



CCT-1: CLAY AND CONCRETE TILE SYSTEMS PERFORMANCE EXAM

Master Tools, Equipment and Materials (TEM) List

1. Qualified Assessors must inspect all tools, equipment and materials for defects before use and ensure defective or otherwise unsuitable items are replaced or defects corrected before conducting this performance exam
2. All items must be readily available for candidates before starting an assignment

✓	QTY.	UNIT	ITEM DESCRIPTION	NOTES
HAND TOOLS				
	1	Each	Nail pouch with belt and hammer loop	Pouch with minimum two compartments; adjustable belt size; suspenders optional
	1	Each	Claw hammer	For hand nailing materials
	1	Each	Staple gun or hammer tacker with ¼-inch staples	For securing separation sheet to deck
	1	Each	Utility knife with straight blade	For general materials cutting. Maintain sharp blade inventory based on consumption.
	1	Each	General duty pry bar	For fastener and other materials removal
	1	Each	25-foot retractable tape measure	For general measuring tasks
	1	Each	36-inch-wide soft bristle push broom	For general cleaning of mockups and testing area
	1	Each	Tin snips or shears	For cutting metal flashing materials
	1	Each	Metal hand brake	Minimum 3-inch jaw for field fabricating metal flashing components
	1	Each	Chalk line with chalk	For snapping lines and aligning materials
POWER TOOLS AND DEVICES				
	1	Each	Drill or screw gun with suitable bits to match screw fasteners	Cordless preferred. For driving screw fasteners used to attach tiles and metal flashing components
	1	Each	Electric powered circular saw including general purpose wood cutting blade	For cutting wood battens
	1	Each	Construction duty electric extension cord (SJ or SJO)	To meet the power demand of the power tools used and testing site conditions
	1	Each	Portable ground fault circuit interrupter device	Optional: Required only if building power supply circuit is not GFCI-protected
SAFETY EQUIPMENT AND SUPPLIES				
	1	Pair	Cotton utility gloves with cuffs	For general hand protection from abrasions, heat, dirt or grime
	1	Pair	Utility cut-resistant gloves	Kevlar® or other comparable material for general hand protection from cuts and scrapes







1	Pair	Z-87.1 rated safety glasses with side shields	Required by the product manufacturer's published Safety Data Sheet
1	Each	Personal fall-arrest system including harness, lanyard, lifeline, rope grab and anchor device as well as the PFAS manufacturer's instructions	All certification candidates are required to demonstrate proper inspecting, donning, adjusting, attaching and using a PFAS harness, lanyard and lifeline in conformance with the equipment manufacturer's instructions; demonstrate using a rope grab device; and explain how the anchor device should be located and attached to a roof though they are not required to set up an anchor device.

NOTE: Additional in-house safety equipment is provided by testing locations. Examples of these items include fire extinguishers, first aid kits, eye wash facilities and proper ventilation. A complete safety checklist is found in the Qualified Assessors performance assignment instructions.



ROOFING MATERIALS AND SUPPLIES

8	Lineal feet	Minimum .0145-inch-thick aluminum or 26-gauge galvanized steel L-Type profile drip edge metal flashing	
8	Lineal feet	Minimum .024-inch-thick aluminum, or 26-gauge galvanized steel bird stop lower eave closure	<p>Must match the tile profile being used</p>
4	Lineal feet	Minimum .024-inch-thick aluminum, or 26-gauge galvanized steel deck-level J-pan flashing; minimum 6-inch-high, 6-inch-wide pan, 3/4-inch-high vertical leg	



2	Pieces	Minimum 0.024-inch-thick aluminum or 26-gauge galvanized steel, 24-inch wide by 36 inches long “W” profile valley lining	
5	Lineal feet	12-inch-wide soft metal headwall flashing	ASTM B749 – 20, 2 ½ pound flat stock lead sheet
4	Lineal feet	Nominal 2- x 4-inch construction-grade lumber	For ridge nailer
20	Pieces	(80 lineal feet) 4-foot-long nominal 1- by 2-inch wood batten strips	For tile battens
40	Lineal feet	Red rosin or builders paper	For separation sheet over roof deck
40	Lineal feet	36-inch wide or 39 5/8-inch-wide self-adhering polymer-modified bitumen underlayment	ASTM D1970 for underlayment
45	Pieces	W-style medium profile concrete tile; lugs required	 ASTM C1492 for field tile, maximum 17 ½-inch length
6	Pieces	W-style medium profile concrete tiles; lugs required; pre-cut to ½-inch-width tiles	 Three full tiles pre-cut in half lengthwise
4	Lineal feet	Matching concrete ridge trim tiles	ASTM C1492 for ridge cap
6	Lineal feet	Matching concrete rake edge trim tiles	ASTM C1492 for rake edge trim
1	Pound	1 ¼ -inch galvanized roofing nails	ASTM F 1667 for hand nailing metal flashing components
5	Pounds	2 ½-inch-long #8 corrosion-resistant self-piercing tapping construction screws with washer head	 ASTM C1002-20 for attaching battens and tile



12	Each	1 ¼-inch corrosion-resistant self-piercing pancake-head screw fasteners suitable for wood substrate with matching bit	ASTM A153 for attaching metal flashing components 
1	Piece	2- to 4-inch diameter X 16-inch-long PVC pipe	ASTM D1785-15e1 Schedule 40 cut at one end at an angle (18.4°∠) to match the mockup 4:12 roof slope; anchored to deck in fixed position or a piece long enough to penetrate the deck in the fixed position and secured below the deck. Diameter may not exceed 4 inches.
1	Each	Vent pipe penetration flashing for deck-level installation.	 Prefabricated pipe penetration flashing with elastomeric sleeve to fit pipe diameter. Center hub rise should not exceed 1-inch height.
1	Each	Soft metal vent pipe penetration flashing for above-tile installation	Soft metal pipe flashing sleeve to fit pipe diameter with minimum 18-inch-square base flange to accommodate tile profile. Base flange may be metal or plastic material.