



## AS-B2: ASPHALT SHINGLE SYSTEMS PERFORMANE EXAM Master Tools, Equipment and Materials (TEM) List

**Includes:**  Factory-made starter strips, hip and ridge  Closed-cut valley  Pipe penetration flashing

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 and hammer loop	Pouch with minimum two compartments; adjustable belt size; suspenders optional
	1	Each	Roofing shingle hatchet	For hand nailing, include integrated cutting blade and shingle gauge when a hatchet is used for installing shingles
	1	Each	Utility knife with hook blade	Maintain sharp blade inventory based on consumption
	1	Each	Utility knife with straight blade	Maintain sharp blade inventory
	1	Each	25-foot retractable tape measure	For general measuring tasks
	1	Each	Hand caulking gun	For use with manufacturer's sealants, such as elastomeric sealant caulk
	1	Each	36-inch-wide soft bristle push broom	For general cleaning of mockups and testing area
	1	Each	Light duty tin snips	For cutting light-gauge metal flashing materials
	1	Each	Metal hand brake	Minimum 6-inch jaw, for fabricating transition flashing when using mockup style B
	1	Each	Chalk line with chalk	For snapping lines to align membrane field sheets
<b>POWER TOOLS AND DEVICES</b>				
	1	Each	Drill or screw gun, with suitable bits to match screw fasteners	Cordless preferred. For driving screw fasteners used to attach metal flashing components.
	2	Each	Pneumatic coil roofing nail gun	For materials attachment, NRCA recommends having two available in the event one might malfunction and prevent a candidate from completing his or her assignment. <b>NOTE: NO ADDITIONAL TIME IS ALLOCATED TO COMPLETE ASSIGNMENTS IF A CANDIDATE CHOOSES TO HAND-NAIL DURING THEIR PERFORMANCE.</b>
	1	Length	Air pressure hose	With quick disconnect fittings: adequate length to comfortably reach between compressed air source and all mockup areas
	1	Each	Compressed air source (air compressor)	Adequate for providing minimum pressure requirements of the specific pneumatic coil roofing nail gun
<b>SAFETY EQUIPMENT AND SUPPLIES</b>				



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 rated safety glasses with side shields	Required by the product manufacturer's published Safety Data Sheet
1	Each	Personal fall-arrest system (PFAS) including harness, lanyard, lifeline, 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 setup an anchor device.
1	Each	(Optional) Long-sleeve cotton or wool work shirt, 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**

20	Lineal feet	Minimum .0145-inch thick aluminum, or 26 GA galvanized steel T-Type drip edge metal flashing	
24	Lineal feet	Minimum .0145-inch thick aluminum, or 26 GA galvanized steel L-Type profile drip edge metal flashing	



	4	Lineal feet	Minimum .0145-inch thick aluminum, or 26 GA galvanized steel apron flashing; minimum 4-inch high and 3-inch apron	
	10	Lineal feet	Minimum .0145-inch thick aluminum, or 26 GA galvanized steel counterflashing; 4-inches wide	
	30	Pieces	Minimum 0.024-inch-thick aluminum or 26-gage galvanized steel 8-inch wide x 7-inch long step flashing for standard 5-inch exposure shingles, or 7 5/8-inch long for 5 5/8-inch exposure shingles (shingle exposure plus 2 inches)	
	2	Pieces	Minimum 0.024-inch-thick aluminum or 26-gage galvanized steel 12-inch wide x 18-inch long flat stock metal for transition flashing at bottom of valleys	
	100	Sq. ft.	Underlayment	ASTM D226, Type 1 or D4869, Type 1 for general system underlayment



	20	Lineal feet	Self-adhering polymer-modified bitumen water and ice dam protection membrane	ASTM D1970 for underlayment requirements at roof edges, valleys and around penetrations
	120	Sq. ft.	Standard laminated/architectural asphalt shingles (various available sizes)	ASTM D3018 or D3462 in original packaging, or other access to manufacturer's installation instructions
	12	Lineal feet	Factory-made hip and ridge shingles	ASTM D3018 or D3462 in original packaging, or other access to manufacturer's installation instructions
	50	Pieces	Minimum 1-inch length plastic-cap nail fasteners	For attaching underlayment
	5	Pounds	(Optional) 1 1/4 -inch galvanized roofing nails	ASTM F 1667 for hand nailing shingles
	4	Coils	1 1/4-inch coiled roofing nails to match pneumatic nail gun	ASTM F 1667 for nailing shingles
	25	Each	1 1/4-inch corrosion-resistant self-piercing pancake-head screw fasteners suitable for wood substrate	ASTM A153 for attaching metal flashing components
	3	Lineal feet	Continuous ridge vent material	To cover ridge vent opening
	1	Each	Vent pipe penetration flashing	Soft metal pipe flashing sleeve or prefabricated pipe penetration flashing with elastomeric membrane sleeve, to demonstrate ability to properly flash a penetration