

## GRADING REQUIREMENTS FOR BEDDING AND JOINT SAND

Sieve Size	Percent Passing
3/8 In.	100
No. 4	95 to 100
No. 8	80 to 100
No. 16	50 to 85
No. 30	25 to 60
No. 50	10 to 30
No. 100	2 to 10

### MATERIALS

All pavers shall be 60 mm (2-3/8") thick or 80 mm (3-1/8") thick as noted on the plans. The shape, pattern, and color of the concrete pavers shall be as noted on the plans unless otherwise approved by the Owner's Representative.

#### 308.2.07 UTILITY ACCESS DOORS - SLIP RESISTANCE

Access doors shall be constructed of steel, aluminum, or concrete with an approved non-slip surface having a static coefficient of friction between 0.60 and 1.00 as determined by ASTM Designation C 1028-89. Access doors on inclined surfaces greater than 4% shall have a coefficient of friction between 0.80 and 1.00.

Owners are responsible to maintain the non-slip characteristics of the access door over its life in the sidewalk area.

#### **Approved Metal Non-slip surfaces ( July 2002)**

Product	COF	Manufacturer
SlipNOT Grip Plate Grade 1 (Fine) Grade 2 (Medium) in Galvanized Steel or Aluminum	0.95  0.98	SlipNOT Safety Flooring, W.S. Molnar Company, Detroit, MI Website: <a href="http://www.slipnot.com">www.slipnot.com</a>
Mebac Grade 3, Galvanized Steel Mebac Grade 2, Galvanized Steel Mebac Grade 2, Aluminum EZ Weld, Aluminum	0.96  0.93	IKG Mebac Slip Resistant Metal Surfaces, IKG Industries, Harsco Corporation, Clark, NJ Website: <a href="http://www.ikgindustries.com">www.ikgindustries.com</a>
Algrip 2000	0.80	Grating Pacific LLC, Seattle, WA Website: <a href="http://www.gratingpacific.com">www.gratingpacific.com</a>
ALCOA Aluminum Tread Plate - Lightly sandblasted	0.87	LW Products, Woodinville, WA Website: <a href="http://www.lwproducts.net/">www.lwproducts.net/</a>
Synertech Underground Products Oldcastle Precast underground enclosures – Used by Qwest High Density Polymer Concrete	0.88	Utility Vault Company Division of Oldcastle Precast, Inc. Website: <a href="http://www.oldcastle-precast.com">www.oldcastle-precast.com</a> Wilsonville, OR [ 503.682.2844 ]
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<b>Product</b>	<b>COF</b>	<b>Manufacturer</b>
Syracuse Castings Safety Sure Grip Diamond Plate, Syracuse Castings, Cicero NY Used by BWW	0.94	Utility Vault Company Division of Oldcastle Precast, Inc. Website: <a href="http://www.oldcastle-precast.com">www.oldcastle-precast.com</a> Wilsonville, OR [ 503.682.2844 ]
US Castings, Entiat, WA 332 Aluminum Cast Doors for Utility Vault Company	0.98	Utility Vault Company Division of Oldcastle Precast, Inc. Website: <a href="http://www.oldcastle-precast.com">www.oldcastle-precast.com</a> Wilsonville, OR [ 503.682.2844 ]
Qwest 30 Cast Iron Manhole cover Qwest, Attn: Scott Miller 8021 SW Capitol Hill Road / 110 Portland, OR 97219	0.80	Utility Vault company Division of Oldcastle Precast, Inc. Website: <a href="http://www.oldcastle-precast.com">www.oldcastle-precast.com</a> Wilsonville, OR {503.682.2844}

Additional products may be approved by the City Engineer on an "approved equal" basis.  
COF – Coefficient of Friction (wet)

### 308.3.00 CONSTRUCTION

#### 308.3.01 PREPARATION OF BASE

##### 308.3.01A EARTHWORK

When roadway earthwork is called for in connection with other items of work under the same contract which includes structure construction under this section, all excavation, backfilling and berm construction for the structures and in the vicinities thereof as required or as shown shall conform to applicable requirements of Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL.

When the contract which includes structure construction under this section does not call for roadway earthwork to be performed as set forth in Section 204 EXCAVATION, EMBANKMENT, BEDDING AND BACKFILL, perform required earthwork as follows: make excavations for the structures to required depths and widths and the bottoms thereof to a firm, even surface. Remove all soft and unsuitable material and replace with material as directed. Backfill prior excavations at sites and in the vicinity of the new structures with approved material placed and compacted in successive layers to a dense and firm condition. Areas adjacent to the work shall be trimmed and shaped to a neat condition and restore disturbed areas to their original condition.

##### 308.3.01B BASE FOR PORTLAND CEMENT

All bases upon which new cement concrete structures are to be constructed shall be firm and free of all deleterious matter and compacted to required density. Dampen thoroughly surfaces upon which new cement concrete is to be placed. No payment will be made for water. The cost of preparing bases shall be considered as incidental to the construction of structures, except as noted below.

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If, in the opinion of the Owner's Representative, frost heave may be a potential problem, soil testing may be done by and at the expense of the Owner. When such testing indicates a frost heave problem, the Contractor will place 4 inches of approved base material before placement of concrete structures.

When such material is placed at the direction of the Owner's Representative, measurement shall be on a square yard basis as in Subsection 303.4.01 MEASUREMENT.

Thickness of aggregate base will be converted on a proportionate volume basis to an equivalent number of square yards of specified thickness of like material in unit bid item.

Excavation for placement of base materials shall be paid for on a cubic yard basis under the unit bid price for common excavation.

When new concrete is placed by the mechanical extrusion method, vertical dowel fastening to underlying concrete or asphalt may be eliminated and the bond between new concrete and underlying concrete or asphalt provided with epoxy cement applied in conformance with the manufacturer's recommendations as approved. Spread epoxy at a rate which will provide a thorough coating to the surface with all voids and depressions filled. Place new structure on the epoxy cement within 15 minute after spreading.

#### 308.3.01C BASE FOR ASPHALT CONCRETE

Bring the base of new asphalt concrete structures to proper grade, firm, dry and free of deleterious matter.

Where asphalt concrete is to come in contact with previously placed Portland cement concrete, or bituminous surface, give the area of contact a light coating of emulsified asphalt conforming to the requirement for Tack Coat in Section 306 ASPHALT CONCRETE PAVEMENT.

Before preparing the base for asphalt driveway connections, apply an approved soil sterilant to the compacted subgrade. Follow manufacturer's directions and avoid contamination of areas not intended to be sterilized. Two approved chemicals are:

1. Karmex
2. Simazine

Other chemicals may be used, if approved by the Owner's Representative. The use of sterilant is considered incidental to asphalt driveway connections and no additional payment will be made.

The contractor will be responsible to stop the growth of vegetation and will replace the asphalt driveway connection if growth appears within the two-year maintenance period.

#### 308.3.01D BASE FOR CONCRETE PAVERS

- A. All bases upon which new concrete pavers are to be installed shall be firm and free of all deleterious matter and compacted to density as required by the Owner's Representative.