



State Firefighters' and Fire Marshals' Association of Texas

Texas Volunteer Firefighters' and Fire Marshals' Certification Board

PO Box 1409 ♦ Manchaca, Texas 78652-1409 ♦ 512.453.1876 (fax)

www.sffma.org ♦ 512.454.3473 (phone)

NFPA 472 – Hazardous Materials: Technician (2013 Edition)

Performance Standards Evaluation Form

Detection and Monitoring of Hazardous Materials (HazMat)

Competencies: 7.2.1.3, 7.2.1.3.5 (1-12), 7.2.1.3.6, 7.2.1.5

Objective(s)

Given various types of monitoring equipment, the candidate will select and operate the monitoring equipment to test unknown Hazardous Materials (HazMat). The candidate will report and interpret the results.

Candidate Instructions

Evaluator must read the following verbatim to the candidate:

“In this skill station, you will be required to select two separate methods of monitoring to use on an unknown HazMat. This material will be randomly assigned. You must verbalize and execute the operation of the monitoring equipment, describing the results and their meaning. While performing this skill, ensure that you are wearing the appropriate eye protection for each operation. You will begin on my instruction to start. The skill will end when you state or indicate to me that you have completed all the identified steps. Do you have any questions?”

Evaluator Instructions

The evaluator will select an unknown HazMat at random for each candidate. The material will either be a solid, a liquid, or a gas. The candidate must choose two separate methods of monitoring appropriate for the material selected. Indicate the two unchosen methods of monitoring by circling, “N/A,” for those line items. Candidates are not required to wear Chemical-Protective Clothing (CPC) to perform this skill.

Note: If, “Operation of Colorimetric Tubes,” is selected, the candidate is required to wear safety glasses.

Read the Candidate Instructions verbatim to the candidate and give them an opportunity to ask questions prior to beginning the skill test. The candidate will not be allowed to view the skill sheet once testing begins. After the question opportunity, prepare your stopwatch and instruct the candidate to begin the skill. While the candidate is performing the skill test, observe whether they perform each of the line items and mark the skill sheet appropriately.

Grading Instructions

When filling out forms, be sure to use candidates' first and last names. In order for a candidate to receive credit for a line item, you must correctly circle the appropriate grade/points for each line item on the skill sheet. Earned scores for all line items are either full credit or zero credit; no partial credit is allowed. Note the candidate's status under Initial Test Notes and give it to the lead instructor.

Failure/Remediation Instructions

If the candidate has failed the initial test and needs to retest, the lead instructor will need to remediate the candidate and have them sign the Retest Information Statement on the skill sheet prior to retesting. Allow the candidate time to practice before retesting. Failed skills must be fully documented in the Notes sections of the skill sheet.

Note: The evaluator will need to randomly select a new material for the candidate to retest with. The candidate will be required to test on the same monitoring equipment they initially tested.

Preparation and Equipment

Evaluation materials:

- Multi-gas monitor (Lower Explosive Limit [LEL], oxygen, toxicity, Photoionization Detector [PID])
- Colorimetric tubes and pump
- pH paper or electronic pH meter
- Radiation detection instruments
- Owner's manuals for all monitoring equipment (if available)
- Samples of unknown HazMats: a solid, a liquid, and a gas
- Radioactive source
- Safety Glasses



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Evaluation Location:		Date:
Evaluator 1 Name:	Retest Evaluator 1 Name:	
Evaluator 1 Signature:	Retest Evaluator 1 Signature:	
Evaluator 2 Name:	Retest Evaluator 2 Name:	
Evaluator 2 Signature:	Retest Evaluator 2 Signature:	
Evaluators may not evaluate a skill if a conflict of interest exists. A conflict may be defined as an interest that affects, or appears likely to affect the judgment or conduct of an individual associated with the skills testing process. An evaluator may not participate in the skills testing process for an immediate family member, classmate, or if the evaluator was the class instructor for the skill.		

Skill Performance Criteria: Detection and Monitoring of Hazardous Materials (HazMat)

Operation of Radiation Detector	Circle if Not Applicable: N/A	Initial Test		Retest	
Verbalizes appropriate Personal Protective Equipment (PPE) for radiation time, distance, and shielding		Pass	Fail	Pass	Fail
Operates monitor by following manufacturer's instructions		Pass	Fail	Pass	Fail
Verbalizes result of radiation reading		Pass	Fail	Pass	Fail
Overall Performance Rating: (Pass = must correctly perform all Pass/Fail items)		Pass	Fail	Pass	Fail
Operation of Multi-Gas Meters	Circle if Not Applicable: N/A	Initial Test		Retest	
Completes operational check according to manufacturer's instructions (turns on, allows warm-up, checks for problems)					
Verbalizes they are monitoring at different levels					
Takes sample of unknown HazMat					
Reports the monitor reading (LEL, etc.) and verbalizes hazards associated with substance					
Overall Performance Rating: (Pass = must correctly perform all Pass/Fail items)		Pass	Fail	Pass	Fail
Operation of pH Paper	Circle if Not Applicable: N/A	Initial Test		Retest	
Liquid: Dips the pH paper in solution to test acidity/basicity Gas or Solid: Wets the pH paper with distilled water		Pass	Fail	Pass	Fail
Determines approximate pH by comparing color of the pH paper with the provided color chart		Pass	Fail	Pass	Fail
Correctly reports results by verbalizing acid, base, or neutral		Pass	Fail	Pass	Fail
Overall Performance Rating: (Pass = must correctly perform all Pass/Fail items)		Pass	Fail	Pass	Fail
Operation of Colorimetric Tubes	Circle if Not Applicable: N/A	Initial Test		Retest	
Operation:					
a. Selects proper tube for substance					
b. Performs operational check					
c. Uses appropriate eye protection					
d. Breaks off tube ends properly and safely					
e. Inserts tube into pump with the arrow toward the pump					
f. Verbalizes manufacturer's instructions as to the correct number of pumps/strokes/compressions on the bellows or piston pump		Pass	Fail	Pass	Fail
Verbalizes the presence and concentration of the substance tested		Pass	Fail	Pass	Fail
Overall Performance Rating: (Pass = must correctly perform all Pass/Fail items)		Pass	Fail	Pass	Fail
Overall Performance Rating for Skill: (Pass = must pass two of the four methods of monitoring)		Pass	Fail	Pass	Fail



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Initial Test Notes:	RETEST INFORMATION It is very important that you, as an examinee, understand the number of attempts allowed on the performance skills examination. You are allowed only one retest for each failed skill station. I, _____, have read and understand the above information on retesting. <input type="checkbox"/> I have received sufficient retraining and remediation. _____ Signature _____ Date
Retest Notes:	