


**Tyvek.**

# DUPONT™ TYVEK® THERMAWRAP™ R5.0

## Wind Load Resistance, Impact Resistance and Surface Distortion of Vinyl Siding Installed Over DuPont™ Tyvek® ThermaWrap™ R5.0



### INTRODUCTION

This bulletin provides the results of Wind Load and Impact Resistance and Surface Distortion testing for vinyl siding installed over DuPont™ Tyvek® ThermaWrap™ R5.0 as required by the Vinyl Siding Institute (VSI).

### 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. Tyvek® ThermaWrap™ R5.0 is not a vinyl siding product, so it does not require VSI certification. However, the product can be installed behind vinyl siding so tests were required to confirm that Tyvek® ThermaWrap™ R5.0 does not diminish the performance of VSI-certified siding.

In tests conducted by Architectural Testing, Inc., on behalf of DuPont Building Innovations, **DuPont™ Tyvek® ThermaWrap™ R5.0 did not compromise the performance of the vinyl siding that was tested.** 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

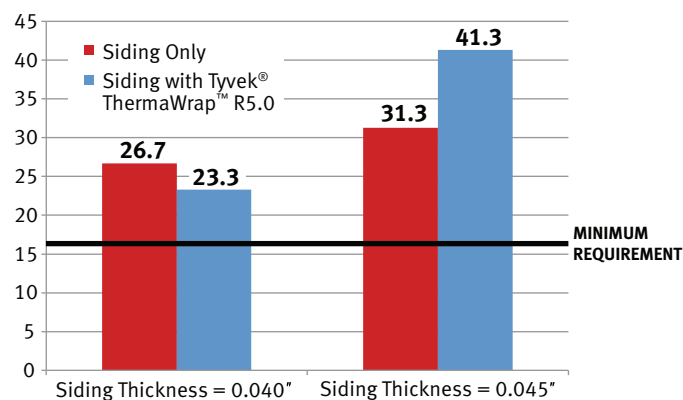
- ASTM D 5206-06a, Standard Test Method for Wind load Resistance of Rigid Poly (Vinyl Chloride) (PVC) Siding, Procedure B.
- ASTM D 3679-13, Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding Sections 6.8 and 6.12.

#### Test Specimens

- 0.040" thick, single hem vinyl siding
- 0.045" thick, half rolled over 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. The addition of Tyvek® ThermaWrap™ R5.0 delivered improved performance, as compared to results for the siding-only trial, for the 0.045" thick sample.**



## WIND LOAD RESISTANCE, IMPACT RESISTANCE AND SURFACE DISTORTION OF VINYL SIDING INSTALLED OVER DUPONT™ TYVEK® THERMAWRAP™ R5.0

### 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.

#### Test Specification

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

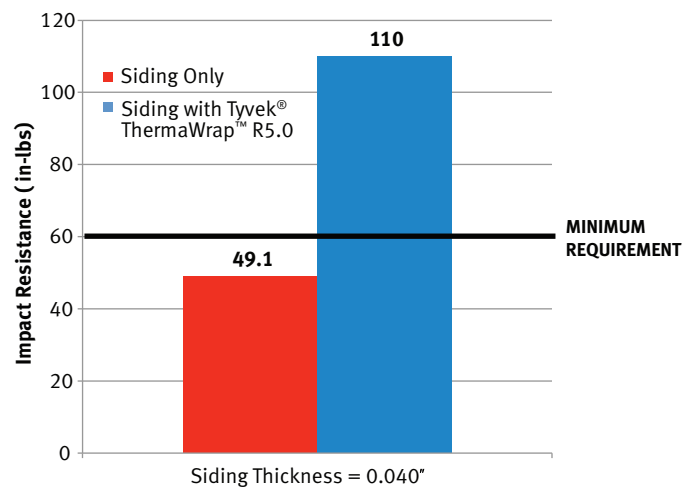
#### Test Specimen

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™ R5.0 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.
- Attach the vinyl siding on top of the Tyvek® ThermaWrap™ R5.0 using fasteners that are at least 1 ½" longer than you would generally use.
- 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.

### CONCLUSION

When properly installed, DuPont™ 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 DuPont™ Tyvek® ThermaWrap™ R5.0, please call 1-800-44-Tyvek or visit us at [www.ThermaWrapR5.Tyvek.com](http://www.ThermaWrapR5.Tyvek.com)