



GLASS & GLAZING CONTRACTORS GENERAL TRADE KNOWLEDGE EXAMINATION CONTENT INFORMATION FOR COMPUTER BASED TESTING

Revised September 9, 2014

The General Trade Knowledge examination is administered daily in Computer Based Testing (CBT) format. It will consist of 80 equally weighted questions.

The examination will have questions relating to the following content areas and necessary knowledge for each area includes:

- reading and interpreting plans and specifications
- reading and interpreting codes
- basic mathematics
(addition, subtraction, multiplication, division, calculations of area and volume, fractions, decimals, percentages, calculating the sides of triangles, square roots, powers of numbers, and solving simple algebraic equations for unknown variables)

You should be prepared to respond to examination questions on any of the content areas listed. Questions asked and content areas tested on previous examinations should not be assumed to be the only possible questions to be asked or content areas to be tested on this examination.

The percentage of questions shown for each content area may vary by as much as plus or minus three (3) percent. Please refer to the Candidate Information Brochure and the Reference List for additional information.

Content Area A **35%** **Pre-Construction**

1. Assisting with Design Work

- knowledge of assessing conceptual design
- knowledge of budgeting the work
- knowledge of providing scheduling / lead time
- knowledge of alternative materials

2. Determining Scope of Work

- knowledge of reading contract documents (e.g., contracts, drawings, specifications)
- knowledge of pre-bid Request for Information process

- knowledge of design intent
- knowledge of factors influencing scope of work
- knowledge of reviewing and establishing job specific safety requirements

3. Reading and Interpreting Plans and Specifications

- knowledge of applicable divisions in specifications
- knowledge of material schedules

4. Verifying for Code Compliance

- knowledge of checking product against state and local codes
- knowledge of checking application of product against codes
- knowledge of interpreting wind load maps
- knowledge of permitting requirements

5. Estimating Materials and Labor

- knowledge of conducting material quantity take-offs
- knowledge of conducting labor take-offs
- knowledge of applying cost factors to takeoffs
- knowledge of obtaining quotes from suppliers

6. Creating Shop Drawings

- knowledge of transferring data from contract drawings to in-house drawings
- knowledge of adding detail to shop drawings
- knowledge of further defining scope of work

7. Verify Product Engineering

- knowledge of confirming product performance meets code
- knowledge of energy code requirements (e.g., U values, thermal performance)
- knowledge of evaluating adjacent materials and systems (e.g., anchoring)

8. Ordering and Submitting Test Results

- knowledge of obtaining test reports
- knowledge of scheduling a job-specific test
- knowledge of scheduling a visual mock-up

9. Preparing Submittals

knowledge of obtaining signed and sealed engineering drawings
knowledge of obtaining product data, finishes, samples and warranties
knowledge of preparing submittal package for design professional approval

10. Establishing Timelines and Work Schedules

knowledge of contractor's construction schedule
knowledge of developing fabrication, shipping and installation schedules
knowledge of recognizing conflicts and negotiating schedules
knowledge of job site meetings

11. Procuring Materials and Equipment

knowledge of issuing purchase orders to suppliers
knowledge of scheduling delivery of products

Content Area B 20% Fabricating Product

1. Ensuring Shop Safety

knowledge of training staff on proper use of equipment
knowledge of training staff regarding safety issues
knowledge of checking equipment for safety
knowledge of Drug Free Workplace requirements
knowledge of instructing staff on proper methods for lifting/handling equip/product

2. Measuring and Confirming Openings

knowledge of whether openings will be guaranteed dimensions or field verified
knowledge of field measuring openings for compliance with shop drawings
knowledge of confirming that field conditions are acceptable for proper installation

3. Cutting Product

knowledge of establishing cut lists
Knowledge of optimizing stock yield for glass and aluminum
knowledge of setting up cutting equipment
knowledge of cutting product

4. Drilling Product

knowledge of laying out material
knowledge of drilling or punching assembly and installation holes
knowledge of locating and drilling weep holes
knowledge of templates and jigs

5. Assembling Product Framing

Knowledge of manufacturer's assembly instructions
knowledge of joining and caulking framing members
knowledge of quality control checks

6. Storing Product in Shop

knowledge of protecting product by isolating from other products (e.g., cardboard)

Content Area C 5% Transporting Product

1. Loading Product

knowledge of determining best method and route for transporting product
knowledge of creating a pick list or load list
knowledge of loading product in manner that protects product during transport
knowledge of weight distribution
knowledge of securing the product on platform or truck

2. Unloading Product

knowledge of determining proper equipment for unloading product
knowledge of scheduling/arranging for loading equipment
knowledge of safe material handling procedures
knowledge of weight distributions
knowledge of job site conditions

3. Distributing and Storing Product

knowledge of determining product location at jobsite (e.g., distribution)
knowledge of ensuring that floor loads will accept product
knowledge of ensuring that storage is in compliance with manufacturer's recommendations
knowledge of protecting product from environment and other trades

Content Area D
Installing Product

35%

1. Ensuring Quality Control

knowledge of checking product before installing
knowledge of checking opening before installing product
knowledge of ensuring installers are properly trained for particular product installed
knowledge of creating and maintaining daily reports

2. Ensuring Job Safety

knowledge of ensuring all installers have appropriate safety equipment
knowledge of ensuring all installers are trained and certified on use of equipment
knowledge of ensuring installers are knowledgeable of contractor's safety plan
knowledge of ensuring that all equipment is properly maintained
knowledge of and compliance with OSHA

3. Preparing for Installation

knowledge of selecting proper equipment for installation (e.g., pulleys, scaffolding)
knowledge of coordinating electrical supply with contractor
knowledge of coordinating installation with contractor and other trades
knowledge of coordinating installation with security system contractors
knowledge of staging product (e.g., place product by correct openings)

4. Laying Out Openings

knowledge of establishing working points, benchmarks, control lines
knowledge of establishing clip locations (e.g., center line of mullions)
knowledge of laying out per manufacturer's instructions

5. Erecting Product

knowledge of setting product in place
knowledge of plumbing, leveling and truing product (i.e., square)
knowledge of proper installation of anchors per approved drawings
Knowledge of inspection requirements (e.g., anchor, bucks)

6. Preparing Product for Glass

knowledge of cleaning materials, removing debris from materials
knowledge of installing glazing gaskets/tape
knowledge of installing appropriate setting blocks (e.g., hardness, size, location)
knowledge of setting glass in frame
knowledge of installing glass stop
knowledge of structural caulking

7. Installing Entrance Systems (Doors)

Knowledge of hardware (e.g., hinges, handles, locks, door closers)
Knowledge of security/fire system requirements
Knowledge of ADA requirements
Knowledge of automatic door opening systems

8. Inspecting Job for Sign-Off

knowledge of preparing a punch list
knowledge of walking job with contractor
knowledge of obtaining sign-off from contractor of work completed
knowledge of providing manufacturer's recommended maintenance instructions

9. Protecting Product

Knowledge of risks to product resulting from ongoing construction
knowledge of advising regarding suitable materials/methods for protecting product

10. Waterproofing Product

Knowledge of selecting appropriate sealant materials
knowledge of assuring proper width to depth ratio for caulking performance
knowledge of cleaning and preparing substrates (e.g., priming)
knowledge of applying appropriate size and type of backer rod
knowledge of verifying that caulking shelf life has not expired
knowledge of applying sealant and properly tooling

Content Area E
Servicing Product

5%

1. Ensuring Code Compliance

knowledge of evaluating existing glass type
knowledge of safety glazing codes
knowledge of glass replacement code requirements

2. Ensuring Job Site Safety

knowledge of securing site from public access
knowledge of barriers, safety cones, security tape
knowledge of securing tools and equipment

3. Replacing Glass Product

knowledge of determining size and make-up of product
knowledge of securing opening (e.g., board up opening)
knowledge of installing replacement product

4. Repairing/Adjusting Non-Glass Product (e.g., doors, hardware, frames)

knowledge of determining what needs to be repaired/adjusted
knowledge of repairing/adjusting the product
knowledge of determining if under warranty

5. Waterproofing Product

Knowledge of identifying source of leaks
knowledge of removing existing caulking and preparing substrates
knowledge of checking for compatibility of sealants with substrates
knowledge of installing new sealants and tooling
knowledge of water test procedures

6. Instructing on Product Care

knowledge of instructing on product care
knowledge of instructing on how to clean
knowledge of manufacturer's recommended maintenance instructions