


**Tyvek.**

## Impact of vinyl siding installed over DuPont™ Tyvek® ThermaWrap® R5.0.

INCLUDES WIND LOAD, IMPACT RESISTANCE AND SURFACE DISTORTION RESULTS.



### INTRODUCTION

This bulletin provides the results of Wind Load and Impact Resistance and Surface Distortion testing for vinyl siding installed over Tyvek® ThermaWrap® R5.0 continuous exterior insulated weather barrier as required by the Vinyl Siding Institute (VSI). It also provides information on how to get the best results when installing vinyl siding and Tyvek® ThermaWrap® R5.0.

### OVERVIEW

The VSI product certification program offers vinyl siding manufacturers an opportunity to provide third-party verification that their products meet or exceed industry standards for quality and performance. Although Tyvek® ThermaWrap® R5.0 is not a vinyl siding product, and does not require VSI certification, the product can be installed behind vinyl siding. Therefore, tests were required to confirm that Tyvek® ThermaWrap® R5.0 does not diminish the performance of VSI-certified siding.

**Tyvek® ThermaWrap® R5.0 did not compromise the performance of the vinyl siding that was tested** according to tests conducted by Architectural Testing, Inc., on behalf of DuPont Building Innovations. In fact, the addition of Tyvek® ThermaWrap® R5.0 delivered improved performance, as compared to results for the siding-only trials, in several of the tests as shown in this document.

### WIND LOAD RESISTANCE

Wind load resistance is a measure of the pressure the siding is designed to withstand when tested in accordance with the established test methods.

#### Test Specifications

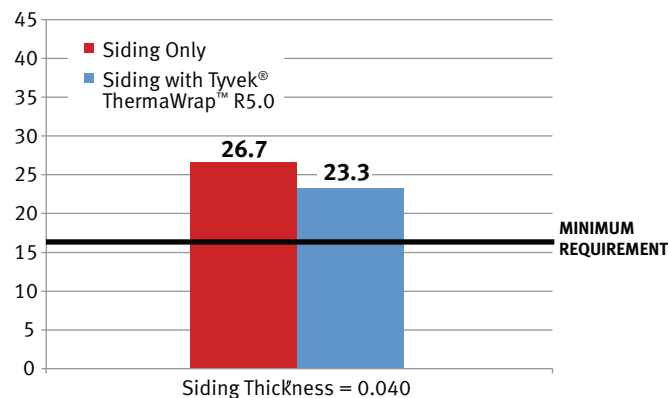
- ASTM D 5206-06a, Standard Test Method for Wind load Resistance of Rigid Poly (Vinyl Chloride) (PVC) Siding, Procedure B.
- ASTM D 3679-13, Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding Sections 6.8 and 6.12.

#### Test Specimen

- 0.040" thick, single hem vinyl siding

### Results

#### Maximum Wind Load Pressure (lb./ft<sup>2</sup>)



**Siding installed over Tyvek® ThermaWrap® R5.0 exceeded the minimum requirement for wind load pressure.**

### IMPACT RESISTANCE AND SURFACE DISTORTION

Impact resistance is a measure of the amount of the energy required to crack or break rigid siding under specified conditions of impact from a freefalling standard weight. Surface distortion refers to the appearance of bulges, waves or ripples when the vinyl siding is heated to 120°F.



# IMPACT OF VINYL SIDING INSTALLED OVER DUPONT™ TYVEK® THERMAWRAP® R5.0.

## Test Specification

ASTM D 3679, Vinyl Siding Ratings for Impact Resistance and Surface Distortion

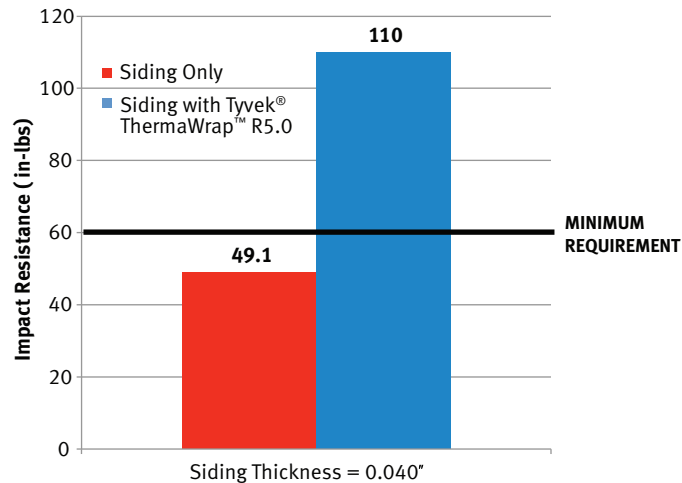
## Test Specimen

0.040" thick, single hem vinyl siding

## Results

Test	Minimum Requirement	Siding Only	Siding with Tyvek® ThermaWrap® R5.0
Impact Resistance	60.0 in-lbs	49.1 in-lbs	110.0 in-lbs
Surface Distortion	No bulges, waves or ripples at 120°F	Pass	Pass

## ASTM D 3679: Impact Resistance (in-lbs)



In impact resistance testing of the 0.040" thick samples, siding installed over Tyvek® ThermaWrap® R5.0 performed better than the siding alone.

## HOW TO GET THE BEST RESULTS WHEN INSTALLING TYVEK® THERMAWRAP® R.5.0 BEHIND VINYL SIDING

The performance of Tyvek® ThermaWrap® R5.0 as both an air and water barrier and as exterior insulation is dependent upon proper installation and the ability of the facade to drain. The following must be considered when installing vinyl siding over the Tyvek® ThermaWrap® R5.0:

- Avoid compressing the Tyvek® ThermaWrap® R5.0 during installation, maintain consistent 1 ½" spacing from the wall sheathing. To assist with this, the DuPont™ Vinylign™ nail depth regulator has been developed to gauge consistent nailing depth and help avoid a wavy appearance of the vinyl siding.
- Attach the vinyl siding over of the Tyvek® ThermaWrap® R5.0 using fasteners that are at least 1 ½" longer than you would generally use. Use the DuPont™ Vinylign™ tool to ensure consistent nailing depth. Refer to the *DuPont™ Vinylign™ Nail Depth Regulator Installation Bulletin* (K-27364) for more information.
- Install vinyl siding in accordance with manufacturer's instructions, industry standards and applicable codes, including ASTM D4756-06 Standard Practice for Installation of Rigid Poly(Vinyl Chloride) (PVC) Siding and Soffit.
- In high wind areas at gable end walls, FEMA recommends vinyl siding be installed over wood sheathing rather than over plastic foam sheathing. DuPont™ Tyvek® ThermaWrap® R5.0 can be used behind vinyl siding on gables in high wind areas when installed over wood sheathing. DuPont™ Tyvek® ThermaWrap® R5.0 can be installed over wood sheathing.



DuPont™ Vinylign™ Nail Depth Regulator

## CONCLUSION

When properly installed, Tyvek® ThermaWrap® R5.0 delivers the air and water management benefits of all DuPont™ Tyvek® weather barriers plus an R-value of 5.0 without reducing the wind load resistance and impact resistance of the vinyl siding tested or increasing the potential for surface distortion on the siding tested.

**For more information about Tyvek® ThermaWrap® R5.0, please call 1-800-44-Tyvek or visit us at [www.ThermaWrapR5.Tyvek.com](http://www.ThermaWrapR5.Tyvek.com)**