

**NFRC Non-Residential Certification Task Group Meeting**  
**Meeting Notes**  
**11/22/04**  
**Baltimore, MD**  
**DRAFT**

**Attendees:**

Bill Lingnell, Bruce Croak, Charlie Curcija, Chris Mathis (conf. call), Dan Wacek, Denny Raske, Ellen Chilcoat, Gary Curtis, Greg Carney, Greg Mckenna, Jason Theios, Jeff Baker, Jim Krahn, Jim Larsen, Joe Erb, Larry Livermore, Marcia Falke, Margaret Webb, Marc LaFarance, Max B. Perilstein, Michael Thoman, Mike Manteghi, Mike Stocki, Mitch Edwards, Patrick Muessig, Richard Wright, Sam Taylor, Tim Moore, Tracy Rogers, Werner Lichtenberger  
NFRC Staff: Bipin Shah, Jessica Ferris

**Agenda**

- Review road map
- Review To Do list from August 9 and 10 meeting
- Non-Residential Draft PCP – Go through each section of PCP
- Technical-Task Group – Update on technical issues
- Future Meetings

**Items Discussed**

- This meeting was Co-Chaired by Larry Livermore (AAMA) and Greg McKenna (Kawneer)
- The meeting opened with a welcome by Larry Livermore and a review of the anti-trust policies.
- Mike Manteghi (Traco), and Bipin Shah (NFRC staff) provided an overview of the NFRC process which must be followed for the Non-Residential PCP to be adopted and published by NFRC. This included a discussion of the role of the sub-committees and committees (technical, certification, quality control), and NFRC board.
- Reviewed meeting notes from 08/09/04-08/10/04 meeting:
  - Discussed evolution of flowchart & possible gaps
  - Identified PCP draft process
  - Identified technical issues raised during meeting
- Mike Manteghi (Traco) and Gary Curtis (NFRC – Board Rep) Provided Road Map Update:
  - Draft PCP for sub-committee – March 2005
  - Final PCP & Label Certificate – July 2005
  - BETA of NRFEN – December 2005

- Release of NFREN – April 2006
  - Training with NFREN software and database – June 2006
  - Pilot Project – December 2006
  - Final Implementation – January 2007
- Gary Curtis (NFRC – Board Rep) gave a narrative on NFRC Board participation of non-residential PCP language development. Gary working on business plan. Fee structure will be proposed to the board separate from from the PCP document.
- Larry Livermore reviewed issues identified during 8/9/04-8/10/04 meeting -
  - Action Items** (i.e., Flowchart development; process for approving systems in library; develop proposal to rate glazing systems for library; best and worst glass numbers for use in establishing best and worst framing; defining process for obtaining different U-values));
  - User Issues** (i.e., training for and auditing of responsible party/calculation entity);
  - Programming Needs** (i.e., how will attachment items like receptors be addressed); and
  - Technical Issues** (i.e., glass bites, standard and custom height spacers, condensation resistance, frame grouping rules, size issues, and effect of glass thickness).
- Discussed the need for area weighted values to satisfy architects & commercial manufacturers.
- Draft PCP handed out and floor open for general discussion
  - Product grouping not yet dealt with. Will be critical and may require a separate research task group.
  - Discussed application of PCP to curtain walls & custom wall systems
  - Discussed responsible party definition:
    - Responsible party is the entity that enters into the license agreement with NFRC which is consistent with the rest of the program.
    - *Licensed calculation entity* – this is different from responsible party and will need a definition this. Calculation entity will need to be trained on the new software.
    - Responsible Party vs. Licensed Calculation Entity – will need to address this issue.
- Larry Livermore: PCP overview. Set protocol for reviewing document (identify key issues – don't get into detailed language issues yet).

- **PCP Section Reviews:**
  1. Scope (Bruce Croak)
    - Discussed terms “commercial”, “non-residential”, “component based whole product ratings”
    - Discussion on role/definition of responsible party / simulators / IAs, NFRC independence. See Action Item below with new working group assignment.
      - Comments:
        - “Spacer system” is not defined in the definition section.
        - Scope should have no mandatory language or mandatory requirement
        - Role of component manufacturer. needs to be defined as with the other roles.
  2. Component Approval (Mike Toman)
    - *Spacer Approval* – Product grouping will be key to simplifying the library. Approval should be undertaken as a peer review rather than NFRC staff review.
    - *Glass approval* – This would be the glass layer not glass system.
    - *Spacer System Approval* –
      - Discussion on Spacer System combinations - including all combinations of spacers (geometries, colors, thicknesses) & sealants would include a large number of combinations/options.
      - Discussed various options: product grouping, allowing every combination of spacer/sealant to be a different spacer system entry in database, having spacers and sealants separate and building spacer system within software.
      - Discussed difficulty in obtaining spacer information.
      - Comments from the task group are that this approval process needs to be more simplified and not duplicative.
      - It was decided that a Working Group for this approval process would be appropriate: See PCP draft action items below.
    - Charlie Curcija presented existing spacer software methodology. Suggested using same approach for PCP software. I.e. Using database of manufacturer’s spacers, material library for primary sealants/secondary sealants/spacer desiccant, and having user specify spacer height. Benefit: Material library already exists in THERM.
      - Question: Can this same approach be applied to Center of Glass calculations? This approach would increase the number of input of the software and may impact the level

- of knowledge/expertise required by the user. See Action Item below with new working group assignment.
    - Discussed database liability: much more complex than residential. Therefore important to have forethought in design & consistency during creation.
  - 3. Licensing Requirement (Larry Livermore)
    - Qualifications – discussion of training program for responsible party/calculation entity that will generate label certificate from the database.
    - See Action Items below
  - 4. Certification (Charlie Curcija)
    - Review of Whole Product and Project Certification
    - Discussed definition of “Best” / “Worst”.
    - This will be a self-certification process with the IA checking about 10% of these. Certification is generated from database.
    - Discussed need for recertification
  - 5. Quality Assurance Program (Marcia Falke)
    - Discussed existing residential inspection process.
    - Question: What are we going to inspect for non-residential buildings?
      - Site visit?
      - As-built drawings?
    - Discussed consequences of failed building – fines, revoking certificate.
    - Discussed hypothetical costs of certification.
    - Some of the task group members believe on-site inspections at the job site are important. Maybe a mock up would be a good compromise. Language will be incorporated into this section to do this.
      - On site inspections could be pooled; wouldn’t necessarily be required to do all sites. Marcia will work on this language for the next meeting.
- Technical Issue Discussion (from technical items #1 and #2 from 8/9/04-8/10/04 meeting)
  - Charlie Curcija presented studies performed at Umass, Amherst on effects of glazing bite and spacer height on U-factor.
  - Glazing Bite: Overall small-linear variations were found. Changes were on the order of magnitude of 0.02 Btu/(hr/ft<sup>2</sup>-°F).
  - Spacer height was found to minimally affect U-factors.
  - See Action Items below related to this topic.

## **ACTION ITEMSa**

### **1. General Action Items**

- Flow chart will need updating throughout PCP development.
- Bipin Shah to send e-mail to all meeting participants with link to NFRC website & Task Group documents
- How does PCP capture custom wall systems such as curtain wall and spandrel systems?
- Define: Responsible Party vs. Licensed Calculation Entity
- Document groupings of all components
- Task Group to decide if bite size should be accounted for in PCP.
- Charlie Curcija to present follow-up paper on spacer height research done at U-Mass, Amherst (including explanation of “0” spacer height).

### **2. PCP Draft #2 Action Items**

#### **Action Items that apply to entire document:**

- Define “Responsible Party,” “Certified Simulator,” and “Licensed Calculation Entity” and use these terms consistently throughout PCP (*Assigned to Jeff Baker-lead, Gary Curtis, and Bruce Croak*)
- Use “Component-based whole product ratings of fenestration products” instead of non-residential. (Benefit of being generic).
- Delete definitions that are NOT used in this PCP
- Define “Listed,” “Approved,” and “Certified”: Needs to be applied consistently within each section / document.
- New working group to develop logistics of spacer system approval, center of glass, and framing system calculation logistics and grouping. See discussion points above in PCP Section 2. Working Group: *Charlie Curcija (lead), Jeff Baker, Greg Carney, Jim Larson, Tracy Rogers, Werner Lichtenberger, Richard Wright, Danny Wacek, and Bill Lingnell.*

#### **Section 1 – Introduction: Action Items (Bruce Croak):**

- Section 1.1 - Define: “Framing System,” “Spacer System,” and “Center of Glazing System.”
- Section 1.1 - 2<sup>nd</sup> paragraph – modify wording (“The process to get each of THE VALUES OF EACH component...”)
- Section 1.1 - 3<sup>rd</sup> paragraph – Revise paragraph such that it does NOT contain any mandatory language.
- Section 1.2: Responsible Party versus Certified Simulation Entity.
- Section 1.2.3: Define “Component Manufacturer/Supplier”. 1.2.3.E and 1.2.3.F need removal. Validation Testing required.

- Section 1.2.4: Additional language indicating that IA will have additional responsibility of approving component performance for components in database.
- Section 1.3: As above, definitions of those terms not used in this document need to be removed.

**Section 2 – Component Approval: Action Items (*Mike Toman*):**

- Section 2.1.1: Change “NFRC Staff” to “Peer Review”
- Define “Listed,” “Approved,” and “Certified”: Needs to be applied consistently within section / document.
- Section 2.1.1.C: Use “physical sample” instead of “sample”
- Section 2.1.2 & 2.1.3: NFRC not comfortable with responsibility.
- Section 2.1: Discuss procedure using component grouping
- Jeff Baker to present parametric study being done on spacer key variables.

**Section 3- Licensing: Action Items (*Larry Livermore*):**

- Revise section based on definition of “responsible party,” “certified simulator,” and “calculation entity.”
- Check if language for calculation can simply reference LAP.
- Section 3.2.1.B: Include “State or Province.”

**Section 4- Certification: Action Items (*Charlie Curcija*):**

- 4.B: List 3 components as “spacer system”, “center of glazing system”, and “framing system”
- 4.D Validation testing on “component” designs NOT “product”
- 4.G: Change to “Product Line”
- 4.1.A: Explicitly list what the “three numbers” are i.e. U-value, SHGC, and VT.
- 4.1.B through 4.1.N: Need draft language
- 4.2: Change to “Project Certificate”

**Section 5- Quality Assurance Program: Action Items (*Marcia Falke*):**

- Provide option of site inspection and purchase verification (paper trail review similar to current site-built program).

**NEXT MEETING**

January 12, 2004- Orlando, FL  
 (Exact site TBD)  
 9:00am – 5:00pm