

Darney Heritage Stone Bricks

This section covers the use of [Darney Heritage Stone bricks](#) on typical building projects but does not give specific design advice and expert advice should be sought where required.

Brick Manufacture

[Darney Sandstone](#) is a fine to medium grained pale gold through, light buff to almost blonde in colour. The Stone is extracted from Darney quarry, located at East Woodburn, Hexham, Northumberland. It has been used on many notable buildings throughout the UK, such as, The Laidlaw Music Centre in St. Andrews, The National Gallery in Edinburgh and the Burners Street restoration and Extension in London, as well as many more.

Design

The [Natural Stone Masonry in modern Scottish Construction](#), gives some useful background information on differing types of walling and construction methods and typical design details and sketches. It is important to read this document together with any new guidance in the relevant British Standards, but typically our Darney Heritage Stone Bricks can simply replace clay bricks in most applications.

We can also offer a full range of brick specials along with standard bricks. Bespoke Darney Sandstone features such as stone quoins, window surrounds, string and coping courses are available to order

Cavity Wall

Designed like a typical cavity wall construction but with a stone brick rather than clay brick as the outer facing. Appropriate insulation, cavity ventilation, water management, movement joints and fixings will need to be incorporated into the design.

Movement Joints

Steve Webb has completed some calculations which show that due to the higher compressive strength of natural stone there is the possibility of fewer movement joints.

Movement joints are located at the corners of the buildings and intermediate locations where necessary. The rules of thumb for movement joint spacing is as follows;

	Stone	Clay
Vertical	20m (8m from corners)	12-15m (8m from corners)
Horizontal	Up to 5-6 Storeys*	Lesser of 4 storeys or 12m

*This needs consideration and is dependent on design and detailing

All calculation should be carried out by a qualified engineer on a project-by-project basis

Solid Wall

The stones are normally directly attached using appropriate fixings to the loadbearing structure or may form part of the loadbearing structure. The wall should be constructed to ensure no staining can migrate from the structure into the stonework. Care needs to be taken relating to control of moisture so we would recommend looking at traditional designs where the surface

water is diverted from the façade with regular projections. The incorporation of a suitable DPC should be carefully considered but waterproofing the face or the rear of the wall to stop moisture penetrating is normally not advised.

Joint & Pointing

The joint sizes will depend on the design, but it is assumed that the typical brick joint of 10mm will be used in most applications.

Regarding mortar, wherever possible we would always recommend using Lime Mortar for the most sustainable solution and we would recommend you consult directly with Masons Mortar, 77 Salamander St, Leith, Edinburgh, EH6 7JZ who have a wealth of helpful information and stocks of all things Lime Mortar.

<https://masonsmortar.co.uk/>

For those not wishing to use Lime Mortar we would suggest these commonly used Mortars as used extensively in Northumberland & Scottish Borders House Building projects;

For Joints 5 to 8mm; Building Sand 6:1:1 Mix (Sand, Lime, Cement)

For 10mm Joints: 4 Building Sand, 2 Concrete (Sharp) Sand, 1 Lime, 1 Cement.

For Random Rubble Walling 4 Sharp sand, 1 Lime, 1 Cement.

Type N mortar

This uses a 1 / 1 / 6 mix and results in a mortar with a 750 psi compressive strength. Type N is the normal, general purpose mortar mix and can be used in above grade work in both exterior and interior load-bearing installations.”

Avoid sand containing clays or other contaminants that could leach into the stone bricks. The mortar should not be stronger than the stone itself and the hydrated lime should not be replaced with a proprietary plasticiser as chemicals within these products may react or discolour the stone. It is essential that the mortar selected achieves an adequate compressive and bond strength to ensure full compatibility and structural performance with the specified brick ties.

For maintenance, it should be treated as per any other sandstone structure

DPC

Darney Heritage Stone Bricks can be used beneath the Damp Proof Course (DPC) layer, but there are several key considerations to keep in mind. The primary concern is that, due to their porous nature, these bricks can draw water from the ground, potentially causing staining. While this staining affects only the aesthetics of the stone and not its strength or performance, it is important to manage this aspect carefully. Effective water management is crucial to help prevent staining. Ensuring proper drainage and minimizing water exposure to the bricks can significantly reduce the likelihood of staining.

Quality & Tolerances

All Hutton Stone's bricks and bespoke masonry are manufactured under BS EN 771-6, Technical data and Declaration of performance are available upon request.

The compressive strength of our Darney Sandstone has a mean average 64 MPa, positioning it at the upper end of masonry bricks and approaching the level required for engineering bricks class B. Notably, it boasts frost resistance, as evidenced by BS EN 12371 standards, showing only a 5.5% decrease in Elastic modules strength after 56 frost cycles. Additionally, it is classified as A1 for fire resistance, offering a high level of safety and durability.

Darney Heritage Bricks are manufactured to the same size as standardised metric size brick 215mm x 102mm x 65mm high and to the tolerances set out in BSEN 771-6 for the D2 category

where the height, length and width are +/- 2mm.

Shear bond strength test is project specific as it depends on the brick, mortar and site workmanship. We therefore quote the generic figure of 0.15N/mm² from the BS EN 771 which is the same figure that has been quoted on our walling stones for the last 30 years. Should you wish to conduct a project-specific shear bond strength test, Hutton Stone would be pleased to provide bricks for this purpose.

Storage and handling

The pallets contain 476 stone bricks which, assuming stretcher bond and 10mm joints, provides a coverage of approximately 7.93m². Pallets are wrapped in recyclable plastic and weigh approximately 1.5 tonnes. The plastic is primarily for protection during transport and is not suitable for long-term site storage. We suggest you avoid prolonged external storage.

Darney sandstone typically weighs 2.2 tonne per cubic meter, giving each Darney Stone Heritage Brick a typical weight of 3.15kg, so a little heavier than a typical clay brick.

Maintenance

The stone will not require cleaning to safeguard its durability; cleaning is purely a cosmetic requirement.

The effects of algae growth and bird fouling can be limited with a regular cleaning regime using a little water with a soft bristled brush or a light jetwash.

Cleaning and surface repair of a larger façade should be carried out in accordance with **BS 8221-1** and **BS 8221-2** and the Stone Federation guide to **Best Practice on the Cleaning of Internal and External Masonry Surfaces guidance** by suitably qualified operatives on a cycle depending on the building design, the local climate and orientation of the facades, and the levels of atmospheric deposits deemed acceptable by the client.