

Unraveling the secret to perfect waterproofing

As a homeowner, one of the most widespread worries related to keeping the home safeguarded and protected is ensuring that no cracks have developed - the paint is intact and no water leaks have occurred within walls. However, one must remember that to keep a home sanitized, strong and long-lasting, correct usage of materials to waterproof a structure plays an integral part.

To be assured of a house being completely safe, it is sufficient for a homeowner to have certain understanding of what makes a structure healthy, how to assess the quality of construction, who are the right decision makers while waterproofing a home, and the solutions to them while fixing issues related to holistic waterproofing and structural safety approach. Here are some guidelines for homeowners to have brief understanding of the entire waterproofing concept.

Approach Matters:

If waterproofing is not done the structure may fall apart later. It will also reduce the building value and hence is important in the current situation. Modern waterproofing methods are more feasible in comparison to the conventional method of waterproofing such as brickbat coba and mud phaska. Dr. Fixit's modern methods of waterproofing are affordable and ensure a leak free home for years to come.

However, contractors actively look for cost effective solutions to waterproofing and perceive the modern practices to be expensive. Chemicals for water proofing are not seen as a substitute for traditional methods but merely as an additional procedure. However, the current traditional waterproofing methods are not enough to strengthen the structure and ensure longevity.

An incident occurred recently in Bangalore wherein an under construction building collapsed. The primary cause of the collapse was supposed to be inferior quality of construction material. In spite of knowing the severity of the issue, waterproofing has always been dependent on the timeframe, budget and contractor's approach.

Assessing quality and health of structure:

Quality of construction can be assessed and interpreted by looking at signs such as the finishes, fixtures and categorically divided into interior and exterior 'markers'. Construction quality can be gauged by external markers i.e. the output (finishing, fixtures, etc.) of a building/ house. The signs of poor construction include patches, cracks, seepages, leakages, fading, and peeling of paint. A homeowner can generally assess the structure's health by looking at it. In a nutshell, attractive exteriors act as markers of good quality construction.

Additionally, the construction quality also depends on certain internal markers such as the input – quality of materials, construction process and skilled labour. Most prominent signs to assess

construction quality are flooring type of terrace tiles, bathroom fitments, fans, switchboards, layout and kitchen space.

While superior fixtures, fitments and layout point to good quality construction, the walls and the floorings are the key to good interior markers. One elementary clue about good construction quality is that the cement should not come off the wall if it is hammered in. The quality of materials used for the walls should be such that it enhances the aesthetics.

Solutions to fix waterproofing issues:

Once early signs related to leaking issues are detected, homeowners must attempt to take brisk and corrective actions to prevent any further damage. Homeowners must actively initiate and participate throughout the entire process of waterproofing. With digital tools and complete customer support program from Dr. Fixit, homeowners must not worry and get the repairs fixed. Homeowners could rely on the online or on-ground support and search solutions for waterproofing issues through the internet.

Homeowners and consumers must be made fully aware of the consequences of poor waterproofing and therefore must tackle the issue of waterproofing separately. It must not be looked upon as part of an entire process of construction or repair work to be done. A good quality modern waterproofing process should be easy to implement and must come with training / trainers.

A great way to measure the improvement would be in terms of minimal effort budget and an assured guarantee – of how long the effort will remain unscathed.

(Inputs by-Dr.Sanjay Bahadur, Global CEO, Construction Chemical Division, Pidilite Industries Ltd)

Waterproofing solutions guarantee safety against dampness, corrosion and leaky roofs and surfaces. By **M.A. SIRAJ**

Key to strength, viability of structures



Waterproofing enables construction of rooftop swimming pools or raising a roof garden.

Immense caution needs to be taken against water seepage or leakage in a building. In the event of inadequate waterproofing, the buildings run the risk of not only looking grumpy but the internal structure can be wrecked or ruined, either reducing the life of the building or its usability. Though waterproofing may involve some cost, its usefulness in enhancing the life of the structure, visual appeal and viability (if it is a commercial edifice), gets a tremendous boost. Just imagine a hotel building where a room develops leakage. It is likely to affect rooms on either side and the floor below.

Fail-safe waterproofing therefore holds the key to ensuring an aesthetic and healthy environment within a building. In the traditional brickbat coba method, the waterproofing is done by laying brickbats and filling the spaces with cement, sand mortar admixed with waterproofer. But the market now has quicker solutions that can be labour-saving too. Some of these even provide thermal insulation for the buildings, cutting down cost of energy consumption for airconditioning. These also enable construction of rooftop swimming pools or raising a roof garden. These come as adhesives, mixtures, coatings, and membranes.

Two-component system

According to Nilanjan Bose, Vice-President-Construction Chemical Division of Pidilite, a company into manufacturing of chemicals that go into construction, comprehensive terrace waterproofing solutions have replaced the traditional methods like brickbat coba or white cement. For instance, Dr. Fixit Blueseal, a product from Pidilite, is a two-component, polyurethane-based waterproofing system which is instant setting and spray applied.

The system may be applied to substrates where the surface temperature is of the order of 10° to 48° Celsius grades and withstands well with both

New waterproofing solutions provide thermal insulation for the buildings, cutting down cost of energy consumption for air-conditioning.

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cold and hot conditions. It adheres well to concrete, masonry and variety of other substrates and does not attract rodents and disallows mold growth. The company provided the solution for Raheja Gigaplex (4.3 million sq. ft. IT SEZ) in Mumbai as well as for Rs. 1,100 crore Medanta Group Hospital in Lucknow (1,000 beds, 30 operation theatres over 12 acres, employing 800 doctors and 2,000 paramedics).

Cost factor

Says A.R. Gehlot, a waterproofing expert from Bengaluru, the cost of waterproofing in construction ranges from 5.5 to 7% of the building. The costing works out in accordance with the function of the structure. For instance, toilet-bathroom blocks may need extra waterproofing while walls could just do with coating of the waterproofing chemicals.

Gehlot has supervised waterproofing in some landmark structures such as Raja Aristos (15 storeys, 4 towers, over two lakh sq. ft area), Wellington Park in Jalahalli Cross (built by Prestige), and MVJ Medical College (over one lakh sq. ft space) on Hosakote Road.

Fall in heat gain

Says Keshab Chopra, President-

Large User Business, Pidilite, modern waterproofing solutions now ensure that heat gain by buildings can now be cut down by 90% with 8 to 10° degree Celsius reduction in internal temperature in buildings. The company provided such solutions for the recently constructed campus of the IIT in Tiruchi (constructed over 80,000 sq. ft area). It provided the same solution to Oberoi headquarters in Gurugram (earlier Gurgaon).

Mr. Chopra terms them as next generation waterproofing solutions which are applied even for rooftop swimming pools. Dr. Fixit Crystalline waterproofing materials and flexible membrane waterproofing systems are the latest in series in this direction. The polyurea elastometric membrane is applied for raising roof gardens. This is said to be high abrasion resistant and can be applied to any kind of surface. While the crystalline method is used to waterproof and rehabilitate leaky water tanks, swimming pools, and retaining walls, the flexible membrane is mainly applied to waterproof roofs and exteriors.

Waterproofing is today also needed for infrastructure projects like tunnels for railways and transport, effluent treatment plants, household STPs, overhead tanks, port structures and marine tanks for sea water desalination. However, the toxic effects of some of the new products are still being investigated by at the R&D centres in order to align these with green building norms.

Makers of brand products such as m-Seal, Fevicol, Fevikwik, Fevistik, Cyclo etc., all under Dr. Fixit brand, Pidilite offers around 400 products online. These combine function of both bonding and waterproofing. Its Roff tile bonders, glass tile adhesives and stone tile adhesives carry the idea to wall cladding as well as floor covering.

(The author can be reached at maqsiraj@gmail.com)

Tips on having a completely sanitized house throughout the year

The monsoon has officially completed its four-month cycle, and with the month of November commencing, humidity and mercury levels are expected to decrease. The month of November is known for the transition of the weather into the winter season.

With reports of cases of Dengue, world's fastest growing mosquito-borne disease, expected to decrease in during this month, it is a significant opportunity for homeowners to understand that these diseases could be prevented by taking care of our surroundings and keeping the home well sanitized through all times of the year.

While it is important to remember that a home can only be completely sanitized if all the existing sanitary issues are taken care of, it is equally important to undertake immediate action upon detection of any household repairs spotted.

Here are some issues that usually crop up and some solutions that you can follow to ensure that your home remains dry, sanitized and clean throughout the year.

Breeding ground for insects and rodents –

Although insects and mosquitoes hatch in large numbers during monsoon, the eggs are laid throughout the year where they survive the cold, the heat and the dryness for over a year. When the right temperature and moisture conditions come in late summer and during the monsoons, they hatch. The larvae live in freshwater in tanks, ditches, pots and planters all around us. Eggs laid by an infected female mosquito carry the infection.

Cracks, holes and gaps around the walls, particularly near the kitchen and washroom area, if not treated on time, develop moist areas around and inside them and thus prove to be an excellent breeding ground for insects and rodents. Rodents and insects have a high rate of reproduction and can grow in population exponentially, thus causing large amount of turmoil within the house. It only seems prudent to take enough care and prevent walls from leaking or developing holes and cracks.

Water leakage –

Water leakages can be small like a drip or be big that spreads everywhere. Water is consumed in most parts of the house and small leakages often cause huge amounts of water wastage in the long run. Also, water leakages often result in issues such as indoor flooding, wall deformations and also cause the floor to perish away over time. One of the most important steps to overcome the issue of water leakages is to identify where the leakages are taking place. Areas of the house most prone to water leakages include pipes, water tanks, water coolers, washbasins, etc.

For sealing gaps, holes and cracks in walls it is recommended to use M-seal Gap Fill. M-seal gap fill is single component water based white acrylic compound that comes in a paste form and does not need any mixing. The same can applied from the tube into the gap and be allowed 4 hours to cure after which it can be painted upon.

For sealing water leakage from pipes and joints, it is recommended to use M-seal epoxy compound. M-seal epoxy putty contains a resin base and a hardener and has to be mixed well proportionally and to be used immediately after mixing it. M seal Phataphat seals in just about 30 minutes.

Broken Tiles and slabs–

Constant wear and tear over the years cause tiles and slabs to have edges that are chipped, broken or cracked. It also becomes unsafe to walk around broken tiles. The gaps present at the juncture where a drain pipe of a wash basin empties into the sink protector (jaali) are also an entry point for rodents/insects into the house.

Air leakages –

Air leakages are usually difficult to detect but may have hazardous implications on the health. Air leakages are most common in galvanized iron pipes, window and window frames and gas cylinders. Not only do air leakages have alarming health effects, but also affect the aesthetics of any home. Iron pipes may begin to rust and air leakages in windows may affect the cooling effect of air conditioners. Gas leakages from cylinders are potentially hazardous and thus must be repaired as soon as they are detected.

It is important to remember that any cracks, gaps and holes must be treated immediately to prevent any further. Any damage to the parts of the house, if left untreated may escalate the consequences and may also result in repeated repercussions.

Here are few simple steps that will guide you to seal any existing damages at your home –

- 1) Detect the damage – Try to detect the damage as early as possible.
- 2) Investigate the area – Different surfaces are unique and thus could need different kinds of sealants. Remember to know the surface of the damaged area before buying the sealant. Like M-seal Gap fill can be used for sealing gaps, holes and cracks in walls and M-seal Epoxy compound can be used for sealing water leakage, air leakage and broken tiles and slabs.
- 3) Prepare the concentration – As soon as the resin and hardener are mixed, the chemical reaction starts immediately and it is advisable to start application on clean substrate as soon as mixing is over
- 4) Apply the M- seal Gap fill sealant uniformly across the damaged area - Spreading of sealant is easy in the first 5-10 minutes, whereas smoothening of sealant surface with wet finger is possible up to about 30 minutes from application. Leave to dry and let the sealant settle over four hours
- 5) The epoxy compound will harden in 1-2 hours to an extent wherein one can start next operation viz. drilling, tapping, filing, painting etc.

(The article is contributed by Yogesh Anand, President, CP MNT Division, Pidilite Industries Ltd.)

घर स्वच्छ ठेवण्यासाठी...

योगेश आनंद

मान्सूनचा चार महिन्यांचा हंगाम संपला आहे आणि नोव्हेंबर महिना जवळ येत असताना, आर्द्रता व तापमानाची पातळी घटण्याची अपेक्षा आहे. डेंग्यू या डासांशी संबंधित असलेल्या आजाराचे प्रमाण झपाट्याने वाढत असून, या महिन्यामध्ये डेंग्यूची प्रकरणे कमी नोंदवली जातील, असा अंदाज आहे. आजूबाजूच्या परिसराची काळजी घेऊन आणि घर वर्षातील सर्व दिवस पूर्णतः स्वच्छ ठेवून या आजारांना प्रतिबंध करता येऊ शकतो.

घरातील स्वच्छतेचे सर्व मुद्दे योग्य प्रकारे विचारात घेतले तरच घर पूर्णपणे स्वच्छ होऊ शकते, हे लक्षात घेणे अतिशय महत्त्वाचे आहे. तसेच घरात कुठेही दुरस्तीची गरज असल्याचे लक्षात आल्यास तातडीने कृती करणे गरजेचे आहे.

साधारणतः समोर येणारे काही प्रश्न पुढे दिले आहेत. तसेच वर्षभर तुमचे घर कोरडे, स्वच्छ आणि शुद्ध राहावे यासाठी काही उपायही दिले आहेत.

कोटक आणि उंदीर यांच्या प्रजननासाठी सुविधा-
कोटक आणि डास मान्सूनच्या काळात मोठ्या प्रमाणात प्रजनन करत असले तरी वर्षभर त्यांना थंडी, उष्णता आणि कोरडेपणा यापासून जेथे संरक्षण मिळते तेथे वर्षभर ते अंडी घालत असतात. उन्हाळ्याच्या अखेरच्या काळात व मान्सूनच्या दरम्यान योग्य तापमान आणि दमटपणाची अनुकूल स्थिती निर्माण झाली की कोटक व डास यांचे प्रजनन होते. त्यांच्या अळ्या आपल्याभोवती असलेल्या ताऱ्या पाण्याच्या टाक्या, चर, भांडी व झाडांची लागवड येथे जिवंत राहतात. संसर्ग झालेल्या मादी डासाने घातलेल्या अंड्यांमुळे संसर्ग पसरला जातो.

प्रामुख्याने स्वयंपाकघर व बाथरूम परिसरातील, भिंतीमधील तडे आणि फटी यांच्यावर वेळेवर उपाय केला नाही तर त्यांच्यामध्ये व आजूबाजूला दमटपणा निर्माण होतो आणि त्यामुळे कोटक व उंदीर यांच्या प्रजननासाठी अनुकूल जागा तयार होते. कोटक आणि उंदीर यांची प्रजननक्षमता प्रचंड आहे आणि त्यांची संख्या झपाट्याने वाढू शकते. याला प्रतिबंध करण्यासाठी आवश्यक काळजी घेणे आणि भिंतीचे गळतीपासून किंवा तडे जाण्यापासून संरक्षण करणे योग्य ठरते.

पाण्याची गळती - पाण्याची गळती बंधनकारक असू शकते किंवा सगळ्याकडे पसरले असू शकते. घरातील बहुतांश भागात पाण्याचा वापर केला जातो. लहानशी गळतीही दीर्घकाळात मोठ्या प्रमाणात पाणी वाया जाण्यासाठी कारणीभूत ठरते. तसेच पाण्याच्या गळतीमुळे अनेकदा घरात पाणी साचणे, भिंतीचे डिफॉर्मेशन असे परिणाम होतात, तसेच लाट्याही खराब होऊ शकतात. पाण्याची गळती रोखण्यासाठी महत्त्वाच्या उपायांपैकी एक उपाय म्हणजे, गळती कोटून देणे आहे ते ओळखणे. पाइप, पाण्याची टाकी, वॉटर कूलर, वॉश बेसिन आदी टिकाणी गळती होण्याची शक्यता अधिक असते.

भिंतीतील फटी, तडे बूजवण्यासाठी एम-सील गॅप फिलचा उपयोग करावा. एम-सील गॅप फिल हे सिंगल कम्पोनंट पाणी-आधारित क्वाइट ऑफ्लिक कम्पाउंड असून, ते पेस्ट स्वरूपात असते आणि त्यात आणखी काहीही मिसळवे लागत नाही. त्याचा उपयोग ट्यूबच्या साहाय्याने फटी भरण्यासाठी करता येऊ शकतो आणि चार तास ते योग्य बसल्यानंतर त्यावर रंगही काढता येऊ शकतो.

पाइप आणि जोडणी यातून पाण्याची गळती रोखण्यासाठी एम-सील इपॉक्सी कम्पाउंडचा वापर करणे सोयीचे ठरते. एम-सील इपॉक्सीमध्ये रॉसेन बस आणि हाइडर सांचा समावेश असतो. त्याचे मिश्रण योग्य प्रकारे



करावे लागते आणि मिश्रणानंतर तातडीने वापरावे लागते. एम-सील फ्लॉटफ्लॉट केवळ ३० मिनिटांमध्ये सील करते. तुटल्या लाट्या व स्लॅब - वर्षानुवर्षे वापराने व खराब झाल्याने फरशा आणि स्लॅब यांच्या कडींना तडे जातात, त्या तुटतात. तुटल्या फरशांवरून चालणे असुरक्षित ठरते. वॉश बेसिनचा ड्रेन पाइप सिंक संरक्षक जाळीच्या इथे जिथे रिकामा होतो ती जागाही उंदीर किंवा कोटक यांना घरात प्रवेश मिळवून देणारी असते.

एअर लिकेज - एअर लिकेज सहसा शोषणे कठीण असते. याचा आरोग्यावर घातक परिणाम होऊ शकतो. गॅल्फन इन्सुलेशन आर्बन पाइप, खिडक्या व खिडक्यांच्या



तुमच्या घराचे कुठेही नुकसान झालेले असेल तर ते कसे मरूज काढावे, याविषयीच्या मार्गदर्शक टीप-

- नुकसान शोधून काढणे - झालेले नुकसान शक्य तितक्या लवकर शोधून काढावे.
- त्या भागात तपास करावा - विविध पृष्ठभाग विशिष्ट असतात आणि त्यामुळे त्यांना विविध प्रकारच्या सीलंट्सची आवश्यकता असते. सीलंट खरेदी करण्यापूर्वी, नुकसान झालेल्या भागाचा पृष्ठभाग जाणून घ्या. एम-सील गॅप फिलचा उपयोग भिंतीतील फटी, तडे बूजवण्यासाठी केला जाऊ शकतो, तर एम-सील इपॉक्सीचा उपयोग पाण्याची गळती, एअर लिकेज व तुटलेल्या टाइल्स, स्लॅब यांच्या सीलिंगसाठी केला जाऊ शकतो.
- मिश्रण तयार करणे - रेसिन आणि हार्डनर एकत्र केल्यानंतर, तातडीने रासायनिक प्रक्रिया सुरू होते आणि मिश्रण झाल्यानंतर लगेचच त्याचा वापर स्वच्छ भागावर करण्यास सुरुवात करावी.
- एम-सील गॅप फिल सीलंटचा उपयोग नुकसान झालेल्या भागावर कमी-अधिक प्रमाणात करावा - पहिल्या ५-१० मिनिटांत सीलंट पसरवणे सोपे असते, तर वापर केल्यापासून ३० मिनिटांपर्यंत ओल्या बोटाने सीलंटचा पृष्ठभाग मऊसर करणे शक्य असते. ते सुकू द्यावे आणि सीलंट योग्य प्रकारे बसण्यासाठी चार तासांचा वेळ द्यावा.
- इपॉक्सी कम्पाउंड १-२ तासांत कठीण होते - इतके की ड्रिलिंग, टॅपिंग, फिलिंग, पेंटिंग आदी कामे सुरू करता येऊ शकतात.

चीकटी आणि गॅस सिलिंडर यामध्ये एअर लिकेज सर्गस आढळतात. एअर लिकेजचे आरोग्यावर घातक परिणाम होतातच, शिवाय घराचे सौंदर्यही बिघडते. लोखंडाच्या पाइपना गंज येऊ शकतो आणि खिडक्यांतील एअर लिकेजमुळे एअर कंडिशनरच्या गारव्यावर परिणाम होऊ शकतो. सिलिंडर मधील वायुगळती प्रचंड घातक असते आणि त्यांचा पत्ता लागताच त्यावर तातडीने उपाय करावला हवेत.

कोणत्याही फटी, तडे यांच्यामध्ये आणखी वाढ होऊ नये म्हणून त्यावर तातडीने उपाय करावला विसरू नये. घरातील कोणताही भाग खराब झाल्याचे आढळल्यास, त्यावर लवकर उपाय न केल्यास त्याचे विपरित परिणाम दिसून येतात.

■ (लेखक पिडिलाइट इंडस्ट्रीज लि.चे सीपी एमएनटी विभागाचे अध्यक्ष आहेत.)

