## 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:

## (1) mil $=$ Solids $X 1604$ Coverage

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

$$
\mathrm{mil}=\frac{0.50 \times 1604}{400}=2 \text { mils }
$$

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

$$
\mathrm{mil}=\frac{0.17 \times 1604}{500}=0.54 \text { mil per coat }
$$

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.:

$$
\text { mils }=\frac{0.40 \times 1604}{350}=1.83 \text { mils for one coat }
$$

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

$$
\mathrm{mil}=\frac{0.24 \times 1604}{750}=0.513 \mathrm{mil} / \mathrm{coat}
$$

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:

## (2) Coverage, sq. ft./gal. $=$ solids $X 1604$ mils

For example, an architect specifies a 5 mil coating of New Generation 40:
Coverage $\quad=\frac{0.40 \times 1604}{5}=128$ 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. $(2 \times 128)$ or 3 coats at 384 sq. ft./gal. ( $3 \times 128$ ) should be applied.

