

## CALCULATING CONCRETE

I did a search on internet "how do you calculate cubic meters of concrete". You need to do this; it will humor you after reading this article. One guy in Ehow had 5 paragraphs on this procedure. I got lost in the second paragraph.

I am an advocate of going to the metric system or at the least going to the decimal system, either one. The decimal/metric system is what you get on your calculator.

I have never owned one of these new construction calculators and probably never will, never used one either.

44 years ago my college engineering instructor would not just give us the formulas for construction calculations; he made us find them on our own.

He told us that "there is a calculation whereas you can multiply feet x feet x inches x? = cubic yards in a slab, and a formula for a beam where you multiply inches x inches x feet x? =cubic yards. I want those two formulas tomorrow".

This was actually simple to do, as I had passed my trig, geometry and math classes with a passable grade.

For the slab I simply took my known factors width'/length'/height" and multiplied them for a cubic yard, 3' x 3' x 36" = 324. I then found a number .0032 x 324 = 1.04, 1 cubic yard. I did the same thing for a beam and came up with .000258.

Here are the formulas:

**Slab:  $w'xh''xL'x.0032$ =cubic yds.**

**Beam:  $w''xh''xL'x.000258$ = cyds**

Both of those formulas will get you within 1/100<sup>th</sup> of a yard, 2 scoops.

Here are some metric formulas you need to put with those and keep:

**Feet x .3048= meters**

**Meters x 3.28= feet**

**Cubic yds x .75= cubic meters**

**Cubic meters x 1.35= cubic yards**

You also need to know if you have a 4" slab or a 20' 4" width and you are calculating cubic meters of concrete you need to turn this 4" into metric.

**4" x .0254= .102 of a meter**

This is 102/1000ths of a meter or 102mm.

To calculate a slab you simply multiply:  
 **$w'xh'xL$ =cubic meters.**

Don't forget anything less than 1 meter is a decimal (millimeters).

Let's take a 20'x4"x30' slab and calculate cubic meters. Remember you have to change all these measurements to meters.

**$6.1x.102x9.15= 5.7$  cubic meters**

Now change that 5.7 to yards:

**$5.7x 1.35= 7.7$  cubic yards**

Now do this one to check:

**$20'x4''x30'x.0032= 7.7$  cubic yds.**

**$7.7cydsx.75= 5.8$  cubic meters**

Thousands of engineers/construction people begged the USA, in 1956, not to adopt the feet/inches system. They wanted decimals (tenths and hundreds) of a foot or the metric system, and there was no calculators as we have today. To no avail, we have inches and feet.

Engineers and I use mainly use decimals in our measurements for elevations. It is easier and a lot faster.

So now, all of us carpenters, construction people, and mechanics need to know all three systems.

Bob Johnston, carpenter

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