

▶ Description

TamSeal Hydroproof is a hydrophobic pore-blocking admixture for concrete. It provides protective and integral permeability reduction, which ensures dense, structurally sound concrete. Capillary absorption is dramatically reduced, preventing the ingress of potentially harmful soluble salts such as chlorides and sulphates, resulting in concrete which is waterproof and durable.

▶ Key Benefits

- Reduced permeability
- Unaffected by surface impact or abrasion
- Can be used in concrete in contact with potable water
- Fully compatible with certain Tam surface coatings and finishes
- Can be used with all types of concrete and with all types of cement binders.
- Cost effective
 - Simple design
 - No protective block-work needed
 - Drilled fixings can be made without loss of waterproofing performance
 - Reduced excavation cost
 - Faster construction time
 - Insensitive to delays caused by inclement weather
- Corrosion protection
 - Integral protection against soluble salts
 - May be used for concrete in contaminated ground
 - Improved chemical resistance

▶ Typical Applications

- Below ground structures, basements, piles and pile cap, foundations, services ducts etc.
- Reinforced concrete in marine environments subject to tidal and wet/dry cycling
- Water retaining structures, water tanks, swimming pools, reservoirs and water towers.
- Highway structures in contact with spray or from directly applied de-icing salts
- Land drainage, manholes and silage pits.
- Encapsulation of toxic waste.
- Waste water treatment and de-salination plants

▶ Technical Data

TamSeal Hydroproof		
Appearance	Dark brown liquid	
Density @ 25°C	1.014	
pH-value	6.0	
Air entrainment	1 - 2%	
Nitrate content	< 0.1% (w/w admixture)	
Alkali content as Na ₂ O (%)	< 0.1% (w/w admixture)	
Freezing point	0°C	
Flash point	Not applicable	
Typical Properties		
Test	Result	% reduction over control
Water absorption (SS 78 : Part A22:1987)	< 1%	63 - 68%
Chloride diffusion	2.67×10^{-9} cm ² /sec	75%
Initial surface absorption test (ISAT) BS 1881 : Pt.5	0.003 ml/m ² /sec	83 - 86%
Chloride equilibrium flow rate	3.08×10^{-5} mo/L/day	75%

All technical data stated herein is based on tests carried out under laboratory conditions.

▶ Application Guidelines

Mixing

Agitate the drum thoroughly before use. Some slight settlement may take place particularly in cold weather. Normally the TamSeal Hydroproof is added first to the mixer drum with approximately one half of the total mixing water. Subsequently, the mix ingredients are added with the remaining water and plasticizer/retarder. Mix thoroughly for a minimum of two minutes or until the mix is homogenous. Never add admixtures to dry cement.

Application

TamSeal Hydroproof should always be used in conjunction with a concrete superplasticiser. This should be added separately to TamSeal Hydroproof.

TamSeal Hydroproof should be added to a concrete mix by means of an appropriate admixture dispensing unit. The plasticizing or, in hot climates, retarding admixture, should be similarly added after the addition of the TamSeal Hydroproof. To produce low permeability, corrosion free concrete a minimum cement content of 350 kg/m³ is required with a maximum water/cement ratio of 0.45.

Curing

Concrete incorporating TamSeal Hydroproof should be cured according to normal good practice. For concrete below ground, a bituminous based protective curing compound is recommended. Back filling operations can begin immediately when the bituminous curing compound is touch dry, normally within 1 - 2 hours.

Effect of overdosing

A severe over dosage of TamSeal Hydroproof will result in the following:

- Increased workability and retardation of set
- Increased air entertainment
- Lower initial compressive strengths

Compatibility

TamSeal Hydroproof is compatible with all types of Portland cement, including sulphate resisting and cements blends. When using sulphate-resisting cements, slight retardation in setting time may be observed.

For use with other cements, consult your local TAM International representative. TamSeal Hydroproof can be used with the majority of superplasticisers but should not be pre-mixed with other admixtures.

Jointing

All joints and openings through the watertight concrete need proper sealing. Consult your local TAM International representative for advice on the correct detailing. Other important detailing such as cover to reinforcement should be as normal for the type of structure and conditions applying.

Dosage

TamSeal Hydroproof is used at a dosage rate of 20 to 30 litres per cubic metre and the mix should incorporate TamSeal Hydroproof from the outset.

To achieve the necessary workability for water/cement, please contact your local Tam International representative for our selection of TamCem superplasticisers.

The addition rate of superplasticiser will depend upon the product used and application conditions but should be between 0.75 - 1.2% by weight of cement (750 - 1200ml per 100kg cement).

Mix trials in the laboratory and trials are essential before work on site commences.

▶ Storage

TamSeal Hydroproof should be stored at room temperature (min 10°C and max 38°C), kept dry and out of direct sunlight. If these conditions are maintained and the product packaging is unopened, then a shelf life of 1 year can be expected.

▶ Health & Safety

TamSeal Hydroproof should only be used as directed. We always recommend that the Health & Safety data sheet is carefully read prior to application of the material. Our recommendations for protective equipment should be strictly adhered to for your personal protection. The Health & Safety data sheet is available upon request from your local TAM International representative.