

JOB TASK ANALYSIS



NRCA
PROCertification®

ASPHALT SHINGLE SYSTEMS INSTALLER



NATIONAL ROOFING CONTRACTORS ASSOCIATION





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Job Task Analysis for ProCertified® Asphalt Shingle Systems Installer Certification

Introduction

This document presents an in-depth Job Task Analysis for professionals who install asphalt shingle roof systems. A committee of subject matter experts who have extensive experience with installing these systems participated in developing this JTA to create the NRCA ProCertified® Asphalt Shingle Systems Installer certification. This document also adopts applicable knowledge, skills and abilities referenced in The NRCA Roofing Manual.

Purpose and Scope

This JTA defines the general body of knowledge, skills and abilities typically performed by professional installers of three-tab and laminated asphalt shingle roof systems.

A JTA is a foundational document for developing all certification programs. It helps define the requirements for the assessment and credentialing of system installers. Further, it helps establish the requirements for recognizing or accrediting related training and educational programs and in developing curricula. The tasks listed in this document—or modified versions thereof—may be used by states or organizations that wish to develop requirements for education or training to qualify existing or new industry installers. This JTA is intended to be all-inclusive of the knowledge, skills, abilities and attitudes expected for any qualified installer of asphalt shingle roof systems.

Limits and Exceptions

In general, the job tasks listed in this document are grouped into common themes, or domains, which include: project safety; general work practices and communications; system materials; tools and equipment; materials installation; flashings and accessories installation; and housekeeping. Note the listed general workplace safety and general work practices and communication tasks are common to most system installations.

As noted, this JTA includes specific knowledge, skills and abilities for installing asphalt shingle roof system flashings. Flashing designs typically include a variety of field-constructed, shop-fabricated and premanufactured accessories used to weatherproof the system at interruptions, penetrations and terminations. Many of these accessories are fabricated using other materials including different metals, polymer-coated metals, plastics and other materials. NRCA recognizes these accessories are integral components of successful system design which manufacturers may require to be integrated into the system installation to meet system performance requirements. However, the skill sets required for fabricators and installers of metal or polymer-coated metal components in many cases are significantly different from those required for installers of asphalt shingles. Therefore, only the installation skills for flashing and accessory components typically performed by asphalt shingle installers are included in this JTA. It should be noted that many related flashing and accessory installation skills are included in other ProCertification JTA documents.



NRCA ProCertified Asphalt Shingle Systems Installer certification is not a license to practice nor does it supersede any licensing requirements. It is assumed NRCA ProCertified Asphalt Shingle Systems Installers will comply with applicable federal, state, and local laws and regulations. The tasks listed in this JTA will not all be relevant to every installation. Rather, they are meant as a comprehensive list of all tasks that could apply depending on the scope and complexity of any given installation. It also should be noted the tasks under each subsection are not necessarily listed in a prioritized order within a topic area.

NRCA ProCertified® Asphalt Shingle Systems Installer Examination Specifications

DOMAIN	DESCRIPTION	PERCENTAGE
1	Project safety	12%
2	General work practices and communications	5%
3	System materials	7%
4	Tools and equipment	5%
5	Materials installation	42%
6	Flashings and accessories installation	24%
7	Job site housekeeping	5%
	Total:	100%



Job Description	Given instructions for installing a specific asphalt shingle roof system, a ProCertified Asphalt Shingle Systems Installer must be able to:	
DOMAIN 1	PROJECT SAFETY	12%
<i>General workplace safety</i>		
1.1	Comply with all employer's safety instructions, policies and rules	
1.2	Participate actively in discussions with supervisors (e.g. foreman, superintendent or safety director) about specific hazards likely to be found on a job site and their controls before the start of each day's work	
1.3	Ask supervisors to explain unclear safety instructions	
1.4	Notify supervisors and other crew members immediately of any unsafe work conditions discovered during construction and implement corrective actions, if feasible, to ensure safety of others	
1.5	Recognize the specific safety regulations published by the Occupational Safety and Health Administration (OSHA) or other organizations with jurisdiction that may apply to a given job site	
<i>Specific workplace safety</i>		
1.6	Confirm fall protection systems are set up during all construction phases	
1.7	Use and maintain fall-protection system(s) following manufacturer's and employer's policies and instructions	
1.8	Identify safety equipment and devices required to meet project requirements	
1.9	Locate safety data sheets for all materials being used on the job	
1.10	Review and implement the information provided in SDSs	
1.11	Select and wear required personal protective equipment when hazards are present	
1.12	Maintain PPE following manufacturer's and employer's policies and instructions	
1.13	Determine safe and efficient roof access locations	
1.14	Select, set up and use ladders following manufacturer's and employer's instructions and policies before each day's use	
1.15	Lift, move and set materials, tools and equipment without injuring yourself or others	
1.16	Use hand and power tools only after receiving training	
1.17	Inspect all hand and power tools and equipment for damage prior to use	
1.18	Tag and remove damaged tools or equipment from job sites and report them to supervisors and other crew members following employer's policies and instructions	
DOMAIN 2	GENERAL WORK PRACTICES AND COMMUNICATIONS	5%
2.1	Define basic roofing terminology	
2.2	Perform basic roof calculations and measurements	
2.3	Accurately follow all instructions given for a projects' specification	
2.4	Ask questions to review and clarify instructions	
2.5	Review work goals, tasks and objectives with supervisor to start each day	
2.6	Remain flexible when work conditions unexpectedly change	
2.7	Participate in and contribute to problem-solving discussions	
2.8	Collaborate with other team members	



2.9	Share work experience and knowledge with others	
2.10	Arrive at job sites on time	
2.11	Express ideas about ways to improve work processes	
2.12	Respect everyone	
2.13	Actively seek feedback on one's performance	
2.14	Notify supervisors when resources are running low	
2.15	Perform all tasks with pride and seek to achieve high-quality standards	
2.16	Take personal responsibility for and report mistakes	
2.17	Continuously seek and actively participate in education and training opportunities that enhance and grow a professional career	
DOMAIN 3	SYSTEM MATERIALS	7%
3.1	Explain the function(s) of all asphalt shingle roof system materials and accessories	
3.2	Identify the various types of asphalt shingles	
3.3	Identify and select the materials and accessories required for a given specification	
3.4	Identify underlayment roll size, types and coverage	
3.5	Identify area of coverage provided by each shingle package	
3.6	Locate and review manufacturer's installation instructions provided on shingle packaging	
3.7	Identify incompatible materials and substrates	
3.8	Identify potential problems when handling and cutting materials	
3.9	Explain the effects different weather conditions may have on asphalt shingle installations	
3.10	Recognize and react to defective or damaged materials following employer's policies and manufacturer's recommendations	
DOMAIN 4	TOOLS AND EQUIPMENT	5%
4.1	Select the required tools and equipment for a given task	
4.2	Inspect tool and equipment condition before every use	
4.3	Use tools and equipment only for their intended purposes	
4.4	Only operate powered tools and equipment that you have been trained to use and follow manufacturer's instructions	
4.5	Maintain tools and equipment per manufacturer's instructions	
4.6	Select electrical extension cords to match the power requirement of a tool	
4.7	Confirm an adequate ground fault circuit interrupter-protected power source for each tool before use	
4.8	Clean tools and equipment after each use	
DOMAIN 5	MATERIALS INSTALLATION	42%
<i>General preparation</i>		
5.1	Set up and inspect all safety-related equipment and devices	
5.2	Determine the installation sequence for all required system components	
5.3	Determine fastening patterns and attachment requirements for all materials and accessories	
5.4	Stage and position all required materials, tools and equipment	



5.5	Inspect all materials and accessories for damage; replace as necessary
<i>Substrate preparation</i>	
5.6	Visually inspect substrate to ensure it is secure, firm, smooth, clean, frost-free and dry before installing materials
5.7	Notify supervisor and other crew members immediately of any deteriorated substrate conditions discovered during construction and implement corrective actions, if feasible, to ensure safety of others
5.8	Repair substrate defects as instructed by supervisor
<i>Re-cover preparation</i>	
5.9	Remove existing metal edge flashings, vertical surface flashings, counterflashings or accessories as specified
5.10	Identify, cut, secure or remove curled or lifted shingles
5.11	Remove existing hip and ridge shingles
5.12	Remove debris and loose material from existing roof surface
<i>Underlayment layout and attachment</i>	
5.13	Determine underlayment locations and sequencing
5.14	Move, set and align underlayment rolls into sequenced locations
5.15	Overlap adjoining underlayment materials to ensure water flows over laps, penetration flashings and accessories and not against them
5.16	Unroll, remove release film and adhere water and ice dam protection membranes without wrinkles, buckles or voids
5.17	Unroll and attach underlayment without wrinkles, buckles or voids
5.18	Set and maintain specified underlayment, sidelaps and overlaps
5.19	Ensure ventilation openings are unobstructed after underlayment installation is completed
5.20	Repair or replace damaged underlayment before covering with shingles
<i>Shingle layout and attachment</i>	
5.21	Determine shingle installation sequence following project requirements and related manufacturer's instructions
5.22	Determine and select nail types and lengths to meet project requirements and manufacturer's specification
5.23	Set, align and attach starter strip materials
5.24	Set, align and attach shingles
5.25	Set, align and attach shingles to ensure water flows over side laps, penetration flashings and accessories and not against them
5.26	Nest new shingles consistently in re-cover installations when existing shingle exposure is consistent course-to-course
5.27	Maintain specified shingle overlap, exposure and alignment on all slopes
5.28	Ensure all nails are driven flush and tight against shingle surface and not under-driven or overdriven
5.29	Ensure all nails are firmly attached in specified locations and nail heads are completely covered in the finished roof system
5.30	Cut shingles without damaging underlying materials
5.31	Cut, set and attach shingles around penetrations and dormers while maintaining specified overlap, exposure and alignment



5.32	Cut, set and attach shingles in valleys	
5.33	Ensure ventilation openings are unobstructed in the finished roof system	
5.34	Ensure shingle self-sealing strips are not damaged or become contaminated during installation	
5.35	Prepare, cut, align and attach hip and ridge shingles	
5.36	Immediately replace any scuffed or damaged shingles	
DOMAIN 6	FLASHINGS AND ACCESSORIES INSTALLATION	24%
6.1	Identify components of a specific flashing detail	
6.2	Demonstrate knowledge of the function(s) of all flashing detail components	
6.3	Stage and position all required flashing materials, tools and equipment	
6.4	Determine and follow the installation sequence for all required flashing components and accessories	
6.5	Determine the attachment method for each flashing component and accessory including fastener type and locations to meet project requirements and manufacturer's specifications	
6.6	Install ventilation accessories including continuous ridge, static, mechanical and powered vents	
6.7	Install drip edge metal flashings at perimeter rake and eave edges	
6.8	Install penetration flashing components, including flanges and accessories, where asphalt shingles intersect pipes or vents	
6.9	Install vertical surface flashing components and accessories where asphalt shingles intersect walls, chimneys, curbs and kick-outs including apron; step; cricket or backer; and counterflashings	
6.10	Install flashing components and accessories at all roof slope transitions including steep-to-low; low-to-steep; and steep-to-steep transition areas	
6.11	Install skylight flashing components and accessories	
6.12	Determine locations and apply mastics and sealants at all flashing and accessory details to meet project requirements and manufacturer's specifications	
DOMAIN 7	JOB SITE HOUSEKEEPING	5%
7.1	Continuously remove all kinds of construction waste and debris from all substrates, roof surfaces, curbs, chimneys, vents, skylights or other surfaces	
7.2	Immediately clean spills of mastics, sealants, solvents or chemicals from roof surfaces	
7.3	Continuously maintain gutters or other roof drainage systems clear of materials or debris	
7.4	Maintain clean footwear on all installed shingle surfaces	
7.5	Ensure sharp-edged materials, fasteners, tools and equipment do not cut, puncture or scrape installed surfaces	
7.6	Protect installed shingle surfaces from damage and other construction debris	
7.7	Immediately correct any incidental damage to newly installed shingles following manufacturer's guidelines	
7.8	Ensure every completed roofing project is left clean and free of scrap, excess fasteners, waste materials or other debris	