

GreenCircle Certified, LLC

certifies that an independent, third-party evaluation
has been conducted for:



GAF

Baltimore, MD; Dallas, TX; Fontana, CA; Michigan City, IN; Minneapolis, MN; Shafter, CA;
Tampa, FL; Tuscaloosa, AL; Myerstown, PA; Ennis, TX

Timberline HDZ®

This product meets all the necessary qualifications to be certified for the following
claims:

	2020	2025	% Reduction
Global Warming Potential (kg CO ₂ eq per 1m ²)	3.88	2.80	27%
Acidification Potential for Air Emissions (kg SO ₂ eq per 1m ²)	1.09×10^{-2}	8.98×10^{-3}	17%
Eutrophication Potential (kg N eq per 1m ²)	7.59×10^{-4}	6.53×10^{-4}	13%
Smog Formation Potential (kg O ₃ eq per 1m ²)	1.77×10^{-1}	1.62×10^{-1}	8%

GAF's Life Cycle Assessment (LCA) Optimized Certification was completed on December 1, 2025. The LCA Optimized Certification analysis compared GAF's 2020 Environmental Product Declaration (EPD) for their Timberline HDZ® shingles completed by WAP Sustainability Consulting, LLC to the 2025 EPD completed by Sustainable Solutions Corporation.

The 2020 EPD and the 2025 EPD were prepared utilizing UL PCR Part A: Life Cycle Assessment Calculation Rules and Report Requirements. Version 3.2/UL PCR Part B: Asphalt Shingles, Built-up Asphalt Membrane Roofing and Modified Bituminous Membrane Roofing EPD Requirements (UL 10010-11) and UL PCR Part B: Asphalt Shingles, Built-up Asphalt Membrane Roofing and Modified Bituminous Membrane Roofing EPD Requirements, respectively. The 2020 and 2025 EPD are both cradle to gate with options. Both the 2020 and 2025 EPD's Program Operators were NSF International.

The 2020 and 2025 EPDs were prepared using GaBi 9.2.0.58 and LCA for Experts v. 10.6, respectively. The impact categories listed above, and subsequent optimization information comes from life cycle product stages A1 through A3 using the TRACI 2.1 methodology for both the 2020 and 2025 EPDs.

The analysis of the EPDs and documentation of material and operational changes to optimize the product stage (A1-A3) were third-party certified by GreenCircle. GreenCircle verified that the EPD's were conducted per applicable standards (ISO 14040/14044, ISO 21930), and that proper documentation and evidence was provided by GAF to verify the product optimization compared to the 2020 EPD.

These products are certified to meet the requirements of the LEED v4.1 Materials and Resources Building Product Disclosure and Optimization – Environmental Product Declaration Option 2 credit. The Timberline HDZ® product contributes two (2) products or 200% of material cost for the LEED v4.1 credit. The reduction in embodied carbon and other life cycle impact categories can be attributed to manufacturing energy and water conservation measures and changes in the shingle formulation.

To review GAF's 2025 EPD for their Timberline HDZ® please click [HERE](#).

Certification Number: 25-8411

Certification Period: December 1, 2025 - November 30, 2030

*Compliant with GreenCircle Life Cycle Assessment Optimized Certification Standard Audit Plan 7.2024,
GreenCircle Certification Scheme 3.2024, and USGBC's LEED Rating System*

Sara Risley, Certification Officer
GreenCircle Certified, LLC
155 Railroad Plaza, Royersford, PA 19468

