

Concrete Calculator

Manufactured by SLIDE RULE & SCALE ENGINEERING CO., Inc. New Carlisle, Indiana

Instructions . . .

The first step in learning to operate a Slide Rule is to learn the value of the divisions between printed figures of each scale on the Rule. When you read an ordinary foot rule you find the feet divided into 12 inches and each inch divided into two halves, four quarters, 8 eighths and 16 sixteenths. Slide Rule Scales have their divisions according to the scale uses and all you need to do to find the value of any division between the printed figures on the scale is to count the divisions. For instance look at Scale 1 (Depth or Thickness in inches and feet) between 3' and 4' and you find 24 divisions so the smallest division is $\frac{1}{2}$ inch. Between 4' and 5' the divisions are 12 to the foot or 1 inch divisions. Now on scale 4 you are dealing with cubic feet and cubic yards so between figures 1 and 2 you find the spacing divided into 27 parts and also into $\frac{1}{4}$ - $\frac{1}{2}$ - $\frac{3}{4}$ and full yards, the 27 parts equal to one cubic foot per part. The 27 parts continue between 2 and 3 on this scale but changes to 9 spacings or 3 cubic foot per spacing between figures 3 and 4 and beyond 4 to 25 the spacings are $\frac{1}{4}$ yards. Between 25 and 50 half yards, between 50 and 100 full yards and between 100 and 200 each space is equal to two yards.

NOTE; Instructions as written are for the 12" Rule, When used with 8" Rule the Scales 1 2 3 4 read A B C D.

EXAMPLE 1: How many cubic yards of concrete in a wall 9" thick, 18' high and 50' long?

Answer: 25 cubic yards.

Solution: Find 9" on scale 1 connected to 18' on scale 2, then connected to 50' on scale 3 read 25 on scale 4.

EXAMPLE 2: How many cubic yards of concrete in a wall 12" thick, 13 $\frac{1}{2}$ ' high and 25' long?

Answer: 12 $\frac{1}{2}$ cubic yards.

Solution: Find 12" on scale 1 with 13 $\frac{1}{2}$ ' connected to it on scale 2, then on scale 3 find 25' and connected to it find 12 $\frac{1}{2}$ on scale 4.

EXAMPLE 3: How many yards of concrete in eight 4' x 4' x 16 $\frac{1}{2}$ " footings?

Answer: 6 $\frac{1}{2}$ cubic yards.

The scales on the Rule should be set so that figure 3" on scale 1 is connected to the line 18' on scale 2 then opposite any length on scale 3 you are able to read the total cubic yards for that length of wall 9 inches thick, 18 feet high.

Solution: Slide scale 2 to the left until one dimension 4' contacts 16 $\frac{1}{2}$ " on scale 1. Then for one footing find 4' on scale 3 connected to 22 cubic feet on scale 4 or for 8 footings find 32' on scale 3 connected to 6 $\frac{1}{2}$ cubic Yds. on scale 4, since $4 \times 8 = 32$ you have merely combined all 8 footings and read the total on scale 4. Suppose there were 15 footings 4' x 4' x 16 $\frac{1}{2}$ " then $4 \times 15 = 60'$ and the required concrete would be 12 $\frac{1}{2}$ cubic yards.

Since the 8" rule has $\frac{1}{4}$ Yd. divisions only you will find the answer for one footing falls between $\frac{3}{4}$ and one yard.

EXAMPLE 4: How much concrete required for 80 columns 12" x 12" x 11'?

Answer: 32 $\frac{3}{4}$ cubic yards.

Solution: Since there are 80 columns 12" square slide 80 on scale 2 to contact 12" on scale 1 then read 32 $\frac{3}{4}$ on scale 4 connected to 11' on scale 3.

EXAMPLE 5: How many cubic yards of concrete required for 9 beams 2' 0" deep by 13" wide and 27' long?

Answer: 19 $\frac{1}{2}$ cubic yards.

Solution: Since there are nine concrete beams 2' deep, 13" wide, $2' \times 9 = 18'$ so connect 13" on scale 1 with 18' on scale 2 then read 19 $\frac{1}{2}$ on scale 4 connected to 27 on scale 3; or you could use $9 \times 13" = 9' 9"$ on scale 1 connected to 2' on scale 2 which is identical.

EXAMPLE 6: How many square feet in a certain area 73' x 100'?

Answer: 7300 square feet.

Solution: Set 73 on scale 2 to connect arrow A on scale 1 then connected to 100 on scale 3 find 73 on scale 4, add two 00 and read 7300.

EXAMPLE 7: How many square yards in a ceiling 30' x 60'?

Answer: 200 square yards.

Solution: Set 30' on Scale to arrow B of Scale 1 and find 60' on 3 connected to 00' on 4 if you are using the 1" rule. When using the 8" rule set 30' on B to connect 3' on A then find that 60' on C does not connect with D. 6, a 10th of 60, reads 0 so you add a 0 to 20 and have 200 square yards for 60' length. This same practice may be followed for any problem where one dimension on one scale fails to connect to the adjoining scale. Take a 10th of any dimension add 0 take 100th add 00 to the Answer