

How to buy the right Cement Mixer

Batch output is the most important when choosing the right mixer, people get confused between Portland cement and Pre-Mix, most consumers will purchase Pre-Mix which is more efficient for almost all jobsite applications. "Pre-mix" is a mixture of Portland cement, sand and gravel to which you only add water to in your cement mixer. When a mixer is rated 1-2 bags with a batch out-put of 5 cubic ft. the manufacturer is referring to pre-mix bags, Otherwise 2 bags of regular cement or (Portland cement) would require a 1000 lbs of mixing material to complete the job!, more than any tow-able cement mixers can handle.

Note: 1 bag of Portland cement is equal to about 6 x 80 lb. bags of Pre-mix cement for your cement mixer. Many manufacturer specify the drum capacity, and not the out-put, barrel type mixer does not mix straight up, they mix at an angle using only 2/3 of the drum, therefore the entire drum capacity is not used, a 9 cubic ft. drum capacity mean a 6 cubic ft. actual batch out-put. Also look at the total weight the cement mixer can actually mix in one batch, If a mixer is rated at 250 lbs load, it will be able to handle ½ bag of 80 lb of Portland cement plus sand, gravel and water. Example 1 bag of 80 lbs Portland cement, would need 180 lbs of Sand, 240 lbs of gravel/aggregate total of 500 lbs of material in the cement mixer!

A mixer that has a powerful motor could be used to mix less workable or higher viscosity concretes. Consider diesel power mixers on intensive use they run all day on 2 quarts of fuel. Suspension and fenders will provide smooth cruising and extend your mixer life. Support legs front & back are a great option for mini batch plat applications.

How to Operate Cement Mixers

Always place the mixer on a flat surface before beginning to mix. If using an electric unit make sure the proper grounded extension cord (10 gauge-50ft max) is being used and is away from any water. Use the appropriate safely equipment before you start. Make sure you have thoroughly read the manufacturer's mixing instructions located on the bag of whatever material you are mixing (concrete, mortar, stucco, dry-pack, pea-gravel grout). Follow the mixing proportions for adding water on the mixing instructions.

Start the mixer gas unit run up to 3/4 throttle. You are now ready to start adding material and water. Once all materials have been added to the mixed, let it run three minutes to mix thoroughly and to allow the materials to chemically react and form a good product. Then, carefully lower the mixer to dump the material into a wheelbarrow or other vehicle for transportation to the work site.

Pour the components rather than dumping them all in at once to prevent clumping. Be careful when adding materials to the drum, the mixing paddles inside the drum can catch a hand, shovel, or bucket, don't reach into the drum while it is moving.

Useful conversions:

- 1 Bag of Cement = 88 lbs.
- 1 Cu ft. Sand/Gravel = 85-100 lbs.
- 1 Cu. ft. Plain Concrete = 140-150 lbs.
- 1 Cu. ft. Water = 62-65 lbs.
- 1 Gallon of Water = 8.33 lbs.
- 1 Cu. Yard = 27 Cu. ft.
- 2 cu. ft. = 6 sq. ft. 4" thick slab
- 2 cu. ft. = 8 sq. ft. 3" thick slab
- 1 yard = 27 cu. ft.
- 1 yard = 80 sq. ft. 4" thick
- 1 yard = 108 sq. ft. 3" thick
- 1 80 lb. bag = 2/3 Cu. ft.

Machine Concrete Mixing Tips:

You will have your concrete forms in place and all your tools ready before you mix up the concrete since you will only have about 30 and 45 minutes to pour and level your concrete. Quantities and proportions have been calculated, begin mixing. Without knowing how much raw material you need for your project, you may have to hastily mix up another batch of concrete to finish the job.

Find the volume: **Length x Width x Depth = Volume (cu. ft.)**

One of the factors that determine the strength of concrete is the quality of the mix. Many times, homeowners mix up cement by trial and error until it "looks right." The most common mistake is to add too much water so the concrete is more workable. Another factor is the weather condition while the concrete is being mixed and immediately after pouring because it has been proven that mixing concrete during cool and humid weather produces stronger concrete surfaces. **Water Content: Why less is more** The quality of hardened concrete is greatly influenced by the amount of water used in relation to the amount of cement. Higher water content dilutes the cement paste (the glue of concrete). Here are some advantages of reducing water content: Increased compressive and flexural strength, lower permeability, thus increased water tightness and lower absorption, increased resistance to weathering, better bond between concrete and reinforcement, less volume change from wetting and drying, reduced shrinkage and cracking aggregates. Aggregate should be clean before mixing.

Portland cement is a skin irritant and cause inflammation, burns and blisters, skin protection is necessary to prevent irritation, it can also burn your lungs and eyes.

SAVE YOUR BACK METHOD! Add 1/2 the water for your batch size first. Cut open the bags and dump them first into 5 gallon plastic pails, then dump the material from the pails into the mixer. This technique is safer, cleaner, and much easier than trying to dump straight from the bags. If you are not using premixed bags make sure you always use the sand first then the lime and cement. This gives a better mixing action and prevents the lighter materials from coating the sides. Be careful not to add too much water. It is best to mix a bit on the dry side then add the last amount of water carefully to get the perfect mix.

Never allow material to harden up inside the drum. When the mixer has been discharged it is always best to do a quick wash of the inside of the drum and let the mixer just turn the water. Don't forget to rinse the wheelbarrow after each load is dumped. Also rinse your tools as soon as you are done for the day.

Discharge from the mixer should be arranged so that it increases productivity (fast discharge), and it does not modify (slow discharge) the homogeneity of the concrete. For instance, if the discharge involves a sudden change in velocity, over a long distance onto a rigid surface, there could be a separation of the constituents by size.

High temperatures (above 90°) may mean you have to increase both the cement and the water ratio to obtain the correct slump. If mixing concrete on hot, windy days, keep materials as cool as possible: cover aggregate and sprinkle to cool before using, mix materials in the shade, add ice cubes to the water (keep same amount of water however), spray the forms, reinforcement and sub grade to moisten and cool them before pouring, erect sun shades, get extra help so you can work quickly, cover the concrete as soon as possible and keep moist to prevent evaporation.

Cold temperatures cover the ground, forms, and reinforcement to prevent freezing; cover aggregates with black plastic to retain warmth; heat the water and mix with the coarse aggregate (temp. no higher than 100° F) before adding the cement and sand; work the concrete quickly and immediately cover (black plastic in day/straw at night or manure piled on plastic); prevent freezing for first 24 hours or permanent damage will occur.