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## **1 INSTRUCTIONS TO ARCHITECTS**

### **1.1 SPECIAL NOTES**

- 1.1.1 The enclosed is not a specification. It is a Guideline of minimum requirements for Granular Base, Grading and Asphalt for Elementary and Secondary Schools' paved areas.
- 1.1.2 It is the responsibility of the Consultants not to rely on this document other than as a Guideline, but to develop a specification to be reviewed by the Design staff of the Board, prior to tendering.
- 1.1.3 The Consultants must note that paved areas consist of paved play areas, fire route access and parking lots with different thicknesses and base.
- 1.1.4 The Consultants' specifications must clearly identify that random testing of applied thicknesses of base and asphalt, will be performed on all paved surfaces, such testing to be paid from Cash Allowance.
- 1.1.5 If the thicknesses of base and/or paving are less than specified, the Board will not entertain credit for work incorrectly performed. Rather, the Board will insist on the removal of deficient work and reinstallation of same, to specified levels at times dictated by the Board.
- 1.1.6 Documentation from the source as to materials and quantities shall be made available to the Board's representative upon request.

## **2 APPLICATIONS**

- 2.1.1 The following is the general application of paved areas in Dufferin-Peel Catholic District School Board's schools. Site conditions and unique situations may, however, dictate different construction applications as required.

LIGHT DUTY CONSTRUCTION:	Pedestrian Walkways Kindergarten play areas
MEDIUM DUTY CONSTRUCTION:	Parking stall pavement Rear and side paved play areas
HEAVY DUTY CONSTRUCTION:	Fire routes Kiss'n'ride areas Bus driveways Accesses to parking lots Parking lot traffic patterns

### **3 BASE FOR ASPHALT AREAS**

The Consultant shall specify, as a minimum, that all granular material shall conform to OPSS 1010. Placement of granular materials shall conform to OPSS 314. Crusher run limestone (19 mm diameter) shall meet the quality, percent crushed and gradational requirements of Granular 'A'. Crusher run limestone (50 mm diameter) shall meet the gradational requirements of Granular 'B', Type II.

#### **3.1 LIGHT DUTY CONSTRUCTION**

- 3.1.1 150 mm (6") of 19 mm (3/4") crusher run limestone base material to Ministry of Transportation specifications form 1010 (OPSS 1010).

#### **3.2 MEDIUM DUTY CONSTRUCTION**

- 3.2.1 150 mm (6") of 19 mm (3/4") crusher run limestone base material to Ministry of Transportation specifications form 1010 (OPSS 1010)
- 3.2.2 150 mm (6") of 50 mm (2") crusher run limestone sub base material to Ministry of Transportation specifications form 1010 (OPSS 1010.)

#### **3.3 HEAVY DUTY CONSTRUCTION**

- 3.3.1 150 mm (6") of 19 mm (3/4") crusher run limestone base material to Ministry Transportation specifications form 1010 (OPSS 1010).
- 3.3.2 305 mm (12") of 50 mm (2") crusher run limestone sub base material to Ministry of Transportation specifications form 1010 (OPSS 1010).

#### **3.4 APPLICATION FOR PATHWAY OR TRACK CURBING AREAS**

- 3.4.1 150 mm (6") of 19 mm (3/4") crusher run limestone base material to Ministry of Transportation specifications form 1010 (OPSS 1010).

### **4 BASE EXECUTION**

#### **4.1 INSPECTION OF UNDERLYING SUB-BASE OR SUB-GRADE**

- 4.1.1 Specify that rough grading shall be performed by laser grading process to levels and contours as shown on the contract drawings or as directed by the Consultant. All work shall be in accordance with OPSS 206.

- 4.1.2 Specify that the Contractor shall not place any granular material or drainage installation until the finished sub-grade surface is inspected and approved by the Consultant. The Contractor shall obtain approval of all excavated or graded material used as fill for grading work.
- 4.1.3 Specify that the Contractor must confirm with the Consultant the depth of granular base required.

#### **4.2 PLACING**

- 4.2.1 Specify that placing of material is to be only on a clean unfrozen surface properly shaped and compacted and free from snow and ice.
- 4.2.2 Begin spreading base material on a crown line or on high side of a one-way slope.
- 4.2.3 Place using methods that do not lead to segregation or degradation of aggregate.
- 4.2.4 Place material in uniform layers not exceeding 200 mm when compacted or to such other depth as approved by the Consultant.
- 4.2.5 Shape each layer to a smooth contour and compact to specified density before succeeding layer is placed.
- 4.2.6 Remove and replace that portion of a layer that comes segregated during spreading.

#### **4.3 COMPACTING**

- 4.3.1 Specify that compaction is to be to a density not less than 98% Standard Proctor Density.
- 4.3.2 Shape and roll alternately to obtain a smooth, even and uniformly compacted base.
- 4.3.3 Apply water as necessary during compacting to obtain specified density. If material is excessively moist, aerate by scarifying with suitable equipment until moisture content is corrected.
- 4.3.4 In areas not accessible to rolling equipment, compact to specified density with approved mechanical tampers.

**4.4 TESTING**

- 4.4.1 Specify that inspection and testing of gravel base compaction will be carried out by testing laboratory designated by Consultant.
  - 4.4.1.1 Cost for such tests is included in the Cash Allowance.
- 4.4.2 The Contractor shall confirm with the Consultant if testing is required.

**4.5 FINISH TOLERANCES**

- 4.5.1 Specify that finished base surface shall be within  $\pm 10$ mm of established grade but not uniformly high or low.
- 4.5.2 Specify that the Contractor must correct any surface that is not within the specified tolerances.

**4.6 MAINTENANCE**

- 4.6.1 Specify that the contractor must maintain finished base in a condition conforming to this section until succeeding materials are applied or until acceptance by the Consultant.

**5 ASPHALT MIX APPLICATION**

- 5.1.1 Specify that all material and work shall be in accordance with OPSS 1150 and OPSS 310, respectively.

**5.2 LIGHT DUTY CONSTRUCTION**

- 5.2.1 50 mm (2") of HL3A fine asphalt in accordance with OPSS 310.

**5.3 MEDIUM DUTY CONSTRUCTION**

- 5.3.1 40 mm (1½") of HL3 surface asphalt on 40 mm (1½") of HL8 base asphalt in accordance with OPSS 1150.

**5.4 HEAVY DUTY CONSTRUCTION**

- 5.4.1 40 mm (1½") of HL3 surface asphalt on 50 mm (2") of HL8 base asphalt in accordance with OPSS 1150.

## **6 PAVING EXECUTION**

### **6.1 SETTING OUT**

- 6.1.1 Specify that the Contractor shall carry out works to dimensions, lines, grades and finishes specified on drawings. Layout of parking, driveway and walkway locations are to be approved by the Consultant prior to clearing excavations.

### **6.2 ASPHALT EMULSION**

- 6.2.1 Asphalt emulsion shall be undiluted SS1 complying with OPSS 1103.

### **6.3 ROLLER**

- 6.3.1 Hand operated weighing not less than 135 kg or approved small power roller.

### **6.4 BASE PRIMING**

- 6.4.1 Specify that the Contractor must inform the Consultant at least 48 hours prior to commencing or re-commencing asphalt paving operations. *Failure to appropriately inform the Consultant will result in rejection of asphalt laid.*
- 6.4.2 Specify that the contractor shall apply asphalt emulsion prime at 0.38 to 0.54 litres per square meter and allow curing to sticky or tacky condition. Apply asphalt before prime becomes hard. The tack coat shall conform to OPSS 1103 and OPSS 310.

### **6.5 ASPHALT PLACEMENT**

- 6.5.1 Specify that the contractor shall place asphalt only on dry primed base and when air temperature is 7C or above. Do not dump hot mix faster than it can be properly raked and screened.
- 6.5.2 The Contractor shall correct irregularities before starting compaction.
- 6.5.3 Carry out hand spreading simultaneously after placing, when asphalt making/spreading to ensure a good bond.
- 6.5.4 Start compaction with roller immediately after placing, when asphalt will bear roller without checking or undue displacement. Compact areas not accessible to roller with hand operated hot tampers.

- 6.5.5 The Contractor shall compact asphalt to density of 98% of maximum dry density.
- 6.5.6 Overlap previous roller passes to ensure smooth surface free of roller marks. Keep roller wheels moist to ensure they do not pick up any material.
- 6.5.7 Ensure drainage of asphalt as indicated on drawings.
- 6.5.8 The temperature of the mixture after spreading and prior to initial rolling shall not be less than 115°C.

**6.6 JOINTS**

- 6.6.1 Specify that joints are to be straight, clean, vertical and free of broken or loose material.
- 6.6.2 Apply asphalt emulsion immediately before continuing.

**6.7 NEW AND EXISTING ASPHALT INTERFACES**

- 6.7.1 Specify that the Contractor must grind asphalt around complete perimeter of areas to be resurfaced including existing catchbasins, manholes and islands to a depth of 40 mm. Asphalt surface to be milled to a minimum width of 4' 0" (1200mm).
- 6.7.2 Milled areas swept clean prior to new asphalt surface being placed.
- 6.7.3 When interfacing with existing asphalt surface and following all grinding operations, use pavement reinforcement mesh with a self-adhesive glue constructed from fiberglass strands in a grid structure.
- 6.7.4 Glassgrid or approved pavement reinforcement mesh alternative is to be installed to conform strictly to manufacturer's specifications for all seams of new and existing asphalt surface interfaces.
- 6.7.5 Usage and placement of a self adhering pavement membrane shall be as directed by the Consultant.

**6.8 TESTING**

- 6.8.1 Specify that inspection and testing of asphalt composition thickness and compaction of asphalt will be carried out by a testing laboratory designated by the Consultant. (See Special Notes)

**6.9 ASPHALT TOLERANCES**

- 6.9.1 Specify that after compaction, surface shall be smooth and true to grade and of uniform texture.
- 6.9.2 Surface shall be free of depressions exceeding 10 mm as measured with 3 m straight edge placed anywhere on the asphalt.

**6.10 PROTECTION OF NEW ASPHALT**

- 6.10.1 Specify that the contractor must protect new asphalt from damage of any kind.
- 6.10.2 Vehicular traffic shall not pass over new asphalt for a minimum of 7 days after asphalt placement.
- 6.10.3 Pedestrian traffic shall not be permitted until mix has cooled sufficiently to prevent deformation.

**6.11 MAINTENANCE**

- 6.11.1 Specify that the contractor must remove asphalt contamination from curbs, catchbasins, manholes, walls, structures and other works and remove from site.
- 6.11.2 Protect and maintain until acceptance of the Work by the Consultant.

END OF GRANULAR BASE, ASPHALT AND GRADING GUIDELINE

DATE ISSUED: MARCH 2002  
REVISION 1: JANUARY 2003  
REVISION 2: MAY 2003