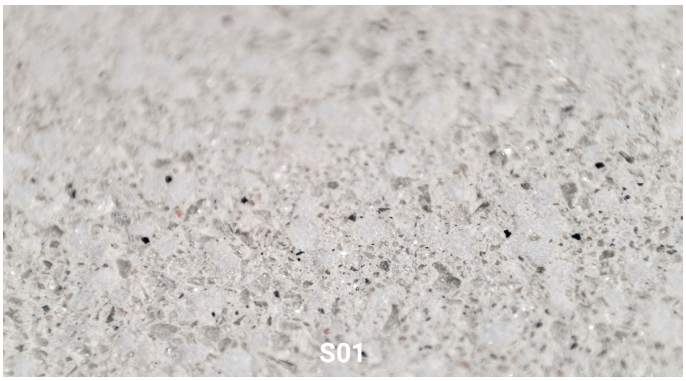
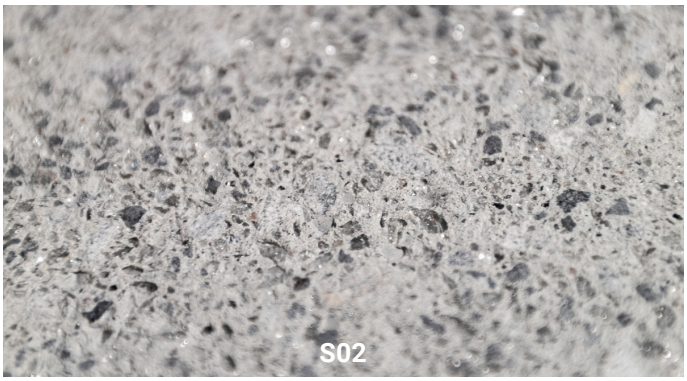
TAKTL SOLA™

SOLA A|UHPC Facade Elements with award-winning SC+ Technology are the world's first integrally self-cleaning, pollution removing, and antimicrobial UHPC panels. SOLA is designed with resilience at its core and delivers measurable environmental and community health benefits. Nano-engineered SC+ Technology uses the power of light to break down contaminants and environmental toxins, with ISO-tested capabilities proven to mitigate air pollution. The design character of SOLA finishes is inspired by its dynamic responsiveness to sunlight. Regionally sourced natural materials show off their mineral qualities as they simultaneously amplify the panel's integral pollution-neutralizing and self-cleaning properties.





SOLA™ Panel Description TAKTL SOLA panels are available in two unique finishes, S01 and S02, engineered for their performance combined with the characteristics imparted by proprietary SC+ Technology. Natural aggregates are selected and tested for their amplification of the light-activated self-cleaning reaction inherent to the SOLA panel. Subtle variation is a characteristic of SOLA applications, with mineral aggregates creating variation within a single panel and across larger facades.

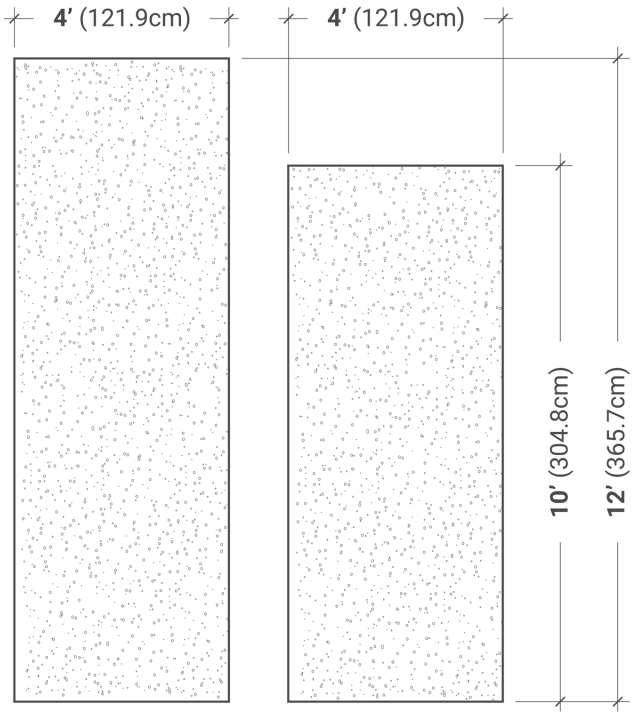
Features and Benefits With SC+ Technology, TAKTL SOLA facade elements make a measurable impact on communities and the environment by removing airborne toxins, neutralizing viral and microbial particles, and breaking down surface dirt and debris.

- Neutralizes environmental pollution by removing a high proportion of ambient NOx, the most prevalent category of harmful airborne toxins
- Self-cleans by breaking down surface dirt and debris over the panel's entire lifespan
- Kills viral and microbial surface contaminants within hours
- Inhibits moss and mold growth to further reduce maintenance requirements in humid climates
- Works passively and integrally to the UHPC mix, requiring none of the maintenance expected with surface-applied alternatives
- SOLA surfaces are engineered with beautiful natural aggregates that amplify self-cleaning performance and create subtle variation across facades
- Standard sizes up to 4' X 12' with custom sizes and textures available
- SOLA S01 and S02 finishes can be specified singly or together on the same facade

Material/Panel Characteristics

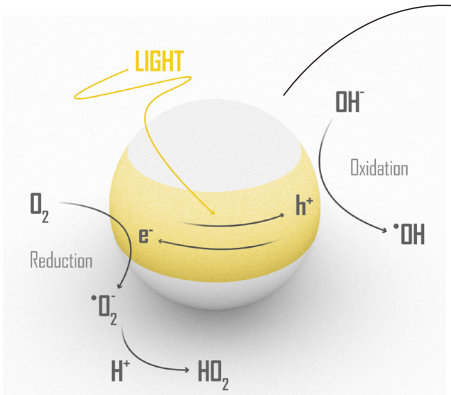
Material Density	137lbs/ft^3
Coefficient of Thermal Expansion	6.41 E-06 in/in/°F
Compressive Strength	12,000 psi – 18,000 psi (95Mpa – 120Mpa)
Flexural Strength (Panel)	3,916 psi – 4,786 psi (27Mpa – 33Mpa)
Undercut Anchor Load Values (10mm)*	520 lbf Tension | 890 lbf Shear
Standard Base Panel Thickness**	5/8 in (16mm) (1½ in/38mm Max.)
Panel Weight 5/8" (16mm) Thickness min.	6.9 lb/f^2 (33.7kg/m^2)
Standard Nominal Panel Size	48 in (1220mm) X 120 in (3050mm) 48 in (1220mm) X 144 in (3656mm)
Min. Standard Panel Size	6 in (150mm) X 48 in (1220mm)
Max. Standard Panel Size	60 in (1500mm) X 144 in (3656mm)

* Recommended minimum design values
** Custom textures/profiles available upon request
Test reports available upon request



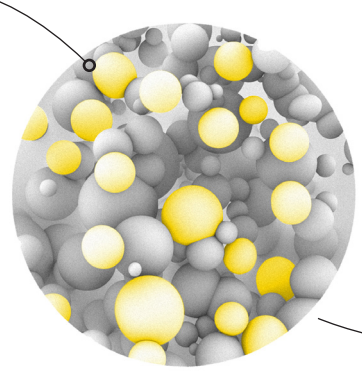
SC+ Technology TAKTL SC+ Technology is a proprietary materials innovation that integrates self-cleaning, pollution-removing, and antimicrobial properties into Architectural Ultra High Performance Concrete (A|UHPC) facade panels. When activated by light, the nano-engineered particles, along withother chemical components in the matrix, breakdown organic and inorganic contaminants and other harmful environmental toxins through photocatalysis. SC+ Technology is integral to the A|UHPC mix and lasts the life of the panel, eliminating the maintenance requirements common to commercial surface-applied alternatives. The photocatalytic effects of SC+ Technology have been rigorously tested in conditions that replicate typical light levels and environmental conditions.

Chemistry | Photocatalytic Model



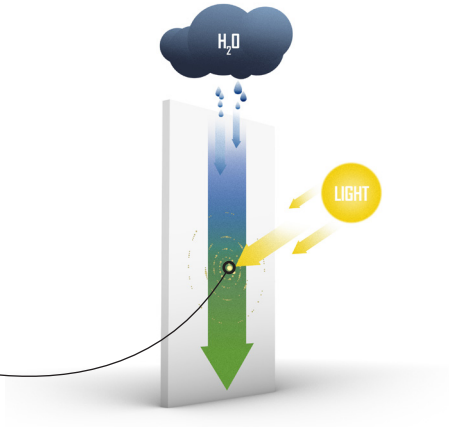
A photocatalytic reaction occurs when light activates the engineered nanoparticle. When activated, environmental humidity breaks down toxic NOx into harmless HO2 and OH.

Intergral to the Mix | Formulation



TAKTL SOLA panels with SC+ Technology are capable of activating nanoparticles below the surface to amplify photocatalytic response for the life of the panel.

Product | Facade



When installed on the exterior or interior of a building, TAKTL SOLA panels with SC+ Technology work with environmental light and humidity to reduce airborne pollution, surface deposits and microbial contaminants.

Photocatalytic Assessment Testing

ISO 10678 Self-Cleaning Properties Standard test to predict SOLA's response to a wide variety of common particulates including nitrogen oxide (NOx), soot, grease, VOCs, and microbes. Results showed complete decomposition under UV-A light over 15 days.

Day 1 | Day 3 | Day 6 | Day 9 | Day 12 | Day 15

ISO 22197-1 Pollution Reduction Test to measure air purification activity using the oxidation of NO and NO2 into NO3, a pollutant with a major role in smog and ozone formation.

ISO 18061 Viral Neutralization Standard used to determine antiviral activity performed by the Tile Council of North America using species of the human coronavirus (229E).

ISO 22197-1 RESULTS

	SOLA
Flow Rate (L/miin)	1.5
Nox Concentration (ppmv)	0.3
Humidity (%)	50
UV Light Intensity (W/m2)	10
NO Removed (%)	64.5
Selectivity (%NO2 gen.)	7.2
NOx Removed	**57.3%**

ISO 18061-2014 RESULTS

Sample	Human Coronavirus	Cell Line	Infectivity Titer TCID50/ml	UV Intensity (mW/cm2)	UV Radiation Time (h)	% Reduction*
1	HCoV-229E	MRC=5	10^5	0.25	4	100%
2						99%
3						100%
1	HCoVO-C43	HCT-8	10^5	0.25	4	100%
2						100%
3						100%

** Percentage reduction calculated per original infectivity titer of virus inoculum*