

| ***Field*** | ***Construction*** |
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| ***Chapter*** | ***Half brick wall, full brick wall, continuous wall, types of corners and intersections at walls. Wall tie.*** |
| ***Subtitle*** | ***Types, implementation.*** |

| ***Half brick wall, full brick wall.*** |
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**1: Half brick wall:**

**\*What is a half-brick wall?**

**1.1: This is a wall that has the thickness of the head, the width of the stone, about half the length of the stone.**

**- The bricks are bricked together lengthwise.**

**\* Application:**

**1.1.1: Mostly applied for facades of family houses, apartment buildings, etc…**

**- A half-brick wall can be masonry with either regular bricks( facing brick), quick build brick, concrete blocks and silicate brick.**

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**Half brick wall Half brick wall quick build brick.**

**2: Types of corners in half brick walls:**

**2.1: Right angle:**

**- A right angle must always be 90°**

**- Checking squareness can be done using a store hook, a construction hook, by the 1-2-3 rule, by measuring in the opposite direction and by the Pythagorean theorem.**



**Half- brick bond, corner joint, layer 1 Layer 2**

**2.1.1: Continuous wall:**

**- The front side of the at a right angle wall, is the continuous wall, the other side is the approaching wall.**

**2.1.2: Meeting in half-brick wall:**

**- In the process, a wall is bricked in at right angles to another wall.**

**- This meeting should form 2 right angles of 90°**

**2.1.3: Implementation:**

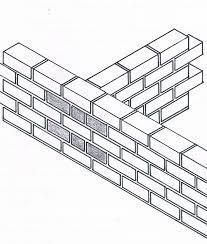
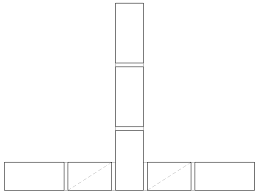
**- This can be done in 2 ways**

**\* Method one:**

**- The layers run in turn.**

**- On each side of the header a three-quarter stone( 3/4stone- should be placed to maintain the masonry bond.**

**- The head of the meeting wall disturbs the stretching layer.**

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**\*Method two:**

**- The layers run in turn.**

**- The 2 triples are bricked side by side in the continuous layer, not next to the head.**

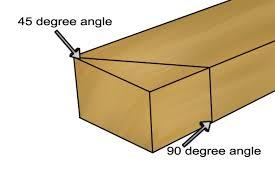
**- The head of the meeting wall disturbs the stretching layer.**

**- This one is almost not implemented.**

**2.2: Angle of 45°:**

**- At this corner, the stones of the continuous and upcoming wall are cut at an angle.**

**- This means that the corner has a vertical joint from the bottom to the desired height.**

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**Corner of 45 degrees Sawing off the sloping side of the stone.**

**-You can also choose this solution:**

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**If it doesn’t seem like the right solution, because you’re stuck with those openings in de facade.**

**2.2.1: Blunt angle with protruding head decoration:**

**- This has an alternating layer where the head of the brick protrudes straight from the corner, and a layer that really forms a blunt angle.**

**- In the intermediate layers, the bricks must be sawn off at an angle, to fix exactly against each other.**

**- The other layers, where the head protrudes from the corner, also have be chamfered.**



-**A blunt angle is therefore greater dan 90 degrees.**

**- This angle does not determine the most beautiful view.**

**2.2.2: A round corner:**



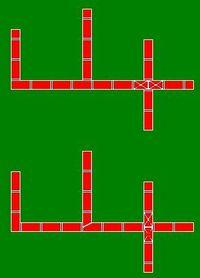
**-Designated to use only headings.**

**2.2.3: Right angle intersection:**

**\*Application:**

**- Widely used in construction training to teach students how to join walls.**

**- Also for continuous walls that are the separation of places in a home, garden tablets etc.**



**Combination of right angle, angled and oblique meet and right -angled junction.**

| **3:** **Stone wall.** |
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**3.1: What is a stone wall?**

**This wall has the thickness of the length of the stone.**

**There is no cavity present.**

**Especially still found in older homes and buildings, as well as in historic buildings.**

**3.1.1: What is the difference between a half-brick wall and a brick wall?**

**In the case of a half-stone wall, the stones are laid longitudinally.**

**The wall is half a brick thick.**

**With a stone wall, the wall is a whole brick thick.**

**For a good bandage, alternately brick heads and stretches around the other layer.**

**3.1.2: Application:** 

**For walls in cross bandage and standing bandage.**

**These are not bricked much more in today’s construction because they are too expensive.**

**Are still applied in foundation masonry.**

**You can apply a stone wall with facing brick, quick build bricks and concrete blocks.**

**Apart from the stone wall, there are also the one-and-half stone**

**wall and the two-stone wall.**

**The latter 2 have all but disappeared from the construction industry, industry, mainly due to the advent of cavity wall and their**

**excessive**  **cost.**

**3.1.3: Continuous wall:** 

**Also with this stone walls, the continuous layer is the so-called building line. The wall coming up against is the oncoming wall.**

**3.1.4: Stone wall in cross bond:**

**The cross dressing has alternating rows of head and rows of stretchers stretches. The row of racks always begins with a three-quarter** 

**stone.**

**The cup layer lies exactly above the underlaying cup laying.**

**The mullion layer always staggered half a brick with respect to the**

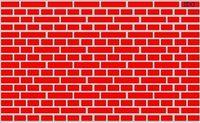
**mullion layer below.**



**Every 4 layers get the same dressing, the difference is in the 2nd**

**and 4th layers. Every 4 layers, a head is placed in the stretching**

**layer to stagger the bandage by half a stone.**



**Stone wall cross bond, look at the 2nd and 4th layer.**

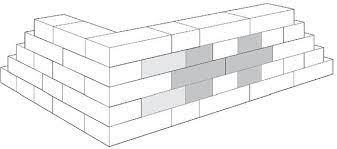
**3.1.5: Right angle in stone walls, cross bond:**

**Even with stone walls, a right angle should be 90 degrees.**

**Each strip layer at right angles begins with a three-quarter stone**

**One can also brick a cross-dressing in a half-brick wall, usually the**

**facades. Heads should be sawn then**

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**Right angle in cross bond, half -brick wall.**

**3.1.6: Standing bandage:** 

**Looks like the cross dressing.**

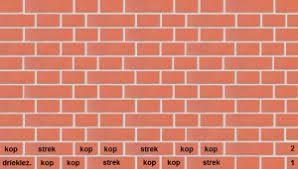
**Here also alternate headings and stretches.**

**Again, the stretching layer always begins with a three-quarter stone.**

**The difference lies in the fact that here both the heads and stretchers**

**are on top of each other.**

**So, the 1st layer= the 3rd layer, the 2nd layer = the 4th layer etc.**

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**Head Three quarter**

**Stretch.**

**3.1.7: Application:** 

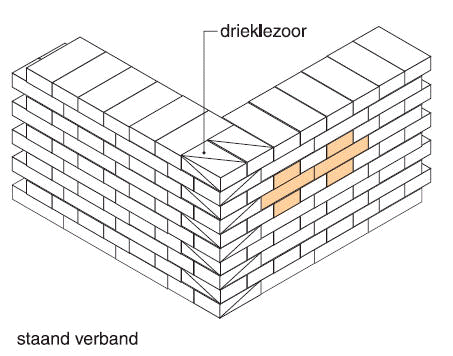
**For a garden wall**

**For common walls between two properties, with the same view along**

**either side.**

**3.1.8: Right angle in standing bond:**

**\* At the corners and the wall ends, one always works with three-quarter stones.**



**Standing bond Three-quarter stone**

**4: Wall tie:**

**4.1: There are 3 ways:**

**\* First by binding walls during the bricklaying.**

**\* Secondly, by means of galvanized strip iron.**

**\* Thirdly, by placing wall hooks.**

**- We have already discussed binding during bricklaying in a previous section, including by perpendicular encounters.**

**4.1.1: Galvanized strip iron:** 

**Used when a new wall needs to connect to an existing wall or concrete wall.**

**The galvanized band iron is shot with a nail gun, especially in a concrete wall.**

**4.1.2: Current dimensions:**

**\* Length= 10 or 25m thickness= 1 or 2mm width= 12, 17, 25 & 40mm.**

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**25x1mm x 25m 25x1mm x 10m**

**4.1.3: By means of wall hooks:**

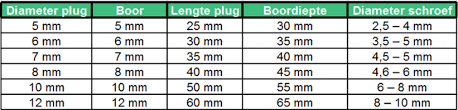
**More suitable for connecting an old or existing wall in masonry.**

**For this we need a drill and plugs.**

**For walls of 9cm wide use a drill of 9mm + a plug of 9mm, for walls of 14cm wide, use a drill of 12mm and plugs of 12mm.**

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**Types of plugs Different types of drills**



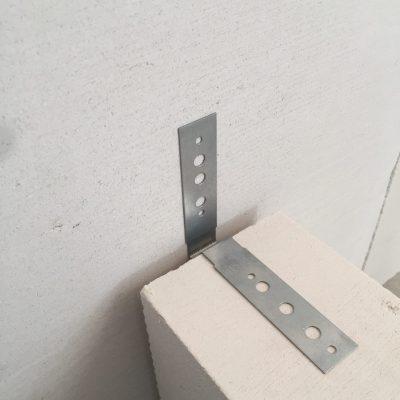
**Plug diameter Drill Drill length Drilling depth Screw diameter**

**4.1.4: connections in aerated concrete:**

**Galvanized spring anchors are used to anchor walls of 70mm thickness thickness.**

**Supplies:**

* **Galvanized spring anchor, collet 6x40mm, 6x50 & 6x60mm**
* **Wire nail 3.0 x 65mm & a claw hammer.**



* **We drive the wire nail into both the vertical existing wall and the horizontal ascending wall, by means of a claw hammer.**
* **For walls of 150mm or thicker, we use a wall anchor.**
* **Wall anchor dilating, collets of 6x40mm, 6x50 & 6x60mm & a claw hammer.**



* **For walls of 240mm or thicker we use exactly the same, but twice.**



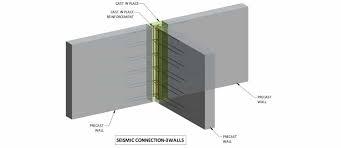
**4.1.5: Connections ( anchors) in concrete ( walls, beams):**

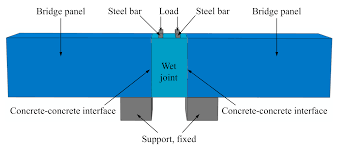
**\* The wet connection:**

**The wet connection is a connection poured on the construct** 

**side between two concrete parts.**

**These are monolithically connected to each other by the poured concrete and the connecting reinforcement.**

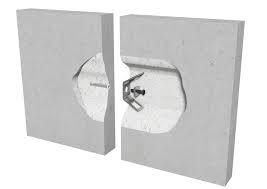
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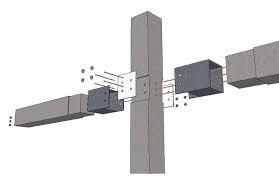


* **The dry connection:**

**This consists of a free laying of two concrete parts with lugs or bolts.**

**This connection is faster to make than the wet connection, no curring required.**

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**These are not as strong as the wet connection.**

* **Chemical anchoring/connection:**

**This is a substance consisting of two or more elements occurring** 

**in a fixed ratio.**

**There are four kinds of compounds, depending on how the** 

**component atoms are held together:**

* **Molecules held together by covalent bonds**
* **Intermetallic compounds held together by metallic bonds**
* **Ionic compounds held together by ionic bonds**
* **Specific complexes held together by coordinate covalent bonds.**

[**https://youtu.be/uHgPVXr-1eI**](https://youtu.be/uHgPVXr-1eI)

[**https://youtu.be/TR2iR3CZLcw**](https://youtu.be/TR2iR3CZLcw)

**Use chemical compound/anchoring:** 

**Connection masonry to concrete wall**

**Connecting/anchoring concrete walls, beams and columns.**

**Anchoring of concrete reinforcement.**

**Sources:**

**Own course**

**Febe.be**

**Wikipedia**

**YouTube**

**Wienerberger.be**