3.60 SMOOTHNESS

3.61 TESTING

~~*Specifications for* Pavement Smoothness~~ evaluation requirements are included in *Specification* ~~*Article* 2316~~. Requirements for Primary and Interstate Pavement Smoothness are included in Specification 2317. In addition to the exclusions noted in the specification, side road and entrance fillet quantities and HMA dropoff fillet quantities should be excluded from testing and incentive/disincentive calculations. Milling of existing HMA to remove deteriorated material, as opposed to milling specifically to remove ruts, shall also be considered as correction of the surface profile in reference to this specification.

~~*Article 2317*~~ *Specification 2428* includes smoothness specifications for bridge decks and bridge deck overlays. It discusses the requirements of smoothness criteria for bridge decks, new approaches, bridge deck overlays, and overlayed approaches and when evaluation is excluded. Required profilograph testing is run at each wheel path for the full length of the bridge regardless of construction headers, except for expansion joints not adjusted.

Any pavement and bridge deck areas carrying traffic, but excluded fromprofilogram index calculation, must be checked with a smoothness checker or profilograph. Deviations in these areas shall not exceed 3 mm (1/8 inch) in 3 m (10 feet).

Further information on profilograph testing is included in *Materials I.M. 341*.

3.62 EVALUATION

Pavement Smoothness
If two or more lanes are placed in a single pass with a full width paver, smoothness results of adjoining lanes should be evaluated separately and independently so that each lane has its own profilograph trace.

The 5 m (16 feet) at section ends may be excluded from testing and evaluation only when the contractor is not responsible for the adjacent section, but the entire header-to-header section should be included in computations for price reduction or incentive assessments.

A composite header where one side is HMA and one side is PCC is excluded from profilogram index calculation only when this header is at the extreme end of the project (i.e. only where one half of the header joint is existing pavement). If the composite header is constructed as a single project, no exclusions for smoothness testing should occur since both types of pavement (HMA and PCC) are under the same contract.

Bridge Deck Smoothness
Profilograph tests in both wheel paths will be averaged and an individual profile index calculated for each traffic lane segment of bridge decks and bridge deck overlays.

The 5m (15 feet) at ends of bridges and at expansion joints not adjusted are not included in testing or evaluation, but should be included in computations for incentive or price adjustment assessments. These areas will be evaluated for deviations exceeding 3mm (1/8 inch) in 3m (10 feet) requiring correction.

Profilograph tests for bridge approach sections or overlay of bridge approach sections are tested at the center of each traffic lane. These areas shall be corrected for smoothness and will not be used in the computation for incentive or price reduction of bridge decks or bridge deck overlays.

3.63 BUMP CORRECTION

Exact location of 13 mm (1/2 inch) bumps requiring correction has proven difficult particularly on resurfacing projects. Referencing by station location, string line, and rolling straight-edge often lacks the precision necessary for identification of exact bump locations. Locate bumps on the pavement surface during initial profilograph testing or have a profilograph available during correction to locate bumps and monitor correction results.