CONCRETE EVIDENCE INFO/TECH BULLETIN MIL THICKNESS

"Mil thickness" is often referred to in a bid or specification for a surface coating. A mil is one thousandth (0.001) of an inch.

A simple formula for calculating mil thickness:

uses the solids of the coating material, expressed in decimals (e.g., New Generation 50, at 50% non-volatile solids would be 0.50) and the coverage, expressed in sq. ft./gal. The factor 1604 is derived from the thickness which would be obtained from 1 gallon of 100% solids on 1 sq. ft.

For example, mil thickness of one coat of New Generation 50

$$mil = 0.50 \times 1604 = 2 mils$$

As a comparison, Spartan solvent based Concrete Seal, which is 17% non-volatile solids, applied at 500 sq. ft./gal. would yield:

mil =
$$0.17 \times 1604$$
 = 0.54 mil per coat 500

If a customer specified a 6 mil coating, 3 coats of New Generation 50 at 400 sq. ft./gal. should be applied. If Spartan's solvent based Concrete Seal were used, over 11 coats would be needed!

An additional example: New Generation 40, applied at 350 sq. ft./gal.:

mils =
$$\frac{0.40 \text{ X}}{350}$$
 = 1.83 mils for one coat

Using formula (1) with Straight Seal (24% non-volatile solids) at 750 sq. ft./gal. would yield:

mil =
$$\frac{0.24 \text{ X}}{750}$$
 = 0.513 mil/coat

5 coats would give 2.56 mils

A variation of formula (1) can be useful to obtain the coverage rate which must be used to achieve a pre-specified mil thickness:

For example, an architect specifies a 5 mil coating of New Generation 40:

Coverage =
$$0.40 \times 1604 = 128 \text{ sq. ft./gal.}$$

Since this is heavier than the recommended coverage for each coat (250-500 sq. ft./gal.), 2 coats at 256 sq. ft./gal. (2 X 128) or 3 coats at 384 sq. ft./gal. (3 X 128) should be applied.

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