

Handling Instructions

Pirrouet®

Pirrouet® facing bricks are available in the following sizes:

- LF50-S 240 x 72 x 50 mm
- WF 210 x 100 x 50 mm
- DF 215 x 100 x 65 mm
- XXL44-S 440 x 72 x 44 mm

The declared manufacturing dimensions and dimensional tolerances are always stated on the technical data sheet. You can easily find this information for the different facing bricks on our website.

On delivery to the site, the dimensions for the series can be found via the QR code on the packaging label of the relevant facing brick packs.

1.1 Safety

Cutting and processing facing bricks generate dust. Ensure adequate dust extraction at the source.

Wear the same personal protective equipment (PPE) for cutting and processing Pirrouet® facing bricks as for cutting and processing ceramic bricks:

- At least an FFP3 dust mask (according to EN 149)
- Safety helmet
- Eye protection
- Safety gloves
- Hearing protection
- Safety shoes

1. Specific points to note when handling Pirrouet® facing bricks

The general regulations for facade brickwork must be followed. These general handling instructions can be found under Section 2.

In the following paragraphs, some aspects are highlighted that deserve special attention.

1.2 Handling on the construction site

Ensure the total quantity of facing bricks required is delivered to the site before the start of the work. Only then can you mix the facing bricks correctly. By mixing the facing bricks correctly, you can achieve the correct colour mix over the facade surface.

Opening pallets

To avoid damage caused by cutting open a pack of bricks, we recommend the following procedure:

- Cut the pack open below the top layer of bricks and remove the top of the packaging. (photo1)
- After unloading the first two layers, cut the cover open at the 4 corners of the pack and unload 3 more layers. (photo2)
- Only for the last 3 layers should the cover be fully cut through and removed. (photo3)

Stacking and transporting

To avoid damage and edge chipping, always stack the bricks flat on the scaffolding. For the same reason, always place an interlayer when transporting the bricks on a brick cart. It is strongly recommended to move the bricks manually with only 4 bricks at a time. Larger stacks can lead to edge chipping.

Cutting

Pirrouet® facing bricks should be cut **dry** with a grinding machine/angle grinder. This can be done with universally available diamond discs for bricks, concrete, and other masonry materials. After cutting we recommend removing the dust created by cutting with a soft brush or compressed air.

Always wear PPE as recommended in section '1.1 Safety'. Saw at a sufficient distance from the Pirrouet® units, taking into account the direction of the wind.

Tip: Pirrouet® facing bricks are also easy to cut using a brick cutter.

Drilling

For drilling into the bricks, use a concrete drill bit and make sure the hammer function is turned off. Adjust the rotation speed to match the diameter of the drill bit.

By way of illustration: Opening pallets



photo 1



photo 2



photo 3

1.3 Masonry bond

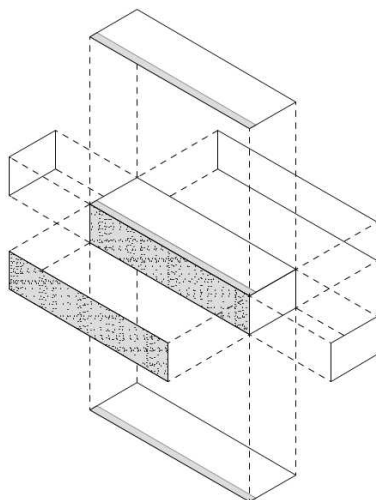
When choosing the brickwork bond, keep in mind that Pirrouet® facing bricks have a grey body, finished with a coloured, sanded and textured top layer with a minimum thickness of 8 mm on one stretcher face. At least 20% of the bricks in a pack have one pigmented, sanded and textured stretcher and header. The colouring of these bricks has been carefully coordinated to prevent the bricks being laid incorrectly. The textured face of the brick is always oriented upwards in the pallet stacking.

Only the sanded faces (one stretcher or one stretcher and one header) are provided with a coating as an extra protective layer, for long-lasting beautiful facades. This coating penetrates only a few millimeters into the brick and has no impact on working with the brick on site.

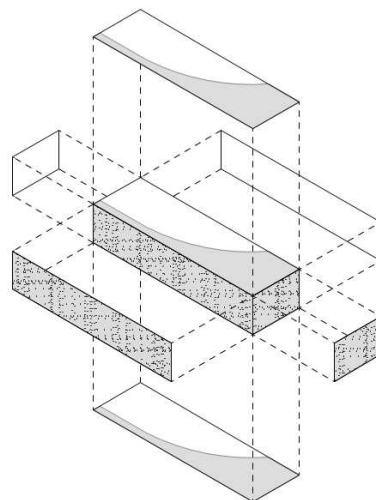
For applications requiring a higher proportion of corner bricks or fully pigmented bricks, for example for use in hit and miss brickwork details, or where bricks are adhesive fixed to the underside of a facade support... we recommend contacting Vandersanden for specific options.

No shaped or profile bricks can be produced from the Pirrouet® facing bricks.

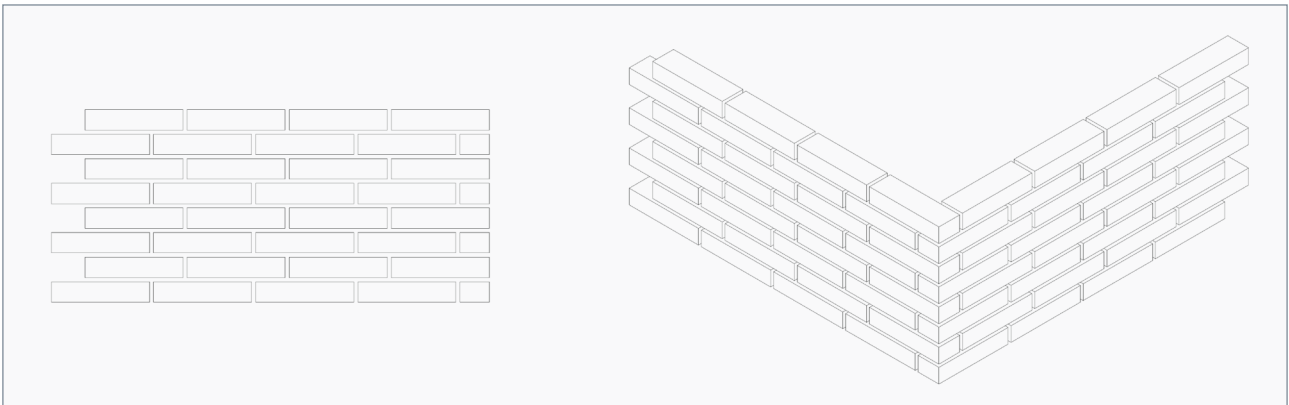
$\leq 80\%$



$\geq 20\%$

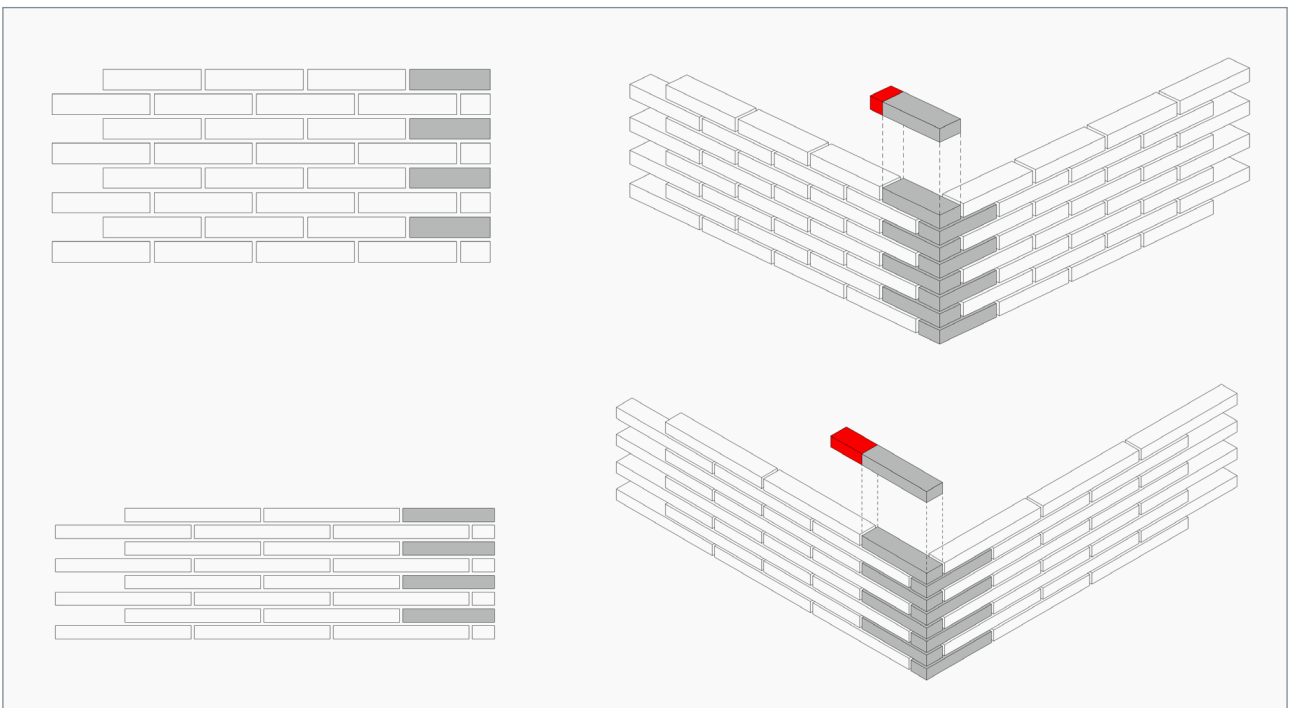


Additionally, Pirrouet® facing bricks in the LF50-S and XXL44-S formats do not have a modular header-to-stretcher ratio ('stretcher = 2x header + joint').



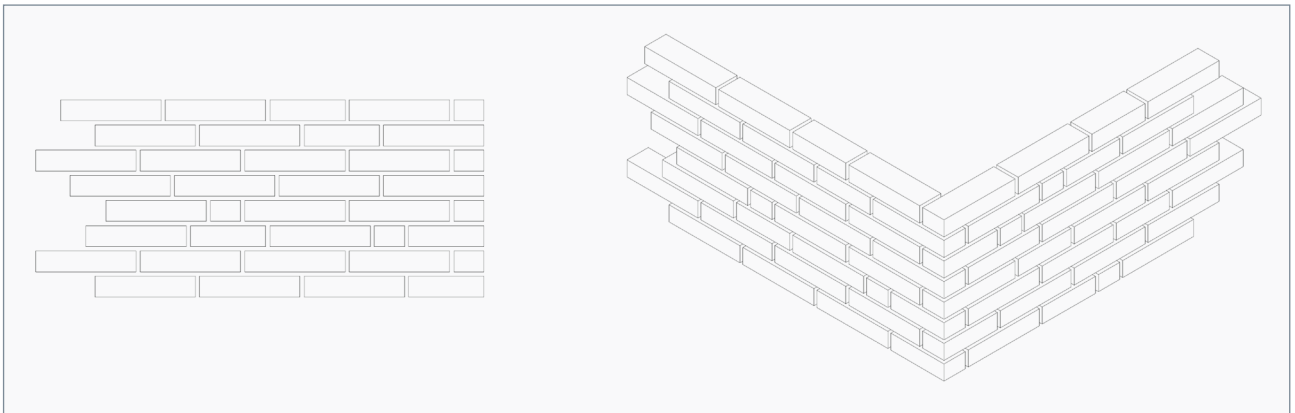
By way of illustration: No modular header-to-stretcher ratio

Nevertheless, provided cut facing bricks are used to make the fitting pieces, a brickwork bond based on modular proportions can be used. A frequently used modular bond is the stretcher bond.

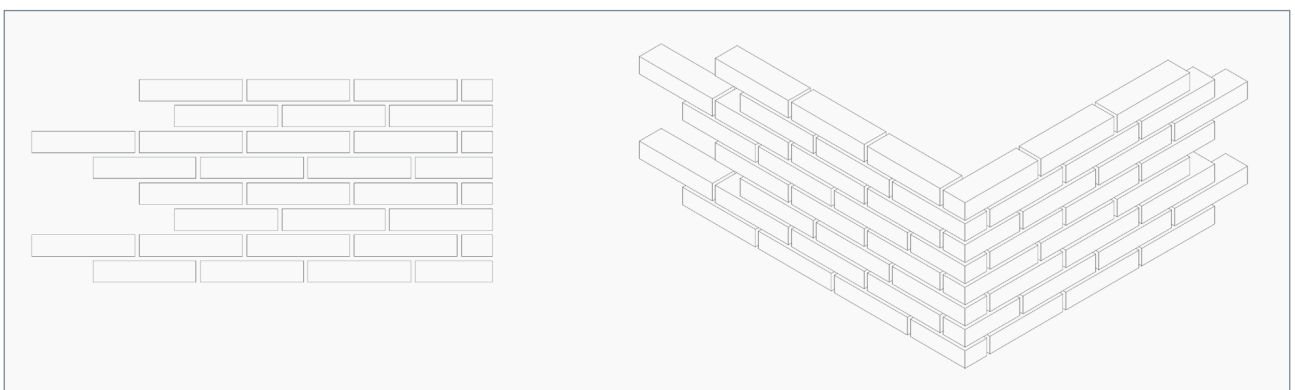


By way of illustration: Stretcher bond in different brick dimensions: use of a cut piece on the corner

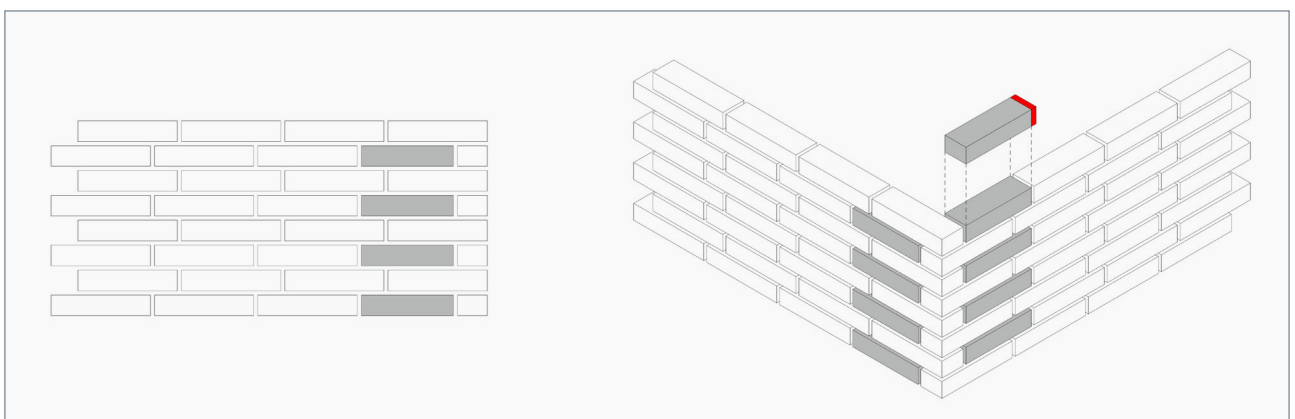
Popular bonds, such as random bond and gentle random bond can be applied without problems. Running bond, stack bond, etc. can also be used.



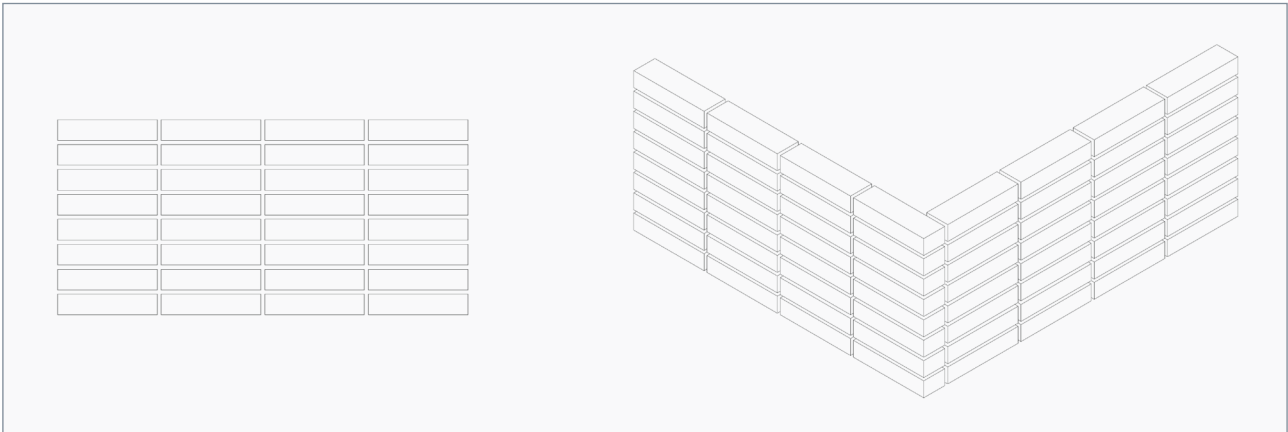
By way of illustration: Random bond



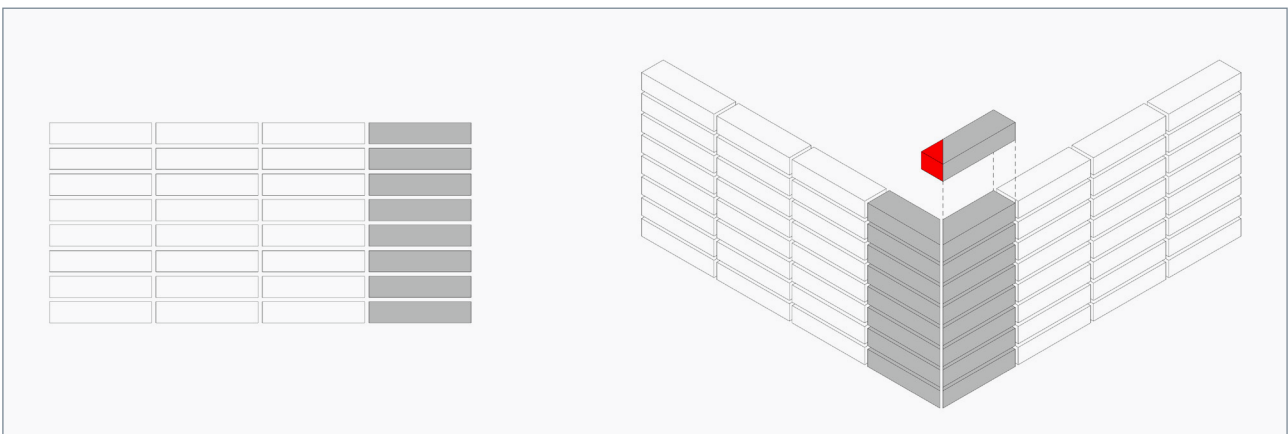
By way of illustration: Gentle random bond



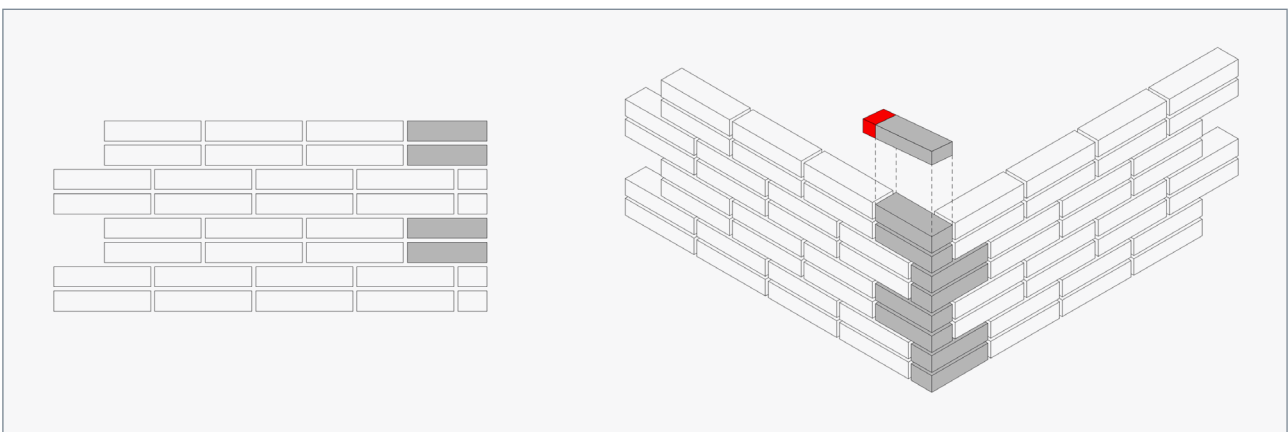
By way of illustration: Running bond



By way of illustration: Stack bond without mitered corner



By way of illustration: Tiled bond with mitered corner



By way of illustration: Block bond

Brickwork bonds that make frequent use of headers (e.g. Flemish bond, French bond, chain bond, etc.) can be achieved but are not recommended due to the limited availability of 'visible' headers in each delivery.

For specific bonds such as projecting, recessed and hit and miss brickwork details, etc. please refer to section 1.9 'Brickwork in relief and special bonds'.

1.4 Brickwork mortar, thin-bed mortar or adhesive mortar

When selecting a suitable mortar (or adhesive mortar to give the appearance of a mortar free facade), consideration is given to the type of brick used, the weather conditions during the execution, and the application.

For the brick, it is essential to match the mortar or adhesive mortar to the IW classification. This IW classification is specified on the technical data sheet for the chosen brick. Based on this value, the mortar supplier can determine which types of mortar from their range are most suitable for the application.

If desired, the mortar manufacturer can also conduct tests to evaluate the bond strength between the brick and the mortar. Bond strength must be guaranteed. Always follow the guidelines provided by the mortar manufacturer.

For brickwork using narrow Pirrouet® facing bricks (LF50-S and XXL44-S) with a traditional joint, the minimum mortar bed is always 60 mm. This is to guarantee the stability of the brickwork.

- If this brickwork is repointed afterwards, the joint may be scraped out to a depth of 10 mm max. Work precisely.
- When using a levelling mortar, match the finishing shape of the joint so that the minimum width of the mortar bed remains 60 mm. The advantage of levelling mortar is that it does not have to be scraped out.
- A thin-bed mortar is also ideally set back about 5 to 10 mm. If necessary, the joint must be scraped out. If the joint is larger than 10 mm, more mortar must be applied.
- When bonding, you can work with one of two glue lines. Each has its advantages and disadvantages. With one glue line in the middle, you have to scrape out less, but the brick can tilt more easily when laid. With two glue lines, the brick can be laid with more stability, but there is a greater risk of scraping out.

For recessed pointing, preferably contact your representative so that the depth of the recessed joint can be adjusted to match the thickness of the pigmented top layer of the Pirrouet®facing bricks.

When the width of the mortar bed is less than 60 mm, always seek the advice of the project's structural engineer regarding the structural performance of the brickwork.

1.5 Movement joints

As with all facade brickwork, the guidelines (including those from Eurocode 6) for structural and technical expansion joints (such as movement joints between different materials) and movement joints to accommodate moisture movement and thermal expansion must be observed.

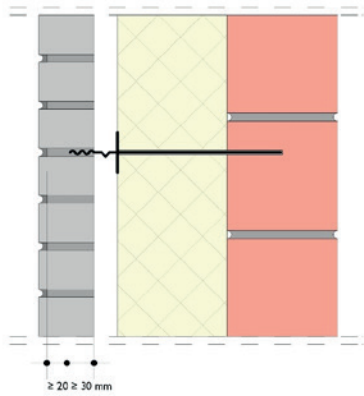
To accommodate moisture movement and thermal expansion, movement joints at a maximum spacing of 8 m apart, both horizontally and vertically, are recommended. For Pirrouet® Serious Black, we advise a maximum of 7 m. Please note that the distance to a rigid fixing point (such as a building corner) or to a location of restraint or rigid connection is halved. For building corners, various solutions are available, analogous to the guidelines for clay bricks.

Always seek project specific advice regarding location of movement joints from a structural engineer. A dilatation plan should always be present on the site before execution.

1.6 Wall ties

The wall ties or wall anchors must meet the requirements stated in STS 22-1 (Technical Specifications 22: Brickwork for low-rise buildings – Part 1: Materials) and have CE AVCP 3 and be declared suitable for use in exposure class MX3. A product certificate is preferable (see STS 22-1, §2.1.4).

The wall ties must be embedded a minimum of 30 mm or the declared anchor length (see technical data sheet of the anchor used) in the mortar and have sufficient mortar coverage of at least 20 mm. Optionally, L-shaped wall ties designed for this purpose can be used.



Source: TV 271

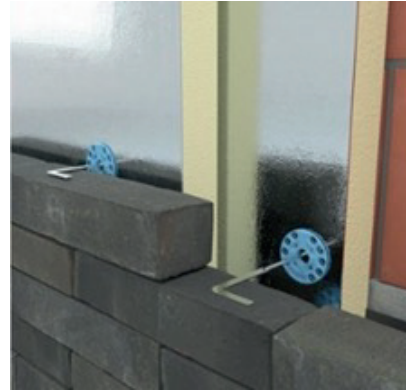


Image: L-shaped anchor

When using Pirrouet® facing bricks in the LF50-S and XXL44-S formats, more wall ties may be required compared to a facing brick that is 90/100 mm wide. The number of wall ties required per m² should be determined by the project's structural engineer.

For a cavity wall with a standard structure, the 'Code of Good Practice' for cavity walls can be followed, see STS 22-4 §2.6 'Cavity sheets' / TV 271 §5.7 'Cavity walls'.

The following table gives an indication of the number of wall ties to be used per m² for a cavity wall with an inner cavity leaf of ceramic quick-build blocks with a width of 14 cm. For a different construction (different type of inner cavity leaf, narrower width inner cavity leaf, larger cavity widths, etc.), specific calculations must be drawn up. The Vandersanden advice center would be happy to help you with this (see section 3. Contact).

Inner cavity leaf	Outer cavity leaf	Cavity width	Ø anchor	n _{min}
140 mm	90 mm	≤ 140 mm	≥ 4,0 mm	6
140 mm	90 mm	≤ 140 mm	≥ 5,0 mm	5
140 mm	70/65 mm	≤ 140 mm	≥ 4,0 mm	6,5
140 mm	70/65 mm	≤ 140 mm	≥ 5,0 mm	6

Source: STS22-4 §2.6 Table 2.6.1

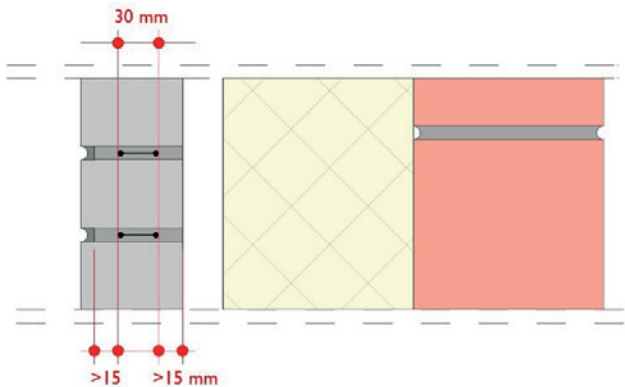
If the design deviates from the normal rules (for cavity walls that are subjected to lateral wind loads), e.g., if the thickness of the facade is less than 90mm or if fewer than five anchors/ties per m² are used, the designer must supplement the dimensioning according to Eurocode 6 (EC6) with a check of the bending behavior of the facade brickwork at total wind load exposure: TV 271 § 3.4.1, STS 22-2 Brickwork for low-rise buildings – Stability.

Due to the multitude of parameters (wall ties properties, project location, depth of relief, chosen bond, cavity width, material of the inner leaf, etc.) it is impossible to establish a general rule. It is recommended that specific calculations are carried out. The Vandersanden advice center can put you in touch with a specialised engineering office (see Section 3. Contact).

For brickwork bonds such as projecting, recessed, hit and miss brickwork and vertical bond, it is always recommended to consider the number of wall ties in combination with the brickwork reinforcement.

1.7 Brickwork reinforcement

Always use brickwork reinforcement adapted to the width of the bed face of the brick. Brickwork reinforcement must always be fully embedded in the mortar (adhesive). When using Pirrouet® facing bricks in the LF50-S and XXL44-S formats, choose brickwork reinforcement that is 30 mm wide. Always position the brickwork reinforcement so that it has a minimum mortar coverage of 15 mm on both sides.



1.8 Facade supports

A facade support must support at least two-thirds of the facing brick.

Facade support manufacturers offer supports that are tailored to the width of the facing brick. Steel lintels should have a minimum bearing length of 100 mm for small window openings. This can increase to more than 200 mm for larger spans.

Always consult your facade support/lintel advisor or the project's structural engineer for discussion, advice, and proper installation.

Please note: if you want to conceal a facade support by gluing Pirrouet® bricks underneath, keep in mind that these bricks are not fully pigmented. Be sure to discuss the possibilities with your Vandersanden contact in advance.

1.9 Relief and Special Bonds

Hit and miss brickwork can be constructed using Pirrouet® facing bricks. For this type of bond, fully pigmented bricks are often preferred. These are not supplied as standard. Please note that, strictly speaking, applying sand on all surfaces is not possible. You can contact Vandersanden for specific options.

When creating relief, take into account the thickness of the pigmented top layer of the Pirrouet® facing bricks. If fully pigmented bricks are required, please contact Vandersanden in advance.

Taking into account the limited width when using the S-formats, it is not possible to create relief in the facade plane without a detailed design for the wall. The design should take into account the desired details, planned cavity width, number of wall ties, brickwork reinforcement, etc.

This also applies to special masonry bonds, such as vertical or stack bond. The mortar/adhesive manufacturer must always confirm whether the limited mortar bed provides sufficient adhesion and ensures the stability of the brickwork. If necessary, they can indicate what additional measures should be taken together with advice from the project's structural engineer. Vandersanden's advice center can connect you with a specialized engineering office for this purpose (see section 3. Contact).

1.10 Post construction maintenance

If any staining occurs on the face of the brick, it does not technically degrade its quality, but the aesthetic aspect of a facade is also important. If there is any pollution or defacement, always contact Vandersanden before carrying out any cleaning to obtain specific advice on suitable cleaning products and the cleaning method to be carried out. (see section 3. Contact)

To date, we have achieved favorable results with 'Efflorescence Remover' from BM-Holland by following this procedure:

1. Apply the product (spraying / gently brushing in)
2. Allow it to act for 15 minutes
3. Remove the product thoroughly with clean water

1.11 Waste Disposal

Waste from Pirrouet® facing bricks can be disposed of under Eural code 17 01 07: 'mixtures of concrete, bricks, tiles, and ceramics other than those mentioned in 17 01 06.'

2. General handling instructions

2.1 Regulations in Belgium

Belgium has no specific building legislation regarding the handling of facing bricks. There are only legal requirements for fire and energy performance. A contractor bases the work on the requirements described in the specifications prepared by the designer.

This often refers to Eurocode 6.

The Eurocode 6 (EC6) contains the standards for the design, calculation and execution of brickwork.

- NBN EN 1996-1-1 + ANB: 'General rules for reinforced and unreinforced masonry structures'
- NBN EN 1996-2 + ANB: 'Design considerations, selection of materials and execution of masonry'
- NBN EN 1996-3 + ANB: 'Simplified calculation methods for unreinforced masonry structures'

The standards are always voluntary. If these standards specifically apply to a project, it is up to the designer to explicitly include them in the specifications.

If there are no standards or specific requirements in the specifications, the 'Code of Good Practice' will be used in the event of discussion. In Belgium, Technical Specifications (STS 22 'brickwork') and Technical Explanation (TV 271 'brickwork') are used for this.

2.2 General precautions at the construction site

- ✔ Order the entire quantity required for the project in a single order. If for some reason you have to work with two different series (batches), save bricks from the first delivery to mix with the new delivery.
- ✔ When the facing bricks are delivered to the site, check and assess the identification label on the packaging unit to ensure it matches the ordered product. If the delivery is not correct, this must be reported immediately before handling. Building with the facing brick implies acceptance of the delivered products.
- ✔ Facing bricks must always be stored and processed in a dry place. Place the packs on a dry, flat surface, such as on timber boards. Opened packs must be well covered. Also make sure there is sufficient ventilation inside the packs to prevent moisture from forming (Flat) stacked brick packs on the scaffolding must also be protected against cold, rain and wind. Do not use wet bricks.
Protect the bricks against rising damp and splashing dirt. This applies during both storage and execution. Cover fresh brickwork.
- ✔ Mix bricks from several packs at the same time. Open new packs when the first ones start to run out and mix in the bricks. This will ensure a continuous mix of facing bricks.
- ✔ Verify the average sizes. To do this, take 10 bricks at random from different layers of the supplied packs, i.e. from the top, middle and bottom of the packs. To calculate the average height, stack these 10 bricks on top of each other. Measure the total height, then divide by 10. Proceed in the same way to calculate the average length. Place 10 bricks tightly against each other on a flat surface and then measure the total length. Divide this length by 10 to get the average length of one brick. (Measurement in accordance with EN771-1)
- ✔ Do not add more water to the mortar, levelling mortar or adhesive than indicated. Always follow the instructions imposed by the manufacturer. Never make more mortar than can be used and always follow the handling instructions closely.
- ✔ The ambient temperature during the bricklaying and hardening processes of the mortar must be no lower than 5°C and no higher than 30°C.
- ✔ The substrate must be clean and dust and frost-free. Work must not be carried out on frozen, thawing surfaces or if there is a risk of frost within 48 hours.
- ✔ In case of highly absorbent and/or dry bricks and/or warm conditions (e.g. dry wind), it is recommended that the bricks be moistened 24 hours before handling (to prevent the mortar from burning).

3. Contact

After Sales Facade

+32 (0)89 51 01 60

service@vandersanden.com

www.vandersanden.com/nl-be/after-sales-gevel



Technical Support Facade

+32 (0)89 56 02 59

technicalsupport@vandersanden.com

www.vandersanden.com/nl-be/technical-support

