# ATIN-2200: BLUEPRINTS AND SPECIFICATIONS

## Cuyahoga Community College

### Viewing: ATIN-2200 : Blueprints and Specifications

**Board of Trustees:**
October 2024

**Academic Term:**
Spring 2025

**Subject Code**
ATIN - Applied Industrial Technology - Insulators

**Course Number:**
2200

**Title:**
Blueprints and Specifications

**Catalog Description:**
Covers how to read blueprints and drawings to identify insulated equipment, using the scale for material estimation, and recognize key symbols related to insulation. Also includes interpretation of engineering specifications related to the insulation system.

**Credit Hour(s):**
2

**Lecture Hour(s):**
2

### Requisites

**Prerequisite and Corequisite**
Departmental approval: admission to Heat and Frost Insulator's apprenticeship program.

### Outcomes

**Course Outcome(s):**
Recognize ductwork piping, insulated equipment, and life safety on a set of drawings.

**Objective(s):**
1. Describe contents of a set of drawings.
2. Explain why insulators must be able to read drawings.
3. Classify different symbols on a set of drawings.
4. Utilize drawings to determine elevations.
5. Determine how to use the scale for material estimation.

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**Course Outcome(s):**
Interpret engineer's specifications for mechanical systems in order to apply insulation to system in accordance with clients' requirements.

**Objective(s):**
1. Locate the specific system's insulation section within the specifications book.
2. Locate insulation material requirements within specifications book.
3. Determine the preparation needs of the substrates to be insulated.
4. Identify the installer qualifications per the specification book.
5. Identify the delivery requirements, material handling, storage, and waste management requirements.
6. Determine the method of installation required.
7. Examine the installation schedule to determine appropriate materials and sizing.

8. Identify clean-up procedures.
9. Explain how to submit a request for information (RFI) to the engineer when questions arise.

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**Methods of Evaluation:**

1. Quizzes from International
2. Tests from International
3. Final exam from International
4. Graded Projects
5. Estimation exercises
6. Homework worksheets

**Course Content Outline:**

1. Blueprints and Drawings
   a. Symbols
   b. Key Scale
   c. HVAC Duct
   d. HVAC Piping
   e. HVAC Equipment
   f. Plumbing Pipe
   g. Life Safety Drawings (Firestopping)
   h. Elevations
   i. Sectional Views
   j. Isometric
2. Engineers Specifications
   a. Safety and material references
   b. Section definitions for key terms
   c. Submittal procedures
   d. Quality assurance
   e. Delivery, storage, and handling
   f. Waste management
   g. Product fire ratings
   h. Types of materials to be used on the job
   i. Insulation securements
   j. Indoor finishes
   k. Exterior finishes
   l. Jacketings
   m. Weatherproofing
   n. Pre-installation requirements
   o. Installation requirements
   p. Installation schedule
      i. Pipe sizing
      ii. Temperature
      iii. Thickness
      iv. Density
      v. Single or Multilayer installation
   q. Clean up procedures
   r. RFIs

## Resources

*Blueprints, Codes, and Specifications Student Manual*. International Association of Heat and Frost Insulators, 2011.

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**Resources Other**

www.jatctraining.com 2024.

Sample specifications from local businesses
Cleveland Clinic
NASA Glenn Research Center
Avery-Dennison
Cleveland Cliffs Steel
Cleveland Municipal School District

Top of page
Key: 5285