

WATERPROOFING for Construction Work

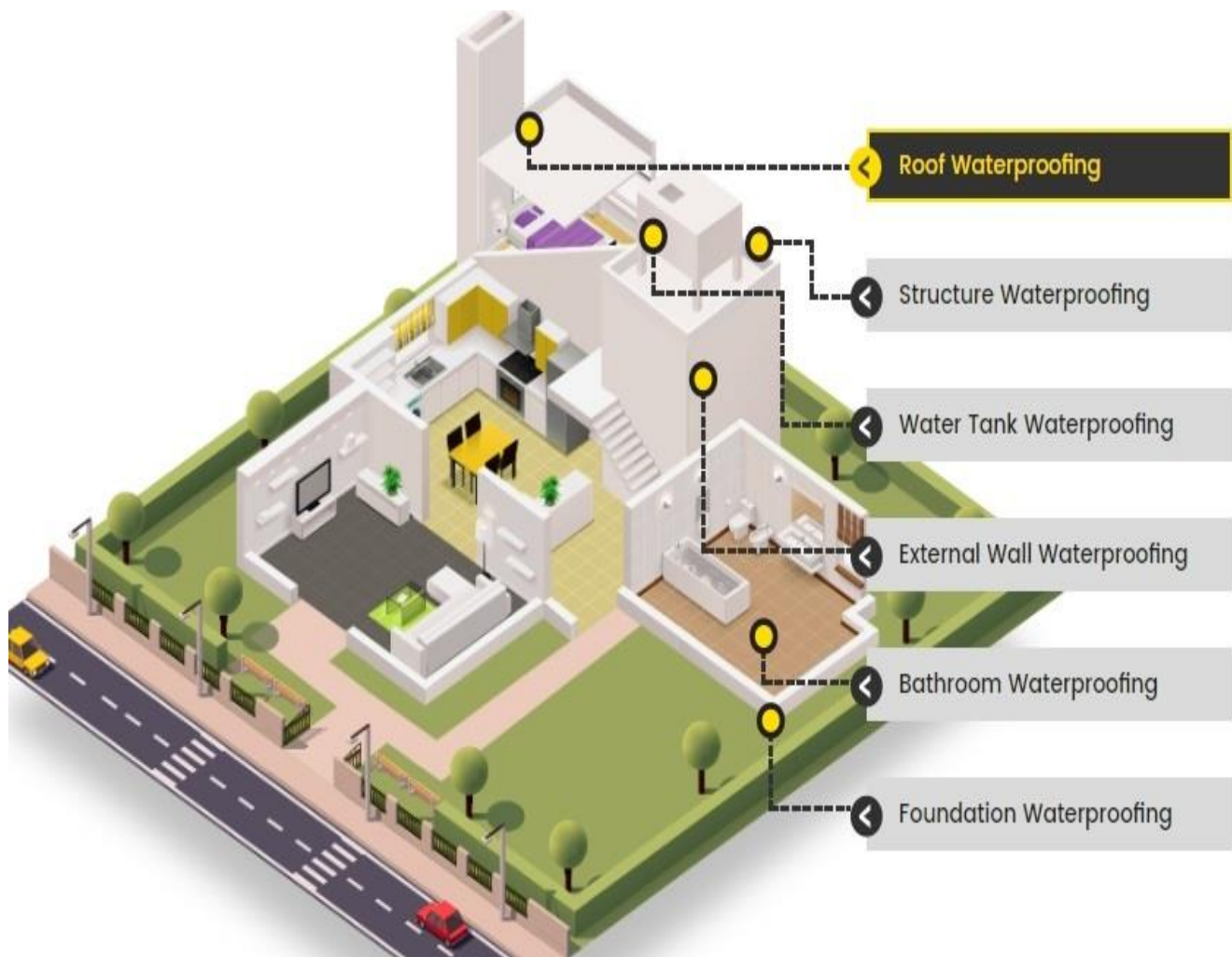
Why Water proofing is required?

Waterproofing is the process of making an object or structure waterproof or water-resistant so that it remains relatively unaffected by water or resisting the ingress of water under specified conditions. Such items may be used in wet environments or underwater to specified depths.

Water resistant and waterproof often refer to penetration of water in its liquid state and possibly under pressure, whereas damp proof refers to resistance to humidity or dampness. Permeation of water vapor through a material or structure is reported as a moisture vapor transmission rate.

Waterproofing required in Building Construction.—

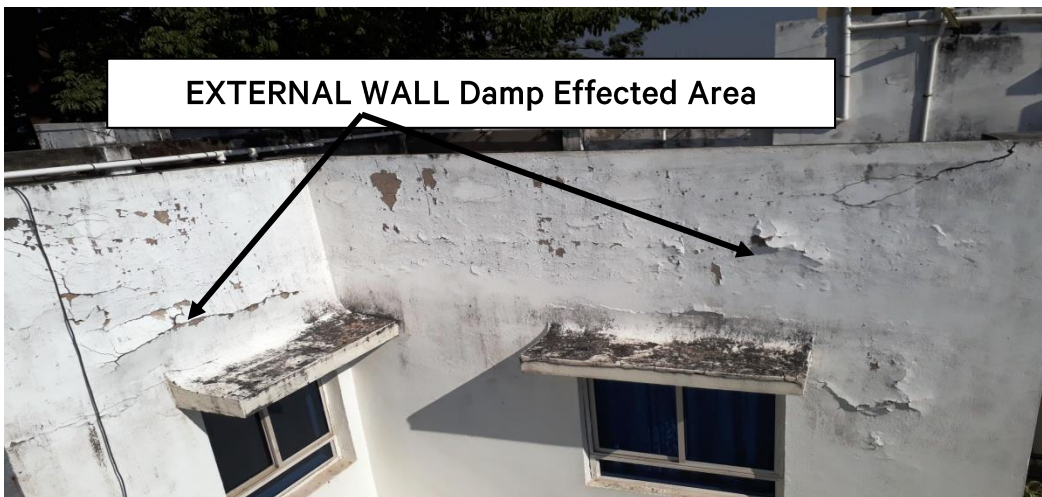
Waterproofing is used in reference to building structures for the Following area at the Time of New Construction.



Waterproofing is used in reference to building structures for the Following area at the *Time of Renovation of building.*



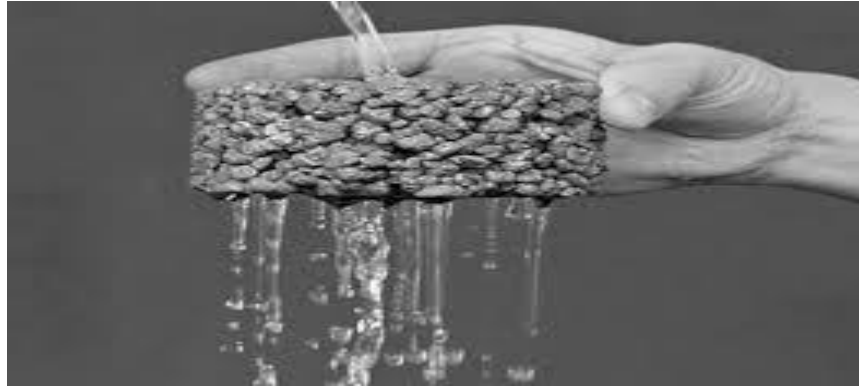
Internal Damp in Residential Building
Ceiling, Toilet, In Room wall



Cause of Dampness—

New Construction-

- 1) **Porosity of Slab Concrete.**



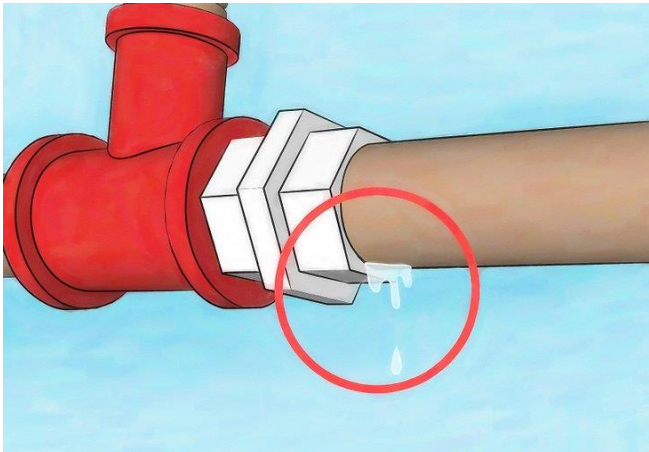
- 2) **High Salt percentage in Brick.**



- 3) **Gap between Concrete and Brick Joint Area Due to Inserted Plastic piece at the time of Concrete.**



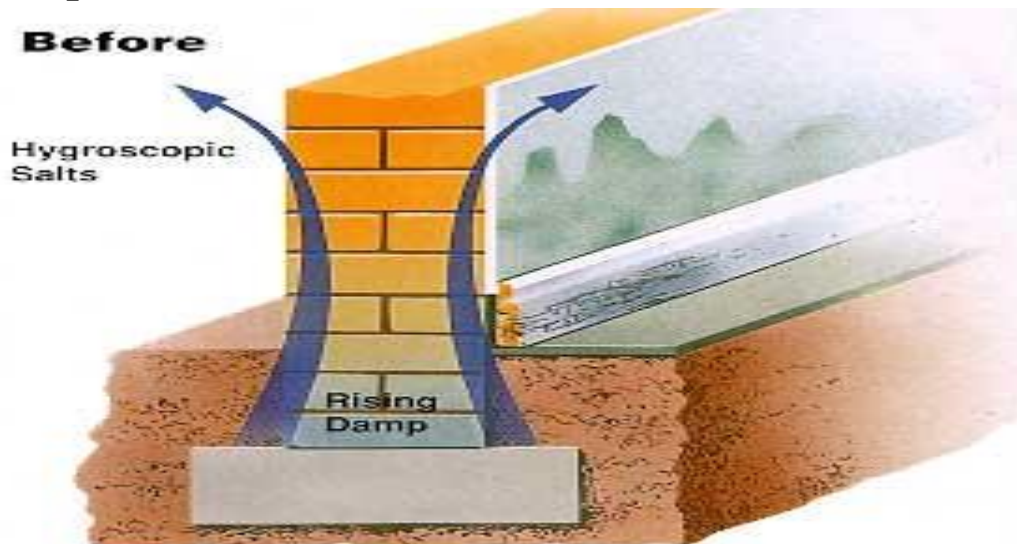
4) Due to Concealed Plumbing and Conduit pipe Leakage of Loose Joint.



5) Water seepage in roof due to preparation of Roof and Balcony garden without Waterproofing treatment on mother Slab.



6) Dampness raise from



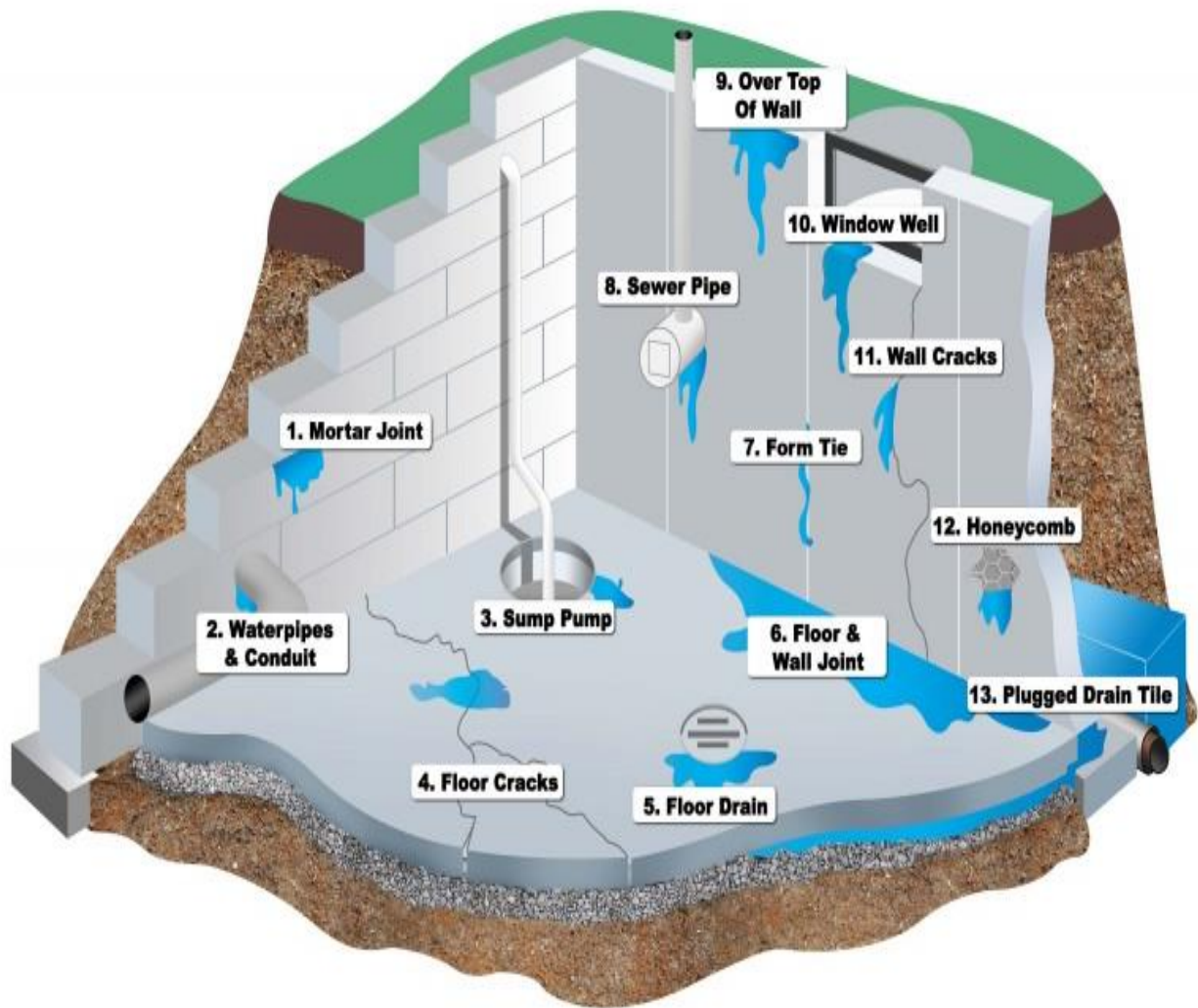
7) External Wall Crack and Broken Pipe joint seepage water.



8) Unwanted stagnant of water on slab due to defect of slope.



9) Dampness Cause in Basement area.



10) Decorative water body in roof-garden without Water proofing on Mother slab...



DAMPNESS IN BUILDING

Dampness in building is one of the important aspects to consider during building design. Because if neglected, it will affect the building structure adversely and will create unhygienic condition for the persons living in that building.

3 PRIMARY CAUSES OF DAMPNESS IN BUILDING

Penetration of water into the building components (such as walls, floors, roof or basement etc) is the primary cause of dampness.

The three primary causes of dampness in building are

- Poor quality of construction material
- Bad design
- Faulty construction or bad workmanship

1. POOR QUALITY OF CONSTRUCTION MATERIAL

Most of the construction materials such as concrete, brick or plaster possess interconnected void within them. When these materials come in contact with water, water finds a path to penetrate into these voids. Again this water when aided by capillary action; moves in different direction causing dampness.

2. BAD DESIGN

At the time of designing a building, it is very important to consider what can be the source of water that can penetrate through building and accordingly the designer must mention where to provide what kind of damp proof course.

3. FAULTY CONSTRUCTION OR BAD WORKMANSHIP

Suppose a designer has specified that the thickness of damp-proof-course must be 15 mm. but due to lack of adequate supervision, the thickness of completed damp proof course become 10 mm. then this will not serve the purpose for which it is constructed and consequently it will lead to dampness in building.

6 MAJOR SOURCES OF DAMPNESS

When water comes in contact with building components such as walls, roofs, floor etc these components acts as a medium to help water to migrate into the building.

The 5 major sources of dampness are as follow.

1. Due to capillary action, the water present in ground soil may rise above the ground level through the walls. If ground water table is nearer to the building foundation then also it can also become a source of dampness.
2. Condensation of atmospheric moisture can also be a source of dampness. Because this form of water gets deposited on different components and gradually find their way to penetrate into the building causing dampness.
3. Rain water falling on external walls, parapets also causes dampness.

4. Rain water can also penetrate through the roofs if the roof is of bad quality. Inadequate roof slopes or defective junction between roof slab and parapet wall may cause dampness
5. Presence of gutter near the building will store the rain water and subsequently this water will create dampness in the external walls.
6. Wet areas of buildings (such as kitchens, bath rooms) having sub standard plumbing fitting can also be a source of dampness.

5 COMMON DEFECTS CAUSED BY DAMPNESS

The common defects caused by dampness in building are as follow.

1. Dampness causes efflorescence of bricks, tiles of stones.
2. It makes the plaster weak.
3. It may cause bleaching and flaking of paint due to formation of colored patches.
4. It causes corrosion of metals.
5. It promotes growth of termites.

Solution from Dampness

- Proper consultant advice also required for effected area.
- Waterproofing treatment as per effected area with various Polymer material.

So, everybody is requested to aware on this matter and take proper advice before repairing the damaged area or new construction from a waterproofing expert.

About Author: Ranajit Datta (Civil-2002), having 16 years' experience in construction field; in various application core area; currently working at M/s Bengal Sharchi, Kolkata. Regarding above mentioned issue - if you wish, you can take suggestive opinion from the author also.