ALBION STONE

Portland Stone – Naturally

Welcome to Albion Stone

We hope you are looking forward to your visit to Albion Stone's factory and mines on Portland. This short guide explains the processes that you can expect to see and what you need to be looking for in order to select the correct stone for your project. All necessary PPE for your trip will be provided by Albion Stone.

Why Choose Albion Stone?

Albion Stone, a fourth-generation family business, combines modern and traditional processes to produce high-quality Portland Stone with minimal environmental impact. We own vast reserves of Portland limestone, ensuring quality control from extraction to processing and eliminating supply chain issues.

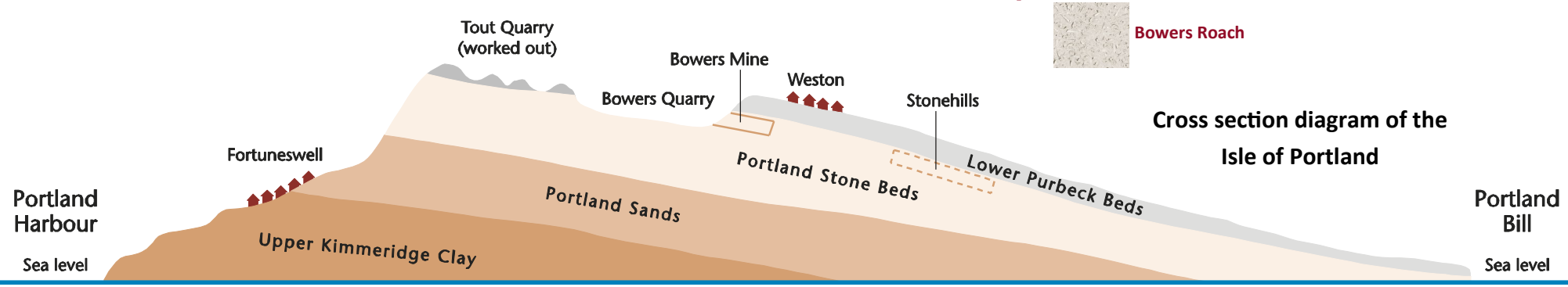
We adhere to ISO 9001 for quality management and ISO 45001 for workforce safety. Our ISO 14001 certification shows our environmental commitment, and we are the only company with an 'Excellent' rating in BES 6001 for responsible sourcing. Our Environmental Product Declaration (EPD) highlights a carbon footprint of 44.7 kgCO2 per tonne, over six times lower than other suppliers.

We publish extensive technical data from over 7,000 tests on our website, supporting our CE Certificates and Declaration of Performance. Albion Stone offers comprehensive services, working closely with architects, designers, and builders to meet project requirements. Our portfolio includes iconic buildings like St. Paul's Cathedral, BBC Broadcasting House, The British Museum, and modern constructions like Chelsea Barracks, cementing our industry reputation.

Our Stones

We extract a full range of Portland Stone from the largest and most productive mines on Portland. There is no colour variation in the basic matrix of the stones, but the shell content and texture of each bed will reflect light slightly differently.

- Jordans Basebed
- Bowers Basebed
- Stonehills Whitbed
- Jordans Whitbed
- Fancy Beach Whitbed
- Grove Whitbed
- Heritage Portland Stone
- Ostrea Patch Reef
- Bowers Roach



Cross section diagram of the Isle of Portland

Mine

Albion Stone has invested heavily in much state-of-the-art mining and stone processing machinery which yields many important benefits, particularly in terms of safety, efficiency, accuracy, and environmental impacts. Maintaining these standards is of paramount importance to the company and as such our performance is regularly assessed and accredited by the completely independent British Standards Institute.

1. Cutting

Our 9 Fantini mining machines cut the perimeter of the face and make horizontal and vertical cuts through the middle, based on the geology. The stones are then cantilevered at the rear.

2. Hydro Bags

Steel hydro bags (1m x 1m) are inserted into these cuts and filled with water. These bags can apply up to 200T of pressure, displacing the stone at its natural joint at the rear.

3. Block Removal

Our Volvo wheel loaders carefully extract the blocks from the face and removes them from the mine for processing in the nearby factory.

4. Bolting

Our £0.5m high technic Epiroc Drill inserts 3m steel bolts to stabilize the roof, ensuring complete stability and safety. The maximum movement observed in the mine is 6mm.

Advantages of Mining Portland Stone over Quarrying

Albion Stone pioneered the switch from quarrying to mining starting back in 2002. Mining Portland Stone offers significant environmental benefits over traditional quarrying. This method minimizes surface disruption, preserving the natural landscape and reducing noise and dust pollution for local residents and wildlife. By accessing stone underground, mining avoids large-scale surface excavation, maintaining the habitat and ensuring the local ecosystem remains largely undisturbed. Additionally, the reduced surface impact fosters better relations with the community and promotes a more sustainable approach to stone extraction, aligning with environmental preservation goals.

Mining allows access to vast reserves of Portland Stone that would be unreachable with traditional quarrying techniques.

Factory

Albion Stone's factory at Portland is the largest and most technically advanced in the UK. It produces a wide range of Portland stone products from slabs, cladding panels, pavers and tiles to the most intricate hand carved stones. The factory processes are:

1. Primary Sawing

The Primary sawing is the first cutting process to the block. The block is cut into a series of slabs.

2. Secondary Sawing

The Secondary sawing process cuts the slabs from the Primary saws into the stone for ashlar cladding, pavers or 'sawn six side' cubes ready for further processing through the masonry or CNC operation.

3. Masonry/CNC

The masonry/CNC operation involves the shaping of the stones utilizing profiling saws or the handwork of a skilled mason. The CNC saws are becoming more and more advanced and can now complete complex details but all stones still need to be finished by hand

4. Finishing

All stones go through the final finishing process which involves putting a rubbed finish on all seen sides (typically 50 grit) to remove all saw cutting and tool marks. Each Stone is individually checked for tolerances and stacked onto a pre-determined pallet ready for dispatch.

We are certified in ISO 14001, ISO 9001, ISO 45001 and the only dimension stone company to receive an 'Excellent' rating for BES 6001. Our EPD shows that our stone has a carbon footprint of 44.7kgCO2/ Tonne

What are the Range Panels for?

These panels show the natural geological variations in the different beds on stone, and therefore give the designer a visual indication of the final façade colour, texture and shell content. There has already been a selection and rejection process therefore these stones are representative of the range manufactured at our factory.

The geology represented by the panels will be present in varying degrees in the finished stone. These panels should give the designer confidence about the features in the stone.

Frequently Asked Questions

Why not select the stone from a sample, why visit the Mine?

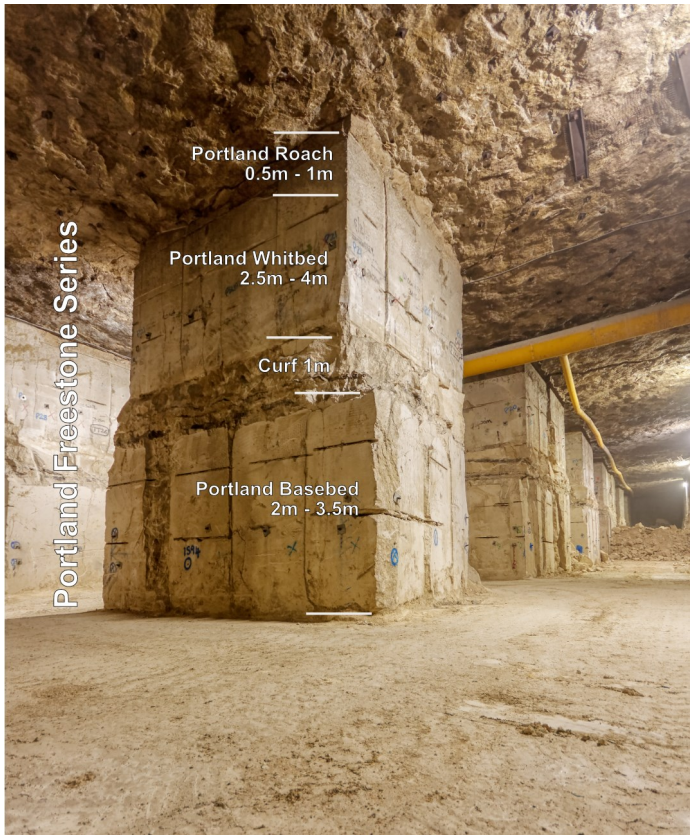
Albion Stone and the Stone Federation strongly recommend visiting the source of the stone. The designer should always visit the extraction site; a few samples or some slabs at a stockists yard can give a very misleading or distorted view of the stone as they may be from one block or one part of the mine. It is vitally important for the designer to fully understand the geology of the stone before it is selected and certainly before it has been cut and is ready for installation on the building.

What to look at in any Quarry or Mine?

Stone Faces/Geology - take the opportunity to closely examine the geological features that are present in the stones. Look at the different beds and note the differing characteristics. Also look at the geology of the stones in stock and the blocks being cut in the factory.

Block Sizes - the production of the blocks is normally controlled by geological features such as bed height, natural jointing or faults. It is important to remember that if the project's typical stones are larger than the average size block, it is likely to impact on the production programme.

Quantity in Stock/Production Rate - extracted blocks are measured and marked in cubic metres. Depending on the stone and the finished panel sizes, wastage from the raw block to the finished stone is typically around 50%.



Environment

A unique range of habitats have been created by the stone quarrying industry on Portland and have been recognised with SSSI and World Heritage classifications. Rare flora and fauna originally located on the cliffs have colonized the bare rock habitats and calcareous grassland in the quarries.

Adonis blue, small blue and chalkhill blue butterflies have an important population in the quarries along with a unique form of the silver-studded blue butterfly.

Albion Stone have a series of Management Projects agreed with Natural England and the company fund a variety of improvements.

Geology

Portland stone originated in the Jurassic period over 145 million years ago, when dissolved carbon dioxide in the shallow tropical seas reacted with the calcium and bicarbonate ions to form thick layers of calcium carbonate (calcite).