Coating Coverage Calculations
Technical Bulletin

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Description
Coatings coverage calculations can be made to determine the amount of coating required to cover a given area at a certain thickness. Calculations can also determine the area a given amount of coating can cover and the average thickness applied. The formulas listed below can be used for 100% solids coatings which, unlike solvent borne coatings, do not lose film thickness during the curing process or can be used for percent solids by volume (%SBV) coatings. When estimating coating coverage additional consideration to be taken into account include waste, irregular surfaces, and material left in containers.

Coating Quantity 100% Solids
\[ \text{gallons} = \frac{ft^2(\text{mils})}{1604} \]
\[ \frac{1400(80)}{1604} = 70 \text{ gallons} \]

Sample Calculation:
\[ ft^2 = 1400 \]
\[ \text{DFT} = 80 \text{mils} \]

Coating Thickness 100% Solids
\[ \text{mils} = \frac{\text{gallons}(1604)}{ft^2} \]
\[ \frac{70(1604)}{1400} = 80 \text{mils} \]

Sample Calculation:
\[ ft^2 = 1400 \]
\[ \text{Gallons} = 70 \]

Coating Coverage 100% Solids
\[ \text{area} = \frac{\text{gallons}(1604)}{\text{mils}} \]
\[ \frac{70(1604)}{80} = 1400 ft^2 \]

Sample Calculation:
\[ \text{Gallons} = 70 \]
\[ \text{DFT} = 80 \text{mils} \]

Coating Coverage %SBV
\[ ft^2 = \frac{1604 \left( \frac{\text{SBV}}{100} \right)(\text{gallons})}{DFT \ (\text{mils})} \]
\[ \frac{1604 \left( \frac{88}{100} \right)}{12} = 117.63 \frac{ft^2}{gal} \]

Sample Calculation:
\[ \text{DFT} = 12 \text{mils} \]
\[ \%\text{SBV} = 88\% \]
Calculating Coating Coverage

**Coating Thickness %SBV**

\[
W_{\text{FT}} = \frac{WFT(\%SBV)}{100} \quad \text{and} \quad \frac{80(88)}{100} = 70.4 \, DFT
\]

\[
D_{\text{FT}} = \frac{DFT(100)}{\%SBV} \quad \text{and} \quad \frac{70.4(100)}{88} = 80 \, WFT
\]

#### %SBV Adjustments due to Thinning

\[
W = \frac{Z(100)}{A} \quad \frac{60(100)}{80} = 75\text{mils}
\]

Sample Calculation:

\[
X = 88 \\
Y = 10 \\
Z = 60
\]

A= %SBV after thinning
W= WFT after thinning
X= %SBV before thinning
Y= % of thinner added
Z= desired DFT

\[
A = \frac{X}{\left(\frac{Y}{100}\right) + 1} \quad \frac{88}{\left(\frac{10}{100}\right)+1} = 80 \, \%SBV
\]

#### Helpful Information

- **Area of Rectangle** = \( \text{Length} \times \text{Width} \)
- **Area of Circle** = \( \pi r^2 \)
- **Area of Cylinder** = \( \text{Diameter} \times \pi \times \text{Height} \)

For 4’ diameter manhole or pipe: 12.56 ft² per vertical or linear foot
Mils equal thousandths of an inch: 250 mils equals 1/4” inch
In a 55 gallon drum one inch of material equals 1.72 gallons