Atul

LAPOX®
LACRETE

Epoxy system for waterproofing, repairing and strengthening of concrete

LEGACY

Founded in 1947 by a legendary Indian, Shri Kasturbhai Lalbhai, Atul Ltd (Atul) is amongst the first companies of independent India. It has the privilege of being the first private sector company of India to be inaugurated by the first Prime Minister of the country, Pandit Jawaharlal Nehru.

PROFILE

The first site of Atul, spread over 1,250 acres of land, houses one of the largest and the greenest chemical complexes of its kind in the world. Starting with just a few textile dyes, the company now manufactures over 1,380 products and formulations. The Company manages complex chemical processes in a responsible way. It has established fruitful and time-tested collaborations with leading multinational companies of the world.

An ISO 9001:2008 and ISO 14001 certified company, Atul serves customers from diverse industries such as Adhesives, Agriculture, Animal Feed, Automobile, Construction, Cosmetics, Defence, Dyestuff, Electrical and Electronics, Flavour, Food, Footwear, Fragrance, Glass, Home Care, Horticulture, Hospitality, Paint and Coatings, Paper, Personal Care, Pharmaceutical, Plastic, Polymer, Rubber, Soap and Detergent, Sports and Leisure, Textile, Tyre and Wind energy.

POLYMERS BUSINESS

Atul is a pioneer in manufacturing epoxy resins in India. The Company is one of the largest manufacturers of epoxy resins and hardeners in the country. It has a portfolio of over 450 world class products that have a range of application including bangles, construction chemicals, handicraft, sports goods and stone processing. The products are marketed and sold under the brand name of Lapox®.

Atul strives to create a leading position in the business-to-consumer segment for its epoxy range of products. Lapox® has a presence across India and is readily available at all hardware, paint and sanitary retail outlets. Lapox® has been training several users to build the required skill sets for specialised epoxy system applications.

In 2010, Atul acquired the Polygrip® brand to market synthetic rubber and polyurethane based adhesives in India. Today, it is among the top selling adhesive brands with a diverse range of value-added products.




LAPOX® LACRETE

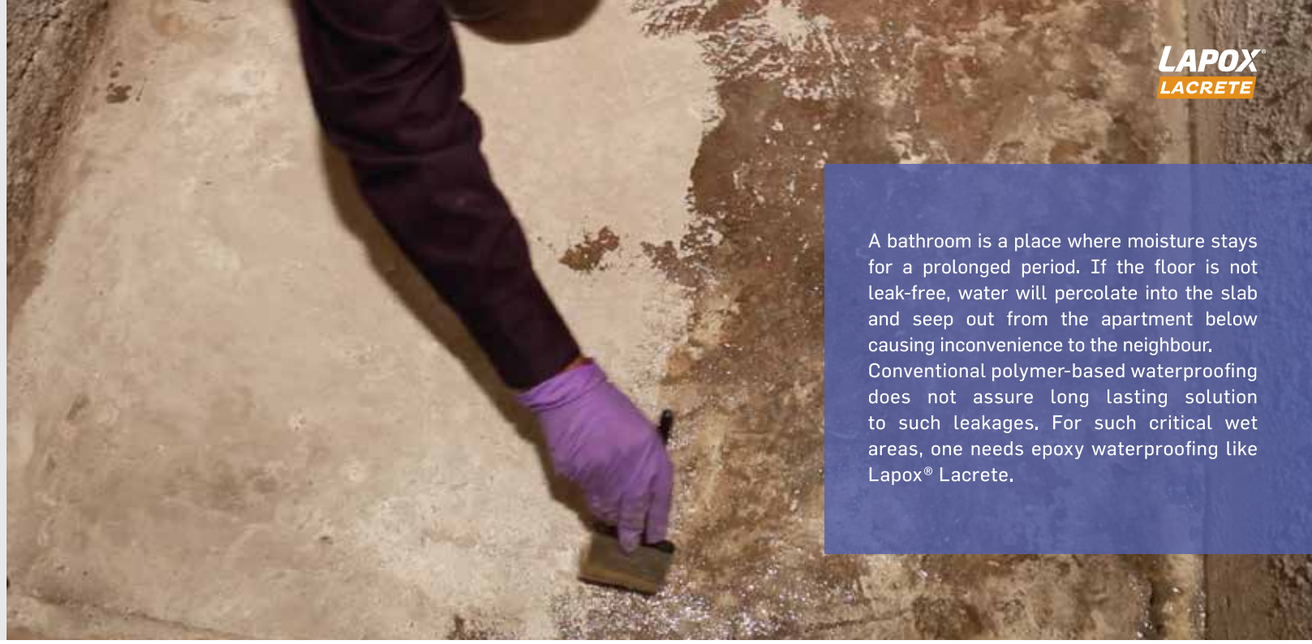
With an expertise of 70 years, Atul, the pioneer in epoxy manufacturing, has launched an epoxy system - **Lapox® Lacrete**, to overcome all issues related to leakages, seepages and concrete strengthening. **Lapox® Lacrete** is an epoxy-based, unique and versatile solution for multiple applications including terrace and bathroom waterproofing, core-cut grouting, bond coat, concrete repairing, epoxy injection grouting and anti-corrosive coating for steel bars.

Conventional waterproofing and repairing techniques have disadvantages such as

- Waterproofing material shrinks due to which cracks re-develop
- Salt water cracks the cementitious waterproofing layer
- Do not bond old and new concrete
- Do not help in strengthening the concrete structure

Advantages of Lapox® Lacrete

- Creates a solid barrier against water penetration; thus providing a long lasting and durable waterproofing solution
- Does not shrink as compared to conventional techniques
- Provides excellent adhesion to multiple surfaces
- Having low viscosity, it provides high coverage
- Addition of filler reduces the system cost considerably
- Provides high bond strength
- Resistant to oil, fuel and most chemicals
- Resistant to vibrations



A bathroom is a place where moisture stays for a prolonged period. If the floor is not leak-free, water will percolate into the slab and seep out from the apartment below causing inconvenience to the neighbour. Conventional polymer-based waterproofing does not assure long lasting solution to such leakages. For such critical wet areas, one needs epoxy waterproofing like Lapox® Lacrete.

WATERPROOFING BARRIER

EXCELLENT ADHESION

HIGH BOND STRENGTH

NO SHRINKAGE

REDUCES SYSTEM COST

RESISTANT TO MOST CHEMICALS

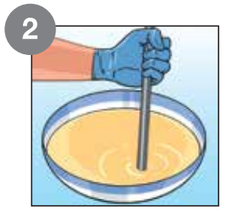
Certified by CFTRI Mysore for food grade applications

WATERPROOFING IN BATHROOM

1

Ensure that the concrete surface is dry, clean and free of contaminants such as oil and grease. Remove loose particles and dust using a wire brush.

2

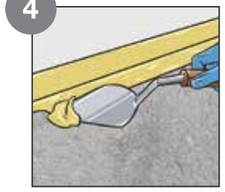


Thoroughly mix Lapox® Lacrete resin and hardener, in a 1:0.5 ratio, in a disposable bowl.

3

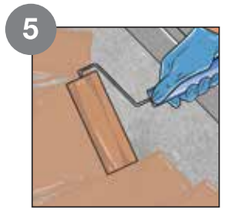
Using a brush, roller or spreader, apply the mixed material in a thin, uniform layer on the substrate. This will act as a primer.

4



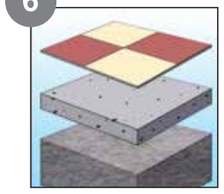
Thoroughly mix Lapox® Lacrete resin and hardener, in a 1:0.5 ratio, with 8 - 9 parts of Quartz Sand no. 10. Prepare the angle fillet (*watta*) 3 - 4 hour after applying the first coat.

5



Apply the second waterproofing coat or screed 5 - 6 hour after preparing the angle fillet. Prepare the material for screed application by mixing Lapox® Lacrete resin and hardener, in a 1:0.5 ratio, with 5 - 6 parts of Quartz Sand no. 10. Thoroughly mix all ingredients with a trowel to achieve homogeneous consistency.

6



For optimum results, allow it to cure for 48-hour.

Note: All application tools should be cleaned with a solvent such as acetone before the adhesive cures permanently on the tools.

Protected by Lapox® Procoat

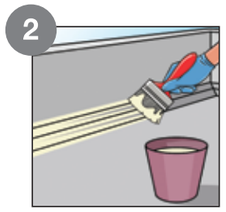
Being flat, indian terraces accumulate a lot of rain water in the monsoon season. If a proper slope is not provided to the terrace slab, water starts accumulating and percolating through the slab and eventually inside the house. To prevent such leakages, conventional waterproofing methods such as brickbat coba or polymer-based waterproofing are not sufficient. High performance epoxy waterproofing like Lapox® Lacrete is the need of the hour.

TERRACE WATERPROOFING

1

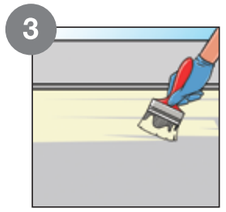
Thoroughly clean the surface.

2



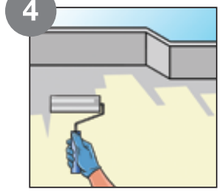
Check for hollow portions and major cracks and fill them with mortar mixed with Lapox® Lacrete. Fill the wall to floor joints (fillets) with the same mortar.

3



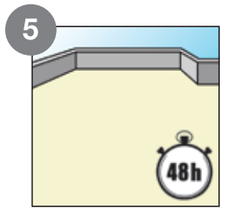
Thoroughly mix Lapox® Lacrete resin and hardener in a 1:0.5 ratio, and apply the waterproofing coating on terrace.

4



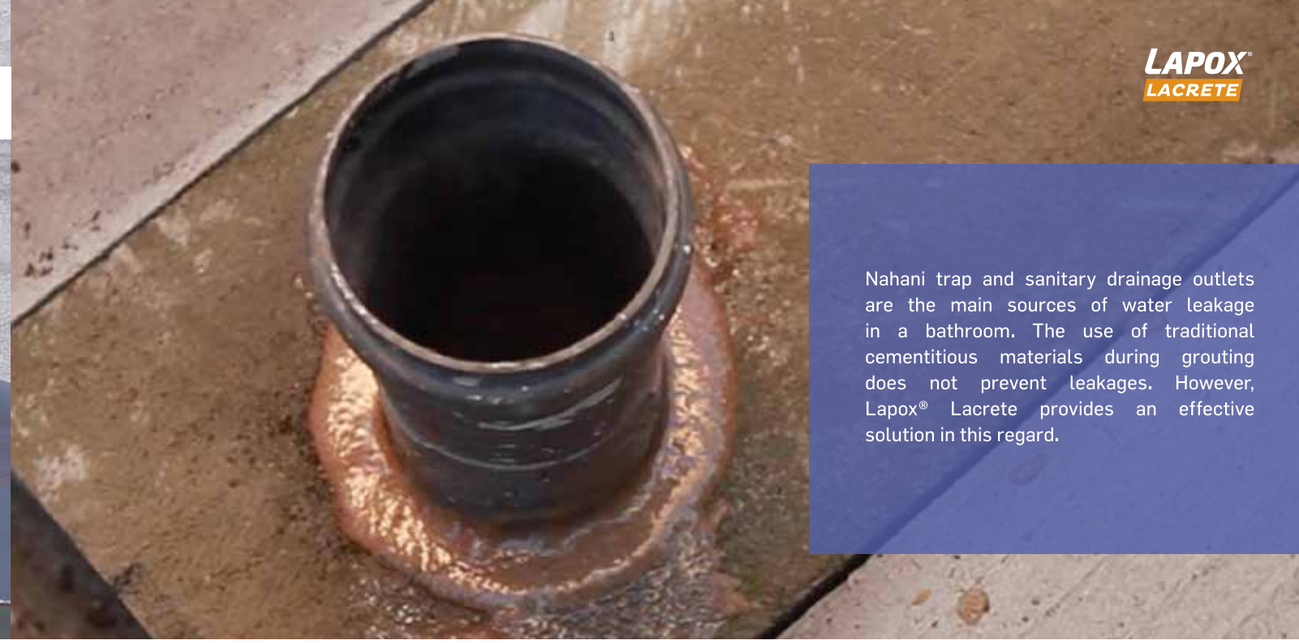
Protect the Lapox® Lacrete waterproofing coating by applying Lapox® Procoat, an UV resistant coating.

5



For optimum results, allow the system to cure for a minimum of 48-hour.

Note: All application tools should be cleaned with a solvent such as acetone before the adhesive cures permanently on the tools.



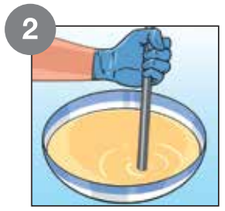
Nahani trap and sanitary drainage outlets are the main sources of water leakage in a bathroom. The use of traditional cementitious materials during grouting does not prevent leakages. However, Lapox® Lacrete provides an effective solution in this regard.

GROUTING OF CORE-CUT IN BATHROOM

1

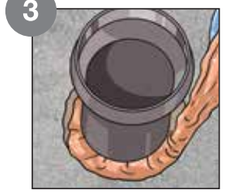
Ensure that the concrete surface is dry, clean and free of contaminants such as oil and grease. Remove loose particles and dust using a wire brush.

2



Thoroughly mix Lapox® Lacrete resin and hardener, in a 1:0.5 ratio, with 5 - 6 parts of Quartz Sand no. 10.

3



Pour the mixed material into the core-cut. On a horizontal surface, core-cut can be filled using the gravity method.

4

For optimum results, allow it to cure for 48 - 72 hour.

Note: All application tools should be cleaned with a solvent such as acetone before the adhesive cures permanently on the tools.

Conventional polymer-based bonding agents do not create a strong bond between old and new concrete, leading to cracks. Lapox® Lacrete helps create a robust and durable bond between old and new concrete that also strengthens old concrete by penetrating into porous structures. Similarly, Lapox® Lacrete mortar can be used to reinstate spalled concrete to RCC columns and walls and to fill honeycombs and voids. It can also be used to fix concealed pipes and for floor patch repairing.

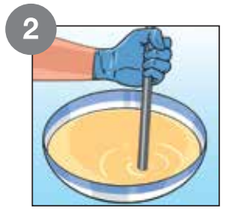
BONDING OLD AND NEW CONCRETE AND REPAIRING CONCRETE STRUCTURES

For bonding

1

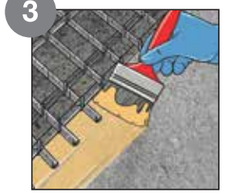
Ensure that the concrete surface is dry, clean and free of oil, grease and other contaminants. Remove any loose particles and dust using a wire brush.

2



Thoroughly mix Lapox® Lacrete resin and hardener, in a 1:0.5 ratio, in a disposable bowl.

3



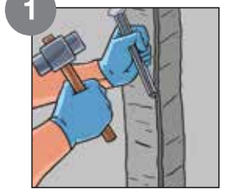
Apply a thin coat of the mixed material on the old concrete surface with the help of a brush, spreader or roller. Allow it to cure for 3 - 4 hour.

4

If the first coat is absorbed significantly, apply a second coat after 3 - 4 hour. Allow it to cure for 6 - 8 hour. While the Lapox® Lacrete coat is just tacky, apply the new concrete at this stage.

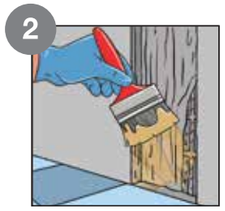
For concrete repairs

1



Widen the crack by making a ‘V’ groove and clean any dust or loose concrete using compressed air or any other suitable means. In case of potholes, loosen the concrete and clean.

2



Apply a thin coat of the mixed material on the crack’s surface. Allow it to cure for 3 - 4 hour.

3

Thoroughly mix Lapox® Lacrete resin and hardener, in a 1:0.5 ratio, with 7 - 8 parts of Quartz Sand no. 10.

4

Press the mortar gently so that the crack is uniformly filled. For optimum results, allow it to cure for 48 - 72 hour.

Note: All application tools should be cleaned with a solvent such as acetone before the adhesive cures permanently on the tools.

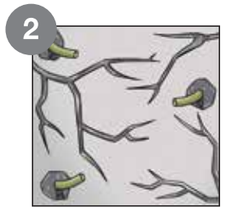
When concrete structures such as dams, bridges and basements are damaged due to structural faults, epoxy-based grouting is preferred over cement due to its properties of quick setting, low shrinkage, excellent adhesion and high strength. In addition, it provides resistance against most chemicals and exhibits low viscosity to penetrate hairline cracks.

INJECTION GROUTING

1

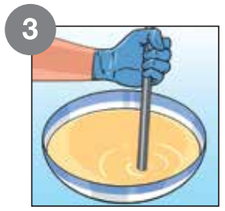
Ensure that the concrete surface with cracks is clean and dry. Remove any loose concrete.

2



Insert PVC nozzles at the two ends of the cracks. Fix them well using Lapox® Ultraseal (epoxy putty).

3

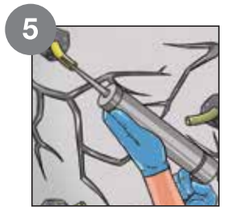


Thoroughly mix Lapox® Lacrete resin and hardener, a 1:0.5 ratio, in a disposable bowl.

4

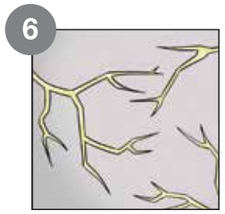
Fill the mixed material in an injection-grouting gun and inject it in the nozzle at a pressure of 7 - 8 bar.

5



When the material comes out of the other nozzle, it indicates that the cavity is completely filled.

6



For optimum results, allow it to cure for a minimum of 24-hour.

Note: All application tools should be cleaned with a solvent such as acetone before the adhesive cures permanently on the tools.

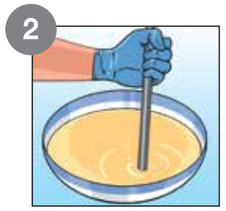
For epoxy flooring, Lapox® Lacrete is used as a primer coat as it helps provide a strong base and facilitate better adhesion. It helps seal pores and reduces the risk of blistering on flooring. Screed prepared with Lapox® Lacrete is used for load bearing applications. Lapox® Lacrete screed offers compressive strength of 70 - 100 MPa.

PRIMER COAT AND SCREED FOR EPOXY FLOORING

1

Ensure that the concrete surface is dry, clean and free of oil, grease and other contaminants. Remove any loose particles and dust using a wire brush.

2



For the primer coat, thoroughly mix Lapox® Lacrete resin and hardener, in a 1:0.5 ratio, in a disposable bowl.

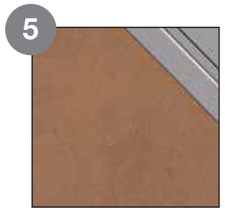
3

Apply the mixed material in a thin, uniform layer on the substrate with the help of a brush, spreader or roller.

4

For application of the screed, thoroughly mix Lapox® Lacrete resin and hardener, in a 1:0.5 ratio, with 4 - 5 parts of Quartz Sand no. 10. Thoroughly mix all the ingredients with a trowel to achieve homogeneous consistency. Pour the mixed material on the concrete.

5



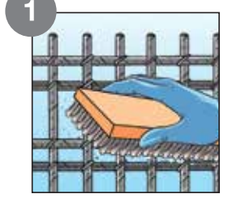
For optimum results, allow it to cure for a minimum of 24-hour.

Note: All application tools should be cleaned with a solvent such as acetone before the adhesive cures permanently on the tools.

Water ingress into concrete structure causes corrosion of re-bars which leads to severe structural damage. To provide a long life to the concrete structure, Lapox® Lacrete is used as an anti-corrosive coating.

ANTI-CORROSIVE COATING FOR RUSTED STEEL BARS

1

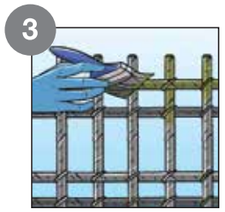


Ensure that the surface of the steel bars to be coated is dry, clean and free of oil, grease and other contaminants. Remove loose rust particles and dust using a wire brush.

2

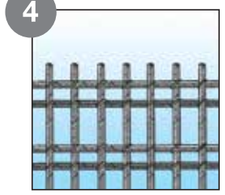
Thoroughly mix Lapox® Lacrete resin and hardener, in a 1:0.5 ratio, in a disposable bowl.

3



Apply the mixed material in a thin, uniform layer on the steel bars with the help of a brush. If required, apply a second coat of Lapox® Lacrete after 3 - 4 hour of the first coat application.

4



For optimum results, allow it to cure for 48 - 72 hour.

Note: All application tools should be cleaned with a solvent such as acetone before the adhesive cures permanently on the tools.

Technical details

Properties	Unit	Lapox® Lacrete
Mix properties		
Mixing ratio	w/w	100 : 50
Mixing ratio	v/v	2 : 1
Mixed viscosity at 25°C	cps	800 - 1,200
Pot life at 25°C (100 g mixed mass)	minutes	65 - 85
Coverage* for primer application (150 µ per coat)	g/m^2	250 - 300
Coverage* for screed application	kg/m^2 per mm	2 - 2.2
Curing characteristics (for 250 µ film) - drying time at 25°C		
Surface dry	hours	5
Touch dry	hours	8
Mechanical properties		
Lap shear strength (Al/Al) at 25°C, after 24-hour curing	kg/cm^2	min 90
Water absorption	%	max 0.5
Hardness after 24-hour curing	shore D	min 75
Compressive strength (with Quartz Sand no. 10)	kg/cm^2	800 - 900
Flexural strength (with Quartz Sand no. 10)	kg/cm^2	300 - 400

*Coverage may vary depending upon the surface conditions

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