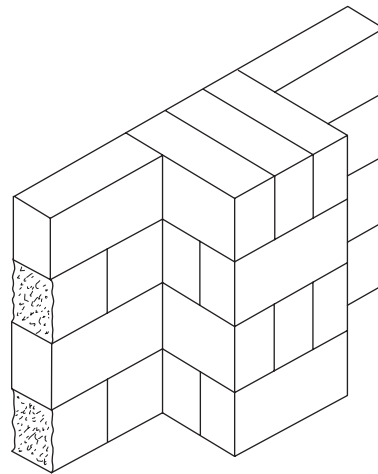


**Figure 5.14** Attached pier



**Figure 5.15** Attached pier with 150 mm blocks

## Thin joint masonry

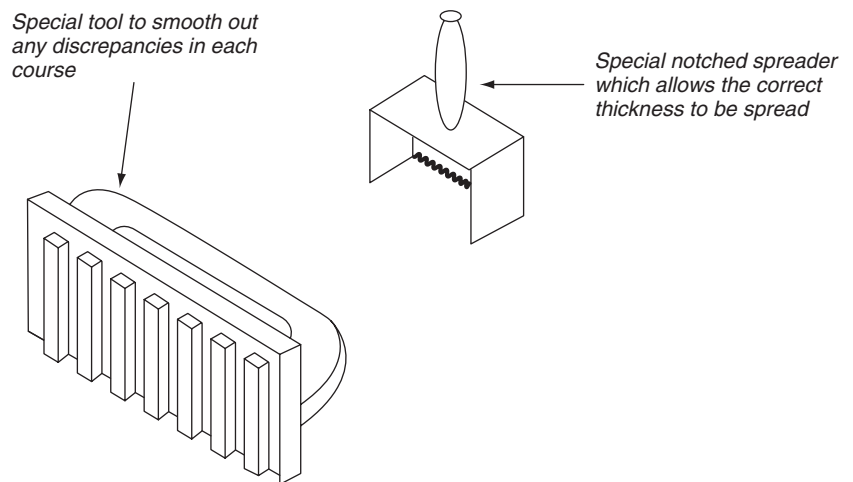
Continual research has enabled leading block manufacturers to develop a thin joint mortar which in conjunction with a larger block size enables internal walls to be constructed quicker.

This system is an alternative to using 10 mm sand and cement mortar bed and cross joints. The thin joint mortar is supplied as a dry pre-mixed powder in 25 kg bags and is applied with a special spreader, 3 mm thick. It begins to set within 10 minutes and approaches full strength in just 1 to 2 hours. The thin joint mortar is mixed with water as required.

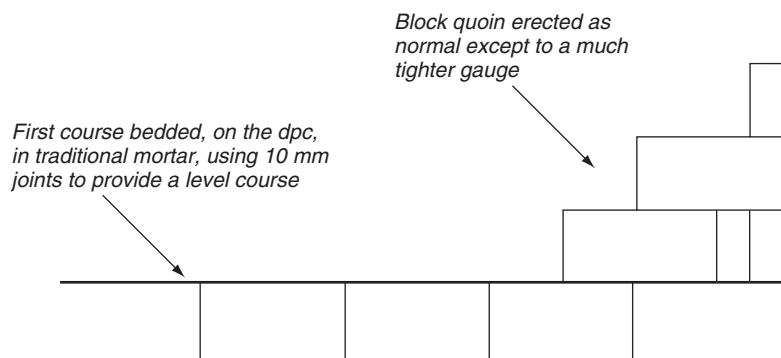
The approach to using the thin joint system is different to the sand and cement system. The blocks have to be produced to a tolerance to allow them to be used in thin joint systems and all cut blocks need to be cut to the exact size allowing only 3 mm for the joints. A masonry saw or mechanical saw could be used, not a club hammer and bolster chisel as this would lead to greater joint widths than 3 mm.

Stability of the walls is greater than with sand and cement so therefore greater height can be reached with very little or no support required.

The first course is usually laid onto the dpc using traditional sand and cement mortar to achieve a level datum to work to; see Fig. 5.17. This is the most important course as it is impossible to gain or reduce height with thin joint mortar as easy as you can with traditional mortar. This course should be allowed to set overnight and be ground level before commencing with the thin joint system.

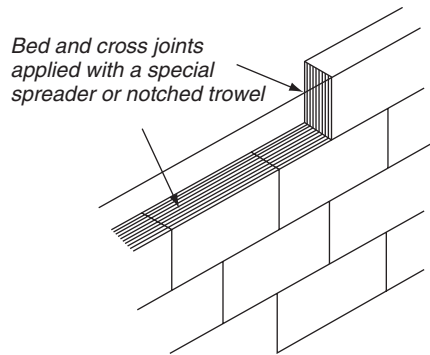


**Figure 5.16** Special tools



**Figure 5.17** First course and thin joint quoin

The skills required to build with the thin joint system are very similar but it is necessary to maintain regular checks for level, plumb and line; see Fig. 5.18.



**Figure 5.18** Laying to line

The dry pre-mixed mortar should be mixed in a clean bucket to the rate of 25 kg of powder to 5.75 litres of clean water.

Special electric mixing tools are available to ensure correct consistency of the mortar. As with traditional mortar, once mixed, unused mortar should not be re-tempered or admixtures applied.

If mixed correctly thin joint mortar should remain workable for up to 4 hours. Ensure overmixing does not take place to prevent wastage.

The procedure for laying is the same as for traditional blockwork. The first course must be set out dry to ensure correct bond with minimum cutting.

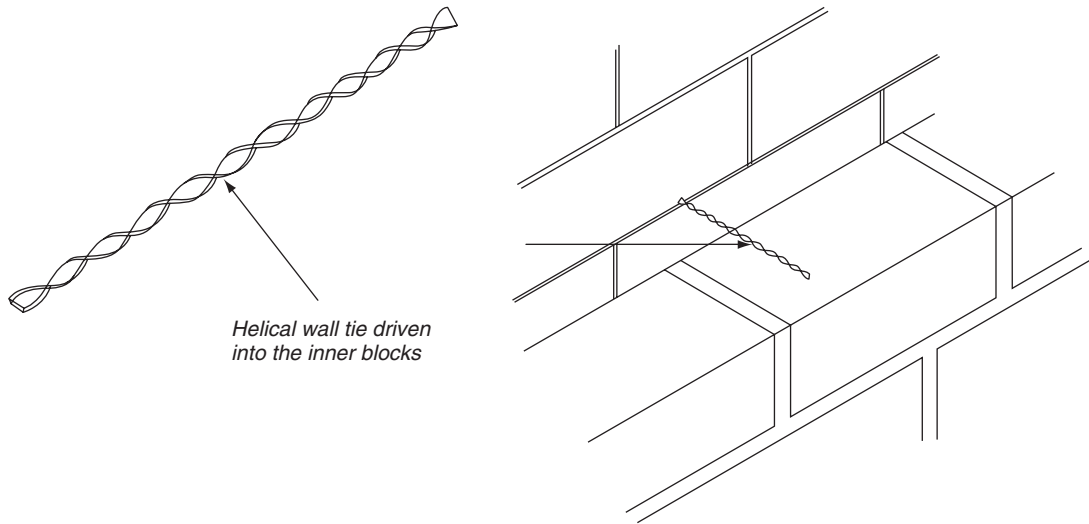
The corners should be erected first and the walls run in as normal.

The thin joint mortar is spread using a special notched trowel or scoop to the correct thickness of 3 mm. The mortar bed should remain workable for 6 to 9 minutes and set within 10 minutes. Any minor adjustments should be made as soon as possible. Cross joints can be applied with the same equipment or the blocks could be dipped into the mortar to apply the cross joint.

One of the main differences is the height the wall can be built to. If the wall is the inner leaf of a cavity wall, normal wall ties cannot be used. The inner leaf can be built to wall plate level and the inner work can continue while the outer leaf of the cavity wall is being built.

Wall ties are placed at the normal positions but due to the bed joint not coinciding, special helical wall ties, shown in Fig. 5.19, are driven into the face of the blocks.

Insulation can be placed against the inner blockwork and the wall ties driven through the insulation. If partial insulation is used, special clips are inserted as normal. It is important to ensure the block wall has set and is stable before driving in wall ties.



**Figure 5.19** Helical wall tie

The benefits of the thin wall system can be greatly enhanced if jumbo block units are used. Jumbo block units are available 440 mm long and 430 mm high. These sizes can change between manufacturers.