



SPFA Certification Overview

RESNET
2013 Conference
March 1, 2013

SPFA Certification Program

QAP Mission and Vision

- Vision
 - That the SPFA QAP professional certification is the most rigorous, extensive and defining program for SPF professionals in the world. That it be consistent with all industry standards, best practices and known building science, and accessible and affordable among our intended constituency. That it be the measure of personal and professional accomplishment in the industry, and a demonstration among professionals of the essential knowledge, skills and abilities inherent among the highest class of sprayfoam professional.
- Mission
 - To deliver and operate a focused, consistent and attentive, world-class professional sprayfoam certification program. Continuously raising, establishing, and raising again the bar on safety, performance, quality and professionalism among SPF industry professionals. For the benefit of their businesses, personal safety, safety and satisfaction among customers, and to create the most solid of foundations for future growth, personal and industry distinction.

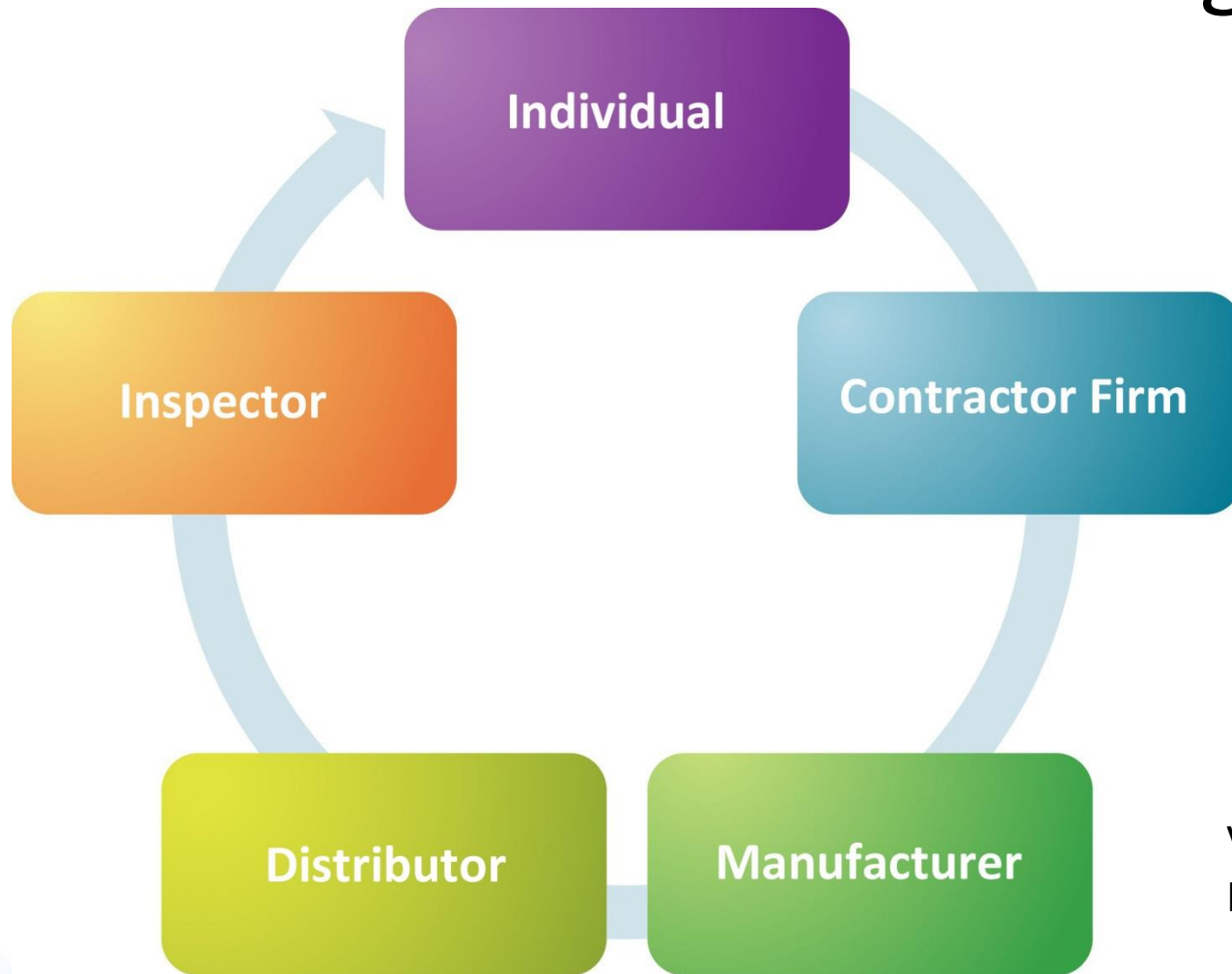
SPF Certification

- Establishes Clear Path to Professionalism
- Establishes Expectations
 - Among Industry Professionals
 - Among Customers
 - Among Partners (Arch / Design Build / GC / Etc)
- Standards-Driven (ANSI/ISO 17024)
- Uniform and Consistent Measures
- Consequences for Failure (Enforcement)
- Regular Continuing Education Required for Recertification
- Provides Further Market Differentiator for Company and Individuals
- Heavy Focus Upon H+S Throughout

Certification Administration

- Third Party Role
- ANSI/ISO Accredited Certification Program Provider
 - Assist in the following areas
 - Ensure ANSI/ISO 17024 Approvals and Compliance
 - Provides Guidance on Program Best Practices
 - Implementation and Delivery
 - Conflict Resolution
 - Training and Test Validation (Psychometrics)
 - Administration
 - Marketing / Promotion

Certification Relationship Diagram



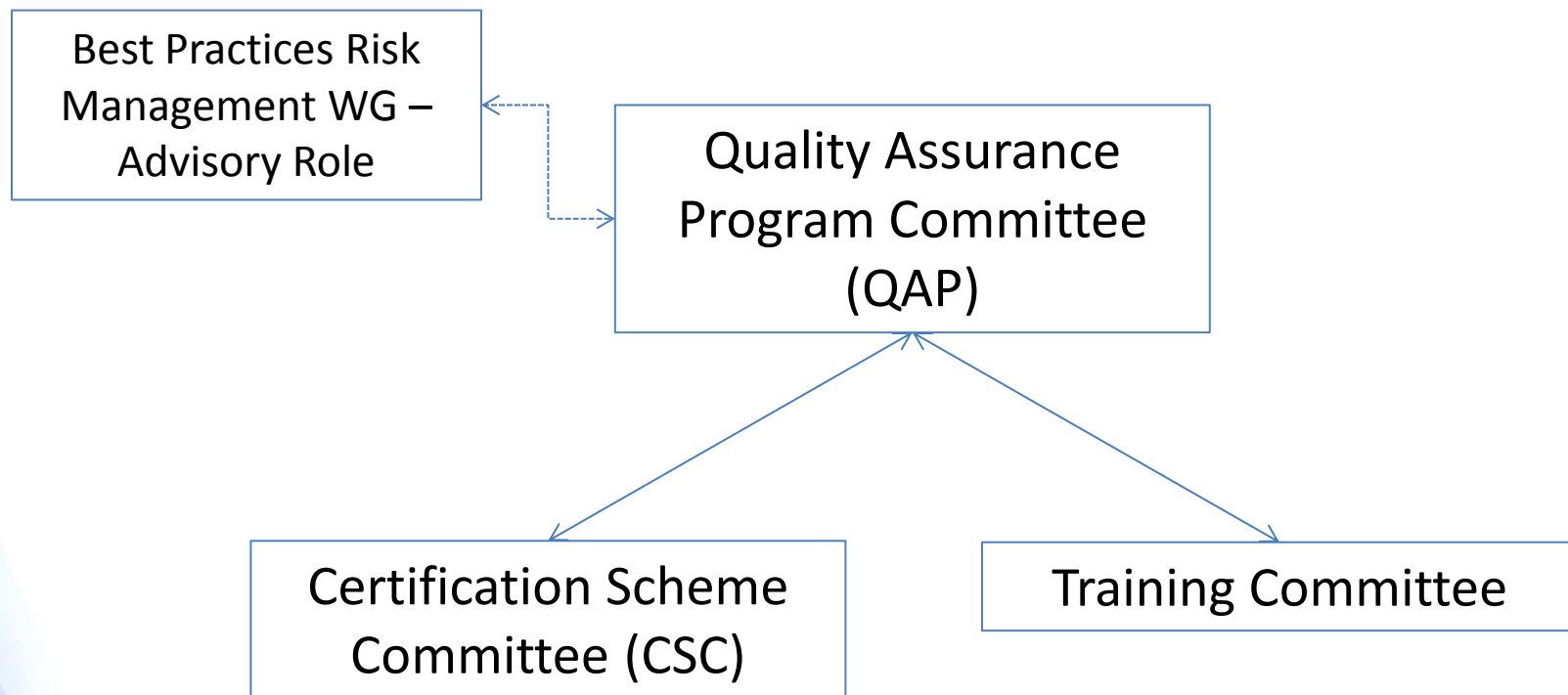
Value Chain
Inclusion

Certification Committees Structure

All SPF Industry Stakeholders are represented:

- Roofing and Insulation Applicators
- Roofing and Insulation Contracting Companies
- Independent Third Party Inspectors
- SPF Industry Consultants
- SPF Industry Training Professionals
- SPF Industry Trade Associations
- Manufacturers
- Distributors
- Affiliated Industry Trade Associations

Certification Committee Structure



Quality Assurance Program (QAP) Committee

- Perform Job Task Analysis (JTA), Translate into Knowledge, Skills and Abilities(KSA)
 - Conducting JTA industry survey to validate content focus, weighting and comprehensiveness
- Develop Learning Objectives (LO) – Insulation & Roofing
- Develop CSC Handbooks – Insulation & Roofing
- Creates QAP Policies and Procedures Manual

Strong Emphasis on H&S at Starting Level (Assistant) Chemical Health and Safety

- Worker Protection
 - Hazard communications
 - Labels and other forms of warning
 - Material Safety Data Sheets (MSDS)
 - Employee training and information
 - “Green” marketing claims and hazard communications
- Effective Workplace Practices
 - Site preparation
 - Good practices
 - Engineering controls - containment, ventilation
 - Homeowner/building occupant outreach
 - Reoccupancy
 - Personal Protective Equipment (PPE)
 - SPF application
 - PPE evaluation
 - Protective clothing
 - Gloves
 - Eye and face protection
 - Respiratory protection
- PPE Continued:
 - Respiratory protection program requirements
 - PPE for SPF high pressure interior application
 - PPE for SPF high pressure exterior application
 - PPE for non-spraying tasks
 - PPE for SPF low pressure kits/systems and insulating foam sealant
- Chemical storage and handling
- Disposal of SPF chemicals
- Spill response
- First-Aid
- Regulations
- Additional SPF health and safety topics

Source: CPI / www.spraypolyurethane.org

QAP Cmte Develop Job Task Analysis (JTA)

JTA INSULATION

A Introduction to Spray Polyurethane Foam

- Task A.1 History of Spray Polyurethane Foam
- Task A.2 What is Spray Polyurethane Foam?
- Task A.3 Types of SPF and Cell Content
- Task A.4 Physical Properties
- Task A.5 Reaction, Time Factors and Ratio

B Health and Safety - Chemicals

- Task B.1 Potential for Chemical Exposure
- Task B.2 Hazard Communications (HMIS)
- Task B.3 Engineering Control/Site Isolation
- Task B.4 Work Practices
- Task B.5 Personal Protection Equipment (PPE)

C Health and Safety - General

- Task C.1 Reasons for practicing safety
- Task C.2 OSHA
- Task C.3 Written Safety Management Program

D Jobsite Safety

- Task D.1 Electrical Hazards
- Task D.2 Hand and Power Tools

QAP Cmte Develop Learning Objectives

Job	Tasks	LO#	Learning Objectives	K, S or A	Level
A. Introduction to Spray Polyurethane Foam	Task A.1 History of Spray Polyurethane Foam	A.1.a	Name the year when spray foam was invented	K	1
		A.1.b	Identify the person credited with inventing spray polyurethane foam	K	1
		A.1.c	Describe the original uses for spray polyurethane foam	K	1
		A.1.d	Understand when spray foam became a commercial product	K	1
	Task A.2 What is Spray Polyurethane Foam and the components that make it?	A.2.a	Define what is polyurethane foam	K	1
		A.2.b	Name the 2 basic chemical ingredients	K	1
		A.2.c	Know that Isocyanate is mostly designated by the letter A	K	1
		A.2.d	Know that Resin blend (or polyol blend) is mostly designated by the letter B	K	1
		A.2.e	Know that Resin blend (or polyol blend) consists of at least 5 components: polyols, surfactants, catalysts, blowing agents, and fire retardants	K	1
	Task A.3 Types of SPF and cell content	A.3.a	Understand the 2 types of cell content (open and closed)	K	1
		A.3.b	Understand the 3 types of foam	K	1
		A.3.c	Understand the differences between the 3 types of foam and where they are used	K	1
		A.3.d	Understand a closed cell content of >90 % is referred to as closed cell foam.	K	1
		A.3.e	Understand a closed cell content of < 10 % is referred to as open cell foam.	K	1

Training Committee

- Develop Written Curriculum
- Develop PPT Slides for Training
- Create Instructor Guidelines and Instructions
- Develop Training Facility Criteria
- Develop Instructor Criteria

Training Cmte Curriculum sample

A

A Introduction to Spray Polyurethane Foam

Task A.1 History of Spray Polyurethane Foam

Learning Objectives

Upon completion of this section the student will be able to:

- Name the year SPF was invented
- Identify the person credited with inventing spray polyurethane foam
- Be able to describe the original uses for SPF
- Understand when spray foam became a commercial product

In 1937 German scientist, Dr. Otto Bayer discovered, and received a patent for, the chemical reaction that gave birth to the modern SPF industry. Since then, SPFs, particularly those that can be sprayed-in-place, have gained wide acceptance in the construction industry.

Spray foam became commercially available in the 1960's. Installation equipment advances soon followed, allowing for more efficient application. Growth was further spurred-on by the energy crisis in the 1970's. SPFs are now used as insulation systems, components in air barrier systems, and as adhesive materials. SPFs may be used in numerous building applications including, the building envelope and roofing systems.

To provide a properly installed sprayed-in-place polyurethane foam system, a contractor must have:

1. a commitment to good workmanship.

But equally important, if an applicator is to apply any spray-in-place system correctly, he must know the system's:

2. chemical and physical properties
3. handling characteristics

This Section will provide that information and advise you on how to obtain any other information you should know about SPF systems.

Task A.2 What is Spray Polyurethane Foam and the Components That Make It?

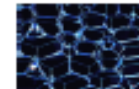
Learning Objectives

Upon completion of this section the student will be able to:

- Define what is polyurethane foam
- Name the two basic chemical ingredients
- Know that isocyanate is mostly designated by the letter A
- Know that the Resin Blend (or polyol) is mostly designated by the letter B
- Know that this Resin Blend consists of 5 components

CHEMICAL AND PHYSICAL PROPERTIES

By definition, SPF is a cellular plastic. It is a dispersion of gas in a solid polymeric matrix and derives properties from both phases. The foam is 97% gas by volume. The gas phase contributes mainly to thermal insulation properties; the polymeric structure effects the mechanical and chemical properties.



Close up view of spray foam

Certification Scheme (CSC) Committee

- Written Knowledge Exams
- Written Skills Exams
- Field Exams
- Create CSC Handbook for program participants

CSC Cmte Sample Written Knowledge Exam Questions (K)

A. INTRODUCTION TO SPRAY POLYURETHANE FOAM

Task	New LO#	learning objective	Question	Answer 1	Answer 2	Answer 3	Answer 4	Correct Answer
Task A.1 History of Spray Polyurethane Foam	A.1.a	Name the year that polyurethane chemistry was invented.	What year was polyurethane chemistry invented?	1886	1985	1962	1937	4
	A.1.b	Identify the person credited with inventing polyurethane chemistry	Who is credited with inventing polyurethane chemistry?	George Sievert	Otto Bayer	Fred Gusmer	Charles Kettering	2
	A.1.b	Identify the person credited with inventing polyurethane chemistry	Polyurethane chemistry was invented by whom?	Otto Bayer	Charles Dow	Henri DuPont	Fred Gusmer	1
	A.1.c	Describe the common uses for spray polyurethane foam	SPF is used widely in the ____ industry.	Cleaning	Construction	Medical	Beauty	2
	A.1.c	Describe the common uses for spray polyurethane foam	SPF generally is NOT used as a(n):	Adhesive	Insulation	Insecticide	Air barrier	3

CSC Cmte Sample Written Skills Exam Questions (S)

Job	Learning Objective	Learning Objective ID	Learning Objective -- OLD#	K, S or	Level	Question	Answer 1	Answer 2	Answer 3	Answer 4	Correct Answer
D - Jobsite Safety	Estimate the minimum length ladder required to access a given roof height	D.6.c.S	D.6.2.c.1	S	3	You have to safely access a roof 20 feet above ground level. There are four ladders available, which of the following is the minimum length ladder that can be safely used to access this roof.	20	23	32	40	3
D - Jobsite Safety	Estimate the minimum base width of scaffolding for a given work platform height	D.6.i.S	D.6.1.d.1	S	3	You need scaffolding with a working platform height of 32 feet, calculate the minimum width of the base.	8	4	32	16	1
D - Jobsite Safety	Calculate the minimum design weight capacity of a hole cover	D.6.m.S	D.6.3.b.1	S	3	There is a 4 foot x 4 foot hole on a roof which will be open during construction. For safety sake the hole needs to be covered during construction. The anticipated maximum weight on this hole cover is 500 pounds. Calculate the minimum design support capacity for the hole	250	500	750	1000	4
D - Substrate Preparation	Estimate the amount of the primer required for the job	G.2.b.S	O.2.b.1	S	3	A concrete wall of 5,000 square feet requires primer before spraying foam. The primer manufacturer recommends .25 gallons per 100 square feet. How many gallons are required for the project?	12.5 gallons	1,250 gallons	6.25 gallons	125 gallons	1

- Example:
CSC Cmte
Master
Installer
Field Exam
(A)

SPFA QAP Certification Master Installer Field Exam	Insulation Installer
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Candidates Name: _____ Certification # (if applicable): _____

SPFA Evaluator Name:

Type of Evaluation: Closed Cell Installer Open Cell Installer Both Open and Closed Cell Installer

Date: _____ Time Started: _____ Time Finished: _____

Please answer yes (Y) No (N) or not applicable (N/A) to the following questions during the practical evaluation.

1. Documentation (15%)

Scope: Candidate's ability to respect personal health and safety guidelines.

- 1 Did candidate identify and locate safety checklist for project?
- 2 Did candidate know where the MSDS sheets are located and explain what type of information is in each section?
- 3 Did the candidate show the temperature range that is recommended for the product? CC
- 4 Did the candidate show the temperature range that is recommended for the product? OC
- 5 Did the candidate show where emergency numbers are posted?
- 6 Did the candidate demonstrate a tool box talk/safety briefing?

Type	Yes	No	N/A
Both			
Both			
CC			
OC			
Both			
Both			

2. Pre-Application (15% weighting)

Scope: Candidate's ability to verify substrate conditions are acceptable and safety procedures and equipment are being utilized.

- 1 Did the candidate show where safety and warning signs are located at the jobsite?
- 2 Did the candidate show locations of fire extinguishers?
- 3 Did the candidate show the location of power sources and equipment that should be locked and tagged out, and demonstrate the proper lockout and tagout procedure for each?
- 4 Did the candidate show areas on the project where fall protection will be required and demonstrate how to check each for safe setup and use?
- 5 Did the candidate show where proper thermal/ignition barrier for this project is needed?
- 6 Did the candidate demonstrate how the area is properly heated? CC
- 7 Did the candidate demonstrate how the area is properly heated? OC

Both			
Both			
Both			
Both			
Both			
CC			
OC			

- 8 Did the candidate demonstrate how to properly set up both an extension and a step ladder? Did the candidate show that all heat producing devices and ventilation systems are disabled, sealed and protected from exposure to SPF and from accidental powering on during spray and all ventilation periods?
- 9 Did the candidate demonstrate the proper setup of ventilation of the spray area? Did the candidate demonstrate that the substrate is properly prepared and is clean, dry and free of dust, loose scale or rust, oil or ice (indicate new or retrofit, and if wood, metal, concrete or masonry)?
- 10 Did the candidate demonstrate proper masking procedures?

Both			
Both			
Both			

3. Equipment/Rig (25% weighting)

Scope: Candidate's ability to properly start-up, adjust, troubleshoot and service equipment in accordance with mfg. req.

- 1 Did the candidate show the HIMS label on the container for the foam that will be used and explain what the instructions mean?
- 2 Did the candidate show the HIMS label on the container for the foam that will be used and explain what the instructions mean?

CC			
OC			

QAP Cmte Develop CSC Handbook



SPFA-QAP's Certification Scheme Committee (CSC) Handbook documents the input and insight into the certification scheme, examination types, processes, recertification, surveillance activities and related matters.

Insulation and roofing versions.



Categories of Certification

- Insulation
- Roofing

Current Status

- Insulation -Complete
 - Job Task Analysis (JTA)
 - 23 jobs, 136 tasks
 - JTA Survey In-Progress
 - Knowledge, Skills and Abilities (KSAs)
 - Learning Objectives
 - 792 learning objectives
 - Levels of Individuals
 - Curriculum Review
 - Test Questions
 - 914 questions

Current Status

- Roofing - Complete
 - Job Task Analysis (JTA)
 - 21 jobs, 122 tasks
 - Knowledge, Skills and Abilities (KSAs)
 - Learning Objectives
 - 993 learning objectives
 - Levels of Individuals - 4
 - Curriculum Review
 - Test Questions
 - 1017 questions



4 Levels of Certification

- Assistant (same as roofing)
- Installer
- Master Installer
- Project Manager

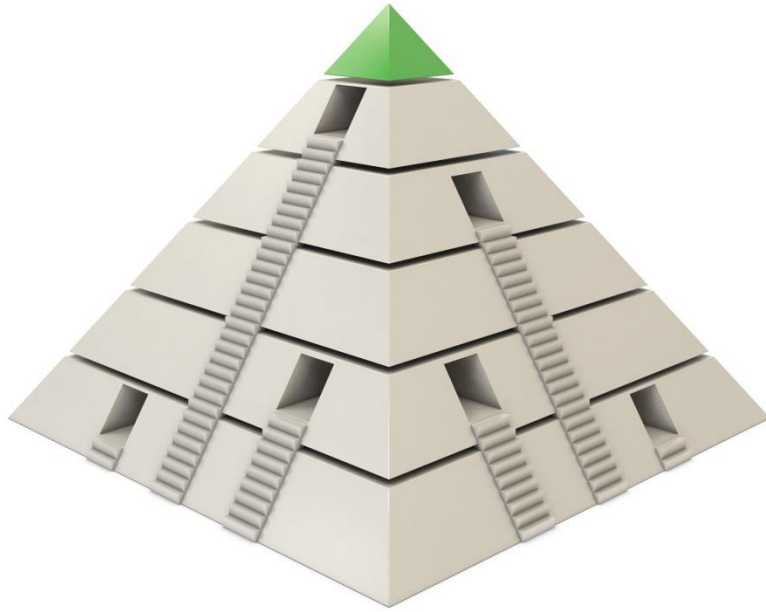
Contractor Individual Certifications

Individual

Four Individual levels for Insulation and Roofing Certification



Priority: Accommodate Multiple Installer Entry Points



Levels build upon each other but allow for multiple entry points to accommodate advancement of more experienced professionals

Insulation Certification Knowledge Requirements

Assistant	Installer	Master Installer	Project Manager
Introduction to SPF	Pre-Job Planning	Troubleshooting and Repair	SPF Estimating
Health and Safety - Chemical	Jobsite Set-Up Procedures	Preparing for Third Party Inspections	Building Science Basics and HAM
Health and Safety - General	Substrate Preparation	Thermal and Ignition Barriers	Building Envelope Design
Jobsite Safety	Start-Up Procedures	Sealant Foams	Understanding Mechanical Systems
	Installation Methodology	Hybrid Insulation Systems	Codes and Standards
	Shut Down Procedures	SPF Equipment	Material Design and Selection
		Coating Equipment	

Certification Requirements

- **Assistant**
 - CPI Health and Safety on-line course
- **Installer**
 - CPI Health and Safety on-line course
 - OSHA 10 hour card
 - 100,000 bf/sf experience
- **Master Installer**
 - CPI Health and Safety on-line course
 - OSHA 10 hour card
 - CPR/First Aid Training
 - 500,000 bf/sf experience
 - Field Exam
- **Project Manager**
 - CPI Health and Safety on-line course
 - OSHA 30 hour card
 - CPR/First Aid Training
 - 500,000 bf/sf experience

Exams required by level

- Assistant - Exam
- Installer
 - Assistant exam
 - Installer exam
- Master Installer
 - Assistant
 - Installer
 - Master Installer
- Project Manager
 - Assistant
 - Installer
 - Master Installer
 - Project Manager

Avenues to Obtain Training To Prepare for Exams

- Training References / Resources
 - SPFA Training Materials
 - Self Study Guides
 - Spray Foam Conventions
 - Manufacturers/Partners Installer Training
 - Others
 - Dedicated SPF Training Facilities
 - Vo-Tech Training Program Partnerships (TBD)
 - Custom delivery/3rd Party Training Programs

Note: classes are not required, but highly recommended.

Avenues to Take Exams

- Exam Delivery
 - SPFA Annual Convention
 - Manufacturer's Recognized Facilities
 - SPFA Recognized Testing/Training Facilities
 - Partner Locations
 - Dedicated Testing Facilities
 - Custom Delivery/ 3rd Party
 - Online (coming soon)
 - NOTE: ALL EXAMS MUST BE ADMINISTERED BY A SPFAPCP trained written examiner



SPFA-PCP CERTIFIED

Insulation: Closed Cell

**Certification Level:
Master Installer**

Certification #: 123456



Issued to: James T. Sprayfoam

Issue Date: Feb. 12, 2013 Expiration Date: Dec. 31, 2013

Spray Polyurethane Foam Alliance Professional Certification Program



SPFA-PCP CERTIFIED

Roofing

**Certification Level:
Master Installer**

Certification #: 123456



Issued to: Jane L. Sprayfoam

Issue Date: Feb 12, 2013 Expiration Date: Dec. 31, 2013

Spray Polyurethane Foam Alliance Professional Certification Program

Field Examiner Certification

Current Status

- Field Examiner -- Complete
 - Job Task Analysis (JTA)
 - Jobs – 6
 - Tasks - 22
 - Knowledge, Skills and Abilities (KSAs)
 - Learning Objectives
 - LO's - 272
 - Categories of Auditors
 - Curriculum Review Working Group
 - Test Questions
 - 284 questions

Field Examiner Certification

- Training is required
 - Dates already offered
 - Nov 2012 Wisconsin
 - Jan 2013 Atlanta
 - Feb 2013 Jacksonville
 - Dates for future training - TBD
- Experience Pre-qualifications
- Conduct Field Exams for Insulation and Roofing Certifications
- One time Certification Registration fee
- Written exam

See Field Examiner CSC Handbook for details



SPFA-PCP CERTIFIED

Insulation & Roofing

**Certification Level:
Field Examiner**

Certification #: 123456



Issued to: Terry C. Sprayfoam

Issue Date: Feb 12, 2013 Expiration Date: Dec. 31, 2013

Spray Polyurethane Foam Alliance Professional Certification Program

Timeline & Future Focus

- Phase I - 2012
 - Installer Certification
 - Insulation
 - Roofing
 - Field Examiner Certification




Pilot Programs November 2012

- Gaco Western – Wisconsin
 - Exam Prep Classes -38
 - Assistant
 - Insulation Installer
 - Field Examiner
 - Self Study Exams -90+



Pilot Programs January 2013

- Premium Spray – Georgia
 - Exam Prep Classes - 69
 - Insulation Master Installer
 - Insulation Project Manager
 - Field Examiner
 - Self Study Exams -305
 - Field Exams Insulation - 39



Spray Foam

February 2013

- Exam Prep Classes -152
 - Assistant
 - Insulation Installer
 - Insulation Master Installer
 - Insulation Project Manager
 - Field Examiner
 - Roofing Installer
 - Roofing Master Installer
 - Roofing Project Manager
- Self Study Exams – 293

Timeline & Future Focus

- Phase II - 2013
 - Contractor (Company/Firm) Accreditation
 - Manufacturer / Systems House Accreditation
 - Distributor Firm Accreditation

Contractor Company Accreditation

Contractor Firm

- Main Points
 - All Field Personnel Registered
 - Written Safety Program
 - Formal Training Program
 - Code of Conduct
 - Insurance
 - Contractor's License or Other Proper Licensing
 - Other - TBD

Manufacturer/Systems House Accreditation

- Main Points
 - Safety Program
 - Quality Assurance Program
 - Field Support Program
 - Training Program
 - Code of Conduct
 - Possible Role in Conflict Resolution

Manufacturer

Distributor Accreditation

Distributor

- Main Points
 - Product Stewardship Program
 - Material Handling Procedures
 - Conveyance of Mfg MSDS and Other Materials
 - Code of Conduct
 - Proper Documentation
 - H+S Training Commitment
 - Promotion of Industry Training to Customers
 - Possible Role in Conflict Resolution



2013 QAP Action Items

- Develop Contractor (Company) Accreditation
- Develop Manufacturer Accreditation
- Develop Distributor Accreditation
- Develop Policies and Procedures Manual



2013 CSC Action Items

- Review and Modify Test questions
- Develop Handbooks for
 - Contractor Accreditation
 - Manufacturer Accreditation
 - Distributor Accreditation



2013 Training Committee Action Items

- Review and Modify Self Study Guides
- Develop Instructor Guide and Instructions

Outreach

- Considerable Outreach Forthcoming
 - Essential to adoption, recognition, reach , and success of the program
- Contractor Groups
 - ICAA, NRCA, Regional Contractor Associations (ie. Western States Roofing Contractors Assoc)
- Industry Trade Customers
 - Construction Specifier's (CSI), National Home Builders (NAHB), General Contractors (AGC), Architects (AIA), Design/Build Community
- Federal
 - EPA, OSHA, NIOSH, DoE, CPSC, FTC
 - SPFA & CPI met with 20+ federal industry agency representatives on Sept. 12, 2012 to provide and overview of the program and request a courtesy review of materials, which is slated to be completed by October 5, 2012.
- Public
 - Empower Customers with Knowledge & Information



Thank You

Questions?