Quality Control in Spray Foam Applications

ROGER LOCK
MACTEC ENGINEERING AND CONSULTING INC.
QUALITY CONTROL

• A QUALITY SPF ROOFING APPLICATION WILL LAST FOR YEARS AND DELIGHT THE CUSTOMER WITH CONTINUED PERFORMANCE.
QUALITY CONTROL

WHAT IS A QUALITY ROOF???

APPLIED IN ACCORDANCE WITH:

* JOB SPECIFICATIONS

* MANUFACTURER’S GUIDELINES

* INDUSTRY STANDARDS
QUALITY CONTROL

Three Stages

- **BEFORE** – DURING DESIGN
- **DURING** – SPF APPLICATION
- **AFTER** – PROJECT CLOSE OUT
BEFORE:

COMMUNICATION
DESIGN DISCUSSIONS

• Logistics: Set ups, parking lots, access, working times
• Interior or exterior usage, protection of building, equipment, vehicles, and occupants
• Existing Roof Condition – Roof Condition, Details, Roof Moisture Survey
• Safety
Don’t cheat

Openly address problem situations

Solution should follow good roofing practices
IMPROPER DRAINAGE

- **Drainage:**
  - Locate areas that may not properly drain
  - Design proper drainage
SKYLIGHT DETAIL
RUSTED METAL / IMPROPERLY FASTENED
METAL EDGE NOT PROPERLY FASTENED
PROPERLY FASTENED METAL EDGE
CONCRETE COPING CAP
WET INSULATION

REMOVE WET INSULATION
Foam Thickness

- Minimum 1-inch thickness on any substrate
- Minimum 1.5-inches on gravel and metal roof
- Maximum lift thickness = 1.5-inches

Consult with Manufacturers, Local Building Codes and Designers
Coating Thickness:

General Range For Coating Thickness

- Acrylic 25 - 30
- Silicone 20 - 22
- Urethane 20 – 30

Consult with Manufacturers, Local Building Codes and Designers
DURING – SPF APPLICATION

DURING:

• Pre Construction Meeting
• Daily Record Keeping
• Surface/Roof Preparation
• SPF Application
• Coatings/Coverings Application
• Quality Control Sampling
Pre-Construction Meeting

- Review Specifications and Drawings
- Ask Questions
- Verify details
- Last opportunity for change
Keep the Job Site CLEAN & NEAT!

You will be remembered most for a NEAT and CLEAN jobsite
NEAT MATERIAL STORAGE AREA
Arrange Staging Areas:

- Use barricades
- Storage areas
- Protect building interior/external
THE SPF APPLICATION

- Surface/Roof Preparation
- SPF Application
- Coatings/Coverings Application
- Quality Control Sampling
SURFACE/ROOF PREPARATION

- CLEAN
- DRY
- SOUND
CLEANING EXISTING ROOF
• Thumb test to check for soft foam

• CHECK FOAM THICKNESS

• Pass thickness-
  o Min ½” thickness
  o Max 1½” thickness

• Details- Watertight, drainage, aesthetics
COATING APPLICATION
CHECK COATING THICKNESS:

1. Sample 1\textsuperscript{ST}, 2\textsuperscript{ND} ... coats

2. Sample final total thickness
GRANULE APPLICATION

Granules should be applied into a minimum coating rate of 1 to 2 gallons per square.
AFTER — PROJECT CLOSE OUT

• CONTRACTOR PUNCH LIST

• DISCUSS OWNER’S RESPONSIBILITIES

• MAINTENANCE/CONTRACT (MAINTENANCE CHECK LIST)
DEBRIS – TREE OVERHANGING ONTO ROOF
POOR QUALITY
THIN FOAM
FOAM CREVICE
PONDING
IMPROPER FOAM CHANNEL
GOOD ROOFING PRACTICE
PINHOLES
MECHANICAL DAMAGE
WHAT'S UNDER THERE ???
FLASHING SEPARATED FROM WALL
IMPROPER DETAIL
THIN GRANULES
IMPROPER DETAIL
MISSING DRAIN STRAINER
THIN COATING

RADIUS METHOD
QUALITY CONTROL

• SPFA Documents Available:

SPRAY FOAM.ORG
QUALITY ROOFS
QUALITY ROOF
QUALITY ROOF

CONSENSATION PIPED TO DRAINS
PROPER DETAIL AT METAL ROOF EDGE
QUALITY ROOF
PROPER DETAIL EDGE
PROPER DETAILS
QUALITY ROOF
QUALITY CONTROL

THREE STAGES OF QUALITY CONTROL

BEFORE – DURING DESIGN

DURING – SPF APPLICATION

AFTER – PROJECT CLOSE OUT

IS ???
QUALITY