Holcim Water Protect

LafargeHolcim Bangladesh Limited
A company of LafargeHolcim and

Basic Introduction

- **Waterproofing :**

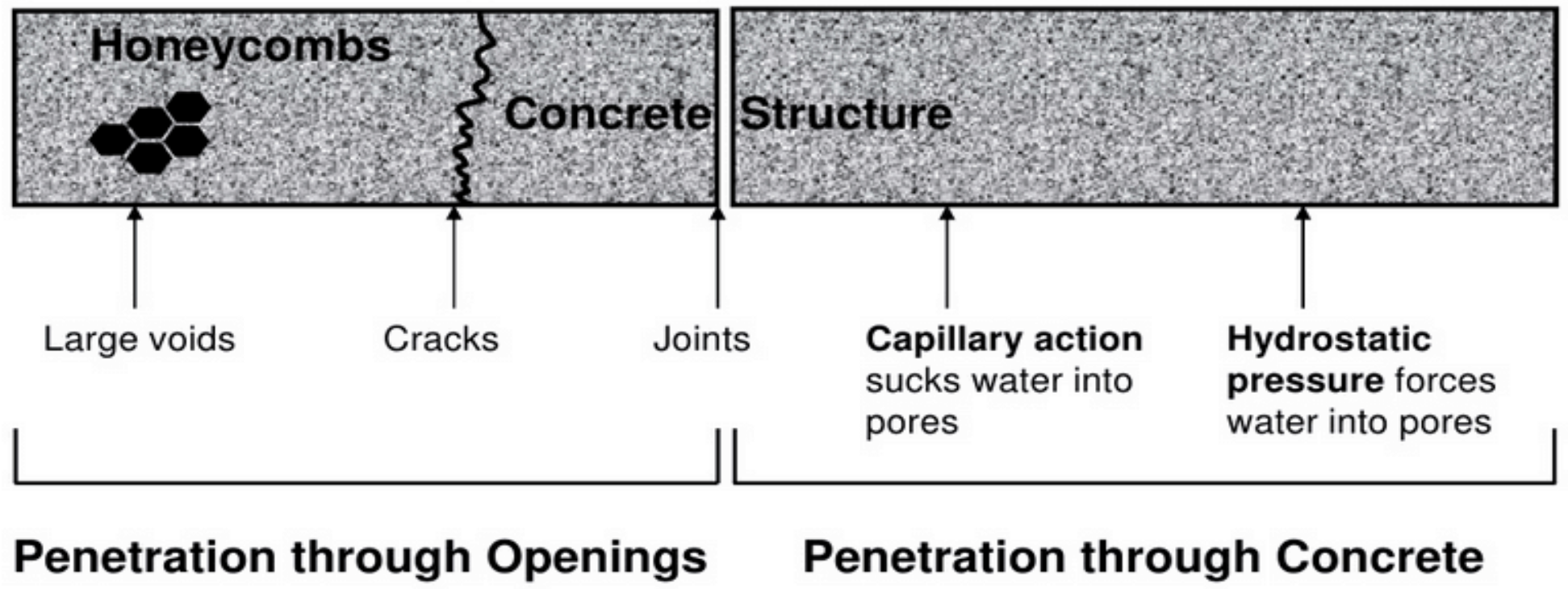
Waterproofing is the treatment of a surface to prevent the passage of liquid water in the presence of hydrostatic pressure

- **Damp-Proofing :**

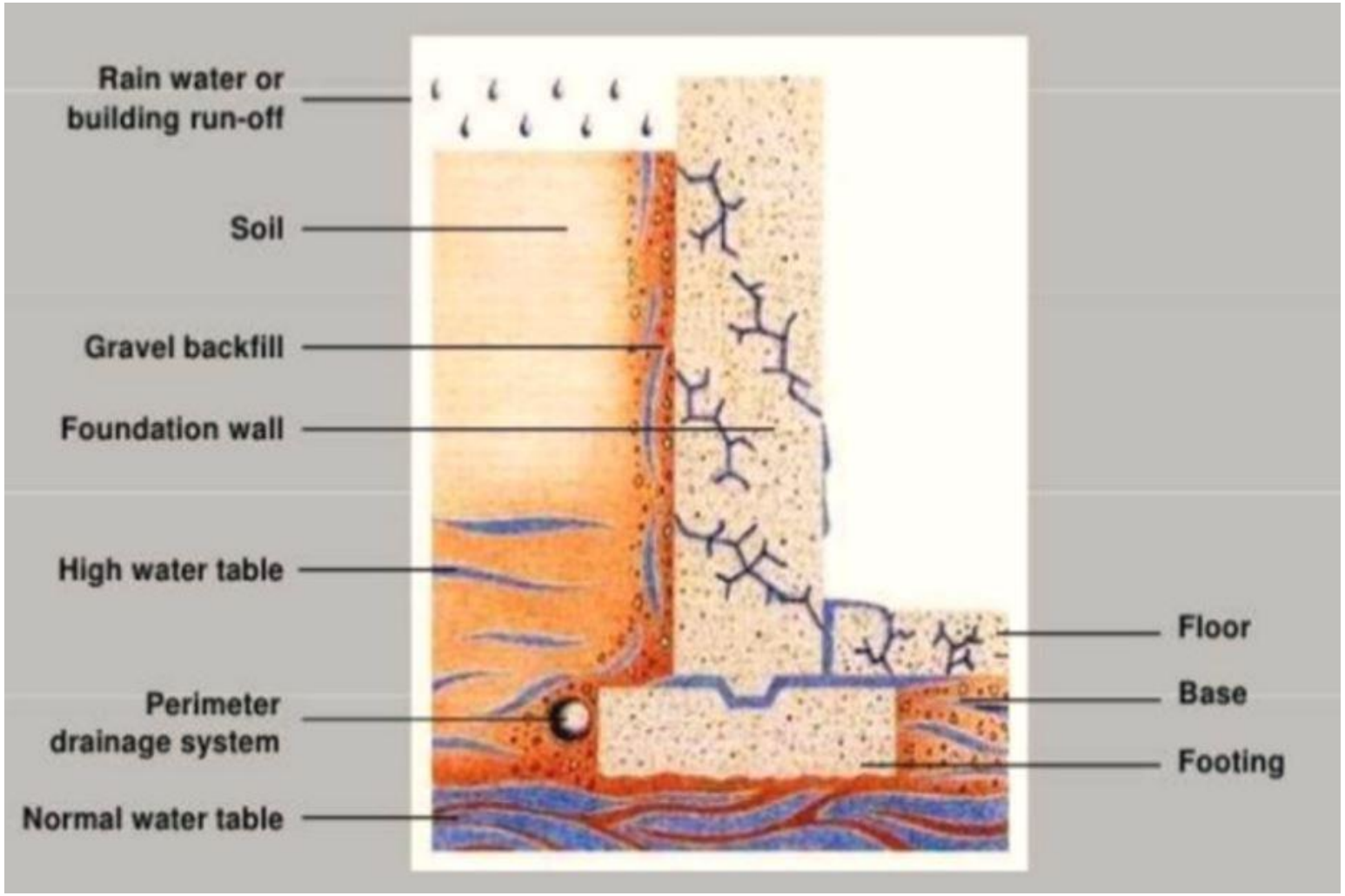
Dam proofing is the treatment of a surface to retard the absorption of moisture in the absence hydrostatic pressure .

Causes of Water Penetration

How Water can penetrate Concrete Structures ?



Why Waterproof A Structure ?



Wall Damage due to capillary absorption

Majority of buildings are standing on concrete foundations. Concrete absorbs ground water and it continues to travel by capillary action into concrete pillars and brick or block walls. Water can reach second floor of building by capillary action. Humidity is trapped inside the walls when it is trying to evaporate it disrupts the periphery within weeks or months.

MOLDS CREATION

Moisture entrapment in the walls is fertile ground for creation of molds. They cause bad smell inside the buildings and damaging of wall finishing materials

DANGERS OF MOLDS INHALATION

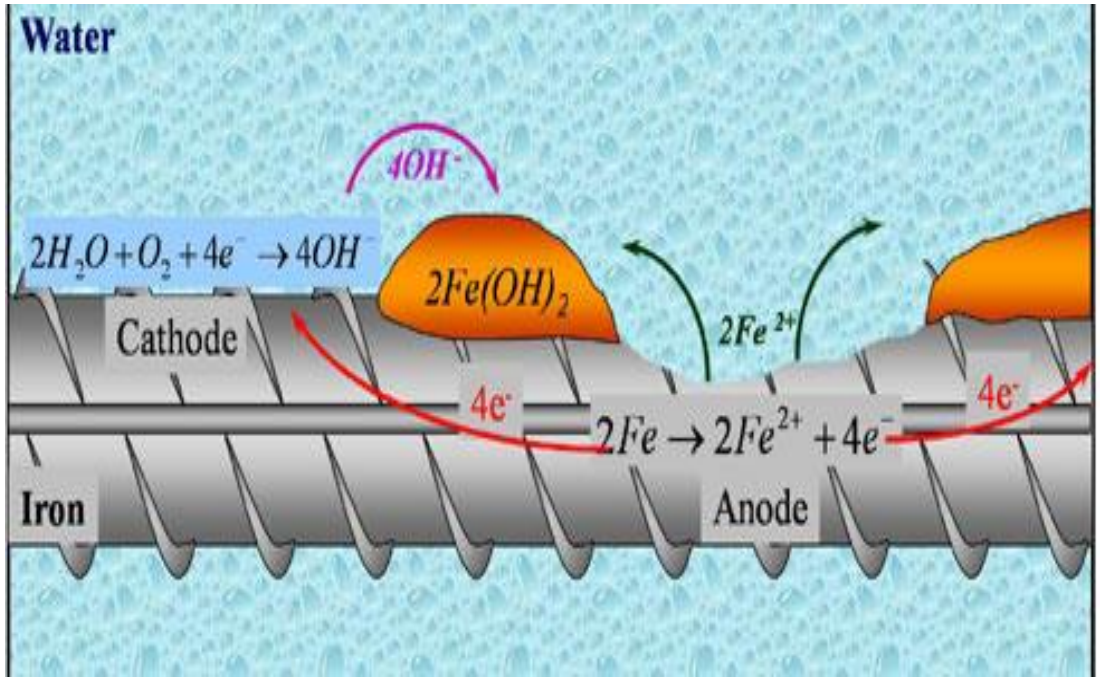
The biggest danger of molds is impact on health of residents. When mold spores are present in abnormally high quantities, they can present especially hazardous health risks to humans, including allergic reactions or poisoning by mycotoxins or causing fungal infection - mycosis

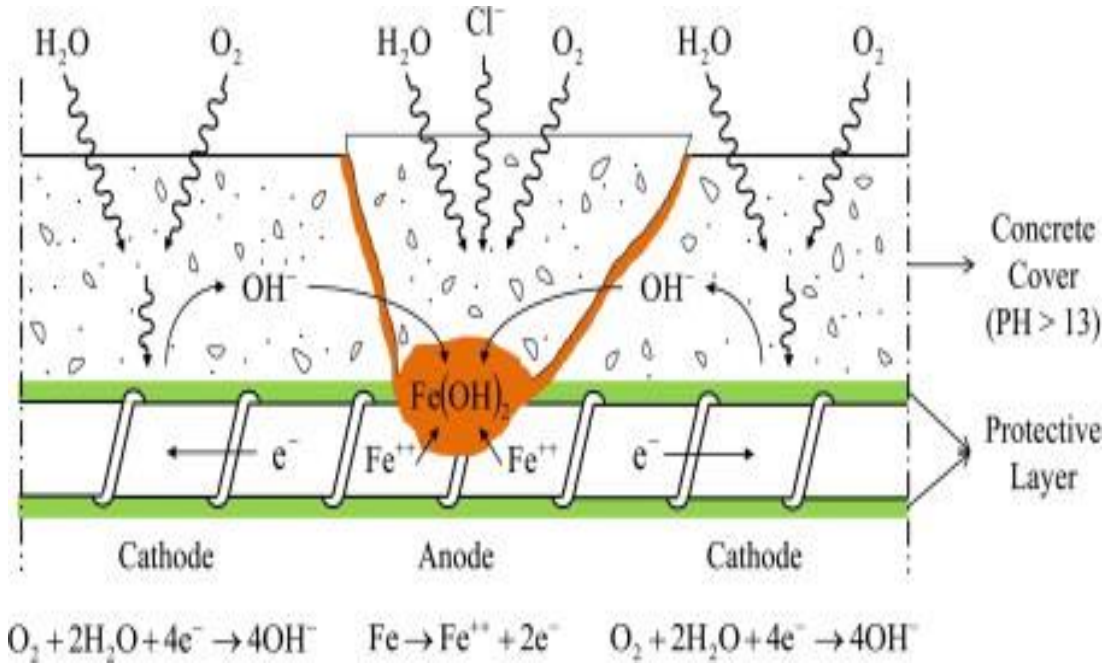
DEGRADATION OF BUILDING MATERIALS

Moisture inside the walls has also negative impact on structural and nonstructural materials. It causes corrosion of steel reinforcement in the concrete which leads to disruption of building statics over time.

DEGRADATION OF BUILDING MATERIALS

Corrosion of Embedded Materials





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Product Variant & Proposition

Core Benefit

Value Proposition

STRENGTH

FAST SETTING

DURABILITY

Technical Composition & Physical Properties

Product Details
Cement Standard-BDS EN 197-1:2010
Cement type-CEM II/B-M (V-S-L)
Strength Class- 42.5N, PCC

Physical Properties	Standard Value (EN 197-1:2010)	Lab Test Result (Approx.)
Initial Setting Time (Mins)	≥ 60 (Min)	250+/-10
Final Setting Time (Mins)	Not Specified	350+/-10
2 Days Strength	≥ 10 MPa (1450 Psi)	≥15 MPa
7 Days Strength	Not Specified	≥28 Mpa
28 Days Strength	≥ 42.5 & <= 62.5	≥44 Mpa

Composition	Standard Value
	65-79%
  	21-35%
Minor Additional Constituents	0-5%

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Benefits & Technical Features

Benefits

- Water repellent
- Removes dampness
- Prevents rust
- Offers longevity
- Environment friendly

Technical Features

- Has integral water repellent properties
- Absorbs much less water by capillary action and acts as a corrosion resistant solution.
- Concrete made of Holcim water protect improves cohesiveness of the mix
- Long term Strength beyond 28 days which is similar to more than 7000 PSI at 90 Days.
- Reduces 10 to 15% Cement Consumption for its higher strength gain properties which also results in Cost reduction

Visual Comparison between HWP & Waterproofing Chemical while mixing

Lab Trial

Show water repellency while mixing and Mixing is homogeneous

HWP

Vs

Waterproofing Chemical

Mixing is not **homogeneous** while adding dosage

Don't Show **water repellency** while mixing

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Absorption Capacity Comparison after hardening

Lab Trial

HWP- Shows water repellency after hardening , Water retains on the surface

Dr.Fixit- Shows absorbing water

Fosroc- Conplast WL- shows which is less than Dr.Fixit

Pudlo- Shows little bit water repellency after hardening

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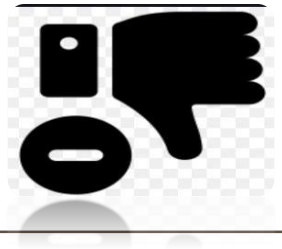

Disadvantages of using waterproofing chemical

- If dosages of chemicals are not mixing in concrete or mortar properly the structure will not be waterproofed perfectly.
- It is highly tough to maintain proper dosages (ml) in site , so a bad reaction will be appeared in future .
- Many more steps are needed to do waterproof
- after 3/4 years the waterproofing system may be demolished by using chemicals (after adding chemical in a cement bag disproportion chemical reaction is happened which is harmful for structure)
- There have Precautions & Limitations in Construction Chemicals
- Mixing of mortar /concrete may not be homogeneous due to bad workmanship.

Advantages of using Holcim Water Protect

- HWP is high strength cement based water protect solution .
- Easy to work . No need to think additional admixture or extra care .
- It’s practically proved that the water repellency (which is the main feature) shows both fresh and hardened state . So, it is more easy to understand the client through a demo .
- Concrete made of Holcim water protect improves cohesiveness of the mix.
- Long term Strength beyond 28 days which is similar to more than 7000 PSI at 90 Days.
- No need to take skilled labor for using HWP.
- Removes dampness
- Prevents rust
- Offers longevity

Application Areas

1 WALL

2 PLASTER

3 ROOF

4 Beams and Columns

5 FOUNDATION


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