DESCRIPTION

AQUABAN 600 is a poly-oxo aluminium stearate which may be represented by the formula (0=A1-X)n, where X is the stearate radical. **AQUABAN 600** is a 7.5% solution of the product in mineral spirits: it is a free flowing liquid at temperatures above 10° C, but below that point it tends to become thicker.

APPLICATION

AQUABAN 600 must be liberally applied to the dry porous surface of the masonry. The solution is usually applied with conventional spray equipment, but small areas can be adequately treated with a large paint brush.

The area covered depends entirely upon the porosity of the surface and varies between 100 and 200 sq.ft. per gallon of solution (2 to 4 sq.m. per litre). The solution is quickly absorbed into the surface, and the water repellent effect will extend well below the surface of the substrate. The depth of the penetration in the case of the relatively porous material can be as much as 0.5 cm.

The full water repellence is produced immediately all the solvent has evaporated, no intermediate curing ageing is required.

In the masonry to be treated is wet, or has a non-porous surface, the **AQUABAN 600** solution may not be absorbed resulting in white staining. The absorbency of the surface can be checked by treating a small test area and if doubt exists about the receptivity of the surface, it is recommended that advice should be sought before the treatment is commenced.

AQUABAN 600 should be applied to clean, dry surfaces and will normally not cause significant change in the appearance of the surface being treated. In certain cases, however, as with other water repellents, the nature of the substrate may result in the treated area appearing to be slightly darker. This is usually considered insignificant but can easily be checked by a trial treatment of a small area. The **AQUABAN 600** coating itself is virtually colourless, and the effect is an optical one due to decreased light.

The rapid shedding of water by **AQUABAN 600** treated walls results in the maintaining of a clean appearance for much longer than would otherwise be the case.

REDUCTION IN POROSITY

The **AQUABAN 600** treatment renders a surface water repellent but does not seal it, and so, although the vapour permeability of the substrate is slightly lowered, a treated surface will still allow the passage of air and water vapour.

RESISTANCE TO WATER UNDER PRESSURE

Because the **AQUABAN 600** treatment produces water repellence rather than a complete sealing of a surface, it will not prevent the penetration of water at pressures in excess of about 20 lbs. per sq.inch (1.4 kg/cm^2)

TREATMENT OF BRICK AND STONE BY BRUSH APPLICATION

In the following series of test, brick and stone were treated by painting the surface with a 2" paint brush (this could, of course, also be achieved by the use of pneumatic spraying) and allow to air dry to constant weight. The test pieces were stood in ½" of water and the amount of water was measured at intervals. The results were compared to those given by un untreated brick. The amount of water absorbed is expressed as the percentage increase in weight on the original dry wight of the brick.

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% OF WATER ABSORPTION AFTER STANDING IN ½" OF WATER		
HOURS	**UNTREATED BRICK**	**TREATED BRICK**
1	50.1	0.076
3	63.8	0.160
5	64.1	0.198
24	64.8	0.211
48	65.2	0.211
72	66.7	0.211
96	67.2	0.211

BATH AND PORTLAND STONES

These stones, which represent the more alkaline type of building material, and which have hitherto been difficult to render water repellent were treated by brushing the solution onto the surface. The water repellence was tested as described previously.

BATH STONE		
% OF WATER ABSORPTION AFTER STANDING IN ½" OF WATER		
HOURS	**UNTREATED BRICK**	**TREATED BRICK**
1	2.70	0.016
18	6.73	0.016
24	7.75	0.016
48	10.40	0.016
72	10.90	0.016
133	11.40	0.016

BATH STONE		
% OF WATER ABSORPTION AFTER STANDING IN ½" OF WATER		
HOURS	**UNTREATED BRICK**	**TREATED BRICK**
18	1.76	0.013
24	1.90	0.013
48	2.41	0.013
72	2.74	0.013
133	3.52	0.013

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TREATMENT OF FRESH CONCRETE

When fresh concrete dries out it is initially porous and absorbent but over the first six months it densifies. The capillary water absorption will be about 0.19% for freshly set and dried concrete, and decreases to about 0.13% after six month aging.

We have carried out trials on the **AQUABAN 600** treated samples were quite water repellent in that the capillary water absorption initially was low at 0.08% but after six months aging this became 0.11%. it would appear that the effect of **AQUABAN** as a waterproofing agent for fresh concrete is most marked in the period immediately following application and for the firs months thereafter. The surface does, however, exhibit water repellence for far longer periods and will withstand intermittent wetting.

DURABILITY CONSIDERATIONS

Compounds based on aluminium stearate have been used for many years for masonry waterproofing and have been recognized as retaining their effectiveness for periods up to 10 years. **AQUABAN 600** can be regarded as an polymerized anhydrous form of a aluminium stearate.

The results of long term weathering tests are now available, and the results to date are given in the following table which shows % reduction in water absorption. This figure is obtained by comparing in a standard test, the water absorbed by a treated and untreated brick. If "A" represents the weight of water absorbed by an untreated brick and "B" the weight absorbed by an identical treated brick, the effectiveness of the treatment can be expressed as follows:

$$\frac{(A-B) \times 100}{A} = \% \text{ reduction in water absorption}$$

% REDUCTION IN WATER ABSORPTION

TEST MATERIAL	INITIALLY	1 YEAR	2 YEARS	3 YEARS	4 YEARS
Standard brick	99.6	99.5	99.2	98.6	97.5
Bath Stone	99.8	99.0	98.9	97.4	93.6
Portland Stone	99.2	96.1	97.7	84.0	38.6

Tests indicate that portland stone has a higher alkalinity than bath stone, and this may account for the considerable reduction in the proofing of the former. Despite this high alkalinity the figures above show that some measure of proofing remains even after four years.

In order to establish the long term durability of **AQUABAN 600** a test wall was erected in 1975. The wall consists of sections of three types of bricks and two types of limestone. It is divided vertically into two equal sections, one of which is treated with **AQUABAN 600** and the other untreated. After five years of exposure, the **AQUABAN 600** treated section still shows no sign of allowing water penetration and is less affected by atmospheric pollution than the untreated portion.

INTERNAL SURFACES

Internal walls subject to damp patches have been successfully treated and the dampness prevented from striking through this type of surface has been satisfactorily wallpapered. These surfaces have also been painted with conventional oil paints, but emulsion paints do not spread satisfactorily.

AQUABAN 600 deteriorates when exposed to the atmosphere due to reaction with moisture, container should therefore be kept sealed and once opened, should be used as quickly as possible.

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CAUTION

Although the toxicity of **AQUABAN 600** has not been determined, to the best of our knowledge, this product does not constitute a health hazard if handled in the proper manner. However, inhalation, ingestion and skin and eye contact should be avoided. It is therefore advisable to wear gloves, protective clothing and goggles when handling **AQUABAN 600 .**

WARRANTY

PennKote Ltd. warrants its products against manufacturing and material defects. PennKote will, for a period of two years from the date of application, supply replacement material for product proven to be defective. This warranty is in lieu of any and all other warranties expressed or implied. Pennkote Ltd. and any Distributor or Retailer of this product accept no liability for incidental or consequential damage due to defective material or improper installation. The user shall determine the suitability of this product for intended use.

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