BUILD RIGHT

Masonry blockwork clean-outs

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IF MORTAR DEBRIS THAT FALLS TO THE BOTTOM OF BLOCKWORK CAVITIES IS NOT REMOVED BEFORE FILLING, THE BOND BETWEEN THE GROUT, BLOCKS, REINFORCING BARS AND CAVITY BASE IS REDUCED.

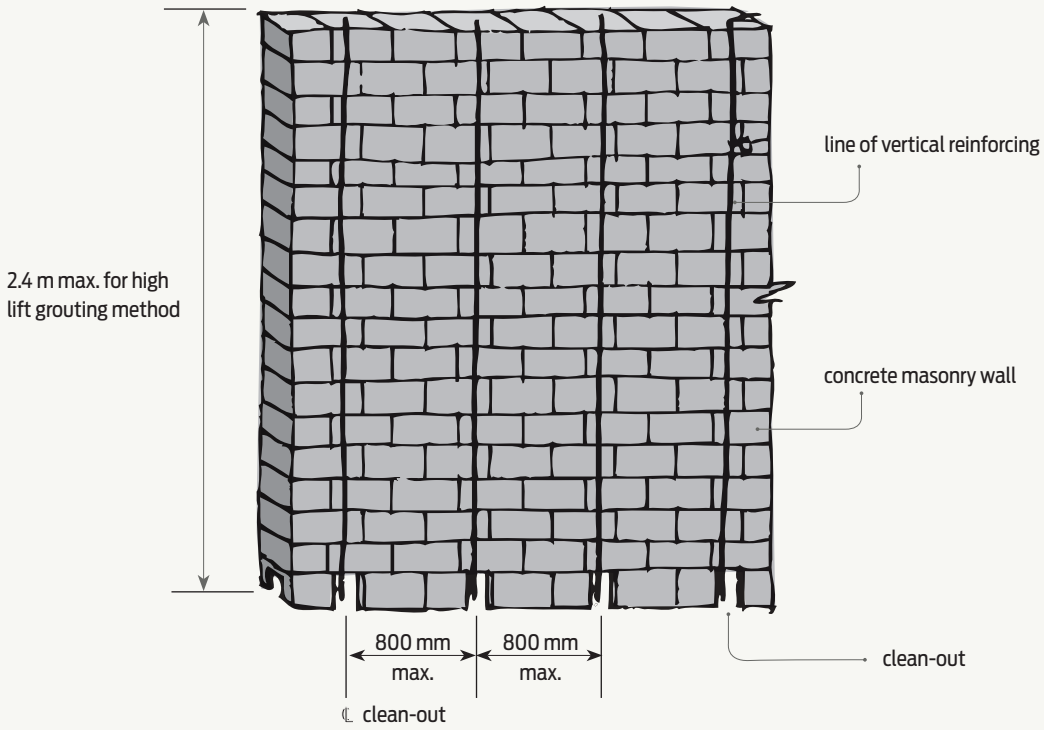

Figure 1 **Clean-out spacings.**

Clean-outs – sometimes called wash-outs – or temporary openings for the removal of the mortar and debris must be incorporated at the base of the blockwork during blocklaying. NZS 4210:2001 *Masonry construction: materials and workmanship* states where they are required. The openings must be at least 100 mm × 75 mm.

Clean-outs are not required where a low-lift grouting method (up to 1.2 m lift) is used, but mortar must be removed as work progresses. Where cleaning out is restricted, clean-outs will be needed. Where a high-lift method (up to 2.4 m) is used, clean-outs must be provided.

Where to locate clean-outs

Clean-out placement depends on the location of the vertical reinforcement and whether the walls are partially or fully filled.

Partially filled walls only have grout inserted in the vertical cores that contain reinforcing and in the horizontal bond beams – all other cores are left unfilled. Each vertical core to be grouted must have a clean-out at its base.

Solid-filled walls are completely filled with grout. Clean-outs are required at each vertical reinforcing bar location with a maximum of 800 mm between clean-outs (see Figure 1).

Clean-out openings are typically created by using open-end bond beam blocks that are inverted and have the shell of the block ➤

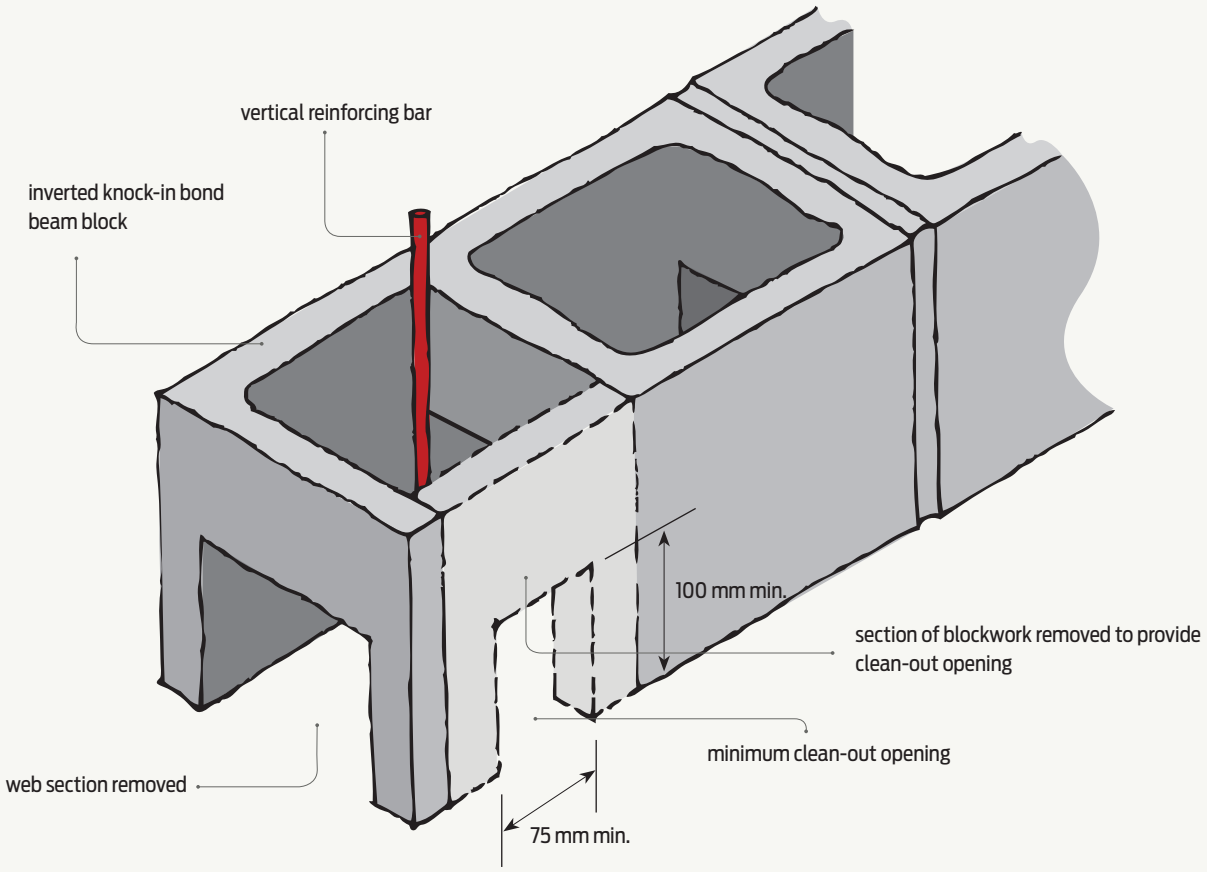

Figure 2 **Minimum dimension of clean-out.**

fully or partially removed to form the opening and the upper sections of the webs removed to provide the continuous access for mortar removal (see Figure 2).

Block off after inspection

Once all the mortar and debris has been removed and the pregrout inspection has been carried out, the clean-outs must be blocked off.

Blocking off can be done by:

- using formwork held in place with tie wires wrapped around the vertical reinforcing in the wall – recommended where the wall is to be either plastered, strapped and lined or have an EIFS cladding (small gaps around the formwork allow some grout leakage to confirm that the cavities are completely filled)
- reinserting the piece of the block face that was removed by mortaring it in place and holding it with bracing during the grouting process – recommended when masonry blockwork is to be left exposed.

For easier mortar removal, BRANZ makes additional recommendations that include:

- providing clean-outs where a low-lift grouting method is used
- placing a 25 mm thick layer of sand at the bottom of the wall after the first course is laid to prevent mortar from becoming stuck to the base of the wall (both sand and mortar droppings must be removed before grouting)
- where sand is not used, removing mortar and debris at the end of each day or more frequently when working in hot temperatures.