

Australian Porphyry Stone Pty Ltd

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The ARDEX System for the installation of Natural Porphyry Stone setts, pavers and random stone to trafficable areas as follows:

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PAVERS

The pavers are Porphyry stone setts in the nominal size indicated.

90 x 90mm guillotine cut, in thicknesses 40-70mm.

Other sizes may be offered and the fixing technique remains the same. We note that the guillotine cut stone may vary in thickness; hence the nominated wet bed fixing method has been designed to accommodate these thickness variations.

Porphyry is a natural stone with a low rate of water absorption. This means that standard grade, cement based fixatives are unable to penetrate the body of the stone and form strong mechanical bonds. The use of polymer additives to the cement based fixatives improves the bond strengths achieved and has been used for many years for this type of application. The stones are embedded in the mortar so that they are physically locked in place as the mortar fills the irregularities in the sides of each piece. Wire reinforcement is not used in this wet bedding system and the substrate must be reinforced concrete to provide the structurally sound base to which the mortar is bonded.

PROCEDURE

Wet Bedding Method.

The wet bed method is to be used to fix all the porphyry stone setts. The stone must be clean and dry. Reinforced concrete substrates must be dry and free from all contaminants such as excessive laitance, debris from other trades, and soiling from dirt tracked in from adjacent bare ground. The concrete should also have completed the recommended (AS3958-2007) curing and drying period of 4-6 weeks prior to installation of the pavers. Contaminants are best removed by mechanical methods such as grinding, shot blasting and high pressure water blasting.

Note: The stone must be embedded in the mortar while the fresh mortar is still in a wet and plastic state. This normally means only 2 or 3 rows are installed at a time with fresh mortar being added to the working edge as the installation proceeds.

Bedding Mortar

- To the prepared concrete, apply a slurry coat of 3 parts (By vol.) cement to 2 parts ARDEX ABACRETE liquid, broom thoroughly into the prepared substrate surface.
- To the wet slurry coat, apply a mortar consisting of 3 or 4 parts sand to 1 part cement and mix with a solution of 1 part ARDEX ABACRETE liquid in 3 parts water. This mortar may be applied from 15mm to over 40mm thick and should be plastic enough to allow the pavers to be pushed into the mix so mortar rises up the sides of the stone pieces.

Laying the porphyry stone setts

- Apply the slurry coat (3 parts cement to 2 parts ARDEX ABACRETE liquid) to the exposed fresh mortar surface and/or directly to the back of the stone pieces. Place the pavers in position onto the fresh wet mortar and tap down so the mortar rises at least halfway up the sides of each stone. The mortar may be allowed to rise up the sides of the tile to finish level with the top surface of each stone piece although it is common to allow 10-12mm depth for a cement based grout to be applied later.

The stone pieces should be positioned at least 10-12mm between adjacent pieces and have at least 15mm of mortar under the bottom of the thickest stone piece.

- Allow the mortar to dry for 24 hours before allowing light foot traffic to access the area. Vehicular traffic may be allowed after a minimum of 28 days curing and drying.
- Movement joints are to be included in the porphyry paving finish over all existing joints in the substrate and as recommended by the stone supplier.
- Where the porphyry paving is only a band or strip across a road way with concrete either side, a movement joint must be installed between the pavers and the concrete.

Movement Joints

Movement joints must be included in the paving layout. We recommend the pre-formed metal edged joint strips such as manufactured by Latham, as these may be anchored onto the mortar topping mix during the stone installation. These metal edged joints are placed in large sections of paving in high traffic areas. Joints adjacent to walls and the like (and not subjected to high traffic loads) may be filled with a proprietary flexible sealant suitable for the purpose. A backing rod may be required under the flexible sealant.

- Movement joints should be placed at all perimeters adjacent to columns, walls, fixed penetrations and other interruptions in the stone finish.
- Movement joints must be placed over all existing joints in the substrate.
- Movement joints are recommended at a maximum of 5 metre intervals in both directions of a grid pattern throughout large areas of paving. This interval may be reduced to provide symmetry in the completed work.
- Movement joints should be a minimum of 6mm wide and may be formed using backer rod as the bedding mortar is placed. The excess backer rod is then cut away after the mortar has set around the setts and prior to grouting.

Grout

We recommend the Ardex WJ50, a pigmented cement based grout to be used to fill the joints between the adhesive fixed stone pavers. This is a sanded grout suitable for both internal and external floor areas where the joints are from 5 to 50mm wide.

We note that the joints between the stone pieces may be wider and deeper than normal; thus this sanded grout may be used without excessive shrinkage. Ardex WJ50 grout may be mixed with Ardex Grout Booster. This additive improves grout strength, resistance to staining and adhesion to the stone. Allow the grout to set for 24 hours minimum before allowing light foot traffic over the completed work.

We trust the above recommendations are of assistance and welcome any further queries you may have regarding the products nominated above.

Graeme ROBB
Ardex Technical Services