SPRI Roof System Listing
Service Program

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Abstract

The Single-Ply Roofing Industry (SPRI) has sponsored the SPRI Listing Service as an unbiased source of information for roof systems tested and evaluated to meet code for wind uplift requirements. This listing service has been developed to serve as an easy-to-use reference source for consultants, design professionals, contractors, code officials, and others. The speakers will discuss the steps to a product’s listing, including the validation of each listing to assure accuracy and quality. They will also explain many benefits, which include deck types not available in other listing services, including Tectum, gypsum, wood, and lightweight insulating concrete (LWIC). Instructions on how to use the listing service, how to easily search for assemblies, and details about the system’s operations will be presented.

Speakers

John C. Greko — Carlisle Construction Materials

John Greko first started in the PVC roofing industry in 1982. He is currently a PVC product manager. Greko has served as vice president of engineering and quality assurance for a roofing manufacturer, faculty member of the Roofing Industry Educational Institute (RIEI), member of the American Society of Testing and Materials (ASTM), board director for the Single Ply Roofing Industry (SPRI), and consulting editor for Architecture magazine. He holds four patents for products and/or processes used in single-ply roofing.

Ronald Reed, ASQ-CQA — Intertek PSI

Ron Reed manages certification and quality assurance programs and inspections for the building and construction segment of his business and oversees the operations of the engineering services, inspection, and program management groups in York, PA. He was an integral part of the development of the SPRI Roof System Listing Service Program.

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BACKGROUND

Finding a reliable source for information to verify that a particular roofing assembly meets the requirements of the International Building Code (IBC) is one of the primary issues raised by design professionals, roofing contractors and code officials. To address this issue, SPRI, Inc. (the association that represents manufacturers of single-ply roof membranes and components), design professionals, and testing laboratories developed a Listing Service Program (LSP).

The purpose of the SPRI Listing Service Program (“Program”) is to provide a “one-stop shop” to find roof assemblies that meet the requirements prescribed in Chapter 15 of the IBC instead of searching multiple laboratory-specific databases to find this information.

SPRI is solely responsible for the establishment of the policies of the Program. In order to provide an independent and credible LSP, SPRI elected to engage a program manager, Intertek, to function as the Program’s third-party administrator. As part of its administrative duties, the program manager is responsible for developing, populating, and maintaining the database.

In addition, Program Guidelines (“Guidelines”) have been developed to govern the requirements for roof assembly submittals and supporting documentation, submittal validation, listing maintenance, and listing challenges and appeals. The Guidelines are part of an independent third-party listing program, and as such, these Guidelines constitute part of the agreements entered into by SPRI, the program participants, and the program manager.

Currently, the LSP and Guidelines cover wind uplift only. Additional Chapter 15 requirements, such as fire classification and edge securement, will be added at a later date. Future plans of the LSP will be discussed later in this report.

To effectively develop and implement the Program in accordance with SPRI’s goals, SPRI utilized a three-phase approach (see Figure 1): 1) discovery and development, 2) database and webpage development, and 3) program implementation and management.

Phase I consisted of discovery and development to determine and clarify the governing criteria of the Program. This was instrumental in ensuring the integrity and effectiveness of the Program. The policies and procedures developed included scope definition, participant eligibility, responsibilities, submittal requirements and limitations, maintenance requirements, and dispute resolution procedures. At the conclusion of Phase I, the Program was well defined and poised for development of the database and webpage.

Phase II of the process was the database and webpage development. Based on the Program’s database criteria, the approved governance documents developed in Phase I, and the information gathered during discussions with SPRI, Intertek utilized a team of experienced developers from its Information Technologies Development Group to create the web-based database. The database has a user-friendly interface and is easily accessible through the SPRI website.

Phase II included a beta sequence where mock data were populated into the system, and beta users tested the database for functionality, efficiency, and user interface. At the conclusion of Phase II, the database was populated with participant data and published for public usage.

Phase III is program implementation and management.

Figure 1 – Development phases.

BENEFITS OF THE LISTING SERVICE

The SPRI LSP is an industry-wide program that contains listings from roofing material manufacturers and suppliers for IBC Chapter 15 compliance. There are numerous benefits to this program as compared to systems that are available today. The program features the following:

• A one-stop shop for finding listings that meet the requirements of Chapter 15 of the IBC from any code-accepted testing laboratory

• Simplified listing system that allows users to:
  — Search by assembly rather than manufacturer
  — Quickly and easily find an assembly listing
  — Determine wind uplift resistance
  — Utilize a single source (SPRI)

• Designers and specifiers can determine complete IBC Chapter 15 compliance for any roofing material or assembly, including:
  — Lightweight concrete
  — Ballasted assemblies
  — Wood deck assemblies
  — Light-gauge metal deck
  — Cementitious wood fiber deck

• Other benefits:
  — Listings will show owners’ names.
  — Cannot obtain “0” results on a search.
  — Doesn’t over-constrain or need to specify everything.
— System manufacturer has reviewed all listings, so you are assured of the applicability and compatibility of all components in the system.

**HOW THE PROGRAM WORKS**

The Program provides a publicly accessible and searchable web-based database of roof assemblies. Four distinct groups will utilize the database: listing owners, recognized component manufacturers (RCMs), the program manager, and the end users (consultants, design professionals, contractors, and code officials). Each of the four groups requires unique settings, accessibility, and safeguards.

The Program and database are designed to allow those with tested and validated roofing assemblies to build the assembly in the database and upload the supporting documentation for review by the program manager. Once it is verified that the assembly is supported for the performance rating proposed through a review of the submitted supporting documentation, the assembly would be approved and the listing would move to the publically viewable and searchable site. As noted above, the site will initially report wind uplift only, with future expansions planned for fire, impact, and other roof types, edge securements, and materials.

Listing owners and RCMs enter into an agreement with the program manager for their participation in the Program.

A listed roof assembly consists of all of the components that comprise the roof assembly, including, but not limited to: the deck, insulation, roof covering, and securements. In general, components of an assembly must be manufactured by an RCM. The use of generic components, such as, but not limited to, asphalt and polyethylene sheeting, will be identified as generic in the database, and not subject to the RCM requirements.

**Adding a Roof Assembly to the Database**

The listing owner submits a roof assembly listing application containing supporting documentation to the program manager, in accordance with the assembly submittal requirements. Eligible listing owners must have ownership or legal release of the listed assembly’s supporting documentation and performance data. The assembly supporting documentation may be in the form of qualified test reports or qualified existing listings. During this period, the listing submittal is pending in the database while under review.

The owner of a listing has the following responsibilities:

- Enter into an agreement with the program manager in order to participate in the Program.
- Submit the necessary supporting documentation.
- Ensure that the supply of components and assemblies are good-faith reproductions of those tested and recognized in the assembly listing.
- Notify the program manager of any changes to the listed assembly that adversely affect its performance.
- Ensure that agreements are in place with RCMs for proper identification of components utilized in listings. The identification must be clear enough to allow the end user or authority having jurisdiction to adequately link the components to those identified on a listing.

The listing owner maintains its listing by timely payment of applicable fees and periodic verification that there have been no changes that adversely affect the performance of the listed assembly. Listing entries for another party is acceptable when the listing owner grants written permission for the use of its data. The program manager maintains the active listing in the Database.

**Verification Review Period**

The program manager verifies the listing submittals supporting documentation and RCM quality control requirements. Each RCM who supplies components of a listed roof assembly must provide proof of satisfactory quality assurance inspections conducted by a third-party quality control agency (QCA) at each of their recognized plant locations. The QCA performing the inspections must be accredited by the International Accreditation Service (IAS) or similar accreditation body, as complying with ISO Standard 17020 or ISO 17065 for performing inspections on its own behalf.

Following a successful verification, the listing submittal is granted approval and is published by the program manager on the database. The listed assembly is accessible to the public through parametric searches and applicable category selections.

Shown as a flow chart, the process is shown in Figure 2.

**Responsibilities of RCMs**

RCMs have the following responsibilities:

- Each RCM must enter into an agreement with the program manager for participation in the Program and enroll the individual plant locations that manufacture components of its listed or pending assemblies in the Program.
- The RCM must maintain a quality assurance system to ensure that its participating products consistently meet the requirements of the Program for each of its recognized plant locations. As part of the quality system, they must provide proof of enrollment in a quality control inspection for each of its recognized plant locations. Proof of inspection may be through the submittal of inspection reports, inspection summary forms, or other equivalent documentation. The documentation must identify variances as a result of inspections and confirmation that variances have been resolved.
- The RCM is required to supply a list of its manufactured components that are part of any Program listed assembly. The list includes any known part numbers or trade names utilized in listed assemblies. For
each component in the Database, all applicable manufacturing locations are noted. Recognizing that this information is proprietary, it is uploaded to a secure portion of the database and is only accessible to the specific RCM and the program manager.

Applicable Test Standards

In order for tested assemblies to be included in the database, the wind uplift testing of roof assemblies shall be conducted in accordance with FM 4474, UL 580, ASTM E1592, or UL 1897, as specified in Section 1504.3 of the IBC.

Assembly Submittal Requirements

Roof Assembly Contents – A complete list of all roof assembly combinations being submitted for consideration must be provided. The components that make up each roof assembly include, but are not limited to:

- Roof coating
- Roof covering
- Cover board
- Insulation
- Method of securing all components
- Pattern or layout of securements
- Air, vapor, or thermal barrier
- Structural deck

Through the submittal process, each component in the assembly must be identified by the manufacturer, product trade name, and product description. The documented wind uplift for each assembly must be provided. Installation details are only required as necessary to properly describe the tested assembly. The listing owner has the authority to decide the content of the listing information, provided it complies with the program rules. Supporting documentation, testing data, and proprietary information will not be publicly visible or accessible. No additional product information or claims will be included.

Supporting Documentation

Listings in the database may be supported by an existing listing, or by the necessary test reports and supporting information for the performance characteristics for which the listing is being sought. Listings being supported by a current and valid existing listing from another qualified product listing program shall be accepted by the program manager without further validation. Qualified product listing programs include, but are not limited to: 17065-accredited certification bodies; Dade County, Florida; FM Approvals; ICC-ES; State of Florida; and UL, LLC. Assembly submittals not supported by an existing listing must include a validation (technical engineering review) of the supporting documentation and the assembly’s performance. Review of the supporting documentation is performed by the program manager before any listing becomes publicly available. The program manager may request additional information as part of the verification process of a listing application. Once approved, each listing owner is responsible, on a periodic basis, depending on method used, to support the listed assembly in order to verify and reaffirm that the listing remains valid and unchanged.

Testing Laboratory Requirements

In the supporting documentation for each assembly, the independent testing laboratory, at the time of testing, must have been accredited as complying with ISO Standard 17025. The scope of accreditation for the laboratory, at the time of testing, must have also included the specific tests conducted in the assembly submittal.

Validation Requirements

Assembly submittals not supported by an existing listing must include a validation (technical engineering review) of the supporting documentation and the assembly’s performance. Validation must be conducted by an ISO 17065-accredited certification body or by a licensed professional engineer with the applicable expertise in the products and performance criteria being evaluated. Listing owners cannot serve as validators. The validation shall ensure that the supporting documentation and performance fully comply with the applicable test standards.

ASSEMBLY LISTINGS

Listing Entries

Listing owners are responsible for entering the assembly information directly into the database, as well as uploading the necessary supporting documentation. The program manager then reviews the submittal for accuracy. All listings will remain in an unpublished, pending status, and are not accessible to the public until review by the program manager is completed. Only the program manager has the authority to activate and publish listings for visibility to the public. Listing owners are notified of acceptance of the listing submission or the reason for denial of the application.

Listing Publication

All listings will be published as part of a graphical user interface and database as part of the Program. This database will be accessible by end users and will allow end users to search for and view performance of roof assemblies, specifically for the purpose of verifying compliance with standards referenced as part of IBC Chapter 15.

Listing Revisions

The listing owner shall have secure access to its own listings and supporting information for maintenance and revision, as applicable. Any revisions that affect a listing will remain unpublished until they are reviewed by the program manager. During the program manager's review of the revision, the current listing will remain publicly accessible on the database unless withdrawn by the listing owner. Publicly visible listing will be updated once the revisions have been approved.

Listing Removal

The listing owner shall have the authority to terminate a listing at any time without explanation. It is the listing owner’s responsibility to notify the program manager when a supporting listing is suspended or discontinued. Failure to maintain a supporting listing for a program listing will result in the removal of the listing from the database.

PROGRAM QUALITY CONTROL

In order for the information contained in the database to be deemed to be reliable by the end users, quality control procedures have been established. A summary of these procedures follows.

Program Manager

To assure a high level of quality and independence, SPRI elected to engage a program manager to develop, implement, and administer the program. Intertek, a global service provider for building products testing, certification, and inspections with ISO/IEC 17025, 17065, and 17020 accreditations, was selected to be the program manager. Intertek’s Certification Services Group has significant experience developing and
administering various types of programs for the building products industry, including listing and certification programs for specific building products, as well as certification of qualified installers of specific building products. Intertek’s Certification Services Group has developed and administered listing programs for industry associations, including: the American Architectural Manufacturers Association (AAMA), the Vinyl Siding Institute (VSI), the Steel Framing Industry Association (SFIA), the Steel Stud Manufacturers Association (SSMA), the Insurance Institute for Business & Home Safety (IBHS), the Door and Access Systems Manufacturers Association (DASMA), and the Supreme Steel Framing System Association (SSFSA).

### Inspection of Recognized Plant Locations - Qualifying Quality Control Inspection

Following an application to enroll as an RCM for the program, an initial qualifying inspection is completed at the pending RCM’s plant locations with an inspection agency. The initial inspection includes a review and approval of AC10-compliant quality system documentation and a review of the implementation of the documented quality system and associated processes and procedures at the manufacturing facility. A qualifying inspection may be waived if the RCM’s plant location can provide proof, through inspection reports and an agreement with an accredited inspection agency, that the components recognized in the program are part of an ongoing quality assurance inspection program with at least one inspection per year.

### Ongoing Quality Control Inspections

As an additional level of oversight and assured quality, each component in the database available for use in an assembly must be manufactured under a third-party quality assurance program. Each manufacturer of components is required to enroll as a recognized component manufacturer (RCM) in the program and input its products for use in tested and listed assemblies. Once enrolled, each RCM must identify the plants in which its recognized components are manufactured. Each RCM that supplies components of a listed roof assembly must provide proof of satisfactory quality control inspections conducted by a third-party QCA at each of its recognized plant locations. The QCA performing the inspections must be accredited by the International Accreditation Service (IAS) or similar accreditation body as complying with ISO Standard 17020 or ISO 17065 performing inspections on its own behalf. To remain an RCM, proof of inspection must be submitted a minimum of once per year.
Quality System Documentation

All RCMs must maintain quality control documentation and a quality system to ensure that their participating products consistently meet the requirements of the Program. The documentation must indicate how the recognized product is to be identified in the field, including manufacturer’s name and product trade name or identification as agreed upon through private labeling agreements.

Noncompliance Issues and Variances

If the program manager is notified of a noncompliance issue or issues in regard to the guidelines, the program manager may issue a variance to the contact of record for the affected RCM. The RCM is given the opportunity to provide a response for correcting the variance within a specified timeframe. If the program manager determines that there are continued non-compliance issues or variances that affect listed assemblies, the program manager may request additional information at its discretion. Any request for information by the program manager must be responded to by the RCM or designated representative within the timeframe specified by the program manager. Failure to satisfactorily resolve variances may result in the removal of all affected listed assemblies from the publicly accessible database.

FUTURE PLANS

Initially covering wind uplift for single-ply, modified-bitumen, and hybrid-type systems, the program is developed to expand into fire and impact ratings, as well as moving into other types of roofing systems for the same performance ratings. Looking ahead, where specific tests and performance attributes allow, the program may rate accessories and other components vital to the overall performance of the assembly.

Future plans also include extensive outreach to users of the LSP by conducting presentations to include live demos to regional consultant, code official, architectural specifier, and contractor groups.

DEMO

The official site went live in January of 2018. With that in mind, we will give a live demonstration of the site, with audience interaction on some searches and pointers on how to use and access the information. Following are some examples of screen formats that will be reviewed. Figure 3 is an example of the search screen in the database.

This screen will allow the user to search by any of the fields shown on the screen. For example, searches can be conducted based on the membrane manufacturer, assembly type, wind uplift rating, specific membrane type, and others.

Figure 4 is an example of the listing entry page used by the listing owner to enter specific information for a database listing. On this page, information such as the tested wind uplift rating, system components, and whether those components are mandatory or optional is included.

Figure 5 is an example of what the output page that would be generated by a database search would look like.

ENDNOTE

1. Initially, the database will contain only wind uplift ratings.