



# 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