

Introduction

Bonding is the arrangement of bricks in a structure such as a wall or column.

Very broadly, bricks can be laid as soldiers (standing upright), stretchers (laid lengthwise along the wall) or headers (laid width wise along the wall).

Bricks are typically laid to an offset pattern to maintain an adequate lap between joints from one course to the next and to ensure that vertical joints are not positioned above one another on consecutive courses.

Brick bonding patterns:

- Distribute loads throughout the structure to achieve maximum strength.
- Ensure stability.
- Achieve the desired aesthetic.

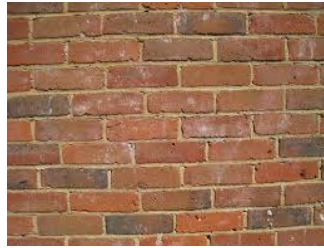
Bond patterns

- 2.1 Stretcher bond
- 2.2 English bond
- 2.3 English garden wall
- 2.4 English cross bond
- 2.5 Flemish bond
- 2.6 Flemish garden wall (also called Sussex bond)
- 2.7 Monk bond
- 2.8 Header bond
- 2.9 Stack bond
- 2.10 Sussex bond (same as Flemish garden wall bond)

1. Stretcher bond

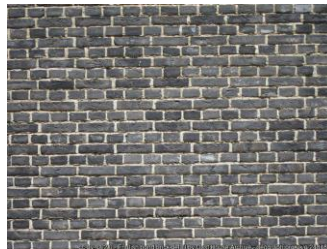
The most commonly used bond in the UK, a pattern is made only using stretchers, with the joints on each course centred above and below by half a brick. This type of bonding is not particularly strong.

A variation is the raking stretcher bond. The overlap between bricks is usually a third or a quarter of a brick, instead of half a brick.



2. English bond

This is a pattern formed by laying alternate courses of stretchers and headers. The joints between the stretchers are centred on the headers in the course below. This is one of the strongest bonds but requires more facing bricks than other bonds.



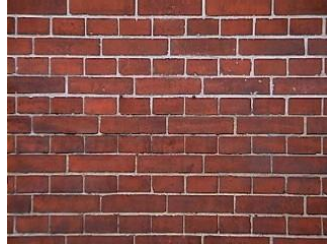
3. English garden wall

This is similar to the English bond but with one course of headers for every three courses of stretcher. The headers are centred on the headers in course below. This gives quick lateral spread of load and uses fewer facings than an English bond.



4. English cross bond

This alternates courses of stretchers and headers, with the alternating stretcher course being offset by half a brick. The stretchers are centred on the joins between the stretchers below them, so that the alternating stretcher courses are aligned. Staggering stretchers enables patterns to be picked out in different texture or coloured bricks.



5. Flemish bond

This is formed by laying headers and stretchers alternately in each course. The headers of each course are centred on the stretchers of the course below. This bond is strong and often used for walls which are two-bricks thick.



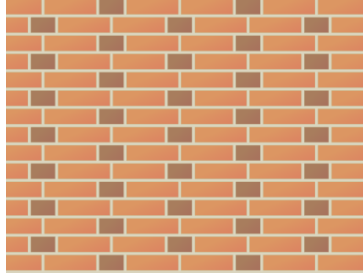
6. Flemish garden wall (also called Sussex bond)

This variant of Flemish bond uses one header to three stretchers in each course. The header is centred over the stretcher in the middle of a group of three in the course below.



7. **Monk bond**

This variant of Flemish bond involves two stretchers between the headers in each course. The headers are centred over the join between the two stretchers in the course below.



8. **Header bond**

This bond features courses of headers offset by half a brick. It is similar to the stretcher bond but with headers instead of stretchers.



9. **Stack bond**

In stack bond, bricks are laid directly on top of one another with joints aligned, running vertically down the entire wall. Bricks can either be stacked horizontally or vertically.

The alignment of joints results in minimal bonding which means that this bond is weak and often structurally unsound unless wire bed-joint reinforcement is placed in every horizontal course or, where loading is moderate, every alternate course. This is often used purely for decorative purposes and in rain-screen applications.

