

Victaulic® Coating Data Sheet



Thermally-Diffused Galvanizing (TDG)

Thermally-diffused galvanizing (TDG) is a multi-layer, zinc alloy-based coating specified for use in applications where hot-dipped galvanizing (HDG) is used. TDG is considered a direct replacement for HDG with equal or better performance as determined by several standard industry tests.

Performance & Corrosion Resistance

TDG provides improved corrosion resistance compared to traditional HDG as determined by the ASTM B117 salt spray testing shown below. Unlike other topical coatings, TDG is applied through a thermal diffusion process where the zinc is directly diffused into the base material, resulting in a hard, wear-resistant coating that can withstand abrasion and other mechanical damage. TDG creates a metallurgical phase with the substrate that eliminates flaking and dripping issues.

Application and Coverage

TDG is an engineered coating in which up to 30% of the zinc alloy layer penetrates the steel or ductile iron substrate. The thermal diffusion process allows for uniform coverage and thickness even with complex cavities and geometries. TDG is applied in accordance with ASTM A1059/A1059M.

Topcoat

Victaulic's TDG-coated products are supplied with a pre-applied topcoat that provides additional protection from surface staining.

Coating Comparison Results

The information in this table compares TDG to traditional HDG.

Coating Comparison	TDG as per ASTM A1059	HDG as per ASTM A123
Environmentally Friendly (RoHS & EU ELV Directive (2000/53/EC))	Yes	No
Application Method	Thermal Diffusion	Dip
Uniform Thickness	Yes	No
Risk of Hydrogen Embrittlement (ASTM F519)	No	Yes
Anti-Galling Properties	Yes	No
Corrosion Resistance (ASTM B117) ¹	300 Hours – No Red Rust	20 Hours – White Rust 300 Hours – Acceptable Rust Bleed Per ASTM A123
Hardness (ASTM E384/D2240)	37 – 42 HRC	23 HRC
Substrate Penetration/Interface	10 microns	5 microns

¹ Corrosion resistance performance is based on internal Victaulic testing to ASTM B117.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

⚠ CAUTION

- The durability/longevity of any coating in a particular application is based on multiple factors.
- The engineer of record, property owner, facility manager, or other individual familiar with the application and any environmental factors is responsible for specifying the appropriate coating for the installation conditions.

Failure to follow these instructions may result in joint leakage and property damage.

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for determining the suitability of Victaulic products for their end-use application, in accordance with industry standards, project specifications, and Victaulic's published performance, maintenance, and safety data, as well as all warnings and installation instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, warranty, installation instructions, or this disclaimer.

Installation

Always refer to and follow the [Victaulic Installation Handbook](#) or installation instructions for the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at [victaulic.com](#).

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

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Note

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