



STUDY AND TEST MATERIAL FOR THE CTFH2 ASSESSMENT

(Confidence Testing Fire Hydrants)

January 1, 2011

Revised 03-05-12

This document contains materials required for the CTFH2 assessment.

You will need this material for the test. Make sure it is bound in a binder or stapled. You will not be allowed to take this material into the test center if it is not bound.

(IMPORTANT: Material provided is not intended to endorse, represent quality, recommend a particular product, or single out any product. Material may be used to provide standardized content for test questions to ensure that participants know how to use data sheets and manufacturer materials to establish listing and installation limitations of these types of products. There is no implied or other relationship between CSA and the manufacturers or suppliers of information used. CSA is not liable for accuracy or content of material contained within these documents. Material in this booklet is for testing purposes only and is not to be used for installation of these systems / components. Check with suppliers for current and specific information to be used in actual design and installation conditions.)

About the Assessment:

Assessment Abbreviation: CTFH2

Number of Questions: 35

Amount of Time for Test: 60 minutes

Exam format: Open book (bring your own books); calculators will be available, writing tablet or paper will be provided for calculations. Any books or exam documents brought into exam must be bound as no loose papers are allowed.

Passing Score: 80%

Cell Phones: Cell phones, pagers, etc. must be left in vehicle. Do not bring them into test center.

Codes / Materials Used for Exam and Editions:

- 2010 NFPA 24, Standard for the Installation of Private Fire Service Mains and Their Appurtenances
- 2008 NFPA 25 Handbook (including Annex materials related to hydrants, valves, mains, flow testing) (the handbook includes excerpts from NFPA 291 that are needed)
- Mueller Co. Operating Instructions for Super Centurion Hydrant (within this booklet)
- Terminal City Iron Works Slide Gate Hydrant Maint. Manual (within this booklet)
- Confidence Testing Fire Hydrants - Colorado Springs FD 1998 (**Separate document**)
- Kennedy Valve K81 Guardian Hydrant Operation and Maint. Guide (**Separate document**)
- Other useful documents include:
 - Manual M-17 “Installation, Field Testing, and Maintenance of Fire Hydrants” by the American Water Works Association (not required for exam)
 - NFPA 291: Recommended Practice for Fire Flow Testing and Marking of Hydrants (not edition specific) (If NFPA 25 handbook is not used, than NFPA 291 is needed)

General Assessment Information:

About the Questions: Questions are randomly selected from respective topics within a larger database. Answer choices are randomly mixed, meaning that choice “B” will not always be in position “B”.

Exam Format: Questions are computer based and will be delivered one at a time. You will have the opportunity to go back and review all questions. You can also “check” a box within each question which will flag it for later review. During the review, checked questions will be marked for easier identification. See the document on “Screen Shots” under the “Test Info” link on our web site.

Time Clock: Most assessments will have a count-down timer displayed on the screen. It may appear as if this timer is fluctuating between questions (gaining time on one question and losing time on the next question). This is normal. The software has a specific function which ensures your time is protected if there is a loss of the Internet connection. It is very difficult to explain the logic behind the clock. However, we can assure you that you are getting all of your time. Do not steadily watch the clock, but rather use it as a general guide. Long pauses between questions will result in the biggest time jump as the computers verify that you are still testing and did not lose the Internet connection.

Study Concepts Include, but are not limited to:

- Understand how elevation impacts pressures. Example would be hydrants at different elevations. Assuming there is no flow, but different pressures, how does elevation impact pressures. Given pressure at one hydrant, be able to calculate pressures at other hydrants.
- Understand and apply the conservation of flow through a pipe.
- Be able to identify which hydrants to use for conducting fire flow test. Including which hydrant is the flow hydrant and which is the test hydrant. If several hydrants are detailed, identify which to use for test results.
- Test questions that refer to NFPA 291 can be found within the NFPA 25 Handbook, 2008 edition. Or you can use NFPA 291.
- Be able to calculate flow based on outlet size and coefficients, including multiple outlets.
- Be able to identify the different parts of hydrants and the different types of hydrants discussed in this document and NFPA 25.
- Be able to identify inspection, testing, and maintenance procedures for hydrants identified in this document and NFPA 25.
- Procedures for testing of fire mains out of NFPA 24. Includes allowed leakage, pressure testing new section of pipe, establishing velocity and flows for flushing.
- Limitations, and requirements around piping out of NFPA 24. Protection of piping and bolts such as when repairs are made.
- Minimum depth of bury of piping in accordance with NFPA 24. Including depth below frost line, under driveways, railroad tracks, etc. Distance of pipe from a retaining wall to provide freeze protection. (Distance from wall would be at least the same as depth of bury).
- Additional material found in documents mentioned above.

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