Useful Formulas When Spreading Cement

Calculating How Far a Tanker Load Should Go:

\[
\text{Distance (feet)} = \frac{9 \times L}{W \times R}
\]

9 = Conversion factor
L = Load (pounds – get scale receipt from the tanker driver)
W = Spread Width (feet)
R = Spread Rate (pounds per square yard)

For example, if spreading a 52,000 lb tanker load 8 feet wide at 68 pounds per square yard:

\[
\text{Distance} = \frac{9 \times 52,000 \text{ lb}}{8 \text{ ft} \times 68 \text{ lb/yd}^2} = 860 \text{ ft}
\]

Calculating Applied Spread Rate:

\[
\text{Spread Rate (pounds per square yard)} = \frac{9 \times L}{W \times D}
\]

9 = Conversion factor
L = Load (pounds – get scale receipt from the tanker driver)
W = Spread Width (feet)
D = Spread Distance (feet)

For example, if spreading a 52,000 lb tanker load 8 feet wide goes 850 feet:

\[
\text{Spread Rate} = \frac{9 \times 52,000 \text{ lb}}{8 \text{ ft} \times 850 \text{ ft}} = 68.8 \text{ pounds per square yard}
\]

Calculating a Surface Spread Rate From Percentage:

\[
\text{Spread Rate (pounds per square yard)} = 0.75 \times T \times D \times P
\]

0.75 = Conversion factor
T = Thickness (depth) of stabilization (inches)
D = Average dry density of soil (usually 110 pounds per cubic foot)
P = Percentage of stabilizing chemical, expressed as a decimal (e.g. 5% = 0.05)

For example, if using 5% Portland and a 12 inch depth of treatment:

\[
\text{Spread Rate} = 0.75 \times 12 \text{ in} \times 110 \text{ lb/ft}^3 \times 0.05 = 49.5 \text{ lb/yd}^2
\]