

SECTION 913A SHELL - ROCK MATERIAL

913A-1 General.

Shell-rock materials to be used for shell-rock base shall be defined as naturally occurring heterogeneous deposits of limestone with interbedded layers or lenses of loose and cemented shell, to include cemented sands (calclitic sandstone). This material shall be mined and processed in a manner that will result in a reasonably homogenous finished product.

Approval of mineral aggregate sources shall be in accordance with 6-3.3.

913A-2 Deleterious Substances.

Shell-rock materials shall not contain lumps of clay, organic matter, cherty or other extremely hard materials, or other substances not defined, in sufficient quantity as to be detrimental to the finishing, strength, or performance of the base. The material shall not contain loose, free silica sand in sufficient quantity to prevent bonding of the base, or to result in a surface which is susceptible to distortion under construction traffic, or accumulation of loose sand on the finished surface which precludes bonding of the bituminous tack coat with the base, nor shall the material contain more than 50% loose, free shells, corals or skeletal remain of other marine invertebrates (retained on the No. 4 [4.75 mm] sieve). Materials shall contain no water sensitive clay minerals.

913A-3 Physical and Chemical Properties.

Shell-rock material shall meet the following physical and chemical properties:

Limerock Bearing Ratio (LBR) (FM 5-515) - Production of this material shall be controlled so as to meet the following requirements for LBR value:

The average of test values shall not be less than 100.

No individual test value shall be less than 90.

No two consecutive test values between 90 and 100.

Plasticity (AASHTO T 89 and AASHTO T 90) - That portion of the material passing the No. 40 [425 µm] sieve shall be non-plastic.

Carbonates (FM-5-514) - The minimum of the average percentage of carbonates of calcium and magnesium shall be 50. Material represented by any individual carbonate LOT average of less than 45% is unacceptable.

Gradation Requirements - Materials classified as shell-rock shall be graded uniformly down to dust and in addition, meet the following specific requirements:

Passing 3 1/2 inch [90 mm] sieve (maximum dimension not to exceed 6 inches [150 mm])..... minimum 97%

Passing No. 4 [4.75 mm] sievemaximum 70%

Passing No. 200 [75 µm] sieve maximum 20% (washed)