

## Strengthening Residential Roof Assemblies with Adhesives

### Why is this research important?

- Roofing failures are rated by FEMA as the **number one factor** leading to home damage during extreme weather events
  - Cites missed and overdriven nails as common mistake
- Rapidly **increasing insurance costs** are making homes less affordable
- **Adhesives add significant strength to roof assemblies** in new and existing homes in a cost-effective manner
- Most homes in hurricane prone areas were **built under older codes** and are more vulnerable to wind damage and significant losses



### What is PATH doing to address these problems?

- **Cooperative research** with the Adhesive and Sealant Council and 15+ manufacturers
- Research on adhesives' effectiveness in new and existing roof assemblies
- Field trials and case study development
- Collaboration with manufacturers to develop a **standardized method** for projecting the long-term performance of adhesives
- Outreach in hurricane prone areas to regulators, builders and home owners on strategies for wind mitigation and **reducing home insurance premiums**

### What has PATH found?

- Adhesives make existing roofs 2 to 3 times stronger
- Multiple pathways for homeowners
  - Retrofit **spray-foam adhesive** also serve as secondary water barrier
  - Do-it-yourself caulk gun adhesives
  - Conditioned attics for new construction
  - **New, innovative tapes** are being tested on roof assemblies
- Consumers and the housing industry are demanding solutions to vulnerable roof systems which weakens a home's storm-resistance
  - Insurance premium discounts
  - Matching grant programs



### What PATH is doing next?

- Expanding field testing of new products with manufacturers and builders
- Publishing reports and findings on adhesive-fastened residential roofing systems for the public
  - Increase consumers and builders' confidence in selecting the best adhesive
- Developing an accelerated life-cycle testing mechanism **funded by Adhesive and Sealant Council, adhesive manufacturers** and PATH grant
- Working with hurricane prone states to fortify their existing homes.

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