

## Cross Slope Tolerance

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Special Provision 313F20

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OPSS 313, April 2021, is amended as follows.

### **313.03 DEFINITIONS**

Section 313.03 is amended by the deletion of the definition for levelling course and its replacement by the following:

**Cross Slope** means the average grade between edges of a cross-section element. Used interchangeably with crossfall.

**Electronic Level** means a device which is capable of measuring the gradient of a flat surface and indicating the measured gradient numerically via a built-in interface.

**Levelling Course** means a HMA course of variable thickness used for correcting cross slope and profile deficiencies in the existing pavement prior to placing a HMA binder or surface course. Levelling course may also be referred to as a padding course.

### **313.06.02 Diamond Grinding**

The 3<sup>rd</sup> sentence of the 1<sup>st</sup> paragraph of subsection OPSS 313.06.02 is deleted in its entirety and replaced by the following:

The grinder shall be equipped with the capability to adjust the depth, slope, and cross slope to remove HMA to the required profile and cross section, and shall also include a slurry pick-up system.

### **313.07.07.02.01 General**

The 3<sup>rd</sup> sentence of the 1<sup>st</sup> paragraph of clause OPSS 313.07.07.02.01 is deleted in its entirety and replaced by:

After final compaction of each course the surface shall be smooth and true to the established crown, grade, and cross slope, uniform in texture, and shall be free of any defects, including but not limited to, cracks, segregation, fat spots, oil spills, chatter, and roller marks.

### **313.08.01 Acceptance Criteria**

Subsection 313.08.01 is amended by the addition of the following:

h) Cross Slope

Subsection 313.08.01 is further amended by the addition of the following clauses:

**313.08.01.08 Cross Slope**

**313.08.01.08.01 Lot Size**

The cross slope of each lane of the top course or binder course of hot mix opened to traffic, to be placed on this Contract shall be divided into lots not to exceed 1000 m in length. The size and location of the cross slope measurement lots for each lane shall be established by the Contract Administrator, based on the Contractor's plan to perform the work.

The number of sublots in a lot shall be based on an average measurement frequency of 100 m (i.e., a 1000 m lot shall have 10 sublots). The minimum number of sublots in any lot shall be 5.

The following locations shall be exempt from cross slope measurement:

[\* Designer Fill In – See Notes to Designer]

**313.08.01.08.02 Acceptance Measurement**

The cross slope within each lot, at subplot locations determined at random shall be measured by the Contract Administrator. For each subplot measurement, the lane, station, design cross slope, and measured cross slope shall be recorded on Owner form PH-CC-886 by the Contract Administrator. A separate form shall be used for each lot.

The cross slope shall be measured using a 3 m straight edge affixed securely to a minimum 1.22 m long electronic level capable of measuring the cross slope to an accuracy of  $\pm 0.1$  degrees. Electronic levels shall be calibrated a minimum of once per day according to the level manufacturer instructions. The time of calibrations shall be recorded on form PH-CC-886.

The cross slope at each subplot location shall be measured on the surface of the compacted top course of hot mix to be placed on this Contract by placing the level at the centre of the lane and perpendicular to the roadway centreline. Measurements shall be recorded to the nearest 0.1%.

Any traffic control to carry out these measurements shall be provided by the contractor.

**313.08.01.08.03 Basis of Acceptance**

Acceptance shall be based on the differences between the design and measured cross slope. The average of the absolute difference between the design and measured cross slope subplot

measurements of any lot shall not exceed 0.2%. A lot that exceeds this value is rejectable and shall be repaired.

The absolute difference between the design and measured cross slope of any subplot shall not exceed 0.35%. A subplot that exceeds this value is rejectable and shall be repaired.

The calculations shall be entered on form PH-CC-886 by the Contract Administrator. A copy of the completed form shall be provided to the Contractor within 1 Business Day of the completion of a lot.

#### **313.08.01.08.04 Repair**

At least five Business Days prior to beginning any cross slope-related resurfacing, a written proposal shall be submitted to the Contract Administrator with the subplot and resurfacing locations including the appropriate stations and length of each resurfacing area. Resurfacing shall not start unless the Contract Administrator has given written permission. If permission is denied, then the Contract Administrator shall provide the reason(s) in writing.

Alternatively, a proposal for the repair of rejectable lots and sublots by diamond grinding may be submitted in writing to the Contract Administrator. The submission shall fully detail the limits and depths of diamond grinding to be performed, and demonstrate that the diamond grinding shall result in full conformance with the requirements of the Contract Documents, including hot mix thickness requirements. Diamond grinding shall not start unless the Contract Administrator has given written permission. If permission is denied, then the Contract Administrator shall provide the reason(s) in writing.

After repair, the cross slope of any lot that has been subject to repair shall be re-measured according to the Acceptance Measurement clause, using new subplot locations determined at random.

#### **313.08.01.08.05 Repair Costs**

All repairs shall be made at no additional cost to the Owner.

- \* Note to Designer: Enter locations exempt from cross slope measurement. Bridge decks and approach slabs should be exempt, as should intersections and any locations of resurfacing where cross slope correction is not intended. Other specific locations may be identified as appropriate.

#### **WARRANT:**

Include, (except as noted below), with OPSS 313, at the discretion of the Regional Head of Quality Assurance Section in consultation with Regional Head of Geotechnical Section, for all hot mix asphalt and hot-in-place recycling contracts where at least a portion of the contract will have a posted speed limit for the in-service pavement greater than 60 km/hour and it includes at least one lift of hot mix asphalt or one lift of hot-in-place recycled asphalt.

Do NOT include if the Contract:

- a) consists extensively of a single lift asphalt on an existing surface that has not received any treatment (i.e. milling or in-place process);
- b) consists extensively of detours, temporary pavement, patching, or structures;