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November 11, 2008

Technical Bulletin 09152008B
(replaces TB dated 9/15/08)

To Whom It May Concern:

Re: Attaching James Hardie Products Over Rain Screen

This Technical Bulletin covers considerations that should be taken into account when choosing to use a rain screen system, including; methods of attachment to different types of furring, design responsibility, choosing alternative fasteners and methods of fastening, and product specific considerations.

The Optional Use of Rain Screen Systems:

Wall cladding is one part of a rainscreen system. The structure design and installation of the exterior wall cladding is important for proper moisture management. Understanding the mechanisms and how moisture enters and leaves the wall leads to better moisture control in building envelope design and material selection, therefore a more durable building.

James Hardie will support the use of its exterior siding products with rainscreen systems, but does not take sole responsibility for the entire wall assembly or system. James Hardie expects the designer or builder using our components as part of the rainscreen system to:

- ✓ Adhere to all the installation requirements listed in the relevant product installation instructions.
- ✓ Provide adequate details for water management.
- ✓ Make the decision about the use of rainscreen.
- ✓ Understand the interaction between system components and how each of the components in the system interacts.
- ✓ Design of the building envelope accounting for both interior and exterior moisture control.

Installation Over Furring:

When installing James Hardie Siding products over furring the question arises what thickness of furring can be used as an alternate to normal metal or wood studs specified in the National Evaluation Services, Inc. NER 405 Report. General rule of thumb is, the specific NER-405 fastener must be installed into a material that has the same or better holding power than that specified in the NER-405 and with the same penetration as the NER-405 fastener.*

Note: The NER-405 is the primary code compliance document James Hardie utilizes, but for other common applications and/or products, additional code compliance documentation and/or fastener specifications may exist. For special circumstances out side the scope of the NER-405 please contact James Hardie's Technical Services.

When reviewing the following details for attaching to wood furring or framing an important consideration is that the fastener chosen must be fully encompassed by a wood substrate - the furring may count as all

or part of the necessary penetration if it has been proven that the furring and/or wood substrate has the same or better holding power as a timber stud.

James Hardie does not specify the fastening requirements for wood or steel furring to the building and will not take the liability of such structural elements. The attachment of wood or steel furring should be incorporated into the overall building design and should be approved by the responsible parties.

Attaching lap siding to wood furring:
When attaching lap siding products over wood furring the typical fastener used is the 1-1/4" long No. 11 ga. Roofing nail, blind nailed. This fastener is going to be the shortest fastener approved for fastening lap siding products, therefore the furring must be a minimum of 0.75" thick to achieve the same values as NER-405 Table 2 states for the 11 ga. 1-1/4" roofing nail given plank reveal, stud spacing, building height and exposure category.

Attaching lap siding to steel furring:
When attaching lap siding products to steel furring the steel must be a minimum of 20 gauge. A fastener should be chosen out of the NER-405 which is approved for attaching to steel framing. Two general rules that should be considered when choosing a fastener is that a nail (pin) must penetrate steel furring ¼" and screws must penetrate steel furring 3 full threads. Therefore, if the rules for steel fastening are followed given plank reveal, stud spacing, building height, and exposure category the values are the same as NER-405 Table 2 states for the chosen fastener.

Attaching panel siding to steel furring:
When attaching lap siding products to steel furring the steel must be a minimum of 20 gauge. A fastener should be chosen out of the NER-405 which is approved for attaching to steel framing. Two general rules that should be considered when choosing a fastener are; that a nail (pin) must penetrate steel furring ¼" and screws must penetrate steel furring 3 full threads. Therefore, if the rules for steel fastening are followed given stud spacing, building height, and exposure category the values are the same as NER-405 Table 2 states for the chosen fastener.

Attaching panel siding to wood furring:
When attaching panel siding products over wood furring the typical fastener used is the 6d common 2" long nail. This fastener is going to be the shortest fastener approved for fastening panel siding products into wood, therefore the furring must be a minimum of 1-11/16" thick to achieve the same values as NER-405 Table 2 given stud spacing, building height and exposure category.

When Fastening over Foam thicker than 1"
Typically James Hardie products are allowed to be installed over foam insulation/sheathing up to 1" thick. If foam over 1" thick is used, furring strips must be utilized and installed over the top of the foam with the product fastened to the furring following the steps outlined above.

James Hardie Requirements for Alternate Fasteners and Methods of Fastening:

The fastening requirements for each product are stated in one or more of the following technical documents and in some cases fastener products may be referenced. Below are the steps that can be used to demonstrate an alternate fastener's equivalency to the James Hardie published fastening requirements.

JamesHardie® Technical Documents[1]:

- Product Installation (application) Instructions
- ICC-ES Legacy Report NER-405;
- City of Los Angeles Research Report No. 24862;
- State of Florida listing FL#889;
- Dade County, Florida NOA No. 07-0418.04;
- U.S. Dept. of HUD Materials Release 1263c;
- Texas Department of Insurance Product Evaluation EC-23;
- City of New York MEA 223-93-M;
- California DSA PA-019.

1) It is the responsibility of either the property owner, design professional, contactor, or installer to consult:
    a. The fastener Manufacturer for a Product Listing Specification or Code Compliance report that covers the installation method in question, or;
    b. A licensed Architect or Professional Engineer to make an equivalency statement linking the alternate fastener (or fastening method) to the fastening requirements published within the relevant James Hardie technical document;
2) Once in possession of the information gathered in step one it is the responsibility of the property owner, design professional, contractor, or installer to make his or her case to the Building Official[1]

[1] The Building Official reserves the right to approve alternate materials, design and methods of construction, 2006 International Building Code® Section 104.11, 2006 International Residential Code® Section R104.11, and 1997 Uniform Building Code™ Section 104.2.8.

All national, state, and local building code requirements must be followed and where they are more stringent than the James Hardie installation requirements, state and local requirements will take precedence.

More detailed information on JamesHardie® product applications are found at http://www.jameshardie.com.

For further clarification, please contact your local sales representative, or, the JamesHardie® Technical Desk at 1-800-942-7343.

Respectfully Sent on the Behalf of James Hardie Technical Services.

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