GET IT RIGHT

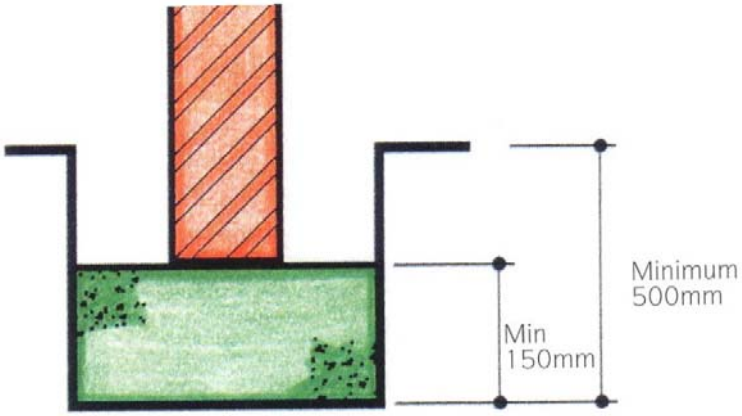
1. Simple Free Standing Walls in clay brickwork

This leaflet highlights the basic requirements for long term stability, durability and safety of simple free standing walls constructed with clay bricks.

1. Foundations & Allowable Wall Height.

Rules of Thumb - The foundation shown will be adequate in most cases.

Foundations



Refer to allowable wall height diagram

Allowable Wall Height

Wind Zone	Maximum height for One Brick Thick walls	
	Sheltered	Exposed
Zone 1	1925 mm / 525 mm	1450 mm / 600 mm
Zone 2	1750 mm / 550 mm	1300 mm / 625 mm
Zone 3	1600 mm / 575 mm	1175 mm / 650 mm
Zone 4	1450 mm / 575 mm	1075 mm / 650 mm

Source: BRE Good Building Guide No.14

Changes to the diagrams shown must only be on the instruction of a Structural Engineer.

For Foundations, a 1:2:4 mix (maximum aggregate size 20mm) will be strong enough in most cases (1 part cement - 2 parts sand - 4 parts aggregate).

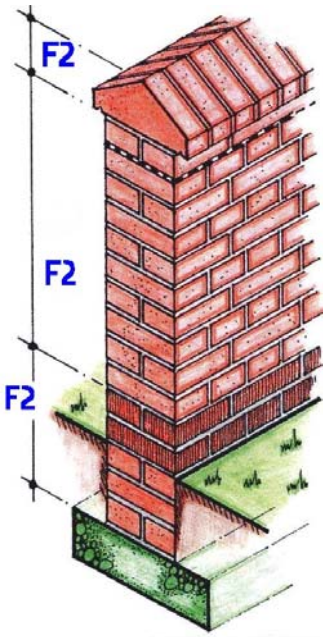
2. Clay Bricks

We would recommend that all clay bricks from concrete footings upwards should be type F2 (frost resistant). A full brick thick construction is also recommended (215mm).

Half brick thick walls (102mm) are not considered to be suitable.

Coping and cappings in clay masonry should always be type F2 (frost resistant).

Jointing should be weather-struck or bucket handle. Recessed jointing should not be used.



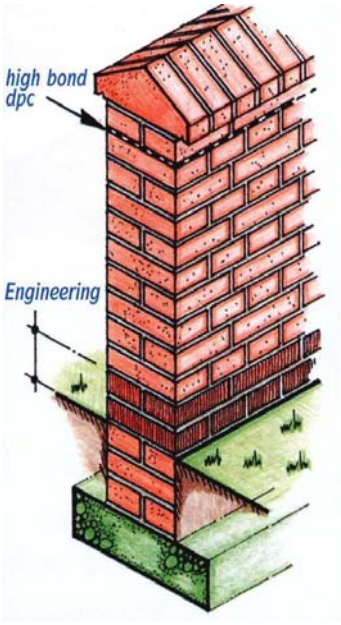
IBSTOCK® innovators in clay

3. Mortars.

Mortar is just as exposed as the brick. Generally, and especially in the North West of England and Scotland, we strongly recommend mortar mix 1 below ground level DPC and for copings and cappings. The exception to this recommendation would apply to 'Stock' bricks for which mix 2 should be used throughout.
Fully fill all bed and perpend joints and lay frogged bricks with frog uppermost.

Mix 1	Mix 2
1 part Portland Cement	1 part Portland Cement
$^1/_4$ part Lime	$^1/_2$ part Lime
3 parts Sand	$4^1/_2$ parts Sand

4. Damp Proof Courses.



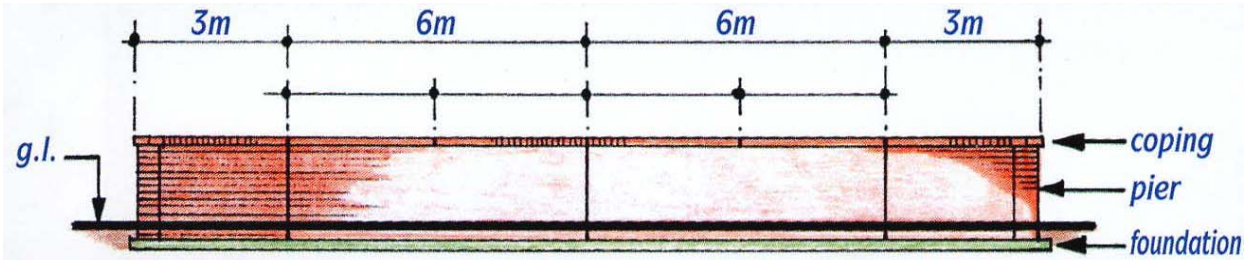
Dpc's are barriers to the passage of water and moisture.

At Low Level, for stability use a minimum of 2 courses (150mm) of Ibstock Engineering Bricks of F2 durability in mortar mix 1.
At High Level, always use a DPC beneath coping and capping courses, which must be at least the width of the wall, be sandwiched within the mortar and have the ability to adhere to the mortar (use a high-bond bitumen polymer type DPC). Polyethylene DPC's should be avoided as they do not bond with the mortar leaving the coping or capping susceptible to being displaced.

5. Movement Joints.

All building materials move when subjected to temperature and moisture changes. Brickwork is no exception.

In freestanding walls, movement joints (often referred to as expansion joints) must be provided at a maximum of 6m spacing with a maximum 3m from a corner or change of direction.
They must commence at concrete foundation level and continue through the coping/capping courses. Additional movement joints will be required at 3m centres through the copings/cappings. A 10mm joint width will normally be sufficient. Use ties fitted with de-bonding sleeves to span the joint to maintain stability.

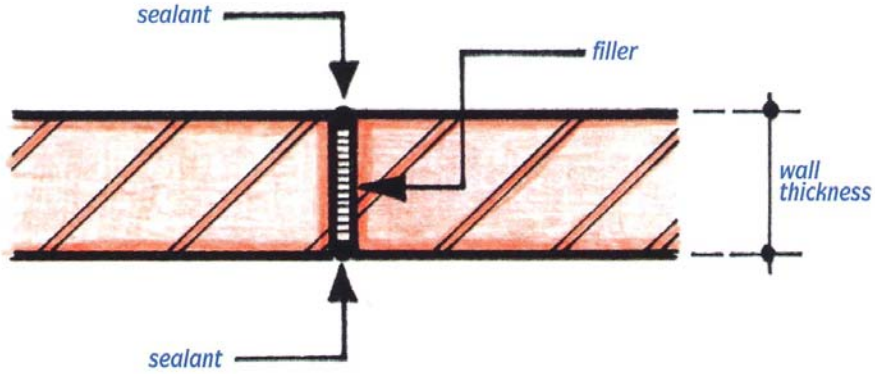


IBSTOCK® innovators in clay

6. Fillers and Sealants.

Filler materials should be compressible by easy pressure between finger and thumb and should recoil back to its original thickness when released.
Cellular polyethylene and cellular polyurethane are ideal.
Impregnated fibre boards should not be used as they do not compress easily and will restrict expansion.

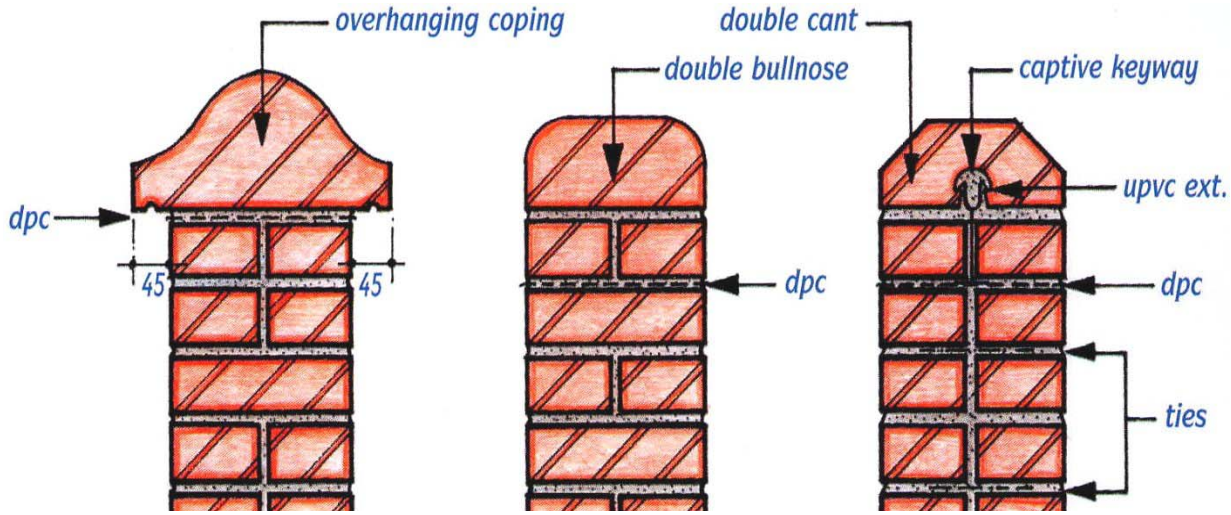
The filler material should be installed as the brickwork is built, keeping it back from the face of brickwork by 10mm to allow for a 10 x 10mm recess for the sealant.



The sealant should be a polysulfide or low modulus silicone.

7. Copings and Cappings

This is where water will ingress the brickwork if not properly constructed.
Clay brick copings and cappings must always be F2 (frost resistant), preferably with an overhang and the ability to shed water. A flexible (roll type) high bond bitumen polymer DPC should always be provided and sandwiched in the mortar. The Ibstock patent 'Caplock' system will provide additional security, particularly in areas where vandalism is prevalent.



In general and especially in the North West of England and Scotland, copings should always be used in preference to cappings where possible.

Suitable coping/capping bricks are always available. Contact your local Ibstock stockist.
For mortar requirements see section 3.

8. Piers.

Maintaining stability is essential for long term safety in use.
It is advisable to incorporate the pier shown at the ends of most walls.
This pier will be adequate for hanging a 1.2m x 800mm wide gate.
It is likely that walls over 1.5m high will require intermediate stiffening piers along its length.

In Scotland, a free standing wall over 1200mm above ground level may require Building Standards approval. Please check with your local Building Standards office before commencing any building operations.