ATGL-1620: GLASS AND MIRROR REPLACEMENT AND INSTALLATION

Cuyahoga Community College

Viewing: ATGL-1620 : Glass and Mirror Replacement and Installation

Board of Trustees:
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Academic Term:
Fall 2020

Subject Code
ATGL - Appld Indus Tech - Glazing

Course Number:
1620

Title:
Glass and Mirror Replacement and Installation

Catalog Description:
Instruction in glass replacement and mirror layout, measurement cutting, edging and mounting. Includes safety procedures, and glass installation using putty and adhesives.

Credit Hour(s):
2

Lecture Hour(s):
2

Requisites

Prerequisite and Corequisite
Departmental approval: admission to any Applied Industrial Technology program.

Outcomes

Course Outcome(s):
Apply safety procedures in removing broken and damaged glass.

Objective(s):
1. Discuss the appropriate safety procedures to use when removing broken and damaged glass.
2. Identify the required personal protective equipment (PPE) to use when working with broken and damaged glass.
3. Describe an edge run.
4. Explain how to perform an impact brake replacement.

Course Outcome(s):
Install a light of glass using putty as a ceiling compound.

Objective(s):
1. Describe how the installation of glass in putty is done.
2. Explain how glass is installed in a wood sash.
3. Explain how glass is installed in a steel sash.
4. Explain how glass is installed in an aluminum sash.

Course Outcome(s):
Measure a wall efficiently and accurately and transfer the measurements onto a mirror.

Objective(s):

1. Explain how to measure a wall and discuss the importance of taking accurate measurements.
2. Explain the steps to take when doing a layout of a mirror for a bowed wall.
3. Differentiate between two mirror layouts and a one mirror layout.
4. Explain the steps to take when doing a mirror layout for large walls.

Course Outcome(s):

Fabricate a mirror and finish the mirror edges.

Objective(s):

1. Explain how to cut mirrors.
2. Explain how edging is done on mirrors.
3. Demonstrate the following glass and mirror cutouts: corner, wall outlet, peninsula notch, island circle, and outside circle.

Course Outcome(s):

Discuss the various types of Mirror Designs.

Objective(s):

1. Explain different design considerations.
2. Describe the difference in manufacturing of various mirrors.
3. Describe how to handle and care for a mirror.

Course Outcome(s):

Install mirrors choosing the best hardware and method of installation for a given job.

Objective(s):

1. Describe a skeleton wood back.
2. Differentiate between types of mounting hardware.
3. Describe the various methods for installing mirrors.
4. Identify and describe the use of hardware used for mirror mounting.
5. Identify different types of drills used for creating holes in glass and mirrors.

Methods of Evaluation:

1. Quizzes
2. Exams
3. Classroom participation
4. Demonstration of project assignments

Course Content Outline:

1. Glass replacement
    a. Safety
        i. Safety glasses
        ii. Glass handling gloves
        iii. Gauntlets
        iv. Suction cups
        v. Padded blocks
        vi. Hard hats
        vii. Safe and secure scaffold i.e. ladders, etc.
    b. Edge run replacement
        i. Examine broken glass
        ii. Stop the examined rune
        iii. Take extreme care
        iv. Make a safe cut
        v. Remove remaining class
    c. Impact break replacement

i. Make safe cut
ii. Tap the safe cut
iii. Run the glass
iv. Remove remaining glass

2. Putty glazing
   a. Installing glass using putty
   b. Wood sash
      i. Residential
      ii. Custom construction
      iii. Single and multiple lites
   c. Aluminum sash
      i. Perfect alignment
      ii. Make adjustments
      iii. Small welds
   d. Sliding windows
      i. Full surround
      ii. Attached weatherstipping
      iii. Keep Square
      iv. Make sure gasket is at proper length
      v. Lubricate if necessary
3. Mirror layout and measuring
   a. Measuring the wall
      i. Accurate measurements
      ii. Wall sketch
      iii. Establish horizontal line
      iv. Establish plumb
   b. Layout for bowed walls
      i. Check for bows
      ii. Use straight edge and square
      iii. Create level line
      iv. Use plumb line
      v. Measure off wall at top and bottom
   c. Two or more mirrors
      i. Establish plumb and level
      ii. Measure from desired point given from contractor or owner
      iii. Divide area according to number of mirrors
   d. Layout for large walls
      i. Establish plumb and level
      ii. Measure from center
      iii. Divide area according to number of mirrors
4. Cutting and edging mirrors
   a. Cutting
      i. Square mirror
      ii. Measure mirror
      iii. Double check measurements
      iv. Cut mirror
   b. Edging mirror
      i. Sand edges
      ii. Look for imperfections
      iii. Seal edges
5. Mirror design
   A. Design considerations
      1. Used to add light
      2. Illusion of a larger space
      3. Illusion of a greater natural light source
   B. Manufacturing
      1. Manufactured from a variety of glass
      2. Only highest quality float glass used

3. Can be tinted
4. Can be safety glass as well

C. Handling and protection
1. Always handle with care
2. Store in dry ventilated areas
3. Store vertically
4. Block Mirror
5. Always Use PPE

6. Mirror Mounting Methods
A. Skeleton wood back
1. Made from furring strips
2. Used to even out large areas
3. Lumber should be prime painted
4. Mechanical fasteners used to fasten to the wall

B. Mirror hardware
1. Clips
2. Clamps
3. J Channel
4. Moldings
5. Rosettes
6. Mastic
7. Double faced tape

Resources

International Brotherhood of Painters & Allied Trades Joint Apprenticeship & Training Fund. "Corner Notch in Mirror"

International Brotherhood of Painters & Allied Trades Joint Apprenticeship & Training Fund. "Glass Replacement and Putty Glazing"

International Brotherhood of Painters Allied Trades Joint Apprenticeship Training Fund. "Glaziers, Architectural Metal and Glass Workers Training Manual"

International Brotherhood of Painters Allied Trades Joint Apprenticeship Training Fund. "Glaziers, Architectural Metal and Glass Workers Training Manual"

International Brotherhood of Painters Allied Trades Joint Apprenticeship Training Fund. "Glaziers, Architectural Metal and Glass Workers Training Manual"

International Brotherhood of Painters & Allied Trades Joint Apprenticeship & Training Fund. "Mirrors Job Layout and Measurements"

International Brotherhood of Painters & Allied Trades Joint Apprenticeship & Training Fund. "Mirror Mounting Methods"

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