

# Densities for Use in Estimating Quantities

**Design Manual**  
**Chapter 1**  
**Chapter Title**  
 Originally Issued: 06-02-00  
 Revised: 07-27-21

The following densities should be used for estimating quantities of Hot Mix Asphalt (HMA) material.

**Table 1: HMA Densities**

Material	Density	Density Values for Scott County Projects	Density Values for District 6
HMA	145 pcf	—	—
High Performance Thin Lift Overlay (non-slag mixture)	150 pcf	—	—
High Performance Thin Lift Overlay (slag mixture)	170 pcf	—	—
Crushed HMA for use as Subbase	127 pcf	—	—
Base Course	145 pcf	155 pcf	150 pcf
Intermediate Course	147 pcf	155 pcf	150 pcf
Surface Course	147 pcf	160 pcf	155 pcf

The following densities should be used for estimating quantities of granular material.

**Table 2: Granular Material Densities**

Material	Density
Granular Subbase	135 pcf
Granular Backfill	125 pcf
Granular Blanket	125 pcf
Granular Shoulders	140 pcf
Special Backfill (treatment)	140 pcf
Porous Backfill	120 pcf
Flooded Backfill	125 pcf
Class "A" Crushed Stone	140 pcf
Class "D" Revetment	110 pcf
Class "E" Revetment	105 pcf
Erosion Stone	120 pcf
Recycled Pavement	135 pcf
Macadam Stone	130 pcf
Crushed Concrete for use as Subbase	135 pcf
P.C.C. Pavement Broken for use as Class "E" Rip-Rap	120 pcf
Rolled Stone Base	140 pcf
Modified Subbase	140 pcf
Crushed Brick	115 pcf
Trench Foundation	127 pcf

# Chronology of Changes to Design Manual Section: 001B-004 Densities for Use in Estimating Quantities

7/27/2021	Revised Added in High Performance Thin Lift Overlay. Density: 150pcf for non-slag mixture and 170pcf for slag mixture.
11/16/2017	Revised Added in Flooded Backfill.
5/26/2017	Revised Added Class "E" Revetment.
9/30/2011	Revised Added density for Trench Foundation.
7/29/2011	Revised Added english HMA densities for Scott County and District 6.
8/31/2010	Revised Changed Rip-Rap as Revetment per the Standard Specifications for Highway and Bridge Construction.
4/15/2010	Revised update reinforcing bar density
10/30/2009	Revised Added reinforcing bar information