

Technical Specifications Bricklaying & Cleaning Guide

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011 Blended Brick

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www.ahbricksnpavers.com

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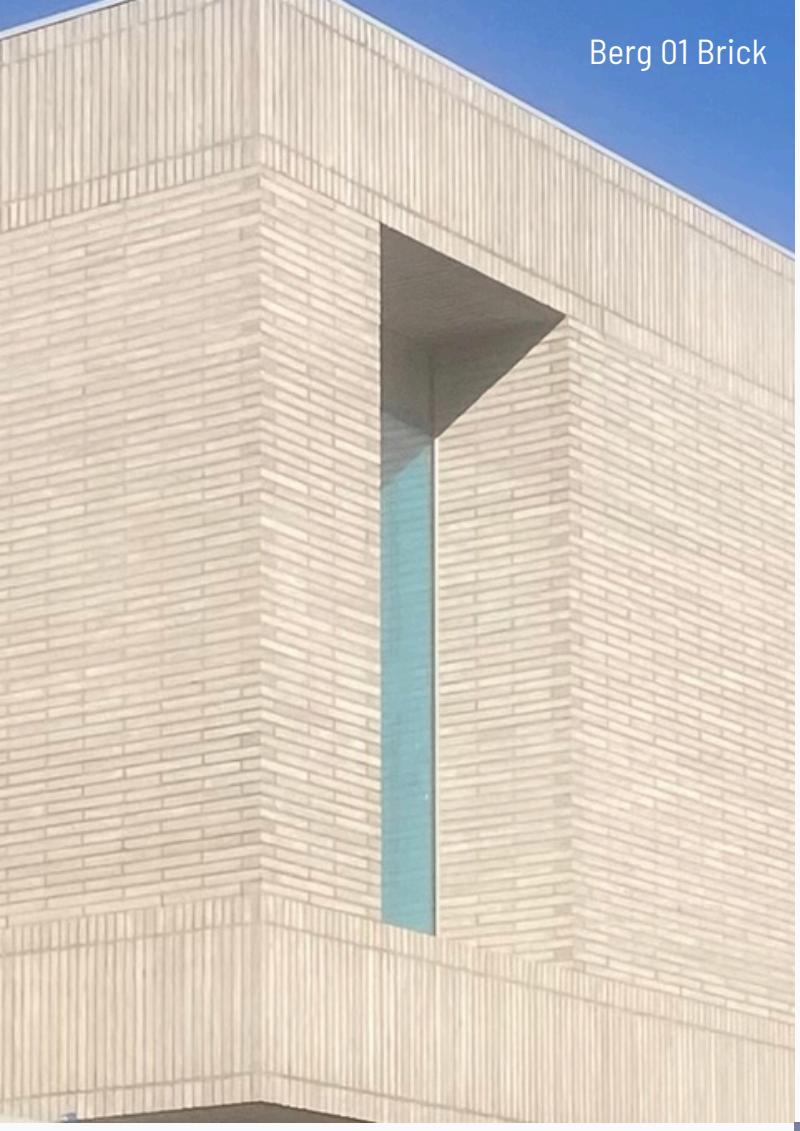
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About AHBP

Our Craftsmanship

Located in Victoria, Australia, AH Bricks and Pavers allows you full control over material, geometry, and finish.

We offer a versatile range of architectural brick formats, where each brick is handmade, allowing for customization in various lengths, heights, and depths, profiles and shapes available to suit your project requirements.

From brick tiles and curved bricks to bespoke corners and transitions, our handmade manufacturing capabilities give architects and designers the flexibility to bring their vision to life.

Exposure Grade (EXP)

Suitable for severe environments, including coastal conditions - long-term durability without additional treatments.

Custom Lengths, Curves, Transitions & Brick Tiles

Resolve form and proportion in the design stage - not on site

More certainty. Faster construction times. Better aesthetic outcomes.



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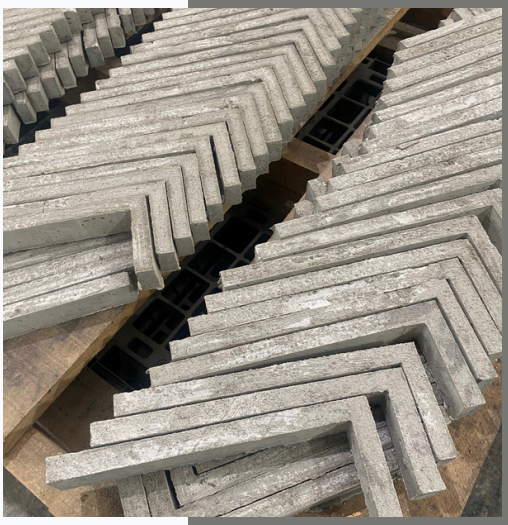
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About AHBP

Sustainability

Architectural Handmade bricks and Pavers is a local manufacturer in Victoria, Australia, dedicated to producing high-quality handmade bricks and pavers while minimizing our environmental impact. We prioritize sustainability in every aspect of our manufacturing process to contribute to a greener and more eco-friendly construction industry.





Raw Materials

Our bricks and pavers are made from locally sourced, reducing the carbon footprint associated with transportation.

We prioritize responsible resource practices, ensuring minimal disruption to the environment.

Manufacturing Process

Handmade craftsmanship minimizes the need for energy-intensive machinery, reducing overall energy consumption.
Our process is optimized for energy efficiency, utilizing advanced technologies to minimize environmental impact.

Waste Reduction

We strive to minimize waste by optimizing the cutting process and repurposing leftover materials. Any waste generated is recycled or responsibly disposed of, contributing to a circular economy.

Our packaging materials are chosen with sustainability in mind, using recycled and recyclable materials. We encourage customers to recycle packaging and provide information on eco-friendly disposal options.

We work with local suppliers and distributors to reduce the environmental impact of transportation. Consolidation of shipments is practiced optimizing transportation efficiency.

Brick Tile Installation

AH Bricks & Pavers manufacturers architectural brick tiles suitable for a range of internal and external applications.

The suitability of substrates, preparation requirments, waterproofing, adhesives and installation methods must be determined by the project builder, architect or qualified installer.

For advice of suitable installation systems and products, we recommend consulting a specialist manufacturer such as MAPEI Australia or an equivalent supplier.

MAPEI Australia
Website: https://www.mapei.com/au/en/dealer-locator/contact-us

All installation work must be undertaken in accordance with applicable Australian Standards, relevant building requirments and the installation-system manufatcturer's recommendations.

AH Bricks & Pavers supplies the brick tiles only. Responsibility for substrate suitability, installation-system selection, installation methods and workmanship rests with the relevant project professionals and installers.









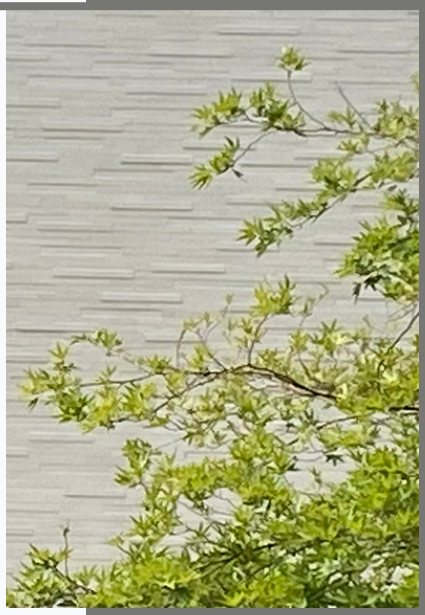
General Adhesive Notes

Use a flexible, polymer-modified tile adhesive that meets C2S1 or C2S2 standards (e.g., Mapei Keraflex Maxi S1, Ardex X18, or similar). For external work or large format tiles, an adhesive with extended open time and non-sag properties is ideal.

Important: The builder, tradesperson and manufacturer should always be consulted prior to installation, as they may have a preferred adhesive system or substrate preparation method suited to the project's condition



Mortar & Bricklaying Guide

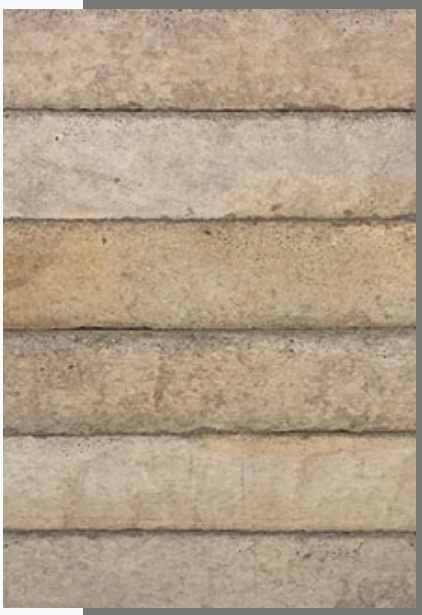


Traditional Mortar

Architectural Handmade Bricks perform best when laid using a traditional lime mortar made from a small number of quality ingredients:

USE:

- Portland cement
- Genuine hydrated lime (dry powder only)
- Quality bricklayer's sand
- Clean water
- Mortar oxide (where coloured mortar is required)
- Firm, load-bearing mortar



Recommended Mortar Mix

Standard Conditions

- 1 part Portland cement
- 1 part hydrated lime
- 6 parts quality bricklayer's sand

Cold Weaather Conditions

Increase the cement content while maintaining hydrated lime

- 1 part Portland cement
- 1 part hydrated lime
- 4½–5 parts quality bricklayer's sand

Reduce the amount of mixing water to produce a firm, workable mortar.



DO NOT USE:

- Liquid lime substitutes
- Waterproofing additives
- Plasticisers
- Bonding agents or proprietary mortar admixtures
- Overwet mortar
- Anti-efflorescence additives
- Other chemical modifiers

In our experience, traditional cement-lime mortar provides the best workability, the most consistent performance and the easiest brickwork to clean.

Mortar should never express water beneath the weight of the brick.

Mortar & Bricklaying Guide

Water Content

Architectural Handmade Bricks are relatively dense and absorb less water than many conventional masonry units.
For this reason:

- Use only enough water to achieve good workability.
- Avoid wet or sloppy mortar.
- A firmer mortar supports the weight of the brick more effectively.
- Firmer mortar produces cleaner joints and improves laying efficiency

Cold Weather Laying

Cold weather slows the hydration of cement, meaning mortar takes considerably longer to gain strength. Because Architectural Handmade Bricks absorb less moisture from the mortar, this effect can be more noticeable than with highly porous clay bricks.
To improve performance during cold weather:

- Use the recommended cold weather mortar mix.
- Reduce the amount of mixing water.
- Keep the mortar firm.
- Store bricks dry before laying.
- Protect fresh brickwork from rain and frost.

Avoid attempting to compensate for cold conditions by adding excessive water or chemical additives.
Genuine powdered hydrated lime allows bricklayers to adjust the water content and consistency of the mortar to suit prevailing temperatures.

Clean as You Lay

The best brickwork is cleaned progressively during construction, ensuring the brick faces remain clean as work progresses—not after completion. Traditional lime mortar makes this process much easier.
Mortar smears must be struck off *immediately,* not left for the cleaner

As the mortar begins to firm:
Brush the brickwork with a soft bricklayer's brush to remove loose mortar – careful not to drag wet mortar onto the face of the bricks. A damp sponge can also be used, but take care not to use it when mortar is still wet and soft – this will drag mortar onto the face of the brick)

As the mortar hardens further:
Brush the brick faces and joints with a light wire brush to remove any remaining residue and clean up the mortar joint.

Cleaning the brickwork as it is laid significantly reduces the need for acid/chemical cleaning and highpressure washing. Aggressive cleaning methods can damage mortar joints, altering their appearance.

Mortar Additives

Why We Recommend Traditional Mortar

Modern mortar additives, including products marketed as liquid lime, can introduce unnecessary complications during bricklaying, joint finishing and subsequent cleaning. While these products are generally promoted for improving workability, their potential effects on the finished brickwork are often overlooked.

Principal Concerns:

Surface contamination and bleeding

Certain additives can contribute to residues being squeezed out of mortar joints during laying or spread across brick faces during sponging. Excessive bleeding can also carry fine particles and soluble materials onto the brick surface, contributing to staining.

Milky or shiny residues

Polymer-containing additives can leave films on brick surfaces which become increasingly difficult to remove as they dry and harden. These residues may produce a milky, glossy or uneven appearance.

Extended setting times:

Some additives retard mortar setting, leaving the mortar wet and workable for longer. This increases the opportunity for smearing, surface contamination and difficulties in achieving a consistent joint finish.

Difficult cleaning

Certain additives can increase adhesion or contribute to persistent hardened residues. Once these materials have dried on the brick face, conventional brushing may be insufficient, requiring more aggressive cleaning methods.

Mortar deterioration:

Excessive cleaning, particularly with strong acids, can weaken mortar joints, leaving them chalky, powdery or inconsistent in appearance. The original contamination can therefore lead to further damage during attempts to remove it.

Unpredictable results:

Proprietary admixtures introduce additional variables into mortar performance, moisture movement, drying behaviour, setting times and cleaning. Different products and dosages can produce different results, making consistent outcomes more difficult to achieve.

Cold Conditions:

In colder conditions, where mortar naturally takes longer to set, a firmer mix with a lower slump can help reduce bleeding, smearing and excessive mortar squeeze-out. Its particular advantage is maintaining good workability while allowing the bricklayer to use a firmer, lower-water mortar mix, without relying on additional liquid plasticisers. This does not eliminate the need for appropriate cold-weather masonry precautions.

AHBP Brickwork Protocol

Standards for Mortar, Laying, Finishing and Cleaning

Sample Panel

A sample wall panel must be built on site and signed off before full-scale bricklaying.
The panel sets the benchmark for mortar colour, batching consistency, joint style, and appearance.

Ideally, the architect should review and endorse this protocol and inspect the sample panel *with the builder and client.*

Mortar Mix and Colour

Mortar must be batched consistently across the whole job.
Use pre-bagged mixes or fixed volume ratios.
Sand, cement, lime (preferably natural powdered lime, not liquid lime), and pigments *must remain identical*.
No switching mid-job.
Mechanical mixer only - no hand mixing.
Only approved additives. No detergents or improvised chemicals

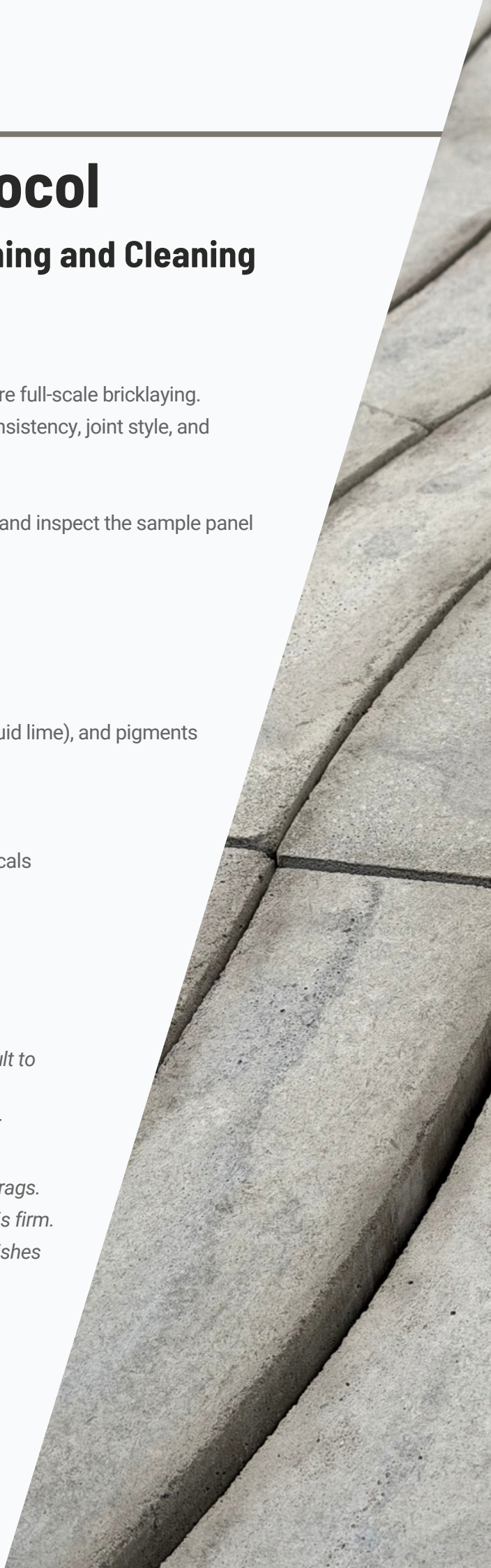
Mortar Joints and Handling After Laying

What to consider:

- *Joints must be fully filled — no voids.*
- *No sponging or brushing while mortar is wet (this is difficult to remove).*
- *Correct timing: mortar firm (no smearing under light finger pressure) but still markable with a fingernail.*
- *At this stage, light wire brushing may be used to remove drags. Sponging, if done, must be minimal and only once mortar is firm.*
- *Do not overwork joints — this produces weak, powdery finishes that discolor and look patchy.*

Accepted finishes:

- *Flush (preferred)*
- *Lightly raked (max. 5–8 mm).*



AHBP Brickwork Protocol

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Standards for Mortar, Laying, Finishing and Cleaning

Weather Limits

No laying in heavy rain.

Work must be protected when temps are below 5°C or above 35°C.

Exposed walls must be protected from rain to avoid streaking and lime runs.

Site Responsibility

Builder/site supervisor is responsible for enforcing these protocols.

Architect endorsement is encouraged as best practice to strengthen accountability.

Chain of accountability: Bricklayer → Builder → Cleaner.

AHBP is not responsible for poor workmanship or cleaning practices.

If protocols are adhered to, very little to no brick cleaning will be necessary, this will incur significant cost saving.

Common Errors to Avoid

- Sponging or brushing mortar while wet.
- Mixing mortar with inconsistent sands, cements, or pigments.
- Allowing mortar smears to harden on brick faces.
- High-pressure washing before mortar has cured.
- Inconsistent joint finishes or depths across the wall.
- Leaving drags, droppings, or bagged surfaces for the cleaner to “fix.”
- Allowing acid or high-pressure cleaning to damage & discolour the mortar.



Cleaning Handmade Bricks

We recommend that bricklayers clean the bricks progressively as they go, rather than relying on an acid wash or high-pressure water after completion.

Excessive cleaning — especially with acid or high-pressure water — can affect not only the brick surface but also the mortar joints. If the acid is too strong, it can darken the bricks or cause streaking, undermining their natural finish. But the most noticeable issue is often with the mortar, which can end up looking inconsistent, patchy, and chalky in areas. These irregularities draw the eye because they appear out of place, diminishing the visual impact and overall quality of the wall.

Cleaning as you go avoids these issues and ensures the wall presents as a clean, cohesive, and well-resolved architectural element. It also eliminates the need for a messy, wet, multi-day post-cleaning job and reduces the risk of construction delays while waiting for cleaners or drying. Plus, by avoiding acid, you help preserve the wall's natural finish and integrity

Cleaning Brick Faces

Use a damp sponge to clean the face of each brick as the laying progresses. This method effectively removes mortar residue and assists in keeping the joint reasonably flush. It also assists in removing the need for harsh acid washing and expensive cleaning of bricks at the end of the job.

Creating Texture in Joints

After ensuring the joints are reasonably flush with the damp sponge, lightly brush them to create a subtle texture. This technique enhances the visual appeal of the joints while preserving and enhancing the character of the handmade bricks.

By following these steps, you can ensure the craftsmanship, cleanliness and aesthetic integrity of the brickwork are maintained throughout the project.

Alternatively, a struck joint (where excess mortar is carefully removed to leave a neat, recessed joint) or a weathered joint (where mortar is shaped to create a slight slope away from the brick face) can also be considered. These techniques can provide a clean and sophisticated appearance that aligns with certain architectural preferences.
Ultimately, the best aesthetic outcome depends on the specific design goals, architectural intent and preferences of the project.



Cleaning Handmade Bricks

Prioritise Clean Construction

The practice of acid-washing brickwork, though sometimes deemed necessary, can lead to ***various forms of damage***.

Therefore, care should be taken during bricklaying to ensure that acid washing becomes unnecessary. Especially with handmade bricks, mortar residues often contribute to the character and authenticity of brickwork, gradually fading away over time.

Many projects across Australia featuring our bricks have achieved completion without resorting to acid washing. Hence, mortar residues should be embraced as integral to the aesthetic appeal of brickwork. The potential damages resulting from acid washing are manifold: acid washing can lead to unsightly greyish mortar bloom, degradation of joint surfaces, and alterations in brick and joint colours.

Should the need for acid washing arise, meticulous preparation and execution are paramount:

- *Prior to acid washing, remove loose mortar residues with a scouring pad, and for stubborn residues, delicately chisel with a wooden stick.*
- *Ensure cleaning of horizontal surfaces to prevent smearing of mortar residues during acid washing.*
- *Dilute the acid appropriately to prevent damage to bricks or mortar.*
- *Pre-wet the brickwork surface before applying acid to saturate it to prevent the acid from being absorbed too quickly.*
- *Prevent acid drying on the brickwork to avoid unsightly stains or residues and ensure uniform cleaning.*
- *Utilize a finishing float with foam rubber backing or an acid-proof masonry broom for the washing process.*
- *Acid should be pre-mixed and supplied to the site.*
- *Optimal timing for acid washing varies based on mortar binder content, brick absorbency, and weather conditions, typically occurring 5-24 hours post bricklaying, but may vary due to site conditions*
- *Regular replacement of acid is necessary to prevent potential discoloration from used or contaminated acid.*
- *Rinse the brickwork thoroughly with clean water after acid washing to neutralize any remaining acid and remove loosened residues, debris, and excess acid solution from the surface.*
- *Acid washing should proceed from top to bottom and should be performed only once.*

Sealing

Sealing our bricks are optional and not required as our bricks have a full exposure rating.

Where required, use only breathable penetrating sealers after the brickwork has been fully cured and cleaned. Sealers are supplementary protection only and should never be used as a substitute for correct mortar selection or good workmanship.

Our Four Principles

Traditional Materials

Simple Mortar

Firm Mortar

Clean as work proceeds

Additional Considerations

- *Testing on a Small Area: Before applying acid washing to the entire brickwork, conduct a test on a small, inconspicuous area to ensure compatibility and assess the effects of the cleaning process.*
- *Protective Gear and Precautions: Ensure workers handling acid washing wear appropriate PPE to prevent exposure to harmful fumes or skin contact.*
- *Surface Sealing: Apply a suitable sealant or protective coating to the cleaned brickwork to enhance longevity and resistance to future staining or weathering (if deemed necessary).*
- *Environmental Considerations: Dispose of used acid and cleaning solutions in accordance with local regulations to prevent environmental contamination.*
- *Damp Sponge Cleaning: Use a damp sponge to keep the bricks clean as the brickwork progresses, ensuring that minimal residue buildup occurs during the laying of the bricks.*

By adhering to these guidelines, brickwork maintenance can be executed effectively while preserving the inherent beauty and integrity of the structure.



Curved Brickwork

AHBP specialises in manufacturing curved architectural bricks to nominated dimensions and radii, allowing for greater flexibility in architectural design.

Design & Specification

To determine the appropriate brick profiles for your project, we require the following information:

- *Brick dimensions: Required length, height and depth.*
- *Nominated radius: The radius of the curved brickwork, specifying whether it is an internal or external radius.*
- *Transition requirements: Confirmation of whether the curved brickwork connects to a straight section of wall.*

Careful coordination of brick dimensions, radius and mortar joint alignment during the design and setting-out stages helps achieve a consistent finish



Transition Bricks

Where curved brickwork meets a straight section of wall, purpose-made transition bricks are important in achieving a seamless connection between the two forms. These pieces help maintain continuity in the brickwork profile and overall appearance, avoiding an abrupt or inconsistent junction.



By specifying transition bricks alongside the curved bricks, the connection can be considered as part of the overall design before construction begins.
Once the project requirements are confirmed, AHBP can advise on the appropriate brick profiles, curved bricks and transition pieces to suit your project.

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