

Toolbox Talk

Using a Diesel Cement Mixer

Cement mixers have been used in construction projects for many years and take a lot of the hard work out of this activity.



Cement mixers consist of:

- A drum with deflectors inside to give a good mixing.
- A means of tilting the drum (whilst rotating) to enable the mix to be tipped into a wheel barrow or other means of transport.
- A prime mover and gear/drive mechanism, enclosed under a cover.



Setting up the mixer:

- Site the mixer on level ground and away from public areas where dust, noise and spillage could be a problem.
- Place the mixer on boards or tarpaulin so the spillage does not contaminate the ground.
- Ensure there are sufficient materials to hand and these are positioned to minimize twisting and lifting.
- Make sure there is an (in date) eye wash nearby.

Pre-start checks:

- Fill up with fuel. If refueling during operation, stop the mixer and allow it to cool before filling.
- Check lubricating oil and greasers, if any.
- Make sure operators are briefed and know how to stop the mixer.
- Make sure the operators know the mix quantities.
- Make sure operators have the correct PPE.
- Check area around the mixer is clear with no obstructions around rotating parts.

Starting the mixer:

- Set control to run, with choke engaged (if fitted).
- Ensure the mixer is empty and the drum tipped up to minimize load on starter mechanism.
- Check fuel line is on.
- Operate the starter key or recoil starter.
- Some (larger) diesel mixers have a de-compressor to assist starting. This must not be used for turning the machine off, always use the on/off switch.



Key points:

Always familiarise yourself with the exact piece of equipment to identify key components.

Make sure you know how to stop it in an emergency.

Health and Safety

Hazards from mixer:

- Pinch points between mixer and drum.
- The rotating drum can snatch anything placed inside, so keep arms and tools outside.
- Put towbar away to prevent runaway and trip hazard.

COSHH:

- Lime and cement can give rise to burns and dermatitis and can lead to respiratory problems if dust is inhaled.
- Fuel and lubricating oil are irritants and flammable.

Manual handling:

- Position materials to minimize lifting, twisting and having to walk to and from mixer.
- Rotating drum will snatch a shovel if it enters the drum.
- Don't overdo, take frequent breaks to avoid fatigue.
- Moving the mixer may require more than one person.

Personal Protective Equipment (PPE):

- Additional PPE; dust mask, safety eyewear, gloves, long sleeves and ear defenders.
- No loose clothing.

Toolbox Talk



**INLAND
WATERWAYS
ASSOCIATION**

Using a Diesel Cement Mixer (contd)

TYPICAL MORTAR AND CONCRETE MIXES

These are “typical” mixes; always follow any site specific instructions for mixes.

A. Lime Mortar Mix:

Hydraulic Lime Mortar (NHL5)	Sharp Sand	Building Sand	Water	Notes
1 part	1½ parts	1 part	Enough to give correct consistency, add slowly, bit at a time whilst mixer is rotating	Cover up with wet sack cloth at end of day, finish joints whilst “green” with flat trowel for tra-

B. Cement Mortar Mix:

Note: Plasticiser can be added, follow manufacturer’s instructions

Portland Cement	Sharp Sand	Building Sand	Water	Notes
1 part	Nil	3 or 4 parts	Enough to give correct consistency add slowly, bit at a time whilst mixer is rotating.	Cover up at end of day, finish joints whilst “green” with a flat trowel or a radius tool (“frenchman”) for

C. Concrete Mix:

Note:

1. The strength of a concrete can be adjusted by increasing/decreasing the amount of cement that is added.
2. Generally sand and stone will be supplied together as ballast, so the ratios below will be combined.

Portland Cement	Sharp Sand	Coarse Aggregate (max size)	Water	Notes
1 part	2 parts	3 parts	Enough to make it workable, max of 15%	Mix the dry ingredients first. Cover up at end of

General Points:

- With concrete, the more water that is added the weaker the concrete, however the concrete workability increases with water content. So there may have to be a compromise.
- Proper additives (plasticisers) added to cement mortar make it more workable. Washing-up liquid must not be added.