



NEPCOAT Qualified Products List A

for Protective Coatings for
NEW and 100% BARE EXISTING Steel for Bridges

NTPEP System No.	Coats	Slip Coef	Manuf'r Coating Class	VOC Tested g/L	QPL Accepted Dates
	3-COAT SYSTEM				
	TESTED AND ACCEPTED				

NEPCOAT LIST A - INORGANIC Zinc Rich Primer / Epoxy or Urethane Intermediate / Aliphatic Urethane Finish

SSC(09)-01*	SHERWIN WILLIAMS COMPANY				from	
	Primer Zinc Clad® DOT Inorganic Zinc Rich Primer	B ¹	2-4	50-100	336	11/09/2010
	Interm Steel Spec Epoxy Intermediate		3-6	75-150	301	until mtg.
	Topcoat High Solids Polyurethane		3-5	75-125	281	fall 2014
	¹ Footnote 4 mils max DFT, 48 hours min cure, 4% max thinner					
SSC(10)-02*	INTERNATIONAL PAINT INC					from
	Primer Interzinc® 22 HS Inorganic Zinc Rich	B ¹	2.5-3	62-75	324	12/14/2011
	Interm Intergard 475HS Epoxy		4-8	100-200	200	until mtg.
	Topcoat Interthane® 870 UHS		3-5	75-125	232 es	fall 2015
	¹ Footnote 5 mils max DFT, 24 hours min cure, zero thinner					
SSC(12)-03*	CARBOLINE COMPANY					from
	Primer Carbozinc® 11 HS Inorganic Zinc Primer	B ¹	2-6	50-150	267	04/14/14
	Interm Carboguard® 893 Epoxy Intermediate		3-6	75-150	198	until mtg.
	Topcoat Carbothane 133 LV Aliphatic Polyurethane		3-5	75-125	245	spring 2018
	¹ Footnote 6 mils max DFT, 19 hrs min cure, 12% max thinner					

¹ Footnote Information from the Slip-Coefficient and Creep Resistance Test Certificate is given for use w/ primed bolted connections.

- NOTE 1** NEPCOAT- NORTHEAST PROTECTIVE COATINGS COMMITTEE of CT, DE, ME, MA, NH, NJ, NY, PA, RI, VT
- 2 NTPEP (Nat'l Transport'n Product Evaluat'n Program). See Structural Steel Coating test data at <http://data.ntpep.org>.
 - 3 Accelerated lab and field testing of coating systems is performed according to AASHTO NTPEP R-31 criteria.
 - 4 Systems are accepted for use on NEW and 100% BARE EXISTING steel for bridges cleaned by abrasive blasting.
 - 5 SSC(yr)-xx systems comply with AASHTO R-31 Evaluation Practice & NEPCOAT Acceptance Criteria.
 - 6 VOC values are lab test results using unthinned samples. NEPCOAT max VOC limit is 420 g/L (3.5 lb/gal). Individual state requirements for VOC limits may differ.
 - 7 Recommended DFT values are listed by manufacturer (see Product Data Sheets.)
 - 8 Any change in coating formulation from that tested will result in removal of the system from the QPL.
 - 9 The full QPL term is seven years starting from the date of acceptance until the next biannual NEPCOAT meeting.
- * Acceptance is **CONDITIONAL** pending submission within four years of successful 2-year field history. A startup list of five bridges painted with the paint system must be submitted within two years. See Acceptance Criteria.
- Note that R-31-09 Section 12.1, Requalification Testing, has been discontinued.
- es VOC value adjusted for exempt solvents



NEPCOAT Qualified Products List B

for Protective Coatings for
NEW and 100% BARE EXISTING Steel for Bridges

NTPEP System No.	Coats	Slip Coef Class	Manuf'r Coating DFT (min/max) mil	VOC Tested g/L	QPL Accepted Dates
3-COAT SYSTEM					
TESTED AND ACCEPTED					
NEPCOAT LIST B - ORGANIC Zinc Rich Primer / Epoxy or Urethane Intermediate / Aliphatic Urethane Finish					
SSC(10)-03*	PPG/AMERON				from
	Primer Amercoat® 68HS Zinc Rich Epoxy Primer	B ¹	3-5 75-125	276	12/14/2011
	Interm Amercoat® 399 Fast Drying Epoxy		4-8 100-200	177	until mtg.
	Topcoat Amercoat® 450H Gloss Aliphatic Polyurethane		2-5 50-125	306	fall 2015
	¹ Footnote 3 mils max DFT, 7 days min cure, 3% vol max thin				
SSC(04)-02	CARBOLINE COMPANY				from 11/17/05
SSC(10)-04	Primer Carbozinc® 859 Organic Zinc Rich Epoxy Primer	B ¹	3-10 75-250	327	until mtg
	Interm Carboguard® 888 Epoxy Polyamide		3-8 75-200	320	fall 2015
	Topcoat Carbothane 133 LH Aliphatic Polyurethane		3-6 75-150	311	(passed requalific'n as SSC 10-04)
	¹ Footnote 6 mils max DFT, 4 days min cure, 10% vol max thin				
SSC(10)-05*	WASSER HIGH TECH COATINGS				from
	Primer MC-Zinc 100	Ø	3-5 75-125	115 es	4/03/12
	Interm MC-Miomastic 100	no	3-5 75-125	173 es	until mtg.
	Topcoat MC-Ferrox A 100	report	2-4 50-100	144 es	spring 2016
	ØFootnote No data reported.				
SSC(11)-01*	SHERWIN WILLIAMS COMPANY				from
	Primer Zinc Clad® III HS Organic Zinc Rich Epoxy Primer	A ¹	3-5 75-125	337	10/02/12
	Interm Steel Spec Epoxy Intermediate		3-8 75-200	293	until mtg.
	Topcoat Hi-Solids Polyurethane		3-5 75-125	288	fall 2016
	¹ Footnote 3 mils max DFT, 7 days min cure, zero thinner				
(continues)	(List B continues)				

¹Footnote Information from the Slip-Coefficient and Creep Resistance Test Certificate is given for use w/ primed bolted connections.

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7 Recommended DFT values are listed by manufacturer (see Product Data Sheets.)

8 Any change in coating formulation from that tested will result in removal of the system from the QPL.

9 The full QPL term is seven years starting from the date of acceptance until the next biannual NEPCOAT meeting.

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Note that R-31-09 Section 12.1, Requalification Testing, has been discontinued.

es VOC value adjusted for exempt solvents



NEPCOAT Qualified Products List B

for Protective Coatings for
NEW and 100% BARE EXISTING Steel for Bridges

NTPEP System No.	Coats	Slip Coef Class	Manuf'r Coating	VOC Tested g/L	QPL Accepted Dates
	3-COAT SYSTEM				
	TESTED AND ACCEPTED				

NEPCOAT LIST B - ORGANIC Zinc Rich Primer / Epoxy or Urethane Intermediate / Aliphatic Urethane Finish

SSC(11)-02*	INTERNATIONAL PAINT INC				from
	Primer Interzinc® 315B Epoxy Zinc Rich	B ¹	2-6	50-150	304
	Interm Intergard 475HS Epoxy		4-8	100-200	187
	Topcoat Interthane® 870 UHS		3-5	75-125	242 es
	¹ Footnote 4 mils max DFT, 48 hours min cure, zero thinner				
SSC(04)-03	SHERWIN WILLIAMS COMPANY				from
SSC(11)-03	Primer Zinc Clad® III HS Organic Zinc Rich Epoxy Primer	A ¹	3-5	75-125	329
	Interm Macropoxy® 646 Fast Cure Epoxy		3-10	75-250	238
	Topcoat Acrolon™ 218 HS Acrylic Polyurethane		3-6	75-150	263
	¹ Footnote 3 mils max DFT, 7 days min cure, zero thinner				
SSC(12)-04*	CARBOLINE COMPANY				from
	Primer Carbozinc® 859 Organic Zinc Rich Epoxy Primer	B ¹	3-10	75-250	322
	Interm Carboguard® 893 Epoxy Intermediate		3-6	75-150	207
	Topcoat Carbothane 133 VOC Aliphatic Polyurethane		3-5	76-127	185 es
	¹ Footnote 6 mils max DFT, 4 days min cure, 10% vol max thin				

¹ Footnote Information from the Slip-Coefficient and Creep Resistance Test Certificate is given for use w/ primed bolted connections.

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es VOC value adjusted for exempt solvents



NEPCOAT Qualified Products List C

for Protective Coatings for
NEW and 100% BARE EXISTING Steel for Bridges

NTPEP System No.	Coats	Slip Coef Class	Manuf'r Coating	VOC Tested g/L	QPL Accepted Dates
	2-COAT SYSTEM				
	TESTED AND ACCEPTED				

NEPCOAT LIST C - ORGANIC Zinc Rich Primer / ----- / Topcoat

SSC(12)-05	SHERWIN WILLIAMS COMPANY				from
Primer	Zinc Clad III HS (OAP)*	A ¹	3-5	75-125	309
Interm	---		--	--	--
Topcoat	Envirolastic 980 PA Polyaspartic Urethane		6-9	150-225	280
¹ Footnote 4 mils max DFT, 14 days min cure, zero thinner *Optically Active Pigment					
					11/15/13 until mtg fall 2017

¹ Footnote Information from the Slip-Coefficient and Creep Resistance Test Certificate is given for use w/ primed bolted connections.

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4 Systems are accepted for use on NEW and 100% BARE EXISTING steel for bridges cleaned by abrasive blasting.

5 SSC(yr)-xx systems comply with AASHTO R-31 Evaluation Practice & NEPCOAT Acceptance Criteria.

6 VOC values are lab test results using unthinned samples. NEPCOAT max VOC limit is 420 g/L (3.5 lb/gal). Individual state requirements for VOC limits may differ.

7 Recommended DFT values are listed by manufacturer (see Product Data Sheets.)

8 Any change in coating formulation from that tested will result in removal of the system from the QPL.

9 The full QPL term is seven years starting from the date of acceptance until the next biannual NEPCOAT meeting.

* Acceptance is CONDITIONAL pending submission within four years of successful 2-year field history. A startup list of five bridges painted with the paint system must be submitted within two years. See Acceptance Criteria.

Note that R-31-09 Section 12.1, Requalification Testing, has been discontinued.

es VOC value adjusted for exempt solvents



NEPCOAT Qualified Products List D

for Protective Coatings for
NEW and 100% BARE EXISTING Steel for Bridges

NTPEP		Slip	Manuf'r Coating	VOC	QPL
System	2-COAT SYSTEM	Coef	DFT (min/max)	Tested	Accepted
No. Coats	TESTED AND ACCEPTED	Class	mil micron	g/L	Dates

NEPCOAT LIST **D** - INORGANIC Zinc Rich Primer / ----- / Topcoat

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¹ Footnote Information from the Slip-Coefficient and Creep Resistance Test Certificate is given for use w/ primed bolted connections.

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2 NTPEP (Nat'l Transport'n Product Evaluat'n Program). See Structural Steel Coating test data at <http://data.ntpep.org>.

3 Accelerated lab and field testing of coating systems is performed according to AASHTO NTPEP R-31 criteria.

4 Systems are accepted for use on NEW and 100% BARE EXISTING steel for bridges cleaned by abrasive blasting.

5 SSC(yr)-xx systems comply with AASHTO R-31 Evaluation Practice & NEPCOAT Acceptance Criteria.

6 VOC values are lab test results using unthinned samples. NEPCOAT max VOC limit is 420 g/L (3.5 lb/gal). Individual state requirements for VOC limits may differ.

7 Recommended DFT values are listed by manufacturer (see Product Data Sheets.)

8 Any change in coating formulation from that tested will result in removal of the system from the QPL.

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* Acceptance is CONDITIONAL pending submission within four years of successful 2-year field history. A startup list of five bridges painted with the paint system must be submitted within two years. See Acceptance Criteria.

Note that R-31-09 Section 12.1, Requalification Testing, has been discontinued.

es VOC value adjusted for exempt solvents



NEPCOAT Acceptance Criteria List A, B, C, D

for Protective Coatings for
NEW and 100% BARE EXISTING Steel for Bridges

AASHTO R31-Testing Standard & NEPCOAT Acceptance Criteria (3/16/04, 2/15/05, 10/16/08, 4/7/09, 10/12/11)

TEST NO. 1 - SLIP COEFFICIENT

<u>Primer</u>	(min.)
IOZ	Acceptance criteria: Required to have Class B Slip coefficient min. 0.5
OZ	Acceptance criteria: None. Report results only. Class B Slip Co. recommended but not required.

TEST NO. 2 - SALT FOG RESISTANCE (ASTM B117)

Delamination	Acceptance criteria: no delamination allowed
Rust / Blistering	Acceptance criteria (max.):

//----- RUST CRITERIA -----//							-- BLISTER CRITERIA--	
<u>Primer</u>	<u>System</u>	<u>@ Hrs</u>	<u>max creep</u>	<u>ave creep</u>	<u>% length</u>	<u>in scribe</u>	<u>@ Hrs</u>	<u>Convers'n #</u>
IOZ	P-I-T	5000	4 mm	2 mm	not req'd	not req'd	4000	8
OZ	P-I-T	5000	8 mm	4 mm	not req'd	not req'd	4000	7

TEST NO. 3 - CYCLIC WEATHERING RESISTANCE (ASTM D5894)

Delamination	Acceptance criteria: no delamination allowed
Rust / Blistering	Acceptance criteria (max.):

//----- RUST CRITERIA -----//							-- BLISTER CRITERIA--	
<u>Primer</u>	<u>System</u>	<u>@ Hrs</u>	<u>max creep</u>	<u>ave creep</u>	<u>% length</u>	<u>in scribe</u>	<u>@ Hrs</u>	<u>Convers'n #</u>
IOZ	P-I-T	5040	4 mm	2 mm	not req'd	not req'd	4032	9
OZ	P-I-T	5040	8 mm	4 mm	not req'd	not req'd	4032	8

GLOSS value	Acceptance criteria: Report results only
GLOSS % Retent'n	Acceptance criteria: Report results only
COLOR Change, Δe	Acceptance criteria: Report results only

TEST NO. 4 - ABRASION RESISTANCE (ASTM D4060)

Weight Loss	Acceptance criteria: Test discontinued
Wear Index	Acceptance criteria: Test discontinued

TEST NO. 5 - ADHESION (ASTM D4541)

Pull-Off Strength	Acceptance criteria (min.) for both primer and PIT panels:
IOZ	2.4 MPa (350 psi)
OZ	4.1 MPa (600 psi)

TEST NO. 6 - FREEZE THAW STABILITY

Pull-Off Strength	Acceptance criteria: achieve min. Test 5 req'd PIT adhesion results and fall within 60% of Test 5 values
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TEST NO. 7 - COATING IDENTIFICATION TESTS

VOC	Acceptance criteria: Max. 420 g/L (3.5 lb/gal). Individual state requirements may differ.
Coating properties	Acceptance criteria: Report only
Coating thickness	Acceptance criteria: A 2-coat system shall be tested and applied at min. total 9 mils DFT.

(continued)



NEPCOAT Acceptance Criteria List A, B, C, D

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AASHTO R31-09 Testing Standard & NEPCOAT Acceptance Criteria (3/16/04, 2/15/05, 10/16/08, 4/7/09, 10/12/11)

TEST NO. 8 - ATMOSPHERIC EXPOSURE (TWO YEAR) at ocean beach site

Acceptance criteria: To be determined / Report results

ITEM NO. 9 - FIELD HISTORY (TWO YEAR)

Acceptance criteria: (All systems after SSC 06-05) The coating manufacturer must submit two notifications;

- (1) a startup list within two years of product acceptance identifying five bridges (in a cold/wet climatic region) which have been coated with a minimum of 400 liters (100 gallons) of the coating system (i.e. total volume of primer, intermediate and topcoat); and
- (2) the same list of bridges within four years of product acceptance after the system has two years (min.) of successful field performance. "Successful performance" is simply defined as whether the Owner is satisfied with its application and performance to date, and whether the Owner would recommend the use of the coating again.

PRODUCT VERIFICATION TESTING

AASHTO R-31-09 Appendix X1 recommends that the Owner perform product verification testing for determining if the coatings supplied to a project are the same quality as the manufacturer's materials originally tested and certified for acceptance.

The R-31-09 Test 7- Coating Identification Tests are described in Sect. 9.7 and Appendix X1, and the lab test results are given in NTPEP DataMine (<http://data.ntpep.org>) along with the manufacturer's listed values.

When the Owner performs verification testing, the following tolerances apply:

<u>Verification Test</u>	<u>R-31-09 Section</u>	<u>R-31-09 App X1</u>	<u>ASTM Test</u>	<u>DataMine Test 7</u>	<u>Tolerance *</u>
Total solids (% by mass)	9.7.9.1	X1.1.1.6	D 2369	Line 2	± 5 %
Pigment (% by mass)	9.7.9.5	X1.1.1.8	D 2371	" 3	± 5 %
Mass per volume (g/L)	9.7.9.8	X1.1.1.5	D 1475	" 6	± 2 %
Viscosity (Stormer)	9.7.9.9	X1.1.1.4	D 562	" 7	± 8 %

* The tolerance is applied to the DATAMINE "test result" value (not the manufacturer's "listed value").

These tolerances apply to the primer and intermediate coats each in their mixed condition (not Part A, Part B components). For topcoats, if the color is different from the original color in NTPEP testing, then these tolerances apply to the Owner's verification test values the first time a particular color is used.

MATERIALS

NEPCOAT does not accept waterborne acrylic coatings for the QPL for use in the Northeast States.