

# ATGL-1640: DOOR FABRICATION AND INSTALLATION

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## Cuyahoga Community College

**Viewing: ATGL-1640 : Door Fabrication and Installation**

**Board of Trustees:**

September 2025

**Academic Term:**

Fall 2025

**Subject Code**

ATGL - Appld Indus Tech - Glazing

**Course Number:**

1640

**Title:**

Door Fabrication and Installation

**Catalog Description:**

Door fabrication and installation, including installation and maintenance of manual and power assisted revolving doors; fabrication and installation of aluminum doors; installation of specialty doors and showcases; and safety procedures and regulations.

**Credit Hour(s):**

2

**Lecture Hour(s):**

2

## Requisites

**Prerequisite and Corequisite**

Departmental approval: Admissions to Glazing Technology apprenticeship program.

## Outcomes

**Course Outcome(s):**

Demonstrate installation and maintenance of manual and power assisted revolving doors.

**Objective(s):**

1. Identify the various types of revolvers.
2. Explain installation procedures for revolving doors.
3. Discuss methods for making adjustments to revolving doors.
4. Discuss the different types of automatic doors and the hardware associated with them.

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**Course Outcome(s):**

Demonstrate the construction and installation of aluminum doors and other entrances.

**Objective(s):**

1. Discuss the requirements for door installation and construction and the effects of the environment on aluminum entrances.
2. Describe measures that can be taken to prevent the effects of temperature extremes on aluminum entrances.
3. Describe door size, construction, and allowable clearances.
4. Explain the importance of following hardware guidelines on proper door installation, adjustment methods and glazing techniques.

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**Course Outcome(s):**

Demonstrate procedures for installation of a variety of shower, showcase and specialty doors.

**Objective(s):**

1. Measure and layout a shower and tub enclosure.
2. Demonstrate the use of hardware for shower and tub enclosures.
3. Demonstrate fabrication and installation techniques for shower and tub enclosures.

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**Course Outcome(s):**

Explain safety procedures and regulations for the fabrication, installation, and maintenance of various types of doors.

**Objective(s):**

1. Discuss the glazing industry standards for the fabrication, installation, and maintenance of various doors.
  2. Identify the safety glazing codes.
  3. Discuss the basic national building code, the standard building code, and the uniform building code.
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**Methods of Evaluation:**

1. Quizzes
2. Exams
3. Classroom participation
4. Demonstration of assigned projects

**Course Content Outline:**

1. Identifying different Types of revolvers
  - a. Types
    - i. Manual revolving door
    - ii. Automatic revolving door
    - iii. Security revolving door
  - b. Terminology
    - i. Book fold
    - ii. Breakaway mechanism
    - iii. Canopy
    - iv. Ceiling
    - v. Cement casing
    - vi. Center shaft
    - vii. Clear opening
    - viii. Collapsing center post
    - ix. Drum enclosure
    - x. Depth
    - xi. Floor operator
    - xii. Floor post
    - xiii. Floor ring
    - xiv. Heavy duty mechanism
    - xv. Hydraulic package
    - xvi. Inside radius
    - xvii. Muntin
    - xviii. Overhead operator
    - xix. Overall height
    - xx. Power assist
    - xxi. Push bar
    - xxii. Quarter point
    - xxiii. Revolving door
    - xxiv. Roof
    - xxv. Speed control
    - xxvi. Sweep
    - xxvii. Transparent core
    - xxviii. Wing

- c. Installation procedures
    - i. Shop drawings
    - ii. Follow all allowances
    - iii. Level and smooth
    - iv. Must be plum level and true
    - v. Reference points
    - vi. Accurate layout
    - vii. Sufficient clearances
    - viii. Shaft needs to be plum
    - ix. Protective coating stays until the end
    - x. Preload with oil
    - xi. Erection sequence
  - d. Adjustments
    - i. Retaining mechanism
    - ii. Prematurely tripped
    - iii. Speed control
    - iv. Servicing door bearing
    - v. Replacing fluorescent lights
    - vi. Replacing the sweeps
2. Different types of aluminum doors
- a. Types
    - i. Single door
    - ii. Double doors
    - iii. Aluminum doors
    - iv. Power assisted
    - v. Double acting doors
    - vi. In active door
    - vii. Single acting door
    - viii. Herculite door
  - b. Terminology
    - i. Active door
    - ii. Astragal
    - iii. Automatic door
    - iv. Bputt
    - v. Bputt hung door
    - vi. Center hung
    - vii. Center pivot
    - viii. Door clearances
    - ix. Door opening
    - x. Double acting door
    - xi. Hand of door
    - xii. Herculite
    - xiii. In active door
    - xiv. Intermediate pivot
    - xv. Kickplate
    - xvi. Offset pivot
    - xvii. Overhead closers
    - xviii. Single acting door
    - xix. Threshold
  - c. Effects of extreme temperatures and weather
    - i. Negative affects
    - ii. Expansion and contraction
    - iii. Improper opening and closing
    - iv. How vestibules help
    - v. Rain penetration
    - vi. Freezing effect
    - vii. Comprehensive stresses
    - viii. Uses of weather stripping

- d. Sizes and allowable clearances
  - i. Narrow style
  - ii. Medium style
  - iii. Wide style
  - iv. 8th inch at the top
  - v. 16th inch on the side
  - vi. 3/16 of an inch at the bottom
- e. Guidelines and proper installation
  - i. Hand of door
  - ii. Shop drawings
  - iii. Benchmarks
  - iv. Erection sequence
  - v. Install plum level and true
  - vi. Protection
  - vii. Follow installation instructions
  - viii. Use proper tools
- 3. Installation of shower doors
  - a. Tub enclosures
    - i. Size and shape
    - ii. All glass
    - iii. Shower shield
    - iv. Colors
    - v. Full enclosure
    - vi. Partial enclosure
    - vii. Fiber glass
  - b. Installation procedures
    - i. Follow installation instructions
    - ii. Proper sequence
    - iii. Measurements
    - iv. Safety protocols
    - v. Hand of door
    - vi. Inside of glass
    - vii. Outside of glass
    - viii. Rain shield
    - ix. Proper sealant
  - c. Regulations
    - i. Glazing standard
    - ii. Safety glazing codes
    - iii. Basic national building code
    - iv. Standard building code
    - v. Uniform building code
    - vi. Consumer product safety commission
    - vii. Fully tempered glass
    - viii. Laminated glass
    - ix. Acrylics polycarbonates
  - d. Showcase glazing
    - i. Clean grooves
    - ii. Allow clearances
    - iii. Mostly in cabinet shop
    - iv. Exposed edges
    - v. Polished edges
    - vi. Proper sealant
    - vii. Clean when done

## Resources

International Brotherhood of Painters Allied Trades Joint Apprenticeship Training Fund. "Aluminum Entrances"

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International Brotherhood of Painters Allied Trades Joint Apprenticeship Training Fund. "Aquariums/Shower Doors/Tub Enclosures/Showcases"

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International Brotherhood of Painters Allied Trades Joint Apprenticeship Training Fund. "Revolving Doors"

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