

INDEPENDENTLY TESTED. INTERNATIONALLY CERTIFIED.  
TRUSTED FOR PERFORMANCE AND PROTECTION.



INTERNATIONAL  
TEST STANDARDS

**Exova**

INDEPENDENT  
LABORATORY TESTED

**intertek**  
Total Quality. Assured.

THIRD-PARTY  
VERIFICATION

**Lab/Cor**  
Materials, LLC

FDA COMPLIANCE  
ASSESSMENT



NSF/ANSI 61  
POTABLE WATER  
COMPLIANCE



FOOD CONTACT  
COMPLIANCE



#### PROVEN QUALITY

Independently tested to international standards for performance and reliability.



#### GLOBAL COMPLIANCE

Meets regulatory and industrial requirements worldwide.



#### ADVANCED PROTECTION

Engineered for long-term corrosion protection in the harshest environments.



#### ENVIRONMENTALLY RESPONSIBLE

Low VOC formulation supporting a safer and sustainable future.



MARINE



OFFSHORE



OIL & GAS



BRIDGES



WATER



WIND

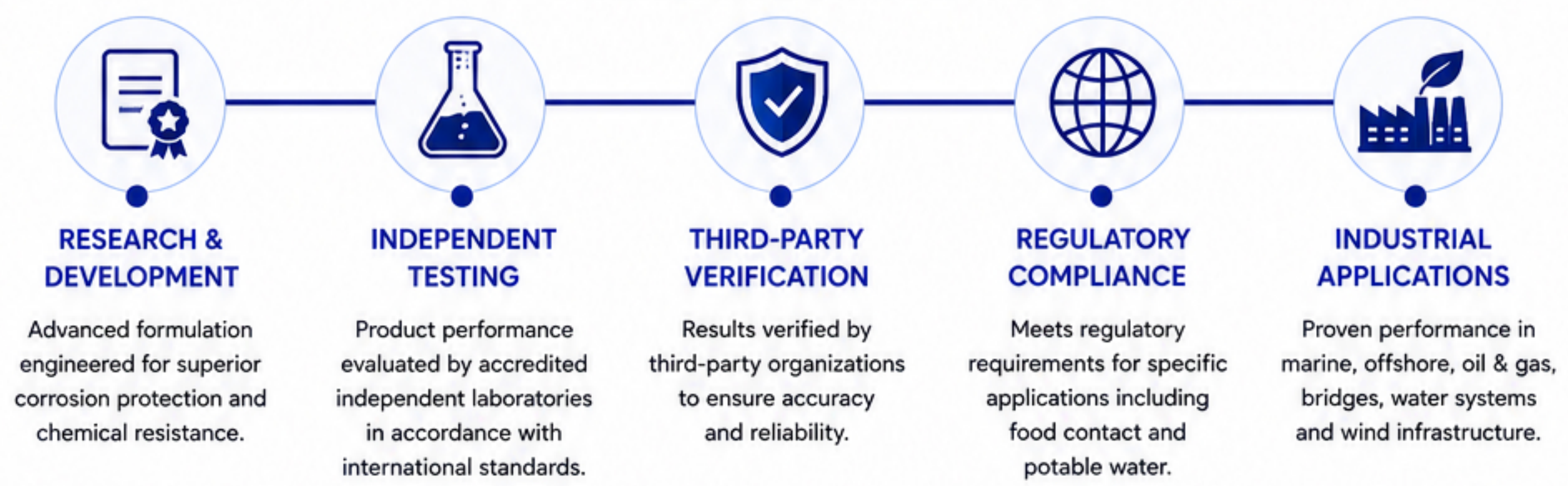
**VERTEXCO LTD**  
[www.vertexcoltd.com](http://www.vertexcoltd.com)



## 2 | CERTIFICATION OVERVIEW

Blue Seal is independently tested and certified by internationally recognized laboratories and organizations to ensure the highest standards of performance, safety and regulatory compliance for demanding industrial and infrastructure applications.

### OUR CERTIFICATION JOURNEY



### STANDARDS & COMPLIANCE COVERAGE

|                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <div><b>ASTM</b><ul style="list-style-type: none"><li>ASTM D2240-05 Durometer Hardness</li><li>ASTM D790-07 Flexural Properties</li><li>ASTM D4541 Adhesion Strength</li><li>ASTM D149-09 Dielectric Strength</li><li>Other ASTM Methods (See Test Reports)</li></ul><b>Tested by Intertek</b></div> |  <div><b>EXOVA</b><ul style="list-style-type: none"><li>IMO Resolution MSC.215(82) Annex 1</li><li>Test Procedures for Coating Qualification</li></ul><b>Independent Test Report N953185</b></div> |  <div><b>INTERTEK</b><ul style="list-style-type: none"><li>Dielectric Strength (ASTM D149-09)</li><li>Dielectric Constant (ASTM D150-98)</li><li>AC Loss Characteristics &amp; Permittivity</li></ul><b>Reports P20100407 / P20100407-2</b></div> |  <div><b>LAB/COR</b><ul style="list-style-type: none"><li>FDA Technical Assessment</li><li>Food Contact Compliance (Where Applicable)</li></ul><b>Technical Opinion Dated Aug 28, 2013</b></div> |  <div><b>NSF / ANSI 61</b><ul style="list-style-type: none"><li>Potable Water System Components – NSF/ANSI 61</li><li>No detectable leaching of chemicals or metals from Topcoat</li></ul><b>Report ID 13.100</b></div> |  <div><b>FDA</b><ul style="list-style-type: none"><li>Resinous and polymeric coatings compliance with FDA regulations for food contact surfaces (Where Applicable)</li></ul><b>Technical Opinion Dated Aug 28, 2013</b></div> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



**TESTED.  
VERIFIED.  
TRUSTED.**

All testing and certifications are performed by accredited, independent laboratories in accordance with recognized international standards and regulatory requirements.



**INDEPENDENT TESTING**  
  
All results from accredited independent laboratories.



**INTERNATIONAL STANDARDS**  
  
Testing conducted to ASTM, IMO and other recognized standards.



**REGULATORY COMPLIANCE**  
  
Meets FDA and NSF 61 requirements for specific applications.



**THIRD-PARTY VERIFICATION**  
  
Verified by globally recognized testing organizations.



3 | CERTIFICATION DETAILS

Blue Seal coatings have been independently tested by internationally recognized laboratories. The following pages summarize our key certifications, test standards and compliance reports.

**Exova**  
Testing

**EXOVA**

Independent Test Report  
N953185

**IMO MSC.215(82) ANNEX 1 COATING QUALIFICATION**

- **Standard:** IMO Resolution MSC.215(82) Annex 1
- **Test Type:** Performance Standard for Protective Coatings for Dedicated Seawater Ballast Tanks
- **Result:** Blue Seal coating system is assessed and found compliant with the performance requirements.
- **Issued by:** Exova Warringtonfire
- **Report No.:** N953185
- **Date:** October 12, 2016



| TEST RESULTS SUMMARY            |        |
|---------------------------------|--------|
| Performance Requirement         | Result |
| General Requirements            | PA35   |
| Coating Composition             | PA35   |
| Abrasion Resistance             | PA35   |
| Adhesion                        | PA35   |
| Impact Resistance               | PA35   |
| Flexibility                     | PA35   |
| Cathodic Disbondment Resistance | PA35   |
| Water Immersion Resistance      | PA35   |
| Resistance to Chemicals         | PA35   |
| Resistance to Temperature       | PA35   |

Conclusion: Exova complies with IMO Resolution MSC.215(82) Annex 1.

Test Engineer: [Signature] Technical Manager: [Signature]

**intertek**  
Total Quality. Assured.

**INTERTEK**

ASTM Test Reports  
(Multiple)

**ASTM PERFORMANCE TESTING**

- **Conducted by:** Intertek Testing Services NA, Inc.
- **Key Test Standards:**
  - ASTM D149-09 Dielectric Strength
  - ASTM D150-98 Dielectric Constant
  - ASTM D790-07 Flexural Properties
  - ASTM D2240-05 Durometer Hardness
  - ASTM D4541 Adhesion Strength
  - ASTM D1149-09 Dielectric Resistivity
- **Reports:** P20100407 / P20100407-2 and others
- **Results** demonstrate excellent mechanical, electrical and adhesion properties.

**intertek**  
Total Quality. Assured.

**Test Report**

REPORT NUMBER:  
P20100407

CLIENT:  
Blue Seal Inc.

SAMPLE DESCRIPTION:  
Blue Seal Top Coat

DATE:  
April 12, 2010

**intertek**  
Total Quality. Assured.

**Test Report**

REPORT NUMBER:  
P20100407-2

CLIENT:  
Blue Seal Inc.

SAMPLE DESCRIPTION:  
Blue Seal Base Coat

DATE:  
April 12, 2010

**Lab/Cor**

**LAB/COR MATERIALS, LLC**

FDA Technical Opinion  
Dated Aug 28, 2013

**FDA FOOD CONTACT COMPLIANCE**

- Review of Blue Seal surface-resistant resins and polymeric coatings.
- **Conclusion:** The coatings are compliant with FDA regulations for food contact surfaces.
- Suitable for use in environments where incidental food contact may occur.
- **Technical Opinion Dated:** August 28, 2013

**Lab/Cor**  
Materials, LLC

**TECHNICAL OPINION**  
For

Blue Seal Inc.

Surface-Resistant Resins and  
Polymeric Coatings

FDA Food Contact Compliance  
August 28, 2013

**CONCLUSION**

Based on the information provided and our review of the applicable FDA regulations, it is our opinion that the Blue Seal surface-resistant resins and polymeric coatings are compliant with FDA regulations for use on food contact surfaces (where applicable).

[Signature]  
Lab/Cor Materials, LLC



**NSF / ANSI 61**

Potable Water Testing  
Report ID 13.100

**NSF / ANSI 61 – POTABLE WATER SYSTEM COMPONENTS**

- **Standard:** NSF/ANSI 61- Drinking Water System Components – Health Effects
- **Test Type:** Leaching of Chemicals / Metals from Topcoat
- **Result:** No detectable leaching of chemicals or metals from Blue Seal Topcoat.
- **Report ID:** 13.100
- Ensures safety for potable water applications.

**NSF International**

**NSF/ANSI 61**  
Drinking Water System Components  
– Health Effects –

**TEST REPORT**

Report ID: 13.100

Blue Seal Top Coat

**SUMMARY OF RESULTS**

Leaching of Chemical and Metals  
from Topcoat

**RESULT:**

**No Detectable Leaching  
of Chemicals or Metals  
from Topcoat**



**HEAVY METALS  
ANALYSIS**

Test Reports  
(Intertek)

**HEAVY METALS ANALYSIS**

- **Tested by:** Intertek Testing Services
- Analysis performed on Blue Seal Top Coat
- **Results:** All heavy metals tested were below detectable limits.
- Ensures compliance with environmental and safety requirements.

**intertek**

Analysis of Heavy Metals Content  
in Paint Sample

| Element       | Detected |
|---------------|----------|
| Lead (Pb)     | < 2 ppm  |
| Cadmium (Cd)  | < 2 ppm  |
| Mercury (Hg)  | < 2 ppm  |
| Chromium (Cr) | < 2 ppm  |
| Arsenic (As)  | < 2 ppm  |
| Berium (Ba)   | < 2 ppm  |
| Antimony (Sb) | < 2 ppm  |
| Selenium (Se) | < 2 ppm  |

\* ppm = parts per million

**RESULT:**

**All Heavy Metals  
Below Detectable Limits**



Tested by  
Intertek Testing Services



All certifications and test reports are available upon request. Full copies can be provided for project approval and compliance documentation.



MARINE



OFFSHORE



OIL & GAS



BRIDGES



WATER



WIND

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4 | VERIFIED PERFORMANCE SUMMARY

(Compiled from Third-Party Test Reports)

All performance data on this page is compiled from independent third-party laboratory test reports. These results verify the exceptional mechanical, chemical and protective properties of Blue Seal coatings.

MECHANICAL & PHYSICAL PROPERTIES (From Intertek Test Reports)

|                                                                                                           | TEST STANDARD | PROPERTY                     | RESULT                   | REPORT REFERENCE            |
|-----------------------------------------------------------------------------------------------------------|---------------|------------------------------|--------------------------|-----------------------------|
|  Hardness (Durometer)     | ASTM D2240-05 | Durometer Hardness (Shore D) | 87                       | Intertek Report P20100407   |
|  Flexural Properties     | ASTM D790-07  | Flexural Strength (MPa)      | 82.2                     | Intertek Report P20100407   |
|                                                                                                           |               | Flexural Modulus (MPa)       | 2,598                    |                             |
|  Dielectric Strength    | ASTM D149-09  | Dielectric Strength (kV/mm)  | 34.7                     | Intertek Report P20100407-2 |
|  Dielectric Constant    | ASTM D150-98  | Dielectric Constant (60 Hz)  | 3.6                      | Intertek Report P20100407-2 |
|  Dielectric Resistivity | ASTM D149-09  | Volume Resistivity (ohm·cm)  | 1.6 x 10 <sup>14</sup>   | Intertek Report P20100407-2 |
|  Adhesion Strength      | ASTM D4541    | Adhesion Strength (MPa)      | > 8.0 (concrete failure) | Intertek Report P20100407   |

intertek

Total Quality. Assured.

Test Report

REPORT NUMBER:  
P20100407

CLIENT:  
Blue Seal Inc.

DATE:  
April 12, 2010

KEY BENEFITS (Verified by Testing)

- ✓ Excellent mechanical strength and durability
- ✓ High resistance to impact, abrasion and flexing
- ✓ High dielectric performance for insulation applications
- ✓ Strong adhesion to concrete and metal substrates

Reports: P20100407 / P20100407-2 and others | Tested by Intertek Testing Services NA, Inc.

CHEMICAL & CORROSION RESISTANCE (From Intertek Test Reports)

|                                                                                                          | TEST METHOD                | CONDITION                             | RESULT                                   | REFERENCE                                |
|----------------------------------------------------------------------------------------------------------|----------------------------|---------------------------------------|------------------------------------------|------------------------------------------|
|  Chemical Resistance   | Various (See Test Reports) | Acids, Alkalis, Salts, Solvents, Oils | No adverse effect (excellent resistance) | Intertek Reports P20100407 / P20100407-2 |
|  Salt Spray Resistance | Various (See Test Reports) | Salt Spray Exposure                   | No blistering, rusting or delamination   | Intertek Report P20100407                |
|  Water Absorption      | ASTM D570                  | 7 Days Immersion                      | 0.35 %                                   | Intertek Report P20100407-2              |

OUTSTANDING PROTECTION VERIFIED



Corrosion Protection



Chemical Resistance



Moisture Barrier



UV & Weather Durability



Abrasion Resistance



Long-Term Performance

TESTED IN REAL-WORLD ENVIRONMENTS (Applications Verified Through Field Use and Testing)



Offshore & Marine Structures



Oil & Gas Storage Tanks



Water & Wastewater Facilities



Bridges & Civil Infrastructure



Wind Energy Structures



All performance claims are based on results from accredited third-party laboratories. Complete test reports are available upon request for project approval and compliance documentation.



MARINE



OFFSHORE



OIL & GAS



BRIDGES



WATER



WIND

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**5 | REGULATORY COMPLIANCE & ADDITIONAL TESTING** (Compiled from Third-Party Test Reports)

Blue Seal coatings have been evaluated for regulatory compliance, environmental safety and additional performance characteristics by independent laboratories. The results below are summarized from official test reports.

**POTABLE WATER SYSTEM COMPONENTS – NSF / ANSI 61**



**NSF International**  
**NSF / ANSI 61**

Drinking Water System  
Components – Health  
Effects

Report ID 13.100

- **Standard:** NSF / ANSI 61 – Drinking Water System Components – Health Effects
- **Test Type:** Leaching of Chemicals / Metals from Topcoat
- **Result:** No detectable leaching of chemicals or metals from Blue Seal Topcoat.
- **Conclusion:** Blue Seal coating is safe for use in potable water applications.
- **Report ID:** 13.100
- **Tested by:** NSF International

**NSF International**

NSF/ANSI 61  
Drinking Water System Components  
– Health Effects –

**TEST REPORT**

Report ID: 13.100

Blue Seal Top Coat

**SUMMARY OF RESULTS**

Leaching of Chemical and Metals  
from Topcoat

**RESULT:**

No Detectable Leaching  
of Chemicals or Metals  
from Topcoat

Tested by  
NSF International

**HEAVY METALS ANALYSIS (Intertek)**

- **Tested by:** Intertek Testing Services
- **Analysis performed on** Blue Seal Top Coat
- **Results:** All heavy metals tested were below detectable limits.
- **Method:** ICP / Atomic Absorption Spectroscopy
- **Ensures compliance with environmental and safety requirements.**

**intertek**

Analysis of Heavy Metals Content  
in Paint Sample

| Element       | Result (ppm) |
|---------------|--------------|
| Lead (Pb)     | < 2 ppm      |
| Cadmium (Cd)  | < 2 ppm      |
| Mercury (Hg)  | < 2 ppm      |
| Chromium (Cr) | < 2 ppm      |
| Arsenic (As)  | < 2 ppm      |
| Barium (Ba)   | < 2 ppm      |
| Antimony (Sb) | < 2 ppm      |
| Selenium (Se) | < 2 ppm      |

\* ppm = parts per million

**RESULT:**

All Heavy Metals  
Below Detectable Limits



Tested by  
Intertek Testing Services

**FDA FOOD CONTACT COMPLIANCE (Lab/Cor)**



FDA Technical Opinion  
Dated Aug 28, 2013

- **Review of** Blue Seal surface-resistant resins and polymeric coatings.
- **Conclusion:** The coatings are compliant with FDA regulations for food contact surfaces.
- **Suitable for use in environments where incidental food contact may occur.**
- **Technical Opinion Dated:** August 28, 2013

**Lab/Cor**

Marietta, LLC

**TECHNICAL OPINION**

For  
Blue Seal Inc.  
Surface-Resistant Resins and  
Polymeric Coatings  
FDA Food Contact Compliance

August 28, 2013

**CONCLUSION**

Based on the information provided and our review of the applicable FDA regulations, it is our opinion that the Blue Seal surface-resistant resins and polymeric coatings are compliant with FDA regulations for use on food contact surfaces (where applicable).

*Long Pender*  
Lab/Cor Materials, LLC

**ENVIRONMENTAL & SAFETY COMPLIANCE**



**Low VOC  
Formulation**

Low Volatile Organic Compounds help reduce environmental impact and support sustainable operations.



**Environmental  
Responsibility**

Formulated to meet environmental regulations for industrial and infrastructure applications.



**Worker Safety  
Consideration**

Manufactured with safety in mind; refer to SDS for handling, storage and PPE requirements.



**SDS Available**

Safety Data Sheets (SDS) are available for all Blue Seal coating products.

**MARINE – FIRE TESTING (Exova)**



**IMO MSC.215(82)  
Annex 1**

Coating Qualification  
Report N953185

- **Standard:** IMO Resolution MSC.215(82) Annex 1
- **Test Type:** Performance Standard for Protective Coatings for Dedicated Seawater Ballast Tanks
- **Result:** Blue Seal coating system is assessed and found compliant with the performance requirements.
- **Issued by:** Exova Warringtonfire
- **Report No.:** N953185
- **Date:** October 12, 2016

warringtonfire



**TEST REPORT**

IMO RESOLUTION MSC.215(82) ANNEX 1  
PERFORMANCE STANDARD FOR PROTECTIVE COATINGS  
FOR DEDICATED SEAWATER BALLAST TANKS

**TEST REPORT**

N953185

Blue Seal Inc.

Issue date: October 12, 2016

**Exova**

WARRINGTONFIRE

**ADDITIONAL TESTING SUMMARY (From Intertek Test Reports)**



**Abrasion Resistance  
(ASTM D4060)**

Excellent abrasion resistance for long-term protection in highly demanding environments.



**Impact Resistance  
(ASTM D2794)**

High resistance to impact, ensuring durability against mechanical stress.



**Mandrel Bend  
(ASTM D522)**

No cracking or loss of adhesion after bending, indicating excellent flexibility.



**Humidity Resistance  
(ASTM D2247)**

Coating shows no blistering, cracking or delamination after humidity exposure.



**Cross Hatch Adhesion  
(ASTM D3359)**

Excellent adhesion to properly prepared steel and concrete substrates.

**intertek  
Test Report**

REPORT NUMBER:  
P201000407

CLIENT:  
Blue Seal Inc.

SAMPLE DESCRIPTION:  
Blue Seal Top Coat

TEST: Abrasion Resistance  
(ASTM D4060)

**RESULT:**  
Weight Loss: 58 mg  
(CS-17 Wheels, 1000 cycles)

DATE:  
April 12, 2010

**intertek  
Test Report**

REPORT NUMBER:  
P201000407-2

CLIENT:  
Blue Seal Inc.

SAMPLE DESCRIPTION:  
Blue Seal Top Coat

TEST: Impact Resistance  
(ASTM D2794)

**RESULT:**  
160 in-lb (Direct Impact)  
No cracking or delamination

DATE:  
April 12, 2010

**intertek  
Test Report**

REPORT NUMBER:  
P201000407-2

CLIENT:  
Blue Seal Inc.

SAMPLE DESCRIPTION:  
Blue Seal Top Coat

TEST: Mandrel Bend (ASTM D522)

**RESULT: PASS**  
No cracking / No blistering /  
Excellent adhesion (5B)

DATE:  
April 12, 2010



**Verified Performance. Proven Compliance.**

All certifications and test reports are available upon request for project approval and compliance documentation.



MARINE



OFFSHORE



OIL & GAS



BRIDGES



WATER



WIND

**VERTEXCO LTD**

**www.vertexcoltd.com**

6 | TRUSTED PERFORMANCE. WORLDWIDE PROTECTION.

Backed by independent third-party testing and recognized international standards, Blue Seal coatings deliver proven, long-term protection in the most demanding environments.

**Tested. Verified. Trusted.**

3RD PARTY TESTING & COMPLIANCE SUMMARY



INDEPENDENT LABORATORY TESTING

- Intertek Test Reports (Multiple ASTM Standards)
- Exova IMO MSC.215(82) Marine Qualification
- NSF / ANSI 61 Potable Water Testing
- Heavy Metals Analysis (Intertek)



REGULATORY COMPLIANCE

- FDA Food Contact Compliance (Lab/Cor)
- NSF / ANSI 61 – Drinking Water System Components
- Low VOC Formulation
- Environmental Responsibility



PERFORMANCE VERIFIED

- Excellent mechanical, chemical and adhesion properties
- Corrosion, abrasion, chemical and moisture resistance
- Long-term durability in harsh environments



DOCUMENTATION AVAILABLE

- Full test reports and certificates available
- Technical Data Sheets (TDS) & Safety Data Sheets (SDS)
- Support for project approval and compliance

KEY STANDARDS & REFERENCES



**ASTM INTERNATIONAL**  
ASTM D2240, D790, D149, D150, D4541 and other applicable standards



**IMO**  
IMO Resolution MSC.215(82) Annex 1 Marine Coating Qualification



**NSF / ANSI 61**  
Drinking Water System Components – Health Effects



**PDA**  
Food Contact Compliance – Resinous and Polymeric Coatings



**INTERTEK**  
Third-Party Test Reports (Mechanical, Electrical, Chemical, etc.)



**LAB/COR MATERIALS, LLC**  
FDA Technical Opinion  
Dated Aug 28, 2013

PROVEN IN A WIDE RANGE OF GLOBAL INDUSTRIES



OIL & GAS

Storage tanks, piping, secondary containment, and offshore structures protected from corrosion and chemicals.



WATER & WASTEWATER

Tanks, clarifiers, pipes and structures in water treatment facilities for long-term corrosion resistance.



BRIDGES & INFRASTRUCTURE

Steel and concrete structures protected from corrosion, abrasion and environmental exposure.



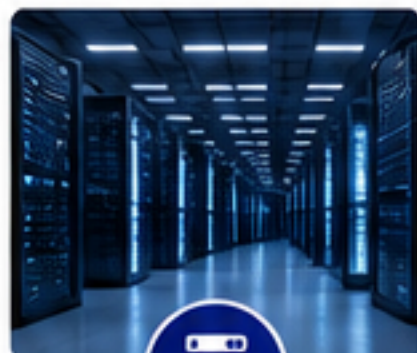
MARINE & OFFSHORE

Ballast tanks, decks and marine structures with high-performance anti-corrosion protection.



WIND ENERGY

Offshore wind turbine foundations and structures protected against harsh marine environments.



DATA CENTERS & INDUSTRIAL FACILITIES

Concrete floors, walls and infrastructure protected for durability, cleanliness and safety.

Driven by Innovation. Proven by Testing.  
Trusted for a Safer, Stronger Future.

Blue Seal Protection. Performance You Can Trust.



MARINE



OFFSHORE



OIL & GAS



BRIDGES



BRIDGES



WATER



WIND

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