

DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
OFFICE ENGINEER
1727 30th Street MS-43
P.O. BOX 168041
SACRAMENTO, CA 95816-8041
FAX (916) 227-6214
TTY 711



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March 26, 2012

09-Mno-120-R3.7
09-344204
Project ID 0900000149

Addendum No. 1

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN MONO COUNTY ABOUT 9 MILES WEST OF LEE VINING AT DODGE POINT SIDEHILL VIADUCT BRIDGE.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on Tuesday, April 3, 2012.

This addendum is being issued to revise the Notice to Bidders and Special Provisions.

In the Special Provisions, Section 10-1.18, "POLYESTER CONCRETE," is revised as attached.

To Bid book holders:

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the Notice to Bidders section of the Notice to Bidders and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the Bid book.

Submit bids in the Bid book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

This addendum and attachment are available for the Contractors' download on the Web site:

http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/09/09-344204

If you are not a Bid book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,


SHAKRI BENDER EHLERT
District Director
District 6 Central Region

Attachment

10-1.18 POLYESTER CONCRETE

GENERAL

Summary

This work includes placing polyester concrete with a prime coat of polyester based resin chemically compatible with the specified polyester binder to the steel deck forms.

The polyester based resin shall have zinc powder added to it at a minimum rate of 85 percent by weight.

Submittals

Submit a polyester concrete placement plan under Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications. The plan review time will be 15 days.

The placement plan must include:

1. Description of equipment for applying prime coat resin
2. Description of equipment for measuring, mixing, placing, and finishing polyester concrete
3. Method for isolating expansion joints
4. Cure time for polyester concrete
5. Description of equipment for applying sand
6. Storage and handling of prime coat resin and polyester concrete components
7. Disposal of excess prime coat resin, polyester concrete, and containers

Submit a material safety data sheet for each shipment of prime coat and polyester resin components before use.

Quality Control and Assurance

Submit samples of prime coat and polyester resins 15 days before use under Section 6-3, "Testing," of the Standard Specifications. Notify the Engineer 15 days before delivery of resin in containers over 55 gallons to the job site.

The resin for the polyester concrete and prime coat must come from the same supplier.

MATERIALS

Polyester concrete consists of polyester resin binder and aggregate.

Polyester resin binder must:

1. Be an unsaturated isophthalic polyester-styrene co-polymer.
2. Contain at least 1 percent by weight gamma-methacryloxypropyltrimethoxysilane, an organosilane ester silane coupler.
3. Be used with a promoter compatible with suitable methyl ethyl ketone peroxide and cumene hydroperoxide initiators.
4. Comply with the following:

Polyester Resin Binder		
Property	Requirement	Test Method
Viscosity *	75 to 200 cP (RVT, No. 1 Spindle, 20 RPM at 77°F)	ASTM D 2196
Specific Gravity *	1.05 to 1.10 at 77°F	ASTM D 1475
Elongation	35 percent, minimum Type I at 0.45 inch/min. Thickness = 0.25 ± 0.03 inch	ASTM D 638
	Sample Conditioning: 18/25/50 + 5/70	ASTM D 618
Tensile Strength	2500 psi, minimum Type I at 0.45 inch/min. Thickness = 0.25 ± 0.03 inch	ASTM D 638
	Sample Conditioning: 18/25/50 + 5/70	ASTM D 618
Styrene Content *	40 percent to 50 percent by weight	ASTM D 2369
PCC Saturated Surface-Dry Bond Strength	3.5 MPa, minimum, at 24 hours and 21° ± 1°C	California Test 551
Static Volatile Emission *	60 gram per square meter, loss, maximum	SCAQMD Method 309-91

*Test must be performed before adding initiator.

Aggregate for polyester concrete must:

1. Comply with Section 90-2.02, "Aggregates," of the Standard Specifications
2. Have at most 45 percent crushed particles retained on the No. 8 sieve when tested under California Test 205
3. Have fine aggregate consisting of natural sand
4. Have a weighted average aggregate absorption of at most 1 percent when tested under California Tests 206 and 207
5. At the time of mixing with resin, have a moisture content of at most one half of the weighted average aggregate absorption when tested under California Test 226
6. Comply with one of the following aggregate gradings:

Sieve Size	Percentage Passing	
	3/8 inch Maximum	No. 4 Maximum
1/2 inch	100	100
3/8 inch	83 - 100	100
No. 4	65 - 82	62 - 85
No. 8	45 - 64	45 - 67
No. 16	27 - 48	29 - 50
No. 30	12 - 30	16 - 36
No. 50	6 - 17	5 - 20
No. 100	0 - 7	0 - 7
No. 200	0 - 3	0 - 3

Sand for abrasive sand finish must:

1. Be commercial quality blast sand
2. Have at least 95 percent pass the No. 8 sieve and at least 95 percent retained on the No. 20 sieve when tested under California Test 205
3. Have an average absorption of at most 1 percent when tested under California Test 207

CONSTRUCTION

Use a continuous mixer to mix polyester concrete. The continuous mixer must:

1. Employ an auger screw/chute device.
2. Be equipped with an automatic metering device that measures and records aggregate and resin volumes. Record volumes at least every 5 minutes, including time and date. Submit recorded volumes at the end of the work shift.
3. Have a visible readout gage that displays volumes of aggregate and resin being recorded.
4. Be certified under California Test 109 before use.
5. Produce a satisfactory mix consistently during a demonstration.

Finishing equipment for polyester concrete must:

1. Have grade control capabilities
2. Be used to consolidate the polyester concrete

The Engineer will provide final grade and cross slope before the start of work.

The steel deck form surface must be dry before placing the prime coat. The steel deck form surface must be at least 50 degrees F and at most 100 degrees F. Relative humidity must be at most 85 percent.

Blow the steel deck form surface clean with compressed air.

Add zinc powder to the polyester based resin at the site under the requirements in AASHTO M 300. Mix zinc powder thoroughly into the resin prime coat within 15 minutes of application of the prime coat to the steel deck form surface.

Apply the zinc rich polyester based resin prime coat to the deck form surface within 2-3 hours after blasting at a rate of approximate 40 sq ft per gallon.

Place polyester concrete within 2-3 hours of applying the zinc rich polyester based resin prime coat.

The resin binder must weigh approximately 12 percent of the weight of the aggregate. The Engineer will determine the exact percentage. Polyester concrete must have an initial set time of at least 30 minutes and at most 120 minutes when tested using an initial-setting time Gillmore needle under ASTM C 266.

Fill the polyester concrete to the top of the steel edge around the deck perimeter.

Consolidate and finish the polyester concrete to the required grade and cross section using finishing equipment. Polyester concrete must be consolidated to a relative compaction of at least 97 percent when tested under California Test 552.

Apply a sand finish of at least 0.8 lbs per sq yd before gelling occurs.

Protect the polyester concrete surface from moisture for at least 4 hours after finishing. Allow traffic or equipment on the polyester concrete surface no sooner than 4 hours after final finishing.

Completed polyester concrete deck surfaces must comply with Section 51-1.17, "Finishing Bridge Decks," of the Standard Specifications.

MEASUREMENT AND PAYMENT

Furnish polyester concrete will be measured and paid for by the cubic foot. The volume to be paid for will be determined based on the quantity of resin binder used, the percent by weight of resin binder in the polyester concrete, and a unit weight of 135 lb per cu ft. The payment quantity shall be the calculated quantity of polyester concrete used in the work, except material wasted or unused material.

Place polyester concrete will be measured and paid for by the square foot of deck area.

The contract price paid per cubic foot for furnish polyester concrete shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing polyester concrete, including furnishing resin prime coat and zinc powder, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as ordered by the Engineer.

The contract price paid per square foot for place polyester concrete shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the polyester concrete , complete in place, including application of prime coat, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as ordered by the Engineer.