

Vibrating Screen Deck screening surfaces including Woven Wire Cloth, Woven Wire Mesh and Wear Resistant Modular Polyurethane Screens are Available at Screen

How to determine required screening area

A separate calculation is required for each deck of a multiple deck screen, although the same formula is utilized for each calculation.

$$\text{Screening Area} = \frac{U}{A \times B \times C \times D \times E \times F \times G \times H \times J} = \text{Square Feet}$$

The succession of unknowns that must be established before using the formula is as follows:

Factor "U" - Undersize

Amount in STPH of material feed to deck that is smaller than a specified aperture.

Factor "A" - Basic Capacity

Predetermined rate of material STPH through a square foot of woven wire cloth with a specified opening when feed to deck contains 25% oversize (Factor "B") and 40% halfsize (Factor "C").

Factor "B" - Oversize

Actual % of material in feed to screen deck that is larger than a specified aperture. (Adjusts Factor "A" to suit conditions)

Factor "C" - Halfsize

Actual % of material in feed to the screen deck that is one-half the size of a specified aperture. (Adjusts Factor "A" to suit conditions).

Factor "D" - Deck Location

Applies for multiple deck screens. Total screening area is available for top deck separation. Time delay for material to pass top deck and 2nd or 3rd decks leaves less effective area available. This factor is expressed as a percentage of the top deck effective area.

Factor "E" - Wet Screening

Applies when water is sprayed on the material as it moves down the screening deck. Generally, about 5 to 7 GPM of water is used per STPH of solids fed to the screen. The volume of water required should be supplied so that a portion is combined with the solids into a feed box to prepare a slurry feed to the screen. The balance of water is added through a series of spray bars located over the screening deck.

Factor "F" - Material Weight

Applies for weights other than 100 lbs. per cubic foot. If bulk density of one cubic foot of material weighs \pm 100 lbs. cu.ft.

$$\text{Factor "F"} = \frac{\text{lbs. per cu. ft.}}{100}$$

Factor "G" - Screen Surface Open Area

Applies when open area of screening surface is less than the open area shown in the Factor "A" capacity chart.

$$\text{Factor "G"} = \frac{\% \text{ open area of screen surface being used}}{\% \text{ open area indicated in capacity chart}}$$

Factor "H" - Shape of Opening

Applies when rectangular openings are used. Slotted or oblong openings will pass more material per square foot than square openings.

Factor "J" - Efficiency

Applies when objective screening efficiency is less than 95%.

$$\text{Efficiency} = \frac{\% \text{ of undersize in feed which actually passes}}{\% \text{ of undersize in feed (should pass)}}$$

ALL FORMULAS ARE INTENDED TO BE USED ONLY AS A GUIDE.

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[Product](#)

[Extensive wire](#)

[\[Woven Wire Cloth Index\]](#)

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