Mtg/Effective Date: /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

NEPCOAT Qualified Products List A

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

3-COAT SYSTEM TESTED AND ACCEPTED

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

NTPEP System No.	Coats		Slip Coef Class	Manuf'r Coating DFT (min/max) mil	micron	VOC Tested g/L	QPL Accepted Dates
SSC(06)-05		CARBOLINE COMPANY					from
	Primer	Carbozinc® 11 HS Inorganic Zinc Primer	B [1]	2-6	50-150	323	06/21/07
	Interm	Carboguard® 893 Epoxy Intermediate		3-6	75-150	200	until mtg.
	Topcoat	Carbothane 133 LH Aliphatic Polyurethane		3-6	75-150	295	spring 2014
	[1] Footnote	6 mils max DFT, 18 hrs min cure, 15 oz/gal max thin					
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 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 NTPEP DataMine Test 7). Also check 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 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 TESTED AND ACCEPTED

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

NTPEP System No.	Coats		Slip Coef Class	Manuf'r Coating DFT (min/max) mil	micron	VOC Tested g/L	QPL Accepted Dates
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
	[1] Footnote	6 mils max DFT, 4 days min cure, 10% vol max thin					as SSC 10-04)
SSC(04)-03		SHERWIN WILLIAMS COMPANY					from
	Primer	Zinc Clad® III HS Organic Zinc Rich Epoxy Primer	B [1]	3-5	75-125	330	11/17/05
	Interm	Macropoxy® 646 Fast Cure Epoxy		3-10	75-250	191	until mtg.
	Topcoat	Acrolon™ 218 HS Acrylic Polyurethane		3-6	75-150	280	fall 2012
	[1] Footnote	5 mils max DFT, 7 days min cure, zero thinner					(in retesting)
SSC(06)-11*		CARBOLINE COMPANY					from
	Primer	Carbozinc® 859 Organic Zinc Rich Epoxy Primer	B [1]	3-10	75-250	327	4/7/09
	Interm	Carboguard® 893 Epoxy Polyamide		3-10	75-250	200	until mtg.
	Topcoat	Carbothane 133 LH Aliphatic Polyurethane		3-6	75-150	311	spring 2013
	[1] Footnote	6 mils max DFT, 4 days min cure, 10% vol max thin					
(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 NTPEP DataMine Test 7). Also check 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 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(07)-02*		INTERNATIONAL PAINT INC					from
	Primer	Interzinc® 315B Epoxy Zinc Rich	Ø	2-6	50-150	291	4/7/09
	Interm	Intergard 475HS Epoxy	(not	4-8	100-200	177	until mtg.
	Topcoat	Interthane® 870 UHS	tested)	3-5	75-125	171	spring 2013
	Ø Footnote	The test was not performed.					
SSC(08)-07*		CARBOLINE COMPANY					from
	Primer	Carbozinc® 859 PRIMER	Ø	3-10	75-250	331	10/07/09
	Interm	Carboguard® 825 Epoxy Polyamide	(not	3-10	75-250	305	until mtg.
	Topcoat	Carbothane 133 LH Aliphatic Polyurethane	tested)	3-6	75-150	317	fall 2013
	Ø Footnote	The test was not performed.					
SSC(10)-05*		WASSER HIGH TECH COATINGS					from
	Primer	MC-Zinc 100	Δ	3-5	75-125	115 es	4/03/12
	Interm	MC-Miomastic 100	(in	3-5	75-125	173 es	until mtg.
	Topcoat	MC-Ferrox A 100	testing)	2-4	50-100	144 es	spring 2016
	Δ Footnote	In Slip Coef. testing					

[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 NTPEP DataMine Test 7). Also check 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 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

TESTED AND ACCEPTED

NTPEP System No.	Coats	Slip Coef Class	Manuf'r Coating DFT (min/max) mil	micron	VOC Tested g/L	QPL Accepted Dates

NEPCOAT LIST **C** - ORGANIC 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 NTPEP DataMine Test 7). Also check 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 Section 12.1, Requalification Testing, has been discontinued.
es	VOC value adjusted for exempt solvents

NEPCOAT Acceptance Criteria List A, B, C

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

Primer	Acceptance criteria (min.)
IOZ	Slip coefficient 0.5 (Class B) required
OZ	Report results only

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)

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

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

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. 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 Appendix 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 Test 7- Coating Identification Tests are described in Sect. 9 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 Section	R-31 App X1	ASTM Test	DataMine Test 7	Tolerance *
Total solids (% by mass)	9.7.13.1	X1.1.1.1.6	D 2369	Line 2	**± 5 %**
Pigment (% by mass)	9.7.13.5	" 8	D 2371	" 3	**± 5 %**
Mass per volume (g/L)	9.7.13.8	" 5	D 1475	" 6	**± 2 %**
Viscosity (Stormer)	9.7.13.9	" 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.