

Comparative Testing of Clarvista® Shower Glass to Post-Temperable Spray-on Coatings

Abstract

Clarvista® shower glass, developed by Vitro Architectural Glass, demonstrates exceptional durability and clarity retention under rigorous performance testing. Comparative analysis shows that Clarvista® glass outperforms competitive spray-on products in resisting corrosion, maintaining clarity and withstanding environmental wear. Its performance underscores the advantages of its fused protective coating, which provides superior long-term results on both clear and ultra-clear glass substrates. In addition, the brilliance of Clarvista® glass is easily restored with routine cleaning using non-abrasive, off-the-shelf cleaners without diminishing or damaging its protective coating.

Introduction

Clarvista® glass is engineered specifically for shower doors and enclosures. Its proprietary coating is fused to the glass during the manufacturing process, creating a durable, non-porous barrier against the corrosive effects of heat, humidity and household chemicals. This ensures shower enclosures maintain their pristine appearance for extended periods with minimal maintenance. To restore its original brilliance, non-abrasive, commercially available cleaners can be used without compromising the integrity of the coating. For best results, a squeegee is recommended after every use.

Clarvista® glass is available on the substrates of standard clear glass and Starphire Ultra-Clear® glass. Both options deliver premium performance that meets the aesthetic and functional expectations of modern bath environments.

This white paper examines the performance of Clarvista® glass through Vitro's internal testing protocols and provides a comparative analysis against a leading competitive spray-on coating.

Testing Parameters

As no universal industry-standard tests exist specifically for coated shower enclosure glass, Vitro developed a comprehensive set of performance benchmarks that simulate real-world bathroom environments. These proprietary tests were designed to assess the following critical factors:

- 1. Heat and Humidity Resistance:** Simulating conditions within a typical bath or shower enclosure
- 2. Mechanical Durability:** Evaluating the interplay between physical wear and environmental exposure
- 3. Chemical Durability:** Assessing the impact of common household cleaning solutions

Vitro conducted a series of accelerated, industry-standard tests, evaluating physical and chemical durability and the ability to withstand the corrosive effects of heat and humidity. To accurately represent their end-use in a shower environment, all products were thermally tempered. The products tested were:

- Clarvista® glass coating on Starphire Ultra-Clear® glass substrate (6mm)
- Clarvista® glass coating on clear glass substrate (5mm)
- Uncoated glass on Starphire Ultra-Clear® glass substrate (6mm)
- A leading competitor's post-temperable spray-on coating on Starphire Ultra-Clear® glass substrate (6mm)

A total of seven tests were conducted on each sample in their post heat-treatment.

Methodology and Results

Vitro Glass Accelerated Aging Chamber Test

To replicate years of environmental exposure in a condensed timeframe, Vitro developed an advanced high-temperature, high-humidity test environment. In this test, all samples were exposed to 1,000 hours of continuous conditions at 140°F and 90% relative humidity.

Common Glass Industry Tests

Vitro also conducted three industry-standard tests on each glass sample, as follows:

- Salt Fog (reference ASTM B117) for corrosion resistance
- Taber Abrasion Test (reference ASTM D1044) for physical durability
- pH testing (reference ASTM D-5146) for chemical durability, including exposure to a variety of household cleaners

Industry Standard Testing Reference Chart

Property Tested	Tests Performed	Relevant Details
Hot/Humid Environment*	Salt Fog (ASTM B117) for corrosion resistance	95°F / 5 wt.% salt spray
Mechanical Durability**	Taber Abrasion (ASTM D1044) for physical durability	10 cycles / 500g weight
Chemical Durability**	pH testing (reference ASTM D-5146) for chemical durability, including exposure to a variety of household cleaners	24-hour exposure Samples were cleaned with a 50:50 Water/IPA solution, followed by DI (deionized) water, gently wiped with a Kimwipe, and blown dry with air

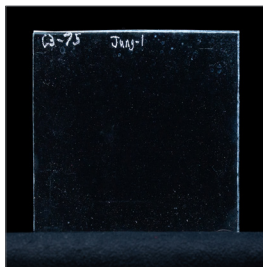
*Exposed 1,000 hours

**Followed by 1,000 hours exposure in Vitro Glass Accelerated Aging Chamber

Results

The following photos depict the performance of each product as measured by post-test haze¹ readings, according to prescribed testing:

Accelerated Aging Chamber Test



Clarvista® glass on Starphire Ultra-Clear® glass substrate
• Ultra-low haze



Uncoated glass on Starphire Ultra-Clear® glass substrate
• Heavy haze



A leading competitor's post-temperable spray-on coating on Starphire Ultra-Clear® glass substrate
• Moderate haze

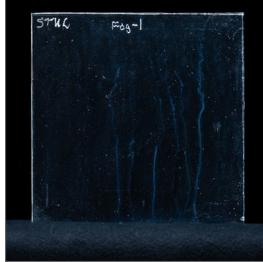
¹Haze is a scientific measure of glass clarity. The lower the haze measure, the clearer the glass appears

Salt Fog Testing (Corrosion Resistance)

Salt fog testing takes place in a closed chamber where glass samples are exposed to a 5% sodium chloride (salt) mist for 1,000 hours at a minimum temperature of 95°F. The performance of the glass/coating is measured by its ability to resist the chamber’s corrosive environment.



Clarvista® glass on Starphire Ultra-Clear® glass substrate
 • Ultra-low haze



Uncoated glass on Starphire Ultra-Clear® glass substrate
 • Heavy haze



A leading competitor's post-temperable spray-on coating on Starphire Ultra-Clear® glass substrate
 • Low haze

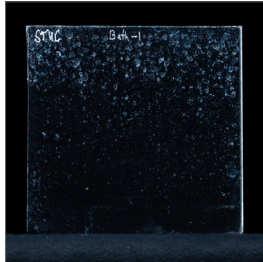
pH Testing (Chemical Durability)

To simulate the effects of repeated chemical exposure from household cleaning products, glass samples underwent a two-part test. First, samples were immersed for 24 hours in a cleaning solution and then subjected to 1,000 hours of heat and humidity in the accelerated aging chamber to gauge long-term performance in a shower environment. Samples were cleaned with a 50:50 Water/IPA solution, followed by DI (deionized) water, gently wiped with a Kimwipe, and blown dry with air.

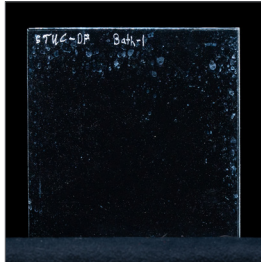
Results with Basic Bathroom Cleaner:



Clarvista® glass on Starphire Ultra-Clear® glass substrate
 • Ultra-low haze



Uncoated glass on Starphire Ultra-Clear® glass substrate
 • Heavy haze

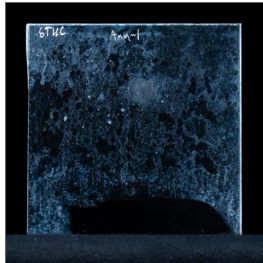


A leading competitor's post-temperable spray-on coating on Starphire Ultra-Clear® glass substrate
 • Moderate haze

Results with Ammonia-Based Glass Cleaner:



Clarvista® glass on Starphire Ultra-Clear® glass substrate
 • Ultra-low haze



Uncoated glass on Starphire Ultra-Clear® glass substrate
 • Heavy haze



A leading competitor's post-temperable spray-on coating on Starphire Ultra-Clear® glass substrate
 • Moderate haze

Performance Summary

Clarvista® glass on Starphire Ultra-Clear® glass performed equal to or better than a leading competitor's post-temperable spray-on coating in all performance trials, supported by visual quality and haze guard measurements. The manufacturing method employed for Clarvista® glass on Starphire Ultra-Clear® glass enables it to maintain its clarity and resist corrosion more effectively than post-temperable spray-on coatings. As a result, consumers can expect Clarvista® glass on Starphire Ultra-Clear® glass to retain its original brilliance longer in a true shower environment.

Corrosion Resistance Comparison

Product	Heat/Humidity ONLY (Accelerated Aging Chamber)	Scratched + Heat/Humidity	Harsh Cleaner + Heat/Humidity
Clarvista® glass + Starphire Ultra-Clear® glass	Light corrosion, on edge only	Light corrosion, on edge only	Light corrosion, on edge only
Uncoated glass + Starphire Ultra-Clear® glass	Moderate corrosion, concentrated on top	Moderate corrosion, concentrated on top	Moderate to heavy corrosion, concentrated on top or film side
Competitor's post-temperable spray-on coating + Starphire Ultra-Clear® glass	Light corrosion, on edge only	Moderate corrosion, concentrated on top	Moderate corrosion, concentrated on top

Conclusions

1. Clarvista® glass on Starphire Ultra-Clear® glass substrate consistently delivers good performance, with results matching or surpassing those of a leading competitor's post-temperable spray-on coating. Visual quality and haze guard measurements further validate its reliability and effectiveness.
2. While the leading competitor's post-temperable spray-on coating on Starphire Ultra-Clear® glass substrate demonstrated adequate performance across select testing parameters, it remains critical to evaluate long-term durability and aesthetic consistency.
3. Conversely, Clarvista® glass on clear glass substrate shows variable results, highlighting the importance of substrate selection.
4. Clarvista® glass' fused coating technology is an effortless choice for fabricators, as it requires no special furnace modifications during tempering and no post-temperable spray-on processes.
5. Proven through rigorous testing, Clarvista® glass is exceptionally well-suited to high-humidity environments, maintaining its pristine appearance with minimal maintenance and simple cleaning.

By specifying Clarvista® glass, projects benefit from a material that maintains its beautiful aesthetic for a long period of time.

Note to Fabricators

Clarvista® glass is ready for immediate use. It does not require heat treatment to activate its high-performing properties. As a point of departure, the standard furnace heat cycle for the same uncoated glass thickness and substrate is recommended.

Clarvista® glass is available in 6mm, 10mm and 12mm thicknesses in both clear and Starphire Ultra-Clear® substrates.

For more information about Clarvista® Glass by Vitro, visit clarvista.com or call 1-855-VTRO-GLS (887-6457).

Vitro Architectural Glass
Glass Technology Center
400 Guys Run Rd.
Pittsburgh, PA 15024

1.855.887.6457 / 1.855.VTRO.GLS
vitroglazings.com



©2026 Vitro Architectural Glass. All rights reserved. Clarvista® and Starphire Ultra-Clear® are registered trademarks owned by Vitro. Cradle to Cradle Certified® is a registered trademark of the Cradle to Cradle Products Innovation Institute. Printed in the USA. 7258 (04/26)

