Third-Party tests reveal **DensDeck® Prime Roof Boards** help roofing membranes perform better against puncture and hail.

DensDeck Prime Roof Boards

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Durable cover board from Georgia-Pacific Gypsum outperforms high-density ISO in puncture and hail testing.

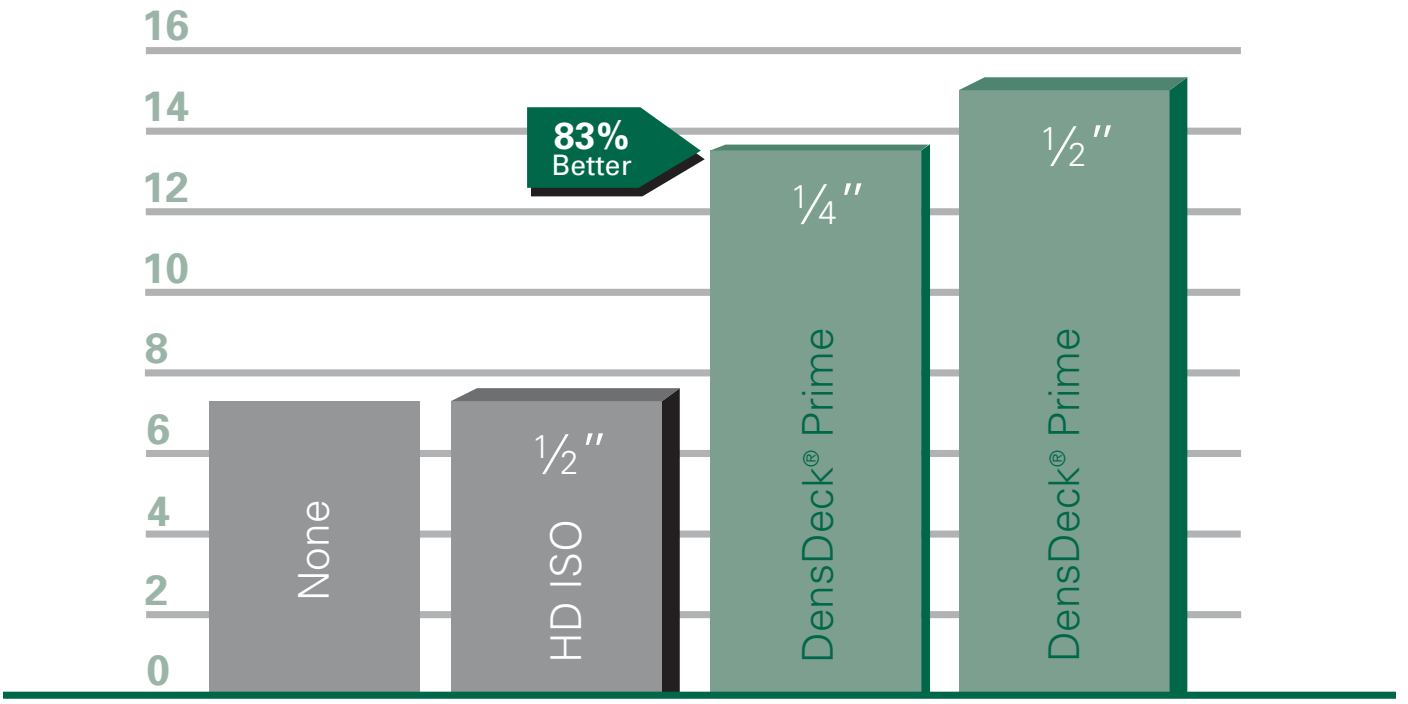
Georgia-Pacific DensDeck® Prime Roof Board

Third-party testing results confirm that Georgia-Pacific Gypsum's DensDeck® Prime Roof Boards display superior puncture and impact resistance, protecting thermoplastic roofing membranes better than high-density polyisocyanurate (HD ISO) cover boards.

All types of commercial roofing membranes are susceptible to everyday punctures from a variety of sources. Rigid objects with sharp edges like dropped tools; heavy equipment; winds which blow branches and debris onto roofs; and frequent foot traffic for general maintenance and repair can cause punctures at any time, explained Todd Kuykendall, director of Marketing and Product Management, Georgia-Pacific Gypsum. "DensDeck Prime cover boards support membranes so they can resist puncture damage, allowing them to do their job as the front-line protection of the roof assembly against water intrusion," he said.

The independent ASTM D5635 puncture test[1] results indicate that thermoplastic membranes do not puncture as easily when ¼" DensDeck Prime Roof Boards are used as a cover board, as compared with HD ISO boards. Thermoplastic membranes tested in assemblies with ¼" DensDeck Prime boards underneath were 83 percent more puncture resistant, on average, than membranes with ½" HD ISO or no cover board at all.

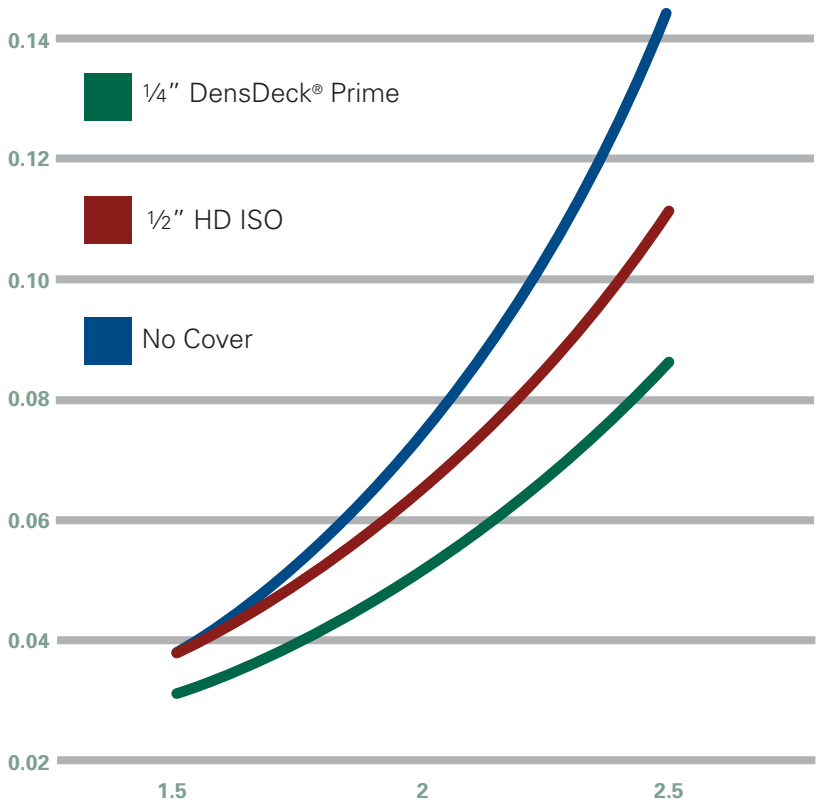
Durable and versatile DensDeck Prime roof boards can potentially save money for roofing contractors, building owners and facility managers by eliminating or reducing the need for costly repairs due to punctures during and after completion of the roof installation, Kuykendall added. "The facts are clear – in these puncture tests, HD ISO performed similar to no cover board at all, allowing thermoplastic membranes to puncture more easily," he said.



*Thermoplastic membranes tested in assemblies with ¼" DensDeck® Prime boards underneath were **83 percent more puncture-resistant** than membranes with ½" HD ISO or with no cover board at all.*[1] *

*Based on average calculations.

Performance of ¼" DensDeck® Prime roof board versus HD ISO or no cover board at 1.5- to 2.5-inch hail ball impacts [2]. Assemblies in these tests with thermoplastic membranes and high-density ISO cover boards demonstrated 25-30 percent greater indentation than similar tests with DensDeck Prime roof boards.



[1] Puncture resistance testing conducted by Jim Koontz & Associates, July 21, 2014 to August 1, 2014, in its Hobbs, N.M. laboratory, according to ASTM D5635 standards. Assemblies included a base layer of 2", 20-psi polyisocyanurate insulation; and configurations were covered with 45-mil thermoplastic polyolefin (TPO) or 48 mil polyvinyl chloride (PVC) membranes. The test method evaluates the maximum puncture load the samples can withstand, without allowing the passage of water when subjected to impact from a rigid object with sharp edges.

[2] Hail testing (or impact resistance testing of rigid roofing materials by impacting with freezer ice balls) conducted by Jim Koontz & Associates July 21, 2014 to August 1, 2014, in its Hobbs, N.M. laboratory, according to FM 4473 (using NBS 23 standards). Based on average results using 1.5"-2.5" freezer ice balls. Assemblies included a base layer of 2", 20-psi polyisocyanurate insulation; and configurations were covered with 45 mil thermoplastic polyolefin (TPO) or 48 mil polyvinyl chloride (PVC) membranes.

DensDeck® Prime Roof Board Stands Up to Hail

In addition to puncture resistance testing, the independent company also conducted tests simulating the impact of hail in a variety of roofing scenarios – and the results were similar.

FM 4473 (using NBS (National Bureau of Standards – 23 standards) hail test results[2] indicate that DensDeck® Prime boards offer key benefits against hail damage versus HD ISO products:

Less likelihood of membrane damage –

Assemblies with DensDeck Prime panels exhibited less indentation that stressed the membrane and can potentially result in membrane failure;

More resilience during hail events –

Assemblies with DensDeck Prime panels withstood larger hail sizes that may cause cover board fractures.

Read more about the results, and view additional information about the testing, including videos of hail and puncture testing, at *http://www.buildgp.com/densdeck-hail-resistance or http://buildgp.com/densdeck-puncture-resistance.*

DensDeck® Roof Boards
Legacy

Billions of square feet of DensDeck® roof boards have been installed in thousands of commercial roofing systems worldwide for nearly 30 years. DensDeck and DensDeck Prime panels feature the mold resistance, fire resistance, strength and dimensional stability built into the entire Dens portfolio. Learn more about DensDeck Roof Boards at *www.DensDeck.com.*

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About Georgia-Pacific

Headquartered at Atlanta, Georgia-Pacific is one of the world's leading manufacturers and marketers of building products, tissue, packaging, paper, cellulose and related chemicals. The company employs nearly 35,000 people worldwide. For more information, visit *www.gp.com.*

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2/15. GP-TM Lit. Item #622835.

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