Mtg/Effective Date: 6/5/96, 9/4/96, 1/8/97, 7/22/97, 5/20/98, 3/3/99, 9/22/99, 3/30/00, 11/8/00, 3/28/01, 5/14/01, 11/20/01, 11/29/01, 4/24/02, 2/24/03, 4/17/03, 3/16/04, 2/15/05, 4/19/05 R1, 11/17/05 R1, 10/5/06 R1, 06/21/07, 10/16/08, 4/7/09 R1, 10/7/09 R1, 11/09/10, 01/25/11, 4/5/11 R2, 12/14/11, 4/3/12, 4/3/12 R1, 10/02/12, 10/02/12 R1, 4/16/13, 11/15/13 R1, 04/14/14 R1, 10/07/14, 4/7/15, 10/6/15 R2, 04/05/16, 10/04/16

NEPCOAT Qualified Products List A

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

NTPEP System No.	Coats	3-COAT SYSTEM TESTED AND ACCEPTED	Slip Coef Class	Manuf'r Coating DFT (min/max) mil	micron	VOC Tested g/L	QPL Accepted Dates
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 2017
	[1] Footnote	4 mils max DFT, 48 hours min cure, 4% max 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 <u>seven</u> years starting from the date of acceptance until the next biannual NEPCOAT meeting.

* Acceptance is CONDITIONAL pending submission within <u>four</u> 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

Mtg/Effective Date: 6/5/96, 9/4/96, 1/8/97, 7/22/97, 5/20/98, 3/3/99, 9/22/99, 3/30/00, 11/8/00, 3/28/01, 5/14/01, 11/20/01, 11/29/01, 4/24/02, 2/24/03, 4/17/03, 3/16/04, 2/15/05, 4/19/05 R1, 11/17/05 R1, 10/5/06 R1, 06/21/07, 10/16/08, 4/7/09 R1, 10/7/09 R1, 11/09/10, 01/25/11, 4/5/11 R2, 12/14/11, 4/3/12, 4/3/12 R1, 10/02/12, 10/02/12 R1, 4/16/13, 11/15/13 R1, 04/14/14 R1, 10/07/14, 4/7/15, 10/6/15 R2, 04/05/16, 10/04/16

NEPCOAT Qualified Products List B

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

NTPEP System No.	Coats	3-COAT SYSTEM TESTED AND ACCEPTED	Slip Coef Class	Manuf'r Coating DFT (min/max) mil	micron	VOC Tested g/L	QPL Accepted Dates
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 2018
	[1] Footnote	3 mils max DFT, 7 days min cure, 3% 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 2019
	Ø Footnote	No data reported.					
SSC(11)-01*		SHERWIN WILLIAMS COMPANY					from
	Primer	Zinc Clad® III HS Organic Zinc Rich Epoxy Primer	B [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	spring 2017
	[1] Footnote	5 mils max DFT, 7 days min cure, zero thinner					
SSC(11)-02*		INTERNATIONAL PAINT INC					from
	Primer	Interzinc® 315B Epoxy Zinc Rich	B [1]	2-6	50-150	304	10/02/12
	Interm	Intergard 475HS Epoxy		4-8	100-200	187	until mtg.
	Topcoat	Interthane® 870 UHS		3-5	75-125	242 es	Dec 4 2016
	[1] Footnote	4 mils max DFT, 48 hours min cure, zero thinner					
(continues)		(List B continues)					

[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

3-COAT SYSTEM

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

NTPEP System No.	Coats	TESTED AND ACCEPTED	Slip Coef Class	Manuf'r Coating DFT (min/max) mil	micron	VOC Tested g/L	QPL Accepted Dates
SSC(04)-03		SHERWIN WILLIAMS COMPANY					from
SSC(11)-03	Primer	Zinc Clad® III HS Organic Zinc Rich Epoxy Primer	B [1]	3-5	75-125	329	10/02/12
	Interm	Macropoxy® 646 Fast Cure Epoxy		3-10	75-250	238	until mtg.
	Topcoat	Acrolon™ 218 HS Acrylic Polyurethane		3-6	75-150	263	spring 2017
	[1] Footnote	5 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	04/14/14
	Interm	Carboguard® 893 Epoxy Intermediate		3-6	75-150	207	until mtg.
	Topcoat	Carbothane 133 VOC Aliphatic Polyurethane		3-5	76-127	185 es	spring 2018
	[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.
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 C

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

2-COAT SYSTEM

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

NTPEP System No.	Coats	TESTED AND ACCEPTED	Slip Coef Class	Manuf'r Coating DFT (min/max) mil	micron	VOC Tested g/L	QPL Accepted Dates
SSC(12)-05		SHERWIN WILLIAMS COMPANY					from
	Primer	Zinc Clad III HS (OAP)*	A [1]	3-5	75-125	309	11/15/13
	Interm	---		--	--	--	until mtg
	Topcoat	Envirolastic 980 PA Polyaspartic Urethane		6-9	150-225	280	fall 2017
	[1] Footnote	4 mils max DFT, 14 days min cure, zero thinner					
		*Optically Active Pigment					

[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 D

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

NTPEP System No.	Coats	2-COAT SYSTEM TESTED AND ACCEPTED	Slip Coef Class	Manuf'r Coating DFT (min/max) mil	micron	VOC Tested g/L	QPL Accepted Dates
NEPCOAT LIST **D** - INORGANIC Zinc Rich Primer / ----- / Topcoat							
		[Blank]					

[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 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)

*** * * PERFORM ALL REQUIRED TESTS FOR EACH COATING SYSTEM. * * ***

TEST NO. 1 - SLIP COEFFICIENT - Perform Slip Co test on the same primer batch used for the other tests.
- The Slip Co test results may be applied to more than one system provided all Primer samples come from the same container.

Primer	(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--	
Primer	System	@ Hrs	max creep	ave creep	% length	in scribe	@ Hrs	Convers'n #
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--	
Primer	System	@ Hrs	max creep	ave creep	% length	in scribe	@ Hrs	Convers'n #
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) – NOT REQUIRED

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

(continued)

NEPCOAT Acceptance Criteria List A, B, C, D

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

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. 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.

TEST NO. 8 - ATMOSPHERIC EXPOSURE (TWO YEAR) at outdoor site: – **NOT REQUIRED**
Acceptance criteria: Test discontinued

ITEM NO. 9 - FIELD HISTORY (TWO YEAR)
Acceptance criteria: (All systems after SSC 06-05) The coating manufacturer shall 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:

Verification Test	R-31-09 Section	R-31-09 App X1	ASTM Test	DataMine Test 7	Tolerance *
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.

Note 1. Test Criteria: Two of three panels must pass for each test to pass. (e.g. Tests 2, 3, 5, 6)
Note 2. Materials: NEPCOAT does not accept waterborne coatings for the QPL for use in the Northeast States.