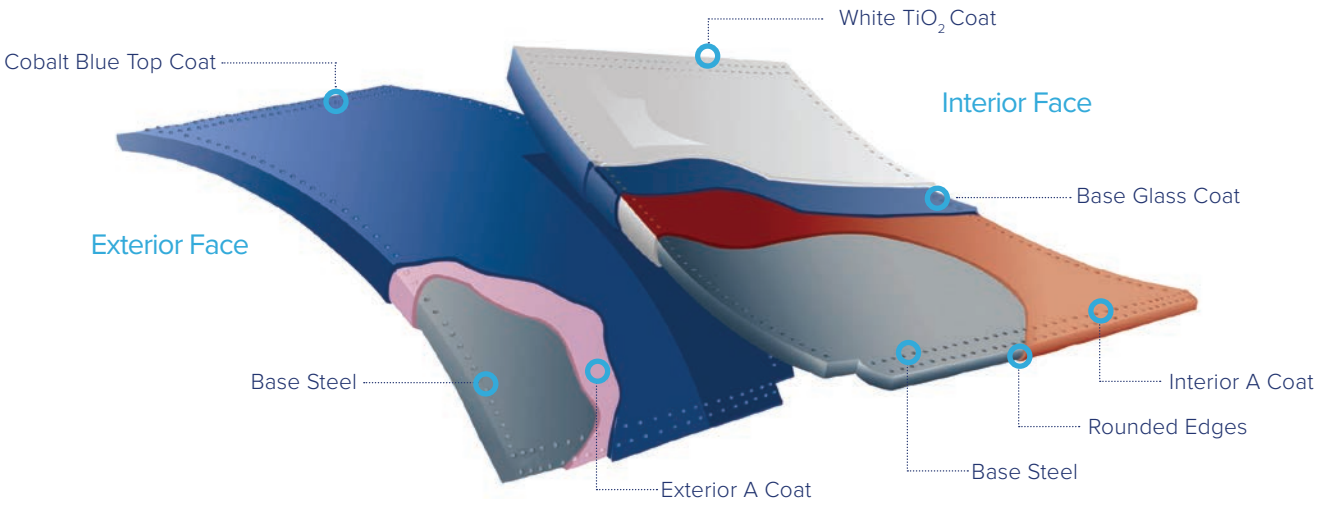
Glass-Fused-To-Steel Vitrium™ Coating

Technical Data Sheet

CST

AQUASTORE®



Vitrium™ is the world's leading glass-fused-to-steel coating for bolted storage tanks and has been proven in the field for more than 67 years. CST's Vitrium coating technology enhanced with titanium dioxide (TiO_2) is applied in a 3-coat, 1-fire (3c1f) process procedure. Vitrium is also produced in a 3-coat, 2-fire (3c2f) process primarily when special colors are requested or thicker layers of glass are required.

The coating has been trademarked as Vitrium (derived from Vitreous and Titanium). This premium technology increases the advantages of previous glass technologies and provides new process efficiencies. CST ensures Vitrium TiO_2 technology is utilized on every tank for maximum corrosion resistance and the longest life span available.

LIFE CYCLE LEADER • ULTIMATE CORROSION RESISTANCE • NEVER NEEDS PAINTING

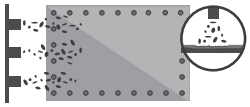
Enhanced Glass-Fused-To-Steel Technology

Vitrium features and benefits include:

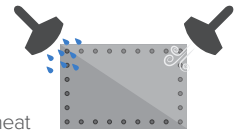
- Tough TiO_2 glass formulations provide longer life
- White interior is easier to inspect than darker coatings
- Factory certified holiday-free sheets
- Designed for use in both cold and hot climates
- Designed, fabricated, shipped and supported within the USA

COATING LINE

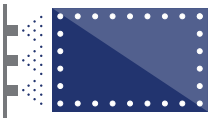
Step 1: Blasting and Profiling
Grit blast panels to remove mill scale and prepare substrate to accept coating



Step 2: Degrease and Rinse
A combination of rinse solution and hot air is used to clean and preheat the substrate to optimal coating temperature



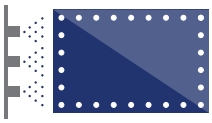
Step 3: "A" Coating Application
Interior, Exterior & Edges



Step 4: Dryer
Panels pass through natural gas dryer to remove all moisture from the coating

Step 5: Vitrium Base Application
Interior – 1st coat

Step 6: Top Coat Application
Exterior

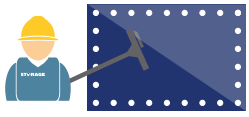


Step 7: Dryer
Panels pass through natural gas dryer to remove all moisture from the coating

Step 8: Vitrium Saturated TiO_2 Application
Interior – 2nd coat

Step 9: Dryer
Panels pass through natural gas dryer to remove all moisture from the coating

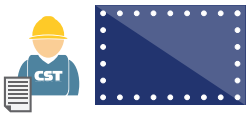
Step 10: Quality Control Check
Parts are checked using a dry film thickness test and visual inspection to identify and correct panels with non-conforming coating



FURNACE LINE

Step 11: Furnace Line
Coated panels pass through the furnace to bond the enamel (coating) to the substrate, yielding an exceptionally durable finished product

Step 12: Final Quality Control
Trained service professionals examine all panels for final Dry Film Thickness and with an Electric Holiday Tester to ensure consistent coverage and protection on all panels



Physical Properties – Vitrium™	
Inside Sheet Color	White
Outside Sheet Color	Cobalt Blue, Desert Tan, Forest Green, Sky Blue, White
Nominal Thickness	Interior: 10-16 mils, 260-410 microns; Exterior: 7-15 mils, 180-380 microns
Service Range	140° F (60˚C) @ 3-10 pH-subject to verification, depending on specific products stored
Abrasion Resistance	Taber-8 mg loss (CS-17, 100g, 5000 cycles)
Elasticity	Young's Modulus 12 x 10^6
Permeability	Impermeable to gases and liquids within normal operating temperature ranges
Thermal Conductivity	8 BTU in/hr ft^2 ˚F
Cleanability	Smooth, inert, glossy, anti-stick
Hardness	6.0 Mohs
Adherence	Over 5,000 psi to base steel
Impact Resistance	24 inch-lb.
Corrosion Resistance/ ASTM B-117	Excellent, virtually unaffected by most waste waters, brines, sea water, salt spray, organic and inorganic chemicals

Note: Specific applications may be limited by sealant, hardware or glass protection characteristics.

Call 815-756-1551 or visit aquastore.com to find an authorized dealer near you.
CST Industries, Inc. | 345 Harvestore Dr. | DeKalb, IL 60115 USA | Ph: 815-756-1551 | www.aquastore.com