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# Specification for Type Methyl Methacrylate Slurry (MMS ) Polymer Overlays for Bridge and Parking Garage Decks

An ACI Standard

*Reported by ACI Committee 548*

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33 *This Specification covers methyl methacrylate slurry (MMS) overlays for bridge and parking*  
 34 *garage decks. Type MMS polymer overlay incorporates methyl methacrylate-based primer, resin*  
 35 *filler slurry, and topcoat with selected filler and aggregate to produce a flexible, skid-resistant, and*  
 36 *low-permeability slurry overlay. The overlay is used for new construction or rehabilitation. This*  
 37 *Specification includes requirements for chemical components, filler, aggregates, storage and*  
 38 *handling, surface preparation, surface profile, mixing, placement, quality control, and quality*  
 39 *assurance.*

40 **Keywords:** *bridge decks; methyl methacrylate; parking garage decks; polymer overlay; surface*  
 41 *preparation; low permeability.*

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25

26 **Part 1—GENERAL**

27 **1.1—Scope**

28

29 **1.1.1** This Specification covers materials and procedures for installing a methyl methacrylate slurry  
30 (MMS) polymer overlay for new construction or rehabilitation of bridge and parking garage decks  
31 as indicated in Contract Documents.

32

1     **1.1.2** This Specification is incorporated by Contract Documents and provides product and  
2 installation requirements to contractors.

3  
4     **1.1.3** This Specification governs for construction within its scope, except project-specific  
5 Contract Documents govern if there is a conflict.

6  
7     **1.1.4** This Specification governs if there is a conflict with referenced material and testing  
8 standards.

9  
10    **1.1.5** Contractor is permitted to submit written alternatives to any provisions in this  
11 Specification for consideration by architect/engineer.

12  
13    **1.1.6** This Specification governs for MMA polymer overlay installation.

14  
15    **1.1.7** Ignore provisions of this Specification that are not applicable to the Work.

16  
17    **1.1.8** Values in this Specification are stated in inch-pound units. A companion specification in  
18 SI units is available.

19  
20    **1.1.9** The Notes to Specifiers are not part of this Specification.

21  
22    **1.2—Interpretation**

23  
24    **1.2.1** Unless otherwise explicitly stated, this Specification shall be interpreted using the following  
25 principles.

26  
27    **1.2.1.1** Interpret this Specification consistent with the plain meaning of the words and terms used.

28  
29    **1.2.1.2** Definitions provided in this Specification govern over the definitions of the same or  
30 similar words or terms found elsewhere.

31

1 **1.2.1.3** Whenever possible, interpret this Specification so that its provisions are in harmony and  
2 do not conflict.

3

4 **1.2.1.4** Headings are part of this Specification and are intended to identify the scope of the  
5 provision or sections that follow. If there is a difference in meaning or implication between the  
6 text of the provision and a heading, the meaning of the text governs.

7

8 **1.2.1.5** Footnotes are part of this Specification. The meaning of the provision text governs in the  
9 event of a difference in meaning or implication between the provision text and a footnote to that  
10 provision.

11

12 **1.2.1.6** Where a provision of this Specification involves two or more items, conditions, require-  
13 ments, or events connected by the conjunctions “and” or “or,” interpret the conjunction as fol-  
14 lows:

15 “and” indicates that all of the connected items, conditions, requirements, or events apply

16 “or” indicates that the connected items, conditions, requirements, or events apply singularly.

17

18 **1.2.1.7** The use of the verb “may” or “will” indicates that the Specification provision is for  
19 information to the Contractor.

20

21 **1.2.1.8** The phrase “as indicated in Contract Documents” means the specifier included the  
22 provision requirements in Contract Documents.

23

24 **1.2.1.9** The phrase “unless otherwise specified” means the specifier included an alternative to the  
25 default requirements in Contract Documents.

26

27 **1.2.1.10** The phrase “if specified” means the specifier may have included a requirement in  
28 Contract Documents for which there is no default requirements in this Specification.

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30 **1.2.1.11** Unless otherwise stated, the inch pound system of units is applicable to combined  
31 standards referenced in this Specification.

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### 1.3—Definitions

**accepted**—determined by Architect/Engineer to be in compliance with Contract Documents.

**Construction Documents**—written and graphic documents and specifications prepared or assembled for describing the location, design, materials, and physical characteristics of the element of a project necessary for obtaining a building permit and construction of the project.

**Contract Documents**—set of documents that form the basis of a contractual relationship between the Owner and Contractor or design-builder. These documents are defined by the contractual agreement, and can contain contract forms, contract conditions, specifications, drawings, addenda, and contract changes

**Architect/Engineer**— the architect, engineer, architectural firm, or engineering firm developing Contract Documents or administering Work under Contract Documents, or both.

**broadcast aggregate**—fine aggregate that is broadcast uniformly over a layer of uncured overlay slurry.

**Contract Documents**—set of documents that form the basis of a contractual relationship between and Owner and Contractor or design-builder; documents are defined by the contractual agreement, and can contain contract forms, contract conditions, specifications, drawings, addenda, and contract changes.

**Contractor**—the person, firm, or entity under contract for construction of Work.

**drawings**—graphic presentations that detail requirements for Work and may include written notes.

**gel time**—the time required to change a flowable liquid resin into a nonflowing gel

**inspection agency**—the person, firm, or entity under contract for providing inspection services.

**lot or batch**—volume of material produced and packaged at one time.

**methyl methacrylate**—solvent-free, cold-curing, two-component reactive methacrylate resin, cured through radical polymerization, which is initiated by dibenzoyl peroxide/amine-system or by other methods generating free radicals, such as ultraviolet radiation or heating.

**Owner**—the corporation, association, partnership, individual, public body, or authority for whom Work is constructed.

**Specifications**—the written document that details requirements for Work.

**submit**—provide to Architect/Engineer for review.

**submittal**—document and material provided to Architect/Engineer for review and acceptance.

1 **testing agency**—the person, firm, or entity under contract for providing testing services.

2 **Work**—the entire construction or separately identifiable parts required to be furnished under Contract  
3 Documents.

#### 5 **1.4—Reference standards**

6 Standards cited in this Specification are listed by name of standards-producing organization; and  
7 designation, including year and title.

##### 9 **1.4.1 ASTM International standards**

10 ASTM C139/C139M-19—Standard Test Method for Sieve Analysis of Fine and Coarse  
11 Aggregates.

12 ASTM C566-19—Standard Test Method for Total Evaporable Moisture Content of Aggregate  
13 by Drying

14 ASTM C881/C881M-20—Standard Specification for Epoxy-Resin-Base Bonding Systems for  
15 Concrete

16 ASTM C884/C884M-16—Standard Test Method for Thermal Compatibility Between Concrete  
17 and an Epoxy-Resin Overlay

18 ASTM C1583/C1583M-20—Standard Test Method for Tensile Strength of Concrete Surfaces and  
19 the Bond Strength or Tensile Strength of Concrete Repair and Overlay Materials by Direct  
20 Tension (Pull-off Method)

21 ASTM D570-98(2018)—Standard Test Method for Water Absorption of Plastics

22 ASTM D638-14—Standard Test Method for Tensile Properties of Plastics

23 ASTM D695-15—Standard Test Method for Compressive Properties of Rigid Plastics

24 ASTM D790-17—Standard Test Methods for Flexural Properties of Unreinforced and Reinforced  
25 Plastics and Electrical Insulating Materials

26 ASTM D1310-14 (2021)—Standard Test Method for Flash Point and Fire Point of Liquids by Tag  
27 Open-Cup Apparatus

28 ASTM D2556-14(2018)—Standard Test Method for Apparent Viscosity of Adhesives having  
29 Shear-Rate-Dependent Flow Properties using Rotational Viscometry

30 ASTM D4263-83(2018)—Standard Test Method for Indicating Moisture in Concrete by the Plastic  
31 Sheet Method



1 ASTM D4417-21—Standard Test Methods for Field Measurement of Surface Profile of Blast  
2 Cleaned Steel

### 3 **1.5—Submittals**

4 **1.5.1** Unless otherwise specified, submit manufacturer certificate of compliance and quality  
5 control test results verifying conformance with 2.1 for each lot or batch of methyl methacrylate  
6 primer, slurry resin, slurry filler, broadcast aggregate, and topcoat.

7 **1.5.2** Submit manufacturer material and product data. Unless otherwise specified, include the  
8 following information:

9 (a) Product technical data sheet

10 (b) Physical property test reports in conformance with Part 2 of the specification 5

11 (c) Installation instructions

12 (d) Product Safety Data Sheets (SDS)

13 **1.5.3** Submit Quality Control Plan for acceptance prior to Work. Quality Control Plan must be  
14 approved by Architect/Engineer prior to placing any overlay. Unless otherwise specified, include  
15 the following information:

16 (a) Key personnel and contact information

17 (b) Methyl methacrylate resin-filler slurry production plants and location of plants

18 (c) Aggregate production plants and location of plants

19 (d) Name of independent testing agency

20 (e) Applicable overlay material certificates of compliance and test results

21 (f) Cure time and time to open to traffic estimates for overlay as function of temperature

22 (g) Procedures for storage of materials

23 (h) Method for disposal and recycling of excess overlay materials and empty containers

24 (i) Name of the designated Quality Control Manager with authority to institute any action  
25 necessary for successful operation of Quality Control Plan.

### 26 **1.6—Delivery, storage, and handling**

27 **1.6.1** *Delivery of materials*—Use only primer, slurry resin, and topcoat delivered in sealed  
28 containers with labels legible, intact, and with following information.

- 1 (a) Name of manufacturer
- 2 (b) Manufacturer's product identification including lot/batch identifications.
- 3 (c) Warning for handling and toxicity
- 4 (d) Expiration date

5 **1.6.2 Storage of materials**—Unless otherwise specified by the manufacturer store primer, slurry  
6 resin, topcoat, filler, and aggregate in an area that is not in direct contact with water from the  
7 environment, at temperatures between 50 and 100°F. Store primer, slurry resin, and topcoat away  
8 from open flames and other sources of ignition.

9 **1.6.3 Handling of materials**—Handle all materials to avoid material contamination. Do not use  
10 contaminated materials.

### 11 **1.7—Surface preparation qualification**

12 **1.7.1 Equipment**—Utilize shot blaster with steel shot or grit abrasives to remove deteriorated  
13 concrete, grease, dirt, oil, and other contaminants that inhibit bond of overlay.

14 **1.7.2 Surface preparation qualification**—Use procedures in ~~(1.7.2.1 through 1.7.2.5 and 1.8.2)~~  
15 to determine that required adhesion of test overlay to substrate is obtained.

16 **1.7.2.1** As indicated in Contract Documents designate one test location to be evaluated for each  
17 span or 500 yd<sup>2</sup>, whichever is smaller, for bridges, and for each deck level or 500 yd<sup>2</sup>, whichever  
18 is smaller, for parking decks. Unless otherwise specified test locations will be designated for  
19 quality control to evaluate range of surface conditions on the area to be overlaid, including areas  
20 with previous deck repairs, if any.

21 **1.7.2.2** At each test location selected by Architect/Engineer, prepare surface area of 4 ft<sup>2</sup> using  
22 proposed equipment and procedures.

23 **1.7.2.3** Prepare substrate and apply test overlay to designated test locations. Surface preparation  
24 technique (size, flow of abrasive, forward speed, number of passes of blasting machine) shall be  
25 used that exposes coarse aggregate. Completely remove loose material for dust-free surface before  
26 application.

27 **1.7.2.4** Apply test overlays at test locations with proposed thickness materials, equipment,  
28 personnel, timing, sequence of operations, and curing period that will be used on the project.

29 **1.7.2.5** Test overlay bond strength in accordance with ASTM C1583/C1583M, modified in that  
30 tensile adhesion evaluation is performed at overlay surface temperatures less than or equal to 80°F.  
31 For concrete substrate, core drill through test overlay to depth of at least 0.5 in. into concrete deck.

1 For steel surfaces, core through test overlay to top of steel surface. Evaluate test result with an  
 2 average of three tests at each test location exceeding or equal to 250 psi.

3 **1.7.2.6** If average bond strength is less than 250 psi, modify surface preparation procedures and  
 4 repeat tests. If testing reported to the Architect/Engineer does not result in minimum average bond  
 5 strength of 250 psi, Architect/Engineer shall make decision on the placement of overlay.

## 6 **Part 2—PRODUCTS**

### 7 **2.1—Materials**

8 **2.1.1 Methyl methacrylate-based primer**—Comply with requirements in Tables 2.1.1a and 2.1.1b  
 9 for Methyl methacrylate-based primer. Maintain all testing components at 73°F ± 1°F for a  
 10 minimum of 24 hours before mixing and testing.

11

**Table 2.1.1a—Physical properties of mixed, uncured methyl methacrylate-based primer**

Property	Value	Test method
Viscosity	0.4 to 1.5 poise	ASTM D2556 (Spindle No. 3 at 20 rpm, Brookfield RVT)
Gel time at 73°F	10 to 30 minutes	ASTM C881/C881M (modified 2.4 oz) *
Flash point	greater than 40°F	ASTM D1310

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14

\*The specimen to determine gel time in the field is 2.4 oz. rather than 250 mL as required by ASTM C881/C881M.

**Table 2.1.1b—Physical properties of mixed, cured methyl methacrylate-based primer**

Property	Value	Test method
Tensile strength	2500 to 5000 psi	ASTM D638 (Type I)
Tensile elongation	less than 10 percent	ASTM D638 (Type I)
Water absorption	less than 1.0	ASTM D570

	percent	
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2 **2.1.2 Methyl methacrylate-based slurry resin**—Comply with requirements in Tables 2.1.2a and  
3 2.1.2b for methyl methacrylate-based slurry resin. Maintain all testing components at 73°F ± 1°F for  
4 at least 24 hours before testing.

**Table 2.1.2a—Physical properties of mixed, uncured methyl methacrylate-based slurry resin**

Property	Value	Test method
Viscosity	7.0 to 13.0 poise	ASTM D2556 (Spindle No. 3 at 20 rpm, Brookfield RVT)
Gel time at 73°F	10 to 30 minutes	ASTM C881/C881M (modified 2.4 oz) *
Flash point	greater than 40°F	ASTM D1310

5 \*The specimen to determine gel time in the field is 2.4 oz.  
6 rather than 250 mL as required by ASTM C881/C881M.  
7

**Table 2.1.2b—Physical properties of mixed, cured methyl methacrylate-based slurry resin**

Property	Value	Test method
Tensile strength	1000 to 2000 psi	ASTM D638 (Type I)
Tensile elongation	30 to 70 percent	ASTM D638 (Type I)
Water absorption	less than 0.5 percent	ASTM D570

8  
9 **2.1.3 Filler**—Fillers for overlay shall be supplied by overlay manufacturer and, when mixed with  
10 recommended quantity of methyl methacrylate-based slurry resin, shall result in self-leveling  
11 slurry complying with requirements in Table 2.1.3. Maintain all testing components at 73°F ± 1°F  
12 for a minimum of 24 hours before testing.

1  
2**Table 2.1.3—Properties of type MMS mixed cured slurry**

Property	Value	Test method
Compressive strength* (24 hours)	1500 to 3000 psi	ASTM D695
Thermal compatibility*	Pass	ASTM C884/C884M, Method B
Bond strength*	greater than 250 psi	ASTM C1583/C1583 M
Tensile strength*	1000 to 2000 psi	ASTM D638 (Type I)
Flexural strength*	1000 to 2000 psi	ASTM D790

\*Test specimens shall be made using recommended ratios of methyl methacrylate-based slurry as supplied by manufacturer. Compressive strength, tensile strength, and flexural strength to be tested on binder and filler slurry only. Thermal compatibility and bond strength to be tested on test specimens of complete slurry overlay system (primer, slurry, broadcast aggregate, and topcoat).

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**2.1.4 Methyl methacrylate-based topcoat**—Comply with requirements in Tables 2.1.4a and 2.1.4b for methyl methacrylate-based topcoat. Maintain all testing components at 73°F ± 1°F for a minimum of 24 hours before testing.

**Table 2.1.4a—Physical properties of mixed,**

**uncured methyl methacrylate-based topcoat resin**

Property	Value	Test method
Viscosity	0.4 to 1.5 poise	ASTM D2556 (Spindle No. 3 at 20 rpm, Brookfield RVT)
Gel time at 73°C	10 to 30 minutes	ASTM C881/C881M (modified 2.4 oz) *
Flash point	greater than 40°F	ASTM D1310

\*The specimen to determine gel time in the field is 2.4 oz. rather than 250 mL as required by ASTM C881/C881M.

**Table 2.1.4b—Physical properties of mixed, cured methyl methacrylate-based topcoat resin**

Property	Value	Test method
Tensile strength	2500 to 6000 psi	ASTM D638 (Type I)
Tensile elongation	20 to 50 percent	ASTM D638 (Type I)
Water absorption	less than 0.4 percent	ASTM D570

**2.1.5 Broadcast aggregate**—Comply with requirements in Table 2.1.5 for broadcast aggregate and have a hardness of 6 or higher on Mohs hardness scale. Aggregate to be angular; consist of natural silica sand, basalt, or other nonfriable aggregate; and contain less than 0.2 percent moisture when tested in accordance with ASTM C566. Aggregate particle size distribution to be tested in accordance with ASTM C136.

**Table 2.1.5—Broadcast aggregate gradation**

Normal sieve opening (sieve designation)	Percent passing
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<b>Broadcast bridge deck aggregate gradation</b>	
0.187 in. (No.4)	100
0.0937 in. (No. 8)	30 to 75
0.0469 in. (No. 16)	0 to 5
0.0234 in. (No. 30)	0 to 1
<b>Broadcast parking deck aggregate gradation</b>	
0.0937 in. (No. 8)	100
0.0469 in. (No. 16)	51 to 75
0.0331 in. (No. 20)	14 to 50
0.0234 in. (No. 30)	0 to 25
0.0165 in. (No. 40)	0 to 2

1

2 **Part 3—EXECUTION**3 **3.1—Surface preparation**

4 **3.1.1** *Quality control of surface preparation*— Prepare services for overlay to same surface  
5 profile as accepted in 1.7.2.

6 **3.1.2** *Concrete decks*—Prepare concrete surfaces using procedures approved in 1.7 that result  
7 in acceptable average bond strength at test locations. Unless otherwise specified, prepared surface  
8 shall have a profile equivalent to CSP 5 or rougher, as defined in ICRI 310.2R. ~~15~~

9 **3.1.3** *Steel decks*—Prepare steel surfaces according to NACE No. 2/SSPC-SP 10 resulting in  
10 surface profiles of at least 4 mils when measured in accordance with ASTM D4417. If flash rust  
11 appears, reblast surface to NACE No. 2/SSPC-SP 10. Blast surface removing rust, dust and other  
12 loose materials that can interfere with overlay bond.

13 **3.1.4** If Architect/Engineer determines that surface preparation is inadequate, repeat until it  
14 meets acceptable standards. Obtain Architect/Engineer acceptance of surface preparation before  
15 placing overlay.

16

17 **3.2—Mixing methyl methacrylate-based primer, resin filler slurry, and topcoat**

18 **3.2.1** *Primer*—Mix methyl methacrylate-based primer resin with catalyst according to  
19 manufacturer's instructions. For each mixed primer batch, submit following information:

20 (a) Date and time each batch is poured identified by its unique number

- 1 (b) Deck location where each batch was placed
- 2 (c) Gel time tested in accordance with ASTM C881/C881M modified to 2.4 oz specimen
- 3 (d) Temperature of the air, deck surface, and mixed polymer components 27

4 **3.2.2 Resin filler slurry**—Mix methyl methacrylate-based resin and filler according to  
 5 manufacturer's instructions. Use equipment with mixing capacity that allows placement operations  
 6 to proceed continuously and be completed before overlay slurry begins to gel at area of the next  
 7 placement.

8 For each mixed slurry batch, equal to one full load of the mixer's capacity, sample slurry mixture  
 9 each hour of mixing if continuous mixing is used, maintain and submit following information:

- 10 (a) Date and time each batch identified by its unique number was poured
- 11 (b) Deck location where each batch was placed
- 12 (c) Gel time tested in accordance with ASTM C881/C881M modified to  
 13 2.4 Oz. specimen
- 14 (d) Temperature of air, deck surface, and mixed polymer components at the time of  
 15 Placement

16 **3.2.3 Topcoat**—Mix methyl methacrylate-based topcoat with catalyst according to  
 17 manufacturer's instructions.

18  
 19 For each mixed topcoat batch, submit following information:

- 20 (a) Date and time each batch identified by its unique number was poured
- 21 (b) Deck location where batch was placed
- 22 (c) Gel time tested in accordance with ASTM C881/C881M modified to  
 23 2.4 oz specimen
- 24 (d) Temperature of air, deck surface, and mixed polymer components at time of pouring

25 Time to opening to traffic polymer overlay.

### 26 **3.3—Overlay application**

27 **3.3.1 Cold weather limits**—Place overlay when deck temperature or applicable surface and  
 28 polymer materials are not expected to be less than 32°F, as indicated in the Contract Documents.

29 **3.3.2 Hot weather limits**—Place overlay when 2.4 oz job-site production samples have gel times  
 30 equal to or greater than 10 minutes or when broadcast aggregate will penetrate methyl  
 31 methacrylate-based slurry layer as indicated in Contract Documents and as recommended by



1 the manufacturer.

2 **3.3.3 Moisture limits**—Place overlay on surfaces when there is no visible moisture under plastic  
3 sheet when tested in accordance with ASTM D4263 modified to 2 hours or per manufacturer  
4 recommendations as indicated in the Contract Documents.

5 **3.3.4** The overlay application consists of four distinct steps:

- 6 (a) Apply Methyl methacrylate-based primer
- 7 (b) Place Methyl methacrylate-based slurry
- 8 (c) Broadcast Aggregate
- 9 (d) Apply Methyl methacrylate-based topcoat

10 **3.3.5** Place overlay on hydraulic-cement concrete or patching materials greater than 28 days of age,  
11 unless otherwise specified.

12 **3.3.5** Do not place overlay on magnesium-phosphate-cement concrete.

13 **3.3.6** Do not place overlay over crack repair or other materials that will affect bonding or curing of  
14 overlay.

15 **3.3.7** To identify excess substrate moisture, tape a plastic sheet to concrete surface in accordance  
16 with ASTM D4263. At 2 hours after applying plastic sheet, check for presence of condensation  
17 beneath plastic sheet. If no condensation is present, surface is sufficiently dry to apply overlay.

18 **3.3.8 Priming**—Mix methyl methacrylate-based primer components according to manufacturer's  
19 instructions. Use squeegees or paint rollers to apply primer at a uniform coverage rate of 100 ft<sup>2</sup>/gal.  
20 ± 2 ft<sup>2</sup>/gal unless otherwise recommended by manufacturer. Allow primer to cure tack-free prior  
21 to slurry placement. Protect primed surface from contamination.

22 **3.3.9 Methyl methacrylate-based slurry placement**—Use a self or hand-advanced vibrating  
23 screed or gauge rake to apply overlay slurry. Adjust screed or gauge rake to required depth of  
24 overlay slurry. Unless otherwise specified, apply methyl methacrylate-based slurry at a thickness  
25 of 0.25 in. ± 0.05 in.

26 **3.3.10 Aggregate broadcasting**—After placement of methyl methacrylate-based slurry and,  
27 while it is still fluid, broadcast aggregate onto surface until a dry layer of aggregate is present over  
28 entire surface. If wet spots develop, broadcast additional aggregate until a dry surface is  
29 reestablished. Remove excess aggregate when slurry has cured sufficiently so that embedded  
30 aggregate is not dislodged. Remove excess aggregate with street sweeping equipment, brooms, or dry  
31 compressed air. Unless otherwise specified, do not reuse removed aggregate.

1     **3.3.11 Top coating**—After overlay has cured and excess broadcast aggregate has been removed,  
 2 mix methyl methacrylate-based topcoat components according to manufacturer's instructions. Use  
 3 squeegees or paint rollers to apply topcoat at a uniform coverage rate between 50 and 80 ft<sup>2</sup>/gal.,  
 4 unless otherwise recommended by manufacturer.

### 5     **3.43.3—Curing**

6     **3.4.1** Cure overlay in accordance with manufacturer recommendations.

7     **3.4.2** If protection against adverse weather conditions is necessary during curing, cover with  
 8 non-adhering plastic cover. Remove plastic cover after surface is tack-free.

### 9     **3.5 —Joints**

10    Maintain expansion joints in concrete surface being overlaid during overlay application. If joints  
 11 must be saw cut into overlay, perform the cut as soon as overlay supports sawing equipment without  
 12 damaging overlay. Saw cut joints within 12 hours of overlay placement.

### 13    **3.6 —Opening to traffic**

14    Open to traffic according to the manufacturer recommendations or when vehicle tires will not  
 15 cause depression or permanently deform finished overlay.

16    non-mandatory language follows

#### 17                                   **NOTES TO SPECIFIER**

### 18    **General notes**

19    **G1.** ACI Specification 548.10-2X is to be used by reference in the Project Specification. Do not  
 20 copy individual parts, articles, or paragraphs into the Project Specification, because taking them  
 21 out of context may change their meaning.

22    **G2.** If parts of ACI Specification 548.10-2X are copied into the Project Specification or any  
 23 other document, do not refer to them as an ACI Specification.

24    **G3.** A statement such as the following will serve to make ACI Specification 548.10-2X a part of  
 25 the Project Specification:

26         “Work on (Project Title) shall conform to all requirements of ACI 548.10-2X,  
 27         “Specification for Type MMS (Methyl Methacrylate Slurry) Polymer Overlay for Bridge  
 28         and Parking Garage Decks,” published by the American Concrete Institute, Farmington  
 29         Hills, Michigan, except as modified by these Contract Documents.”

30    **G4.**—ACI Specification 548.10-2X is written in the three-part format of the Construction  
 31 Specifications Institute, as adapted for ACI requirements. The language is imperative and terse.

1 **G5.** If ACI Specification 548.10-2X is referenced in Contract Documents along with another  
2 ACI specification that contains overlapping provisions, identify which requirements are in conflict  
3 and state in Contract Documents which requirements govern.  
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#### 5 **Foreword to checklists**

6 **F1.** This foreword is included for explanatory purposes only; it is not a part of ACI Specification  
7 548.10-2X.

8 **F2.** ACI Specification 548.10-2X may be referenced by the specifier in the Project Specification  
9 for any building project, together with supplementary requirements for the specific project.  
10 Responsibilities for project participants must be defined in the Project Specification. ACI  
11 Specification 548.10-2X cannot and does not address responsibilities for any project participant  
12 other than the Contractor.

13 **F3.** Checklists do not form a part of ACI Specification 548.10-2X. Checklists assist the specifier  
14 in selecting and specifying project requirements in the Project Specification.

15 **F4.** The Mandatory Requirements Checklist indicates work requirements regarding specific  
16 qualities, procedures, materials, and performance criteria that are not defined in ACI Specification  
17 548.10-2X. The specifier must include these requirements in the Project Specification.

18 **F5.** The Optional Requirements Checklist identifies specifier alternatives and additions. The  
19 checklist identifies the parts and articles of ACI Specification 548.10-2X and the action required  
20 or available to the specifier. The specifier should review each of the items in the checklist and  
21 make adjustments to the needs of a particular project by including those selected alternatives as  
22 mandatory requirements in the Project Specification.

23 **F6. Cited references**—Documents and publications that are referenced in the checklists of ACI  
24 Specification 549.10-2X are listed below. These references provide guidance to the specifier and  
25 are not considered to be a part of ACI Specification 548.10-2X.  
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#### 27 *International Concrete Repair Institute*

28 ICRI Technical Guideline No. 310.2R-2013—Selecting and Specifying Concrete Surface  
29 Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair  
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#### 31 *The Society for Protective Coatings/NACE International*

1 NACE No.2/SSPC-SP 10—Near-White Metal Blast Cleaning 1994

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### MANDATORY REQUIREMENTS CHECKLIST

Part/Article	Notes to Specifiers
1.1.1	Indicate in Contract Documents those portions of Work to be constructed as Type MMS polymer overlay
1.7.2.1 Test locations	Specify test locations for quality control to evaluate range of surface conditions on the area to be overlaid.
<del>1.9 Project conditions</del>	<del>Specify application cold weather, hot weather and moisture limits recommended by the overlay material manufacturer.</del>
3.1.2.1 Quality control tests	Specify one test location to be evaluated for each span or 500 yd <sup>2</sup> , whichever is smaller, for bridges, and for each deck level or 500 yd <sup>2</sup> , whichever is smaller, for parking decks.
<del>3.3 Overlay application</del>	<del>Specify application cold weather, hot weather, and moisture limits recommended by the overlay material manufacturer.</del>
3.3.2	Specify type of mixing equipment for slurry.

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### OPTIONAL REQUIREMENTS CHECKLIST

Part/Article	Notes to Specifiers
1.5.1 Submittals	Specify required materials to be submitted along with a manufacturer certificate of compliance and quality control test results verifying conformance to each material specifications, if different from the specification.
1.5.2 Submittals	Specify required materials to be submitted if different from the specification.

1.5.3 QC plan	Specify exceptions or additions to list of items in the quality control plan.
1.6.2 Storage of materials	Specify material storage requirements if different from manufacturer recommendations
1.7.2.1 Test locations	Specify test locations and number of tests if different from the Specification.
1.8.2 Surface preparation concrete	Specify minimum concrete surface profile if different from CSP 5 as defined in ICRI 310.2R.
3.2.2 Patching material	Specify minimum age of hydraulic-cement concrete and patching material if different from the specification to be determined by bond test of placed overlay test patches.
3.2.7 Overlay thickness	Specify overlay slurry application thickness if different from the specification.
3.2.8 Aggregate broadcasting	Specify if reuse of removed aggregate is allowable.
<del>3.2.9.11</del> Top coating	Specify top coat application rate if different from the specification

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