

B312 - ASPHALT CURB AND GUTTER SYSTEMS AND  
ASPHALT SURFACING OF GUTTER - OPSS 312

312.1      GENERAL

Asphalt curb and gutter serves the same purpose as concrete curb and gutter. The construction of asphalt curb is generally intended to fulfill a temporary need.

Surfacing of existing curb and/or gutter is carried out primarily on road resurfacing contracts or when the profile is raised and the existing curb and gutter is in good condition.

The Project Manager should compare the economics of surfacing curb and gutter to removing and replacing the curb system with new curb and gutters.

When asphalt surfacing of gutter is carried out, the existing catch basins or manholes encountered within the curb system will be subject to either of the following treatments.

- a) Catch basins or manholes will require adjustments and are paid under the tender item "Adjusting and Rebuilding Manholes, Catch Basins and Ditch Inlets", (see Section B407-1 of this manual for estimating and documentation).
- b) the asphalt material used for surfacing curb and gutter may be feathered out at the manhole or catch basin location.

Consideration should be given to treatment (a) when feasible. Treatment (b) is less desirable as the roadside depressions create a traffic safety hazard.

312.2      REFERENCES

MTO Highway Drainage Design Standards  
CDED B313-1  
CDED B407-1

312.3      TENDER ITEMS

Asphalt Curb and Gutter	(Variation, m, PQP)
Asphalt Gutter Outlets	(Normal, each, PQP)
Asphalt Spillways	(Normal, m, PQP)
Asphalt Surfacing of Gutter	(Normal, m, PQP)

### 312.4 SPECIFICATIONS

The requirements for asphalt curb and gutter, asphalt surfacing of curb and gutter, asphalt gutter outlets, and asphalt spillways, are contained in OPSS 312.

### 312.5 SPECIAL PROVISIONS

Refer to Chapter 'E' of this manual to review the applicable standard special provisions.

### 312.6 STANDARD DRAWINGS

Applicable standard drawings are contained in the 600 series of Ontario Provincial Standard Drawings (OPSDs).

### 312.7 DESIGN

#### 312.7.1 Asphalt Curb and Gutter

##### 312.7.1.1 General

The construction of an asphalt curb or gutter is generally intended to fulfill a temporary need. Asphalt curb and gutter used in conjunction with gutter outlets and spillways are used primarily to control erosion on shoulders and slopes. Asphalt curb is used for traffic guidance on major detours.

Roadside ditches are generally the most cost effective solution for channelling surface runoff from roadways. The designer should consider curb or gutter only when a ditch is infeasible due to property constraints, topography, etc, or when it is deemed necessary to provide traffic guidance.

Drainage by gutter outlets and spillways is preferred over catch basins and sewers as this is more cost effective.

Excavations required for construction of curb and gutter are considered part of the work and are not documented separately.

Granular quantities required for curb and gutter construction are included with the appropriate granular item and are not documented separately.

### 312.7.1.2 Asphalt Gutter

Asphalt gutter is typically used in low volume areas where curb is not required such as in patrol yards, parking lots, etc. with minimum runoff. It allows cross traffic and does not interfere with snow removal.

Asphalt gutter may also be considered on a permanent basis as an alternative to concrete mountable curb on highways with low traffic volume.

### 312.7.1.3 Asphalt Curb

Asphalt curb is used when asphalt gutter is required to channel surface runoff and where it is desired to provide traffic guidance on detours.

### 312.7.1.4 Asphalt Gutter Outlets

The type and spacing of gutter outlets shall be according to Standard SD-8 in the MTO Drainage Design Standards.

### 312.7.1.5 Asphalt Spillways

Spillways are constructed to prevent washout of the granular shoulder and slope. They are placed from the end of the gutter outlet to the edge of subgrade or, depending on conditions, to the bottom of earth fill slope.

The requirement for placing a spillway at the gutter outlet will depend on the type of side-slope at the gutter outlet. Rip rap treatment in the form of a spillway may also be considered.

## 312.8 COMPUTATION

These are Plan Quantity Payment items.

### 312.8.1 Source of Information

The main sources of information for the computation of these tender items are the Field Note Books, B-Plans, ETR Books, Design Cross-Sections, the MTO Drainage Design Standards and Ontario Provincial Standard Drawings Manual.

### 312.8.2 Method of Calculation

The unit of measurement for Asphalt Curb and Gutter, and Asphalt Surfacing of Gutter is the metre. The length is measured along the flow line of the gutter, with no deductions made for the length of gutter outlets or catch basins. The types and lengths of asphalt curb and gutter to be placed will include bullnose and transition sections, and straight and circular curb and gutter. The various lengths are scaled from the plan.

The unit of measurement for Asphalt Gutter Outlets is each. The location of gutter outlets is scaled from the plan or determined from the profiles. The lengths of gutter outlets will not be deducted from the lengths of curb and gutter.

The unit of measurement for Asphalt Spillways is the metre. The length is taken from the cross-section and is measured along the contour flow line of the spillway from the end of the gutter outlet to the end of the spillway.

Any granular quantity required is calculated in tonnes and added to the appropriate granular tender item.

### 312.8.3 Hot Mix Asphalt

The tonnage of asphalt used in curb and gutter shall be paid for under the appropriate hot mix item. The unit of measurement for hot mix asphalt is the tonne. The hot mix asphalt used shall generally be the same as that being used to pave the adjacent roadway at the time of installation.

Hot mix tonnage is calculated by multiplying the length in metres by the cross section area in square metres and the mix density in kg/m<sup>2</sup>/mm; divided by 1000 kg/t. The applicable mass in kg/m<sup>2</sup>/mm for the various mix types is shown in the table “Recommended Mix Densities for Determining Tender Tonnages” in CDED B313-1.8.3.

## 312.9 DOCUMENTATION

### 312.9.1 Straight and Circular Construction

Asphalt curb or gutter to be installed on tangent and curves with radii of 15.0 m and greater are documented as straight. Curves with radii of less than 15.0 m are documented as circular.

### 312.9.2 Drawings

Curb and gutter is shown on the plans by the appropriate symbol and the appropriate OPSD number e.g. (OPSD 600.010).

Typical sections or cross sections are required to be included into the construction plans to illustrate the depth of asphalt surfacing of curb and gutter.

Asphalt gutter outlets are indicated on the construction plans of the contract drawings. The appropriate OPSD number and type is identified.

### 312.9.3 Quantity Sheet

Asphalt Curb and Gutter is a variation item. There are two variations, the OPSD that applies and the type of construction, straight or circular. Each variation requires a separate column on the "Quantities - Miscellaneous 1" sheet. Locations are documented by station to station limits and location right or left of the roadway centreline. Transition and termination sections are included with the measured curb quantity and are not documented separately. The quantities in each column are sub-totalled. These sub-totals are combined into one total which is the tender total. The tender total is transferred to the tender documentation.

Curb and gutter to be surfaced is documented on the "Quantities - Miscellaneous 1" sheet and itemized by station to station limits, and location left or right of the roadway centreline.

Asphalt Gutter Outlets locations are documented on the "Quantities - Miscellaneous 1" sheet, by station and location left or right of the roadway centreline.

Asphalt spillways locations are documented on the "Quantities - Miscellaneous 1" sheet, by station and location left or right of interface with the gutter.

Hot Mix Asphalt shall be documented on the "Quantities - Hot Mix and Granular" sheet. Stations and offsets shall match the appropriate asphalt item on quantity sheets as described above.

Granular base quantity is added to the roadway granular item and identified as a separate entry on the "Quantities - Hot Mix and Granular" sheet, showing the depth of granular on the same line.

### 312.9.4 Documentation Accuracy

Stations are recorded to the nearest whole number metre.

Quantity entries for Asphalt Curb and Gutter, Asphalt Surfacing of Curb and Gutter and for Asphalt Spillways are recorded to the nearest whole number metres of linear measurement.

Quantity entries for Asphalt Gutter Outlets are recorded in whole numbers.

Hot Mix Asphalt is recorded to the nearest whole tonne.

Granular is recorded to the nearest whole tonne.