

FORMDEX PLUS

CRYSTALLIZATION WATERPROOFING FOR CONCRETE

ASIA'S LEADING
BUILDING PROTECTION
SPECIALIST



FORMDEX PLUS

CRYSTALLIZATION WATERPROOFING FOR CONCRETE

FORMDEX PLUS IS A SPECIAL BLEND OF CEMENT, QUARTZ SAND AND PROPRIETARY CHEMICALS IN POWDER FORM FOR THE PERMANENT PROTECTION OF CONCRETE AGAINST WATER PENETRATION.



MRT2 DEPOT - SERDANG, SELANGOR

ADVANTAGES

Waterproofing is permanent, crystals become an integral part of concrete. Crystal growth penetrates deeply into the capillary tracts and seals it completely.

Completely effective against high hydrostatic head pressure. Can be applied from either the positive or negative side.

Does not require protection against backfilling or placement of reinforcement steel. Cannot come apart at the seams, tear or puncture. Can be applied to moist or green concrete. Non-toxic, approved for potable water use.

HOW DOES IT WORK?

The compound by the pressure of osmosis will penetrate deep into the capillary tracts of the concrete and reacts with moisture and free lime forming crystals that will completely and permanently seal the capillaries, pores and minor shrinkage cracks, making it impenetrable to water under high pressure.



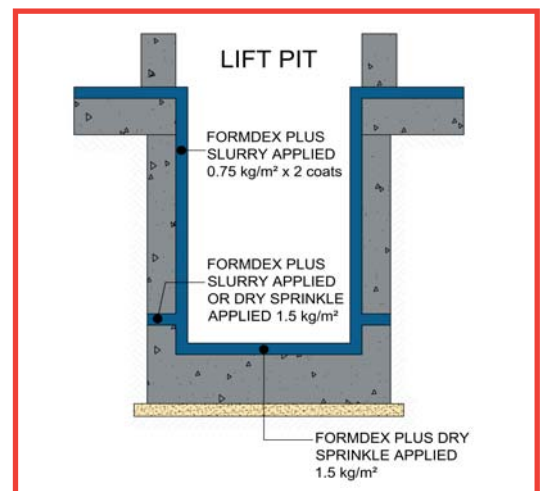
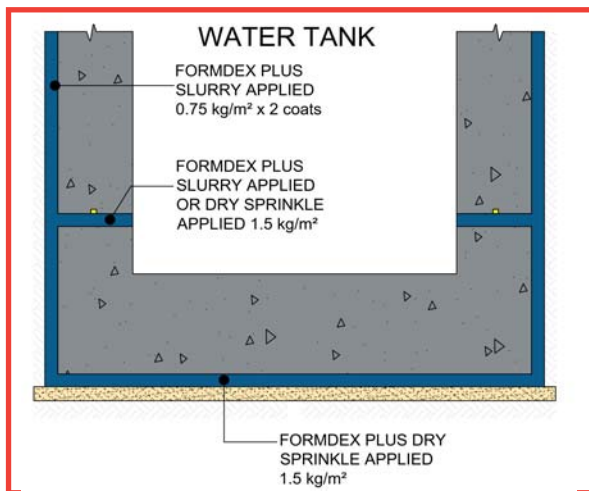
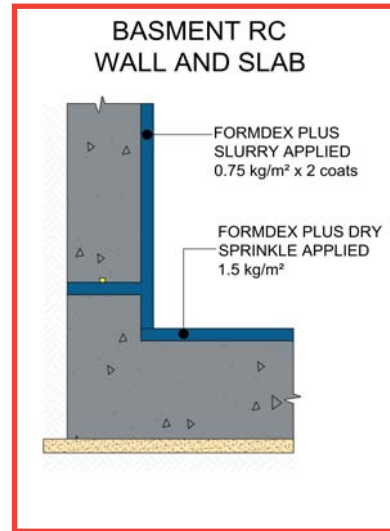
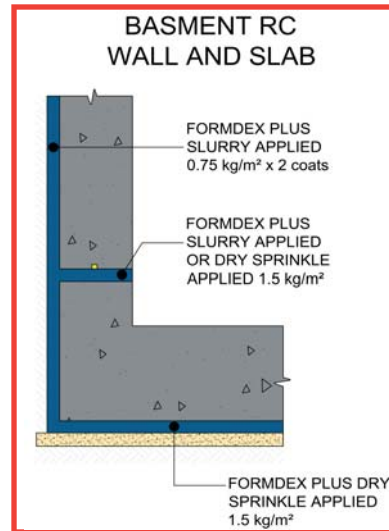
In the absence of moisture, the Formdex Plus chemicals will lie dormant.

Introduction of moisture will activate chemical reaction and sealing process.

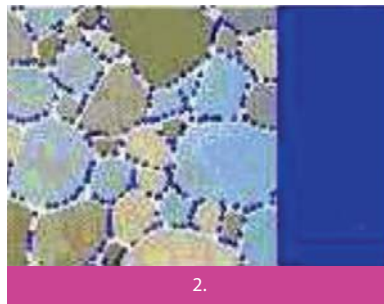
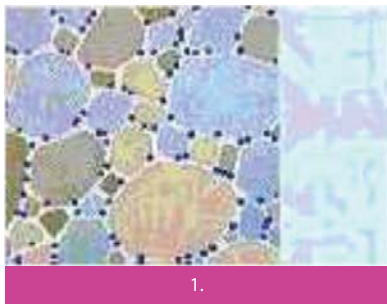
Applicable on both active side (exposed to water) or the negative side (side opposite to the water)



DIAGRAM OVERVIEW



HOW IT WORKS?



- 1) Section of dry concrete wall showing the natural free lime and moisture in the capillary system.
- 2) Concrete wall exposed to water: The water forced its way into the capillaries.
- 3) After treatment: Formdex Plus penetrates the concrete forming chemical complexes which block the capillaries.
- 4) The concrete is now watertight but still allows water vapour to pass.

WARRANTY INFORMATION

Only Hitchens' trained applicators are approved to undertake all application work. Hitchens products carry a long-term warranty for both materials and workmanship. The warranty is further backed by Hitchens International Fidelity Fund. Please check with our local applicators if this fund is available in your country. For complete warranty and other related information, please contact Hitchens regional offices.

FORMDEX PLUS

CRYSTALLIZATION WATERPROOFING & PROTECTION

DATA SPECIFICATION SHEET

022 068
Eco-Friendly Building Material

DESCRIPTION

Formdex Plus is a cementitious waterproofing system consisting of cement, quartz sand and multiple activating chemicals. The waterproofing effect is provided by the penetration of various chemical components into the capillary tracts of the concrete by pressure of osmosis and reacts with moisture and free lime in the concrete, forming crystals which seal the capillaries and pores, thus preventing water penetration. Formdex Plus works equally as well when applied to or against the pressure of water.



AREAS OF USAGE

Formdex Plus is used for any type of new or existing concrete structure to protect it against the penetration of water. It can be used in both interior and exterior applications. Application can be made by brush, or dry sprinkling to either lean concrete before laying the slab or on the surface of newly laid concrete.

Formdex plus can be used either exposed or concealed for:

- Basement walls and floor
- Tunnels & Underground shafts
- Foundation walls and footings
- Bathrooms
- Water retaining structures
- Retaining walls

PRODUCT SPECIFICATION

COLOUR: Cement Grey

BULK DENSITY: 1.6 kg/litre

PACKAGING: 25 kg bag

MIX RATIO (powder : water): 5 : 2 (by weight)

SHELF LIFE: 2 years in dry environment

MINIMUM APPLICATION TEMPERATURE: 10°C

COVERAGE: 1.5 kg/m² (0.75 kg/m²/coat)

INITIAL SET @ 25°C: ≥ 20 mins

WATER PERMEABILITY (DIN 1048: Part 5): ≤5.0 mm

BOND STRENGTH BY PULL-OFF (BS EN 1542): 1.5 N/mm²

BOND STRENGTH BY SLANT SHEAR (ASTM C1042): 1.2 N/mm²

COMPRESSIVE STRENGTH (ASTM 12390-3): ≥40 N/mm²(after treated)

BOND PERFORMANCE ON STEEL BAR (SS2): 0.15mm slip

WATER TOXICITY (SS 375): Passed

CORROSION RESISTANCE TEST: No rust was found on the rebar after 28 days

SUBSTRATE PREPARATION

Make sure the substrate is of sound construction, thoroughly clean and must not contain any water repellent additives. Surface must be clean, free from oil and paint and have a wood float finish. All loose substrate should be removed. All tie wires, wood or steel separators should be removed. The structure must be examined for structural defects and any defects must be repaired. All protrusions must be removed, honeycomb areas, cracks exceeding 0.3mm wide and any other damaged areas shall be hacked out to the sound concrete to a minimum depth of 25mm and treated with two coats of Formdex Plus and then re-plastered to original profile with sand/cement mortar. Substrate must be dampened with water prior to Formdex Plus treatment. Any surface water must be removed so that concrete surface is damp only immediately prior to applying Formdex Plus. Substrate should be moist but not visibly wet.

APPLICATION

Formdex Plus Dry Sprinkling Application (Before Concrete Pouring)

Separate clean containers must be used for measuring by volume Formdex Plus materials and clean water. Mixing ratio for Formdex Plus is: 1 part of clean water to 3 parts of powder (by volume).

A) Formdex Plus Slurry Application

Retaining walls, lift pit walls, water containment structures

- a) Apply by brush 2 coats of Formdex Plus slurry @ 0.75kg/m²/coat to surfaces of R.C. walls

Ground Slab, Lift Pit Slab

- a) Apply by brush 2 coats of Formdex Plus slurry @ 0.75 kg/m² to R.C. slab
- b) Upturns and pipe penetrations-to be treated with either Formdex Uni or Formdex Uniflex (see respective product data spec.)

Followed by Formdex Plus Dry Sprinkling Application.

B) Formdex Plus Dry Sprinkling Application (Before Concrete Pouring)

Sprinkle Formdex Plus at a coverage rate of 1.5 kg/m² onto clean dry / damp lean concrete, pilecap, ground beam etc; continuously immediately prior to pouring of concrete slab.

C) Formdex Plus Dry Sprinkling Application (After Concrete Pouring)

Sprinkle Formdex Plus at a coverage rate of 1.5 kg/m² onto concrete immediately after it has reached its initial set and then trowel in by hand or powered float. Note: If floor hardeners are incorporated in the above specification, they must be of the non-premixed, non-metallic aggregate - type floor hardener.

D) Formdex Plus application to construction joints

- Accessible Construction joints apply by brush 1 coat of Formdex Plus at a coverage rate of 1.5 kg/m² prior to putting up of formwork OR dry sprinkle Formdex Plus at a coverage rate of 1.5 kg/m² immediately prior to the pouring of concrete.
- Inaccessible construction joints apply by pouring Formdex Plus slurry at a coverage rate of 1.5 kg/m² prior to the pouring of concrete.
- Existing construction joints shall be "V" out to a depth and width of 25mm and then apply by brush 1 coat of Formdex Plus at a coverage rate of 1.5 kg/m² and then fill chase to original profile with sand/cement mortar or

CURING & PROTECTION

Protect treated surface by either covering with moist sand or plastic sheeting, or by carefully post watering constantly with fine water spray for at least 3 days.

For enclosed areas, air circulation is necessary within the first 24 hours to ensure normal setting of Formdex applications.

HEALTH & SAFETY

Read the product label and Material Safety Data Sheet (SDS) before use. Users should acquaint themselves with all risk and safety phrases.

Place Product
Sample Here

Hitchins (FE) Marketing Pte Ltd
Telephone: (65) 6861 1177
Facsimile: (65) 6863 4240
Email: hitchins@hitchins.com

Revision A

All data given and statements and recommendations made herein are base upon our research and experience and are believed to be accurate. However, no guarantee of their accuracy is made or applied. This data specification supersedes all other issues.

MAJOR PROJECT



Stamford America International School - Singapore



Metropolis @ One North - Singapore



Ocean Front - Singapore



Sahid Kuta Bali - Indonesia



De La Salle University Library - Philippines



Ameera Condo - Petaling Jaya, Selangor



The Peninsula Hotel - Shanghai



Nanjing Xuan Wu Hu Tunnel - China



Point 92 - Damansara Perdana, Petaling Jaya, Selangor

APPLICATION & INSTALLATION



1. Measuring of material



2. Sprinkling of Formdex Plus



3. Sprinkling prior to casting



4. Mechanical mixing with water



5. Prewatering before application



6. Application is with brush