will also receive a Quality Assurance checklist based on the most current industry installation requirements. This manual will be a valuable reference as you return to your job.

### **Who Can Benefit:**

All personnel involved in system installation, and for those responsible for implementing and overseeing installation project activities. Also, those individuals who are responsible for turning over new equipment in telecommunications facilities will find this course to be beneficial. Additionally, installation and maintenance technicians, as well as engineers, auditors and managers can benefit from the topics discussed.