



## THERMOPLASTIC SYSTEMS PERFORMANCE EXAM Master Tools, Equipment and Materials (TEM) List

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

✓	QTY.	UNIT	ITEM DESCRIPTION	NOTES
<b>HAND TOOLS</b>				
	1	Each	Nail pouch with belt	Pouch with minimum two compartments. Adjustable belt size. Suspenders optional. Hammer loop optional.
	1	Each	Silicone- or Teflon-coated membrane seam roller	Minimum 2-inch-wide roller
	1	Each	Seam tester/probe	Not overly sharp
	1	Each	10-inch scissors/shears, minimum 4-inch cut	Sheath optional
	1	Each	Utility knife with HOOK blade	Maintain sharp blade inventory
	1	Each	Utility knife with STRAIGHT blade	Maintain sharp blade inventory
	1	Each	25-foot retractable tape measure	For general measuring tasks
	1	Each	36-inch-wide soft bristle push broom	For general cleaning and smoothing membranes into adhesive
	1	Each	Claw hammer or roofing hatchet	For fastener hand installation
	1	Each	Chalk line with chalk	For snapping lines to align membrane field sheets
	1	Each	9-inch roller handle with extension pole	For use with standard paint/adhesive disposable rollers
	1	Each	9-inch roller cover	For applying bonding adhesive to flat surfaces, roller nap as specified by membrane manufacturer
	1	Each	4-inch roller handle	For use with standard paint/adhesive disposable rollers
	1	Each	4-inch roller cover	For applying bonding adhesive to flat or vertical surfaces or confined areas; roller nap as specified by membrane manufacturer
	1	Each	Disposable paint brush	For applying bonding adhesive on vertical surfaces or at confined areas
	1	Each	Silicone- or Teflon-coated membrane roller	Minimum 4-inch-wide roller for adhering field sheets to substrate at smaller surface areas
	1	Box/bag	Clean white cotton rags	For membrane cleaning tasks
	1	Each	Fine-point permanent marker or other compatible marking pen/crayon	For marking membranes. Type of marker recommended by material manufacturer.
<b>POWER TOOLS AND DEVICES</b>				
	1	Each	Hand-held electric hot air welding tool including a variety of nozzles	Minimum 1600 watt and achievable 1200 F-degree temperature
	1	Each	Replacement heat element for hot-air welding tool or a second hand-held hot air welding tool	Available in the event of hot air welding tool failure

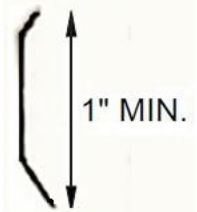
	1	Each	Mechanical fastener electric drill with bits	Bits must match the fastener type; spare bits recommended
	1	Each	Type SJ or SJO heavy-duty electric extension cords	To match all power tool requirements and distance to power source
	1	Each	Ground fault circuit interrupter device; external or built into power source	To match power source and power tool requirements
	1	Each	Power source, building-integrated or generated	To match power tool requirements
	1	Each	Flat- and Phillips-tip screwdrivers	For miscellaneous attachment or maintenance tasks

**SAFETY EQUIPMENT AND SUPPLIES**

	1	Pair	Chemical-resistant gloves	Meeting product manufacturer’s published SDS requirements
	1	Pair	Cotton utility gloves with cuffs	For general hand protection from minor 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-compliant safety glasses with side shields	Meeting product manufacturer’s published SDS requirements
	1	Pair	Z-87.1-compliant splash-resistant wrap-around goggles	Meeting product manufacturer’s published SDS requirements
	1	Each	PFAS including harness, lanyard, line, rope grab and anchor device including 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.
O p t i o n a l	1	Each	Long-sleeve cotton or wool work short, various sizes	Certification candidates are instructed to bring their personal work clothing. Performance exams may not be administered without candidate wearing protective clothing when required by the system manufacturer’s SDS.

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**

	10	Lineal feet	Minimum 0.073-inch-thick by 1-inch-wide extruded aluminum termination bar with caulking lip	
--	----	-------------	---	---

	10	Lineal feet	Minimum 45-mil-thick by 60-inch-wide reinforced TPO or PVC membrane roll	ASTM D 6878 or ASTM D 4434 for all performance assignments. Smaller mockups may require cutting sheet widths to provide at least 8-lineal feet of sidelap seam. Larger mockups or job-site conditions may require additional membranes.
	24	Lineal feet	Minimum 45-mil-thick by 18-inch-wide reinforced or nonreinforced TPO or PVC flashing membrane	ASTM D 6878 as required by system manufacturer and available mockups
	5	Pieces	Premolded outside corners	Provided by system manufacturer, for parapet wall and curb flashing outside corners
	1	Piece	Premolded inside corner	Provided by system manufacturer, for parapet wall inside corners
	50	Pieces	Field membrane seam fasteners and plates	Length and type as required by system manufacturer, job-site requirements or mockup conditions
	50	Pieces	Cap nail fasteners	Optional membrane attachment at curbs or perimeters. Length and type as required by system manufacturer and available mockup conditions.
	25	Each	1 1/4-inch corrosion-resistant self-piercing pancake- or round-head screw fasteners	ASTM A153 fasteners for attaching termination bar
	1	Gallon	Membrane cleaner solution	As required by the system manufacturer
	1	Gallon	Flashing sheet bonding adhesive	Compatible bonding adhesive as required by the system manufacturer. This is typically the same adhesive used to bond field sheets. System manufacturer specifications or available mockup conditions may require additional adhesive.
	1	Each	Prefabricated pipe boot flashing, including draw band	As required by system manufacturer