



# RISE Certified Solar Roofing Professional (CSRP) Job Task Analysis

## RISE CERTIFIED SOLAR ROOFING PROFESSIONAL (CSRP) JOB TASK ANALYSIS

Primary Objective: Given a proposed roof-mounted photovoltaic (PV) system design, a solar roofing professional will apply essential knowledge, skills and abilities to advise estimators, contractors and sales professionals and plan, coordinate and supervise the installation of a low-slope or steep-slope roof-mounted PV system that complies with applicable codes, standards and regulatory requirements; maintains the weatherproofing abilities of the integrated roof system; and meets customers' needs by the following items.

Item	Description
Domain 1:	Planning and Implementing Safety Requirements
Domain 2:	Identifying Structural, Roof Assembly and PV System Design Issues
Domain 3:	Applying Basic Electrical System Principles and Practices
Domain 4:	Estimating, Contracting and Selling a Roof-mounted PV System
Domain 5:	Managing and Directing Roof-mounted PV System Installations
<b>Domain 1: Planning and Implementing Safety Requirements</b>	
<i>As part of safe installation and maintenance of a roof-mounted PV system, a solar roofing professional must be able to:</i>	
1.1	Develop and implement a comprehensive safety plan for all construction phases
1.2	Demonstrate proper use of necessary PPE, tools and equipment
1.3	Prescribe safe handling, rigging, hoisting and loading of all roof system and PV system components
1.4	Verify employees have completed all required safety training
1.5	Demonstrate proficiency in basic CPR and first aid
<i>For all phases of a roof-mounted PV system installation, a solar roofing professional must be able to identify and address:</i>	
1.6	Building owner safety requirements and procedures
1.7	Site-specific safety hazards
1.8	Potential environmental hazards
1.9	Basic structural safety issues (e.g., point loading)
1.10	Basic electrical hazards
1.11	Requirements for safely accommodating rooftop traffic and allowing necessary access during construction and future system maintenance
1.12	Compliance with applicable codes, regulations and standards concerning worker and public safety
<b>Domain 2: Identifying Structural, Roof Assembly and PV System Design Issues</b>	
<i>When advising others about structural and general design issues, a solar roofing professional must be able to:</i>	
2.1	Identify the structural and mechanical issues presented as-built for an existing job site
2.2	Identify applicable codes and standards, including those associated with electricity, fire, wind and impact resistance
2.3	Describe means and methods to accommodate future maintenance requirements
2.4	Read and interpret electrical schematics and make recommendations for modifications in electrical layout in roof system and PV system construction details and drawings

Item	Description
<i>When advising others about roof assembly and roof system issues, a solar roofing professional must be able to:</i>	
2.5	Describe characteristics and explain functions of individual roof assembly components
2.6	Evaluate and describe the condition of an existing roof system
2.7	Assess whether a proposed roof-mounted PV system is appropriate by comparing the expected service life of the PV system to the anticipated service life of the existing roof system
2.8	Identify local energy code requirements for a roof assembly
2.9	Identify requirements for positive drainage of the entire roof assembly
2.10	Verify with the manufacturer of the existing roof system that the new PV system will not void the existing manufacturer's warranty
2.11	Plan and prescribe the installation procedures for penetrating PV system mounts and building attachments to comply with industry best practices and manufacturers' warranty requirements
<i>When advising others about PV system issues, a solar roofing professional must be able to:</i>	
2.12	Define basic PV system terms
2.13	Explain the basic principles of PV system design
2.14	Identify PV system components
2.15	Describe available PV technologies and the power-generating characteristics of each
2.16	Conduct a site assessment for solar energy access and shading
2.17	Identify available rooftop area suitable to receive PV system components
2.18	Recognize when actual site conditions require revisions to a given roof-mounted PV system design
2.19	Identify the required documentation, fulfillment and commissioning procedures (e.g., tests, submittals, warranties, maintenance, administrative record-keeping) for a given roof-mounted PV system project
2.20	Explain PV system maintenance issues that affect power-generating performance
2.21	Describe the functions of power performance monitoring systems
<b>Domain 3: Applying Basic Electrical System Principles and Practices</b>	
<i>A solar roofing professional must be able to:</i>	
3.1	Define basic electrical terms and systems (amperage, voltage, wattage, energy, power, phase, wire sizing, circuit components, etc.)
3.2	Explain basic principles of alternating and direct current
3.3	Explain basic principles of parallel and series electrical circuits
3.4	Identify PV system electrical components in given specifications and drawings
3.5	Describe the functions of PV system electrical components
3.6	Explain basic principles of string sizing
3.7	Use basic procedures for calculating anticipated kilowatt capacity for a proposed PV system design
3.8	Test functionality of individual PV modules during installation
3.9	Conduct PV system line and commissioning performance tests

Item	Description
<b>Domain 4: Estimating, Contracting and Selling a Roof-mounted PV System</b>	
<i>When advising an estimator, a solar roofing professional must be able to:</i>	
4.1	Acquire current system component pricing
4.2	Explain the criteria for choosing compatible roof systems and PV systems
4.3	Determine the requirements for complying with applicable codes, standards and other regulatory requirements
4.4	Determine labor requirements and costs for installing all system components
4.5	Identify as-built structural and mechanical issues that affect project costs
4.6	Identify job-site staging restrictions and their effects on costs
4.7	Identify subcontracting needs, scheduling and related costs
4.8	Identify warranty options available for specific roof-mounted PV system designs
4.9	Identify all components that could be included, including optional components
4.10	Calculate overall construction budget, including required labor, materials, sequencing and subcontracted services
4.11	Identify insurance and bonding requirements and related costs
<i>When advising a roof-mounted PV system installation contractor, a solar roofing professional must be able to:</i>	
4.12	Identify and explain the major components of a comprehensive contract agreement between the roof-mounted PV system installation contractor and the building owner
4.13	Identify and explain the major components of a comprehensive contract agreement between the roof-mounted PV system installation contractor and the subcontractor
4.14	Identify the unique job-specific issues that should be part of a comprehensive risk assessment for a given roof-mounted PV system installation project
4.15	Facilitate execution of tasks and processes related to financing the project
<i>When advising a salesperson about important information for customers, a solar roofing professional must be able to:</i>	
4.16	Explain the variables included in life-cycle costing, return on investment and payback period calculations
4.17	Explain power purchase agreements
4.18	Give a basic explanation of how PV systems work
4.19	Identify local, state and federal rebate and incentive programs available for a given project
4.20	Provide an accurate description of a given PV system's potential financial costs and returns
4.21	Describe the warranty provisions (inclusions and exclusions) of PV system and roof system components
4.22	Identify and explain future PV system and roof system maintenance needs
4.23	Identify and explain customer service and support needs (e.g., project management, documentation, rebate and incentive fulfillment)

Item	Description
<b>Domain 5: Managing and Directing Roof-mounted PV System Installations</b>	
<i>A solar roofing professional must be able to:</i>	
5.1	Identify and describe leadership and project management skills required to oversee the installation of roof-mounted PV systems
5.2	Identify skills training necessary for workers to install specific roof systems and roof-mounted PV systems
5.3	Determine, schedule and manage the labor requirements for installing all roof system and PV system components
5.4	Interpret and implement system layout, construction details and sequencing as provided in the specification documents, drawings and electrical schematics
5.5	Identify, schedule and implement all manufacturers’ installation instructions, including quality-assurance inspection and testing protocols and related documentation
5.6	Assemble and install penetrating PV system mounts in compliance with manufacturers’ instructions and roofing industry best practices
5.7	Plan for and maintain a roof system’s weatherproofing or watershedding integrity throughout the construction process
5.8	Plan for the protection of roof system and PV system components from damage and theft throughout the construction process
5.9	Determine requirements for installation equipment and tools
5.10	Determine delivery sequencing for all products contained in the scope of work
5.11	Develop and implement a construction schedule including all subcontractors
5.12	Monitor the performance of all project personnel for compliance with safety and installation requirements
5.13	Advise the PV system designer of actual site conditions and implement subsequent design revisions if necessary
5.14	Implement onsite change order policies and procedures