



DevMar Manufacturing

Buildings: Advanced Protective Nano Penetrating Protectants

Company Overview

DevMar Manufacturing, located in Nashville, TN, has developed a product line of long-lasting, invisible, transparent, penetrating protective nano penetrating protectant with advanced fourth-generation Nanotechnology-based biochemistry over the past 20 years.

Interior Nano penetrating protectant Features and Benefits

Biostatic Protective Finish

The interior nano penetrating protectant provide a biostatic protective finish that protects against odor-causing bacteria, mold and mildew, soil accretion, static, UV degradation, and corrosion. These nano penetrating protectants also degrade VOCs to improve indoor air quality and reflect and emit radiant heat and cooling back into the space to improve insulation.

Exterior Nano penetrating protectant Features and Benefits

Additional Nano-metal Oxides

When modified with additional Nano-metal oxides for exterior applications, the nano penetrating protectant offer all the benefits of the interior nano penetrating protectant. They repel and decompose atmospheric corrosives and greenhouse gases, create super-hydrophobic "self-cleaning" surfaces, and reflect the sun's radiant heat, reducing energy usage and HVAC costs by up to 25%. This technology also historically reduces routine maintenance costs indoors and out by 30% to 50%.

Proven Effectiveness

Independent Testing

The benefits of these technologies have been demonstrated in independent laboratories and field trials since at least 2005.

DOE Contract DE-AC05-00OR22725

A nationwide trial of paint products using early versions of the reflective technology on seven residential structures of both wood-framed and concrete-framed homes across the U.S. was reported by Oak Ridge National Laboratory under a DOE contract.

Case Study (2021)

An external sealer applied on a home near Tucson, AZ resulted in HVAC savings of over 25%, as determined by utility invoices year over year.

InterTek Testing

Independent laboratory InterTek recently evaluated the external sealer for solar reflectance index (SRI) on a large manufacturer's white TPO roofing material, improving its already LEED-qualified SRI by 12.5%.

Safe and Innovative Chemistry

Constituents

The constituents of the sealers are used in common personal care and household products. They are electro-chemically fused into a water-based, insoluble, macromolecular new chemistry.

Technological Benefits

The nano penetrating protectant employ Photocatalytic Oxidation, similar to Photosynthesis in plants, to clean the air and decompose greenhouse gases. They produce a "lotus leaf" effect, super hydrophobicity for water repellency and "self-cleaning" effects, and effectively reflect and emit radiant heat to invisibly improve insulation.

Theoretical National Benefits

Potential Savings

According to DOE statistics for 2020, with 224,620,000,000 sq. ft. of home space at \$1.04 per sq. ft. utility costs, the total cost is \$233,604,800,000. A 20% savings would result in \$44,720,960,000 in savings. Additional benefits include reducing the cost of generation, mitigating strain on increased demand, and improving the environmental footprint.

Conclusion

DevMar Manufacturing's BioDefense 24/7 technology represents a significant advancement in protective sealant technology, providing substantial benefits in public health, sustainability, and economic savings. By leveraging federal funding programs, particularly under the Biden-Harris Investing in America and Bipartisan Infrastructure Law, BioDefense 24/7 can secure the necessary resources to expand its impact across the nation, particularly in underserved communities.