

Blue Seal coatings are advanced surface protection systems engineered to provide long-term performance in the most aggressive environments.
Independently tested. Globally trusted.



MARINE & OFFSHORE
Ships, Tanks, Decks,
Ballast Tanks



OIL & GAS
Storage Tanks,
Pipelines, Containment
Structures



WATER & WASTEWATER
Treatment Plants,
Tanks, Clarifiers,
Process Equipment



INFRASTRUCTURE
Bridges, Concrete
Structures, Buildings,
Parking Structures



RENEWABLE ENERGY
Wind Turbine Foundations,
Offshore Structures,
Transition Pieces

KEY FEATURES & BENEFITS



EXCEPTIONAL PROTECTION

Superior resistance to corrosion, abrasion, chemicals and impact.



LONG-TERM DURABILITY

Engineered for extended service life and reduced maintenance.



CHEMICAL & MOISTURE RESISTANT

Withstands harsh chemicals, moisture and immersion.



UV & WEATHER RESISTANT

Excellent weatherability for outdoor and exposed environments.



LOW VOC FORMULATION

Environmentally responsible and safe for applicators.



TESTED & CERTIFIED

Independently tested by accredited third-party laboratories.

TESTED. CERTIFIED. COMPLIANT.

Blue Seal coatings are tested in accordance with international standards and meet requirements for marine, industrial and potable water applications.



ASTM TESTS



IMO MSC.215(82)



NSF / ANSI 61



FDA FOOD CONTACT COMPLIANCE



FDA TECHNICAL OPINION



AND MORE



PDS-001

BLUE SEAL PROTECTIVE COATING SYSTEM



Revision: 1.0
Date: May 2024

1. PRODUCT DESCRIPTION

Blue Seal is a two-component, high build, 100% solids epoxy coating system designed for outstanding protection in the most aggressive environments. It provides excellent resistance to corrosion, abrasion, chemicals, impact and **UV exposure**. Blue Seal is low VOC, **easy to apply** and ideal for long-term asset protection with extended service life and reduced maintenance.

KEY ADVANTAGES

- ✓ Exceptional corrosion, abrasion and impact resistance
- ✓ Excellent chemical & solvent resistance
- ✓ High build – fewer coats, lower total cost
- ✓ UV & weather resistant – suitable for outdoor exposure
- ✓ Low VOC formulation – environmentally responsible
- ✓ Long-term durability with extended maintenance cycles
- ✓ 100% solids – no shrinkage, high film integrity
- ✓ Independently tested and certified by third parties

3. TYPICAL APPLICATIONS



MARINE & OFFSHORE

Ships, ballast tanks, decks, pipelines, offshore platforms, jetties, splash zones and seawater structures.



OIL & GAS

Storage tanks, pipelines, refineries, petrochemical plants, secondary containment and process equipment.



WATER & WASTEWATER

Water treatment plants, clarifiers, digesters, pipes, tanks and wet process areas.



INFRASTRUCTURE

Bridges, highways, concrete structures, parking garages, industrial buildings and support steel.



RENEWABLE ENERGY

Wind turbine foundations, transition pieces, offshore wind structures and substructures.



INDUSTRIAL & COMMERCIAL

Power plants, pulp & paper, mining, data centers, warehouses and other industrial facilities.

6. THIRD-PARTY TESTED & CERTIFIED



ASTM TESTS



IMO MSC.215(82)
MARINE TEST



NSF / ANSI 61
POTABLE WATER



FOOD CONTACT
COMPLIANCE



FDA TECHNICAL
OPINION



CERTIFIED
& COMPLIANT



LOW VOC
FORMULATION

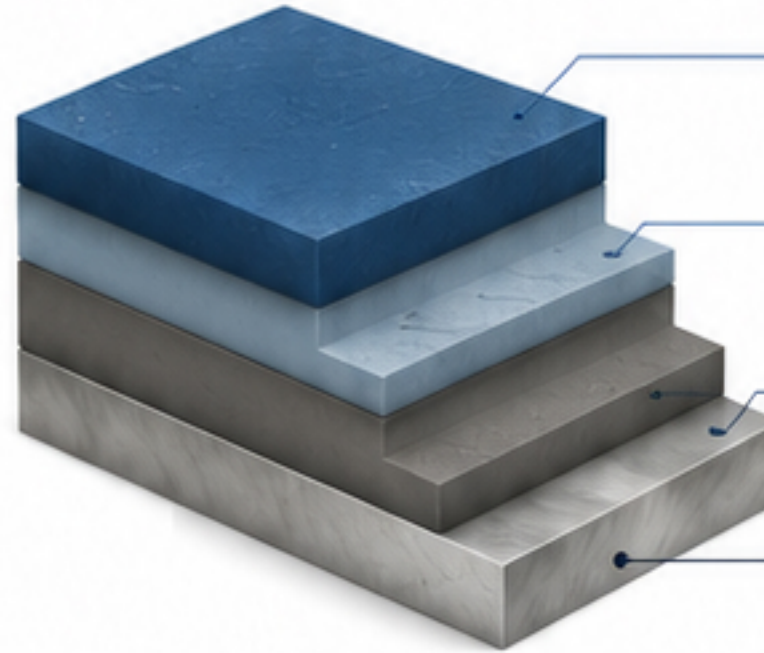


CHEMICAL & MOISTURE
RESISTANT

For full details, please refer to our CERT-001 Certification & Compliance Overview.

2. PRODUCT SYSTEM OVERVIEW

BLUE SEAL PROTECTIVE COATING SYSTEM



TOP COAT

Blue Seal Top Coat
(High performance epoxy finish)

BASE COAT

Blue Seal Base Coat
(High build epoxy barrier coat)

OPTIONAL PRIMER

Blue Seal Epoxy Primer
(For optimum adhesion)

SUBSTRATE

Steel / Concrete / Other
Prepared Surface



SYSTEM TYPE

Two-Component
Epoxy
100% Solids



TYPICAL DFT

300 – 600 μ m
(12 – 24 mils)
Per Coat
(Total System)



VOLUME SOLIDS

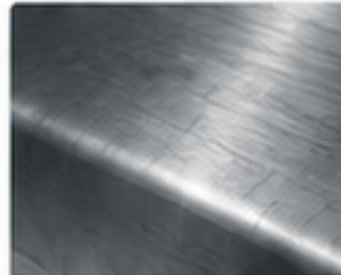
~100%
(ASTM D2697)



THEORETICAL COVERAGE

3.1 m²/L @ 300 μ m
2.6 m²/L @ 400 μ m
1.9 m²/L @ 600 μ m
(Allow losses)

4. RECOMMENDED SUBSTRATES



CARBON STEEL
(A36, SA 2.5 / SSPC-SP10)



CONCRETE
(Cured $\geq$ 28 Days)



GALVANIZED STEEL
(Properly Prepared)



STAINLESS STEEL
(Properly Prepared)

5. TYPICAL PHYSICAL PROPERTIES* (After 7 Days @ 25°C)

PROPERTY	TEST METHOD	TYPICAL RESULT
Appearance	Visual	Glossy Finish
Color	—	Blue / Gray (Custom Colors Available)
Volume Solids	ASTM D2697	~100%
VOC	EPA Method 24	< 50 g/L
Density (Mixed)	ASTM D1475	1.35 $\pm$ 0.05 g/cm ³
Hardness (Shore D)	ASTM D2240	75 – 85
Adhesion (Pull-off)	ASTM D4541	$\geq$ 15 MPa (2175 psi)
Abrasion Resistance	ASTM D4060	< 50 mg (CS-17, 1000 cycles)
Impact Resistance	ASTM D2794	$\geq$ 10 Joules (Direct)
Flexural Strength	ASTM D790	$\geq$ 60 MPa
Water Absorption	ASTM D570	$\leq$ 0.5%
Temperature Resistance	—	-40°C to 120°C (Dry Service) Up to 60°C (Immersion)
Pot Life (25°C)	—	60 – 90 Minutes
Recoat Time (25°C)	—	Min: 8 Hours Max: 7 Days

*Typical values. Actual results may vary depending on color, film thickness and application conditions.

1. SURFACE PREPARATION

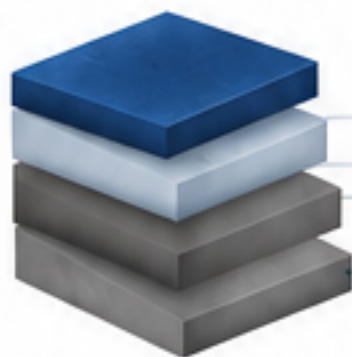
Proper surface preparation is critical to achieve maximum adhesion and long-term performance.

SUBSTRATE	SURFACE PREPARATION REQUIREMENT
Carbon Steel	Abrasive blast to Sa 2.5 (ISO 8501-1) / SSPC-SP10, minimum 75 µm (3 mil) surface profile.
Stainless Steel	Clean with abrasive to remove all contamination. Achieve a uniform surface profile.
Galvanized Steel	Sweep blast or abrasive clean to remove white rust and contaminants. Achieve a uniform surface profile.
Concrete	Surface must be clean, dry and sound. Remove laitance, oils, grease and contaminants. Surface profile CSP 3–5.



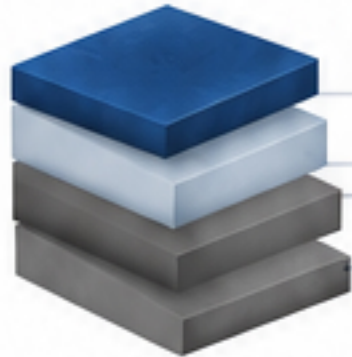
All surfaces must be clean, dry and free from oil, grease, dust, salts and other contaminants before coating application.

5. TYPICAL COATING SYSTEMS



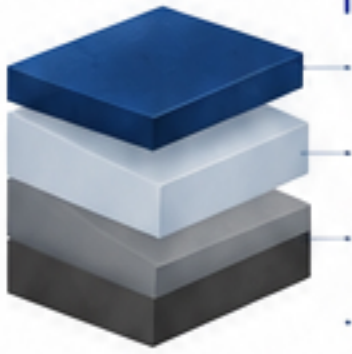
STANDARD SYSTEM (General Corrosion Protection)

- Top Coat : Blue Seal Top Coat (80–125 µm / 3.2–5.0 mils)
- Base Coat : Blue Seal Base Coat (150–200 µm / 6–8 mils)
- Primer : Blue Seal Epoxy Primer (75–100 µm / 3–4 mils)
- Total DFT : 300 – 425 µm (12 – 17 mils)



HIGH PERFORMANCE SYSTEM (Harsh Environment / Immersion)

- Top Coat : Blue Seal Top Coat (100–150 µm / 4–6 mils)
- Base Coat : Blue Seal Base Coat (200–250 µm / 8–10 mils)
- Primer : Blue Seal Epoxy Primer (75–100 µm / 3–4 mils)
- Total DFT : 305 – 500 µm (15 – 20 mils)



IMMERSION / CHEMICAL SERVICE SYSTEM

- Top Coat (Optional) : Blue Seal Top Coat (100–150 µm / 4–6 mils)
- Build Coat : Blue Seal Build Coat (300–500 µm / 12–20 mils)
- Primer : Blue Seal Epoxy Primer (75–100 µm / 3–4 mils)
- Total DFT : 475 – 750 µm (19 – 30 mils)

7. COVERAGE RATE

Theoretical coverage rates at recommended film thickness (no loss factor).

WET FILM THICKNESS (µm / mils)	DRY FILM THICKNESS (µm / mils)	THEORETICAL COVERAGE (m²/L)	THEORETICAL COVERAGE (ft²/US gal)
125 / 5.0	80 / 3.2	8.0	320
250 / 10.0	160 / 6.4	4.0	160
375 / 15.0	240 / 9.6	2.7	107
500 / 20.0	320 / 12.8	2.0	80



Practical coverage will vary depending on surface profile, application method, conditions, and shape of the structure. Allow appropriate loss factor.

2. MIXING INSTRUCTIONS

1



Stir Part A (Base) separately to uniform consistency.

2



Add entire contents of Part B (Hardener) to Part A.

3



Mix continuously for 2–3 minutes using a low speed mixer (300–500 rpm).

4



Scrape sides and bottom of the container and mix again for 1 minute.

5



Allow induction time of 5–10 minutes before application.

 Do not mix partial kits. Mix only in the stated ratios. Do not add thinners. Excessive mixing may entrain air.

3. BRUSH / STRIPE COAT INSTRUCTIONS

1



Apply a stripe coat to all welds, edges, corners, bolts and inaccessible areas using a brush.

2



Ensure full wetting and coverage of all areas. Avoid dry brushing.

3



Allow stripe coat to become tack free before full coat application.

4



Apply full coats by roller or spray to achieve specified DFT.

4. APPLICATION METHODS

METHOD	EQUIPMENT	RECOMMENDED	NOTES
Brush	 High quality natural bristle brush	Stripe coat, small areas, edges	Good for detail work and touch-up.
Roller	 Solvent resistant roller (3/8" – 1/2")	General purpose application	Best for flat areas and large surfaces.
Airless Spray	 Airless spray pump (min. 2400 psi) Tip size: 0.017" – 0.023"	Large areas, high build	Provides uniform finish and high productivity.
Conventional Spray	 Pressure pot Tip size: 1.8 – 2.2 mm	General purpose application	Suitable for field application.

6. CURING SCHEDULE (At 25°C / 77°F)

TEMPERATURE	POT LIFE (Mixed)	TACK FREE	RECOAT MIN	RECOAT MAX	FULL CURE
10°C / 50°F	90 Minutes	6 Hours	16 Hours	30 Days	7 Days
25°C / 77°F	60 Minutes	4 Hours	8 Hours	21 Days	7 Days
35°C / 95°F	30 Minutes	2 Hours	4 Hours	14 Days	5 Days



Lower temperatures extend cure time. Higher temperatures reduce pot life and working time. Ensure good ventilation during curing.

8. PACKAGING & STORAGE

PACKAGING (Standard)		
KIT SIZE	PART A (BASE)	PART B (HARDENER)
1 US Gallon Kit	0.8 US gal	0.2 US gal
5 US Gallon Kit	4.0 US gal	1.0 US gal
15 US Gallon Kit	12.0 US gal	3.0 US gal
55 US Gallon Kit	44.0 US gal	11.0 US gal

STORAGE CONDITIONS



Store in original, unopened containers.



Store in a dry, cool and well ventilated area.



Protect from direct sunlight and frost.



Shelf Life: 24 months at 25°C (77°F).

1. PERFORMANCE CHARACTERISTICS



CORROSION RESISTANCE
Excellent resistance to corrosion, rust and chemical attack in aggressive environments.





ABRASION RESISTANCE
High resistance to abrasion, impact and mechanical wear for long-term durability.





CHEMICAL RESISTANCE
Resists a wide range of acids, alkalis, solvents, salts, oils and industrial chemicals.





WATER IMMERSION
Outstanding resistance to water, salt water and constant immersion conditions.





UV & WEATHER RESISTANCE
Excellent resistance to UV exposure and weathering for outdoor service life.





ADHESION PERFORMANCE
Superior adhesion to properly prepared steel, concrete and other substrates.



2. RECOMMENDED SERVICE ENVIRONMENTS





MARINE & OFFSHORE

- Ships & Vessels
- Ballast Tanks
- Offshore Platforms
- Jetties & Piers
- Splash Zones





OIL & GAS

- Storage Tanks
- Pipelines
- Refineries
- Petrochemical Plants
- Secondary Containment





WATER TREATMENT

- Treatment Plants
- Clarifiers
- Digesters
- Tanks & Reservoirs
- Wet Process Areas





BRIDGES & INFRASTRUCTURE

- Bridges
- Highways
- Concrete Structures
- Parking Garages
- Rebar Protection





INDUSTRIAL FACILITIES

- Chemical Plants
- Pulp & Paper Mills
- Power Plants
- Warehouses
- Floors & Walls





WIND ENERGY

- Turbine Foundations
- Offshore Wind Structures
- Transition Pieces
- Support Structures





DATA CENTERS

- Concrete Floors
- Containment Areas
- Mechanical Rooms
- Cooling Water Tanks
- Secondary Containment

3. CHEMICAL RESISTANCE OVERVIEW (Typical Performance)

CHEMICAL TYPE	EXPOSURE EXAMPLES	PERFORMANCE*
Acids (Dilute)	Sulfuric, Hydrochloric, Nitric, Phosphoric (up to 10%)	Excellent
Alkalis	Sodium Hydroxide, Ammonia, Potassium Hydroxide (up to 20%)	Excellent
Salt Water	Sea Water, Brine Solutions	Excellent
Hydrocarbons	Crude Oil, Diesel, Gasoline, Jet Fuel, Lubricating Oils	Excellent
Wastewater	Sewage, Industrial Effluent, Sludge, Biogas	Very Good to Excellent
Industrial Chemicals	Solvents, Detergents, Salts, Many Organic/Inorganic Chemicals	Very Good to Excellent

*Performance depends on chemical concentration, temperature, exposure time and service conditions. Refer to Blue Seal Chemical Resistance Guide for details.

4. ADVANTAGES OF THE BLUE SEAL SYSTEM



HIGH BUILD – FEWER COATS
High solids, high build formulation achieves the required DFT in fewer coats, reducing labor and downtime.



LONG SERVICE LIFE
Provides extended protection and reduces maintenance frequency and total life-cycle cost.



THIRD-PARTY TESTED
Independently tested in accordance with international standards by accredited laboratories.



LOW VOC FORMULATION
Low VOC content for a safer work environment and reduced impact on the environment.



EASY TO MAINTAIN
Smooth, non-porous finish is easy to clean and maintain for long-term performance.



INDUSTRIAL GRADE PROTECTION
Engineered for the harshest industrial and marine environments worldwide.

5. THIRD-PARTY TESTING & COMPLIANCE (Representative Tests)



CORROSION (ASTM B117)
Salt spray testing to evaluate corrosion resistance.



ABRASION (ASTM D4060)
Taber abrasion resistance to evaluate wear performance.



IMPACT (ASTM D2794)
Direct impact test to determine coating toughness.



ADHESION (ASTM D4541)
Pull-off adhesion test measuring bond strength to substrate.



CHEMICAL RESISTANCE (ASTM D543)
Immersion testing in various chemicals to evaluate resistance.



WATER IMMERSION (ASTM D870)
Long-term immersion testing for blistering and adhesion.



UV WEATHERING (ASTM G154)
Accelerated UV exposure testing to evaluate color and gloss retention.



FDA FOOD CONTACT COMPLIANCE
Complies with FDA requirements for use in food contact areas.*

*Refer to FDA Compliance Statement and test reports for details.

For complete test reports and certifications, contact VERTEX Co Ltd.



VERTEX CO LTD
INFRASTRUCTURE PROTECTION



MARINE



OIL & GAS



WATER



INFRASTRUCTURE



ENERGY



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1. APPLICATION GUIDELINES



SURFACE TEMPERATURE
Minimum 10°C (50°F)
Maximum 40°C (104°F)
Surface must be at least 3°C (5°F) above dew point.



RELATIVE HUMIDITY
Maximum 85%.



VENTILATION
Provide adequate ventilation during application and curing.



INSPECTION
Verify surface preparation, mixing ratio and environmental conditions before application.



CONDITIONS AFTER APPLICATION
Protect coating from water, condensation, rain and chemicals until fully cured.



**IMPORTANT**
Improper surface preparation or application under adverse conditions may affect adhesion, appearance and long-term performance.

2. QUALITY ASSURANCE & CONTROL

STAGE	QUALITY CHECK
 SURFACE PREPARATION	• Visual cleanliness and profile • Surface profile (as specified) • Moisture test (if required)
 MATERIAL CHECK	• Verify product, batch number and expiry • Check temperature of components • Confirm mixing ratio
 MIXING	• Mix in correct ratio by volume • Mix thoroughly per instructions • Do not mix partial kits
 APPLICATION	• Film thickness (wet) • Even coverage and no holidays • Proper stripe coat on edges and welds
 CURING	• Verify recoat and cure times • Protect from contamination and moisture
 FINAL INSPECTION	• Dry film thickness (DFT) • Visual appearance • Adhesion (if specified) • Holiday detection (as required)
 All work should be performed in accordance with NACE SP0188, SSPC PA 2 and project specifications.	

3. DRY FILM THICKNESS (DFT) REQUIREMENTS

SYSTEM	COAT	RECOMMENDED DFT	
		Per Coat	Total System
STANDARD SYSTEM (General Corrosion Protection)	Top Coat	80 – 125 µm	300 – 425 µm
	Base Coat	150 – 200 µm	
HIGH PERFORMANCE SYSTEM (Harsh Environment / Immersion)	Top Coat	100 – 150 µm	305 – 500 µm
	Base Coat	200 – 250 µm	
IMMERSION / CHEMICAL SERVICE SYSTEM	Top Coat	100 – 150 µm	475 – 750 µm
	Build Coat	300 – 500 µm	
	Primer	75 – 100 µm	

NOTE:
DFT depends on surface profile, application method, equipment and environmental conditions. Achieve minimum total DFT as specified.



DFT Measurement
Per ISO 2808

4. DEFECTS & CORRECTIONS

DEFECT	CAUSE	CORRECTION
Pinholes / Holidays	• Inadequate mixing • Contaminated surface • Low film thickness	• Repair by brush, roller or spray • Ensure proper mixing • Maintain specified DFT
Sagging / Runs	• Excessive film build • Improper application	• Allow to cure, sand smooth • Recoat per specification
Poor Adhesion	• Poor surface prep • Moisture / contamination • Wrong primer	• Remove coating • Re-prepare surface • Recoat per system
Blistering	• Moisture in substrate • Solvent entrapment	• Remove blisters • Re-prepare and recoat • Ensure dry conditions
Mechanical Damage	• Impact / abrasion • Improper handling	• Clean area • Repair with Blue Seal • Maintain protection
 Repairs should be carried out in accordance with the original system and application procedures.		

5. TYPICAL COATING SYSTEM SELECTION GUIDE

	ENVIRONMENT	RECOMMENDED SYSTEM	TYPICAL TOTAL DFT
	Marine / Offshore Seawater splash, decks, ballast tanks, offshore structures	High Performance System (Immersion)	305 – 500 µm (15 – 20 mils)
	Oil & Gas Tanks, pipelines, refineries, petrochemical plants	Standard or High Performance System	300 – 425 µm (12 – 17 mils)
	Water & Wastewater Clarifiers, digesters, tanks, wet process areas	High Performance System	305 – 500 µm (15 – 20 mils)
	Bridges & Infrastructure Steel structures, concrete bridges, parking garages	Standard System (General Corrosion Protection)	300 – 425 µm (12 – 17 mils)
	Wind Energy Turbine foundations, offshore wind structures	High Performance System	305 – 500 µm (15 – 20 mils)
	Data Centers Concrete floors, containment areas, mechanical rooms	Standard System (General Corrosion Protection)	300 – 425 µm (12 – 17 mils)

6. MAINTENANCE & REPAIR

ROUTINE MAINTENANCE	REPAIR PROCEDURE
 Regularly inspect coated surfaces for damage, wear and contamination.	1 Clean and remove loose material from damaged area.
 Clean with fresh water and mild detergent as necessary.	2 Feather edge the perimeter.
 Address minor damage early to prevent corrosion.	3 Apply stripe coat (if needed).
	4 Reapply Blue Seal system to required DFT.
	5 Allow to cure per instructions.
 Refer to Blue Seal Application Guide for detailed maintenance and repair procedures.	

7. HANDLING PRECAUTIONS

 Wear appropriate PPE: gloves, eye protection and coveralls.	 Ensure adequate ventilation. Avoid inhalation of vapors.	 Keep away from heat, sparks and open flames.	 Refer to SDS for detailed handling, storage and first aid information.	 Dispose of waste responsibly in accordance with local regulations.
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TECHNICAL SUMMARY

Blue Seal (BlueShield) Protective Coating System is a high performance, multi-layer coating technology designed to provide superior corrosion protection, chemical resistance and long-term durability for critical infrastructure worldwide.

- ✓ Proven protection in the most demanding environments
- ✓ Excellent resistance to corrosion, chemicals and abrasion
- ✓ Extended service life and reduced maintenance cost
- ✓ Compliant with international standards and regulations
- ✓ Backed by third-party tests, certifications and global experience



TYPICAL APPLICATIONS



MARINE &
OFFSHORE



OIL & GAS
FACILITIES



PIPELINES &
STRUCTURES



PORT & HARBOR
FACILITIES



CONCRETE
INFRASTRUCTURE



OFFSHORE
PLATFORMS

AVAILABLE DOCUMENTS



PDS-001
PRODUCT DATA SHEET

Detailed product information, technical data and application guidelines.



SDS-001
SAFETY DATA SHEET

Health, safety and environmental information for safe handling.



ASTM-001
ASTM TEST REPORTS

Third-party test results for physical properties and performance.



EXOVA-001
EXOVA TEST REPORTS

Independent laboratory test reports for advanced chemical and mechanical tests.



CERT-001
CERTIFICATES & APPROVALS

International certifications and industry approvals for quality assurance.



CASE-001
PROJECT CASE STUDIES

Real project case studies and application references.



TECHNICAL GUIDES
& SUPPORT

Application guides, maintenance guidelines and technical support.

ORDERING INFORMATION

ITEM	DESCRIPTION
Product	Blue Seal / BlueShield Protective Coating System
Packaging	Component A & B in pre-measured kits
Standard Color	Blue (Other colors available upon request)
Shelf Life	12 months (unopened, 5–35°C / 41–95°F)
Storage	Store in cool, dry place. Protect from frost and direct sunlight.
Coverage	Refer to system specification and product data.
Custom Solutions	Available for specific project requirements.

CONTACT US

- 30 Wertheim Court, Unit 25
Richmond Hill, ON L4B 1B9
Canada
- +1 (905) 597-1500
- info@vertexcoltd.com
- www.vertexcoltd.com



DISCLAIMER

The information provided in this Product Data Sheet is based on laboratory tests and field experience. Actual performance may vary depending on application method, environmental conditions and surface preparation. VERTEX Co. Ltd makes no warranty, express or implied, including any warranty of merchantability or fitness for a particular purpose. The user is responsible for determining the suitability of the product for the intended use.

For the most up-to-date information, please contact our technical team.

TECHNICAL SUPPORT

- Professional coating consultation and specification support
- On-site application guidance and training
- Project evaluation and solution recommendation
- Global network and local support