

KRAUSE
BRICKS

Bricklaying & Cleaning Guidelines

These guidelines serve as a comprehensive manual for the proper handling, construction, and maintenance of bricks manufactured by Krause Bricks. By adhering to these recommendations, common issues encountered during construction and cleaning processes can be effectively minimised.

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Brick Construction

Ensuring good workmanship and proper storage of bricks during construction is fundamental to prevent potential stains.

Brick Storage

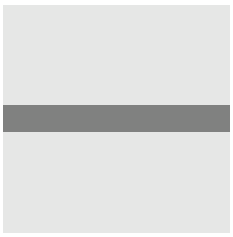
Bricks stored on-site should be meticulously covered and elevated to prevent absorption of ground water containing salts or coloured minerals, which can lead to staining. Saturated bricks may result in excessive efflorescence and compromise mortar bond strength. Minimizing movement of packs is essential to avoid chipping and damage.

- Ensure bricks are stored appropriately, either on pallets or plastic sheeting, to prevent absorption of ground salts and excessive water, which can cause issues when laid.
- Always protect bricks from rain with plastic or similar waterproof material.

Brick Blending

Krause bricks, crafted from natural clays fired at extreme temperatures, exhibit enduring colour and character. Given the inherent variation in clay and firing processes, blending bricks from a minimum of ten pallets vertically is recommended. Poorly blended bricks may result in unwanted patches, streaks, and bands of colour in finished masonry.

- Blend bricks from a minimum of ten pallets in a vertical manner to achieve uniformity in texture, composition, size, and colour.
- Utilise a relatively even mix of all four usable faces (two headers and two stretchers) to achieve the full blended look.



Flush Joint



Iron Joint

Mortar Joint

The mortar joint serves several critical functions in brickwork, including bonding bricks structurally and accommodating dimensional variations inherent in clay bricks. Properly filled and tooled joints significantly enhance durability, weatherproofness, and sound performance of brickwork.

An ironed or raked joint will emphasise the irregular shape of the brick. For durability in a salt atmosphere (for example, near the coast) and good fire resistance (for example, in bushfire-prone areas or in fireplaces) an ironed joint should be used. NCC does not permit the use of raked joints in exposure environments.

The standard thickness for a mortar joint is 10mm. However joints may vary in thickness to allow for the natural size variation of clay bricks. AS 3700 Table 12.1 Tolerances in Masonry Construction allows a deviation from the specified thickness of bed joint of 3mm. The minimum thickness of the perpends must not be less than 5mm.

Mortar that is allowed to set on the masonry face may require high pressure water jet cleaning or more costly, risky methods of cleaning.

Scaffolding should be kept at a minimum distance of 150mm from masonry or as specified by relevant standards.

Face bricks are supplied with one face suitable for exposing. Face bricks with unwanted marks, chips or cracks on a header should be laid with that header inside a mortared joint. Face bricks with unwanted marks, chips or cracks on the face should be set aside by the bricklayer (or labourer) for use as commons or when brick cuts are required.

Coloured Mortar

- Coloured mortars must be strong enough to retain the colour particles on the face of the joint.
- Ensure thorough mixing of the pigment, lime, and cement with water before adding other ingredients to maintain colour integrity.
- Always finish the joint by tooling, even when a raked joint is required. This helps maintain the appearance of the mortar.
- Clean the brickwork with water only.

Bricklaying Practices

Mortar, extruded from tapping the brick down to the string line, should be cut off with an upward stroke of the trowel. In this manner, a clean cut is made, without smearing the face of the brick. Joints should be tooled progressively as the bricks are laid

The bricklayer leaves the wall the easier the cleaning task will be.

- Mortar dags and smears on the work face must be removed by dry brushing within 1-2 days. Ideally end of the day, and then wet sponge for any remaining mortar stains.
- Mortar that is allowed to set on the masonry face may require most costly and risky methods of cleaning.

Cover the brickwork at the end of each day, especially when rain is expected. Additionally, ensure all bricks stored on-site are not exposed to rain. Failure to prevent moisture from entering the brickwork during construction may result in efflorescence and other leaching issues.

Clean water is to be used for all brick cutting. If the water is not cleaned, the dirty water will be absorbed into the brick and cause it to discolour the bricks.

Coping, Sills and Weathering

Efficient drainage is essential to prevent water damage to masonry. Coping and sills should project sufficiently beyond the wall face to effectively shed stormwater. Proper diversion of gutter water away from the brickwork is imperative.

- Ensure adequate projection of coping and sills to shed stormwater away from the masonry.
- Properly divert gutter water away from the brickwork to prevent water damage.

Wall Ties

Wall ties are used to connect the leaves of a cavity wall or to connect a masonry wall to a timber frame or steel stud. The failure of wall ties may result in the masonry falling during an earthquake or in high winds.

It is essential that the wall ties are chosen for the design requirements, as specified in AS/NZS 2699. The durability requirements of AS 3700 (as previously discussed in the durability section) should also be met when selecting the wall ties. For

example, the classification R4 needs to be met by the wall ties in severe marine environments. In addition, the installation of the wall ties is critical to the integrity of the system.

The wall ties should be:

- installed at the correct embedment distance and strength in the mortar,
- aligned correctly to prevent water transfer into the building, and
- placed at the required spacings.

Damp-Proof Courses (DPC)

Australian Standard AS 3700 requires that damp-proof courses and flashing be used to prevent the movement of moisture vertically in the masonry and from the exterior of the building to the interior. In addition, the moisture from a cavity should be shed to the outer course by the damp-proof course.

A good description of damp-proof courses is available in CBPI Manual 10, Construction Guidelines for Clay Masonry. It is important that the damp-proof course should not be bridged, thereby allowing moisture to travel above the DPC level. The DPC should be exposed out of the face of the brickwork to prevent any moisture paths up the brickwork. Care should also be taken during the application of a render coating, to prevent the formation of a bridge. The DPC should also be considered during exterior landscaping.

Weepholes

A weephole acts as a drain hole through the brick wall. Weepholes are created during the construction of the brick wall. Weepholes are normally in the first or second brick course above ground level. Weepholes are required at the head and sill flashing of windows over 1200mm wide and are commonly used for smaller windows also. CBPI Manual 10, Construction Guidelines for Clay Masonry provides descriptions of the different types of weepholes possible.

Brick Cleaning

Correct cleaning methods are paramount to preserving the appearance of brickwork. Seek professional assistance for stubborn stains or large-scale cleaning projects.

- Utilise correct cleaning methods to preserve the appearance of brickwork and minimise damage.
- Seek professional assistance for stubborn stains or large-scale cleaning projects.
- No acid cleaning

Prevention of Staining

Good workmanship and correct storage of bricks during construction will ensure that a number of potential stains are avoided. In addition, the use of the correct cleaning methods will prevent further problems arising. It is also important that garden beds, paved, concrete or tiled areas should be below the level of the installed damp proof course and that they do not cover the weepholes in your brickwork. Building any form of structure over your weepholes can restrict the drainage of moisture that penetrates your brickwork. Allowing moisture to enter the brickwork may result in efflorescence

Stains Resulting from Failure to Follow Recommendations

In instances where stains occur due to the failure to adhere to the recommended cleaning procedures outlined in Krause bricks Construction and Cleaning Recommendations, it's important to follow the removal techniques tailored to specific stains outlined in Thinkbrick manual 13 – Clay Masonry Cleaning Manual. It provides detailed instructions and strategies for addressing a wide range of stains that may result from improper laying and cleaning practices. By referring to this resource, users can access expert guidance on effectively treating stains and restoring the pristine appearance of brick surfaces. Always follow the appropriate techniques to ensure optimal outcomes and minimise the risk of further damage.