

Estomix

High Performance Hydrophobic Waterproofing System

Description

Estomix is a chloride free, organic liquid admixture consists of wood naphtha, when added to fresh concrete, reacts with products of the cement hydration process to produce a hydrophobic material, which repels external water thus drastically reducing water absorption into the concrete.

Estomix has been tested by SIRIM BHD, in accordance to BS 1881 Part 122:1983 on Water Absorption, BS 6920, on The Suitability for Contact with Drinking Water, and complied with the specification in this data sheet.

Uses

- For complete and permanent waterproofing of mass and reinforced concrete.
- **Estomix** drastically reduce water absorption in structural and pre cast concrete.
- It is recommended to be used in multi-storey basement, tunnel, water retaining/excluding structure, bridge deck, civil and building structure.

Advantages

- Reduces surface absorption.
- Minimizes cracking and plastic shrinkage.
- Provides integral protection ensuring reduced permeability throughout the concrete.
- Integral protection is maintained even if surface damage occurs.
- Lower water cement ratio improves compressive strength at same workability.
- No protection required for floor and wall.
- Increase formation of crystal (Calcium Hydroxide) during cement hydration process.

Standards Compliance

- **BS 1881 Part 122:1983**
- **BS 5075**
- **BS 6920 Part 1:2000**
- **CRD-C 163-92**

Physical Properties

Appearance	Brown solution
Specific gravity	1.10 at 20 °C
Chloride content, BS 5075	Nil
Water Absorption Test, % BS 1881 Part 122:1983	< 1.8
Potable Condition, BS 6920 Part 1:2000	Complied
Water Permeability, m/s CRD-C 163-92	< 1.8×10^{-11}

Typical Performance Examples

Estomix meets the water absorption requirements of draft European standard EN 934-2.

Many variables in concreting materials and conditions can affect the use of an **Estomix**. Trials should be carried out using relevant materials and conditions in order to determine the optimum mix design and **Estomix** dosage to meet specific requirements.

A typical performance example from evaluation studies of **Estomix** is included on this data sheet. The values quoted are representative of results obtained and are provided as illustration of the performance.

Because of the variability of concreting material, the results should only be taken as typical of the performance to be expected. Results quoted are not necessarily directly comparable with result obtained elsewhere for **Estomix**.

Example

Water absorption test in accordance to BS 1881 Part 122 as below;

Concrete Grade	40
Cement Content	420 kg
Water Cement Ratio	0.38

	Dosage of Estomix (%)	Water Absorption (%)
Treated	1.0	<1.8
Control	nil	5.9

Instruction for Use

Trial Mix

Trial Mix shall be conducted for concrete intended to utilize **Estomix**, to waterproof a particular concrete structure.

The targeted compressive strength of a particular grade of concrete shall be complied with BS 5328:1981, or its latest revision. The use of **Estomix** shall be under adequate supervision. For further advice contact Denka Technical Department.

Typical Dosage

Estomix may be dispersed to the gauging water at the rate of 1 litre per 100 kg of Portland cement. For severe conditions, a maximum of 1 dose is recommended.

Estomix is also water reduction agent. Therefore, the maximum free water cement ratio shall not be more than 0.55, before dosing of **Estomix**.

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The use of **Estomix** at typical dosage will illustrate an excellent result on water absorption, as shown in Typical Performance Example.

Effects of Overdosing

An overdose of double the intended dose of **Estomix** may result in increased retardation and workability; hence reduce the short-term strength development. Long term strength is unlikely to be affected.

Should segregation of concrete occur, due to excessive increase in workability, the concrete shall not be used.

Dispensing

The correct quantity of **Estomix** should be measured by means of a recommended dispenser. The **Estomix** should then be added to the concrete with the mixing water to obtain the best results. For further advice on equipment and tools contact Denka Technical Service Department. Concrete with higher Grade would require higher cement content.

Curing

As with all structural concrete, good curing practice should be maintained, particularly in situations where an overdose has occurred.

Water spray, wet Hessian or an Estocure spray applied curing membrane should be used.

Good concrete practice must be followed at all times. Well graded aggregates must be used and minimum cement content of 300kg/m³ is recommended for Grade 30 and below.

Waterproofing to Concrete Joints

Denka's Estopper Range PVC waterstop shall be provided between lifts of concrete and joint in floor bays.

Packing & Size

Estomix	210 litre drum
	20 litre pail

Technical Support

Denka provides a technical advisory service for on site assistance and advice on waterproofing product selection, evaluation trials and dispensing equipment. Technical data and guidance can be provided for other products for use with fresh and hardened concrete.

Storage

Estomix has a minimum shelf life of 12 months.

Precaution

Estomix does not fall into the hazard classification of current regulation. Suitable protective gloves and goggles should be worn. If swallowed seek medical advice immediately. Do not induce vomiting.

Additional Information

Denka Construction Solutions Malaysia Sdn Bhd offers a wide range of complementary products which includes waterstops, waterproofing products, grouts, anchors, specialized flooring products. In addition, a wide range of products formulated for repair and refurbishment of spalled concrete are available.



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