



THE ADHESIVE AND SEALANT COUNCIL, INC.

August 10, 2006

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U.S. Department of Housing and Urban Development
Office of Policy Development and Research, Room 8134
451 Seventh Street, SW
Washington, DC 20410

SUBJECT: Progress Report – July 2006

Contract No. H-21521CA, Investigation of Adhesive Applications for Strong and More Disaster-Resistant Roof Assemblies – Phase 1

Period of Performance: 4/7/06 – 4/7/07

Contractor: The Adhesive and Sealant Council, Inc.
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Email Attachments which Accompany this Report:

- Powerpoint Presentation of Current Task 1 Findings

SECTION I – INTRODUCTION

The HUD Office of Policy Development and Research has been extensively involved in supporting research and development on building technology innovations, construction systems, products, standards, regulations, and code issues which affect the affordability, safety and livability of the nation's housing. As the interrelationships of these topics become more complex, the continued need to conduct research and demonstrations becomes even more critical.

In addition to the research and demonstration efforts administered directly by the Office of Policy Development and Research, HUD administers the Partnership for Advancing Technology in Housing (PATH) program. PATH provides private and public sectors for the U.S. housing industry an unprecedented opportunity to advance state of the art practices in the design and construction of affordable housing for the public by accelerating the process of developing and introducing new and innovative technologies and new materials through demonstrations and pilot projects throughout the nation.

This cooperative agreement with the PATH program will investigate and characterize the use of adhesives to fasten roof sheathing materials to underlying roof structures in residential buildings. This application of adhesives holds the potential for improvements in roof system durability and disaster resistance, and applies to both new and existing construction.

SECTION II – PROGRESS AND SCHEDULE

Phase 1 of this project consists of 4 tasks as identified in the project Work Plan. The status of each task is presented below.

Task 1. Assess Performance Requirements and Develop Criteria for Adhesive Consideration

Start Date: 04/15/06

Deliverable & Due Date: Matrix identifying code-approved systems and uplift resistance or wind speed approved rating for new and retrofit roof sheathing fastening systems - 08/07/06

Progress and Deliverables:

The primary objective of Task 1 is determining what criteria will be used to identify adhesives which could be used as a roof sheathing fastening system for new and retrofit applications, based on related research work and product development efforts.

In July we continued our efforts to engage ASC members, non-member adhesive manufacturers, and other organizations (mostly universities) to learn about similar work which has used adhesives in applications similar to the roof sheathing-to-roof framing focus of this project. As part of this effort, we have been able to identify:

- Similar research and product development efforts (limited amount)
- Findings on the most suitable applications for similar systems (e.g. retrofit of existing roofs)
- Relevant building code issues that affect the application (e.g. issues with fire blocking for foam plastics)
- Relevant building performance and installation issues which have been raised (e.g. restricting ability of sheathing panels to expand/contract with ambient humidity changes)

A Task 1 slide presentation relating these findings is being submitted to the GTR along with this monthly report. In August we will conduct additional dialogue with several of the groups involved in related research, and obtain additional reports as possible (e.g. NSF-PATH Final Report on adhesive tapes for shear walls, NRC Canada testing on adhesive systems for commercial roof assemblies). We are also expecting additional information on product specifications for adhesives used in similar applications from one or two manufacturers (via ASC's membership as well as non-members ASC has identified). As we are able to assemble this last batch of information, our Task 1 summary will include an overview of previously tested systems and materials, conclusions from this work, "real world" considerations affecting potential applications, and the implications for this research project. To allow

time to collect this additional information, we propose to submit the Task 1 deliverable by August 31, 2006. Based on this summary we may recommend a refined focus for this project moving forward.

Task 2. Data Collection

Start Date: 07/15/06

Deliverable & Due Date: Matrix of adhesives with potential to be implemented as a primary or secondary roof sheathing fastening system - 01/08/07

Progress and Deliverables:

Within Task 2, Newport Partners staff will compile information on adhesives used for similar or relevant applications to roof sheathing fastening. This task will involve engaging the ASC membership to review products against the performance criteria identified in Task 1, as well as a scan of research literature, trade press, and manufacturer product data.

In July we requested product specifications from several manufacturers who reportedly use adhesives in similar types of roofing applications (although not exactly the same application we are considering in this project). We are currently awaiting this information.

Also in July we established contact with NRC Canada and Virginia Tech and Washington State University (who have worked under the NSF-PATH research on acrylic adhesive tapes). As more data from both of these groups becomes available we will review it for data on product specifications. One particular area of interest is the long-term durability of adhesives in a hot and potentially humid environment like an attic. The limited amount of research we have seen on this application (e.g. Clemson research) clearly states that long term durability and strength are unknowns.

Task 3. Cost Analysis

Start Date: 11/15/06

Deliverable & Due Date: Summary of basic cost estimates – 02/26/07

Progress and Deliverables:

The marketability of any adhesive roof sheathing fastening system identified within this Task 2 will depend heavily on its initial and installed costs. Task 3 will involve analysis of the costs of using adhesives and identify the benefits for new and retrofit applications.

There is no progress to report under Task 3 for July 2006.

Task 4. Preliminary Testing of Adhesive Roof Sheathing Fastening Systems

Start Date: 11/15/06

Deliverable & Due Date: Summary of basic cost estimates – 02/26/07

Progress and Deliverables:

For any innovative building material or system to gain market acceptance and code or standard approval, testing and verification must be performed. From those adhesive systems that have

been identified as having the potential to meet or exceed code requirements while presenting an affordable alternative to current practice, a sample set will be chosen to undergo preliminary testing. The primary function of these preliminary tests will be to evaluate the product's performance and determine whether the adhesive system should be further evaluated for inclusion in code or development of a standard.

There was no activity for Task 4 during July, although several of the groups we have spoken with as part of our research have expressed an interest in performing testing.

SECTION III – OUT OF TOWN TRAVEL AND FUNDING

Travel:

In July 2006 no out of town travel occurred. No out of town travel is expected for August.

We are making arrangements to attend the ASC Fall Convention in Nashville on October 15-18, 2006. We will hold a face-to-face meeting there of the manufacturer members participating in this project (we currently have contacts with 16 firms). One or two Newport staff will attend the convention and the associated project meeting, along with ASC staff.

SECTION IV – KEY STAFF CHANGES

None to report.

SECTION V – PLANNED EFFORT

Activity for August 2006 will focus on gathering additional data under Task 1 and developing our summary findings and recommendations. As we conclude Task 1, we will likely re-focus the remaining tasks in the project to concentrate on the most viable opportunities to take advantage of adhesives to improve residential roof assemblies.