



Testing Bridge Deck Surfaces for Compliance with the Straight Edge or Profilograph Requirements

General Information

All deck surfaces must be tested to be assured of compliance with the Bridge Deck Finishing Specifications. Note that the Specifications have the following requirements:

1. Concrete decks or concrete approach slabs, which are to be covered with one inch or more of another material, will be tested both longitudinally and transversely with a 12-foot long straightedge.
2. The completed roadway surfaces of structures, approach slabs, and the adjacent 50 feet of approach pavement will be tested with a bridge profilograph in the longitudinal direction, and with a 120-foot straightedge in the transverse direction.

Note that if a concrete deck were specified to have a two inch AC overlay, it would be necessary to test the concrete deck both longitudinally and transversely with a 120-foot straightedge prior to placing the AC overlay; and then after placing the overlay, the AC surface should be tested longitudinally with a bridge profilograph and transversely with a 120-foot straightedge.

Straightedging Deck Surfaces

When the Specifications require the use of a straightedge to check deck surfaces, the decks must be systematically checked with a 120-foot straightedge over the entire area. This should be done as soon as the concrete can be walked upon without damaging the deck surface, and should be completed prior to the time that the deck surface is covered with rugs, mats, or other material that would interfere with the straightedging operations. Any places which do not meet specifications should be marked with red spray paint.

It is the Contractor's responsibility to straightedge the deck while the concrete is wet. Structure Construction personnel should not straightedge wet concrete except under unusual circumstances.

Profilograph Testing of Deck Surfaces

When the Specifications require the use of the Bridge Profilograph to check deck surfaces, the deck will be tested with the profilograph in accordance with the Test Method No. Calif. 547. High points in excess of 0.25 inch should be marked with red spray paint. It shall be the Contractor's responsibility to schedule the profilograph testing operations. The Contractor shall

request testing at least 7 days prior to need, and shall ensure that the entire area to be tested has been cleared and cleaned of all obstructions.

Because the Districts currently have the expertise in maintaining highway profilographs, they will also have the responsibility for storing and maintaining the bridge profilographs. Therefore, when bridge profilographs are needed, they should be obtained from the District Construction or Materials Department. The method of handling the profilographs varies somewhat in the various Districts. It will therefore be necessary for the Structure Representative to become familiar with the procedures, and persons to contact, in the District in which he is working. When not actually in use on a project, the profilograph should be returned to the proper District authority.

Letter to Contractor

As soon as possible after testing the deck with the profilograph and/or the straightedge, a letter should be written to the Contractor advising him that the deck has been checked for compliance with the profilograph requirements and/or the straightedge requirements. The letter should describe the specific locations that fail to meet the straightedge specifications, or describe any deficiencies in meeting the profilograph specification. The letter should state that the specific deficiencies must be corrected before the contract can be accepted. After the deficiencies have been corrected, or if the entire deck initially complies with the applicable straightedge or profilograph requirements, then write the Contractor a letter stating that the deck was checked and that it complies with the profilograph requirements and/or the straightedge requirements whichever is applicable. (See Attachment No. 1 for a sample letter relative to concrete decks or concrete approach slabs which are to be covered with one inch or more of another material. See Attachment No. 2 for a sample letter relative to the completed surfaces of bridge decks, approach slabs, and adjoining 50 feet of approach pavement.)

The Specifications allow the Engineer to point out a contract deficiency to the Contractor at any time. However, once the Engineer has completely satisfied himself that the deck surface complies with the Specifications, and has given the Contractor a letter advising him of this; it is the mark of an ethical Engineer to consider the matter closed.

(Sample of letter to be sent to the Contractor for completed surfaces of bridge decks, approach slabs, and adjoining 50 feet of approach pavement.)

The completed surface of (bridge deck) (approach slab) (adjoining 50 feet of approach pavement) at Bridge No. _____, Bridge Name _____ has been tested for compliance with the profilograph requirements and the transverse straightedge requirements of the Standard Specifications.

(USE EITHER)

All areas tested were found to comply with the specified profilograph (and) (or) the transverse straightedge requirements.

(AND/OR)

The profilograph trace indicates that there are high points in excess of 0.25 inch and that the profile count exceeds 5 per hundred feet. High points in excess of 0.25 inch have been marked with red spray paint. A profile trace is available for your examination at the Resident Engineer's office. The completed surface must be ground in accordance with the requirements in Standard Specifications Section 42, *Groove and Grind Pavement*, until the specified smoothness tolerances are met.

(AND/OR)

Straightedging in a transverse direction indicated that the roadway surface varied more than 0.02 foot from the lower edge of a 120-foot long straightedge at the following locations: Areas that do not meet the straightedge requirement have been marked, and are located as noted below:

(EXAMPLE) 4 foot from the left EOD between Sta 300+00 and Sta. 300+75.

Longit. const. jt. at center of left bridge between Sta. 300+50 and Sta. 301+10.

These deficiencies must be corrected before the contract can be accepted. Notification shall be given to the Resident Engineer prior to performing the corrective action.