

Crack Attack: The Art of Concrete Repair



Conworx Concrete Solutions Ltd.



Introduction

Types of Concrete Cracks

Causes of Concrete Cracks

Methods of Concrete Crack Repair

DIY vs Professional Concrete Crack Repair

Conclusion

Introduction



Welcome, everyone! Today we're going to talk about a common issue that plagues many homeowners and property managers: concrete cracks. While they may seem like a minor inconvenience, concrete cracks can actually lead to serious structural problems if left unaddressed.

Whether you're dealing with shrinkage cracks, settlement cracks, or more serious structural cracks, it's important to understand the causes and methods of repair. By the end of this presentation, you'll have a better understanding of how to identify and address concrete cracks, and the importance of doing so promptly.



Types of Concrete Cracks



Concrete cracks can occur for a variety of reasons, and it's important to understand the different types of cracks in order to properly address them. One common type of crack is a shrinkage crack, which occurs as the concrete dries and shrinks. These cracks are typically small and occur in a random pattern.

Hydrostatic Pressure cracks occur when gravity pushes stagnant-dense (static) water (hydro) against below-grade walls built partially or entirely below the water table or on a hillside. Hydrostatic pressure increases with depth and soil wetness.

Settlement crack, which occurs when the ground beneath the concrete shifts or settles. These cracks are usually larger and may follow a pattern, such as along a joint or around the perimeter of a slab. Finally, there are structural cracks, which occur due to issues with the design or construction of the concrete. These cracks can be very serious and may require extensive repairs.



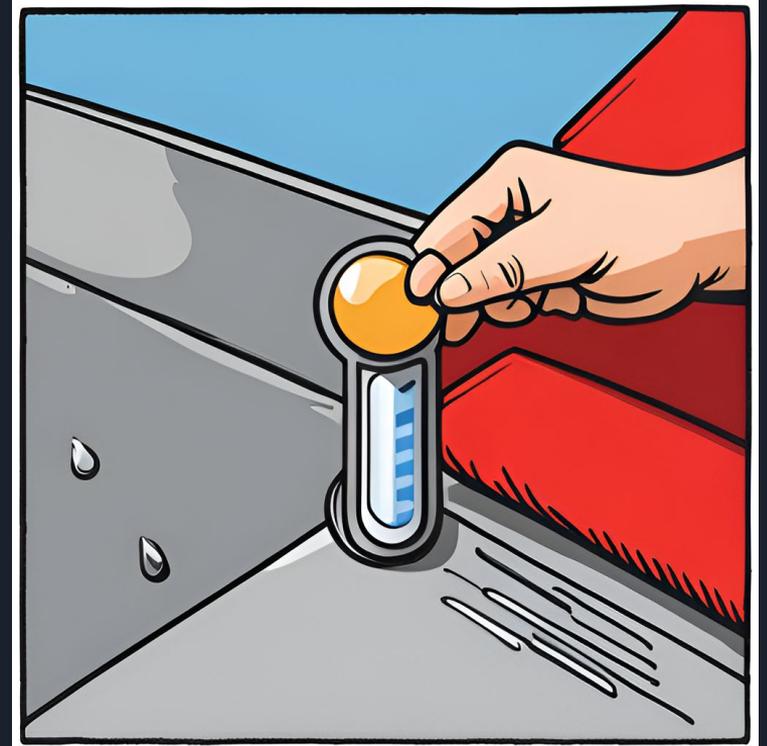
Causes of Concrete Cracks



Concrete cracks can occur due to a variety of reasons, such as temperature changes, moisture, and heavy loads.

Temperature changes cause concrete to expand and contract, which can lead to cracking over time. Moisture can seep into the concrete and weaken its structure, making it more prone to cracking. Heavy loads can also put stress on the concrete and cause it to crack.

It's important to understand the causes of concrete cracks so that you can take preventative measures to avoid them in the future. By addressing these issues early on, you can save yourself time and money in the long run.



Methods of Concrete Crack Repair

POLYURETHANE



CONWORX
GROUP

Polyurethane injection is a popular method for repairing concrete cracks. Especially those caused by hydrostatic pressure. It involves injecting a hydro active polyurethane grout into the crack, which turns to foam and seals the crack. This method is effective for both small and large cracks, and it can be used on horizontal or vertical surfaces. However, it can be difficult to apply the polyurethane correctly, as it requires high pressure pumps.

Polyurethane Injection also helps with rebar protection. Corroding rebar rust can expand 6-10 times. This creates internal pressure on the concrete. Although concrete is very strong, it has a low tensile strength. Therefore the expanding rebar will cause the concrete to crack. With the high pressure polyurethane injection, we can slow down the rebar corrosion process.



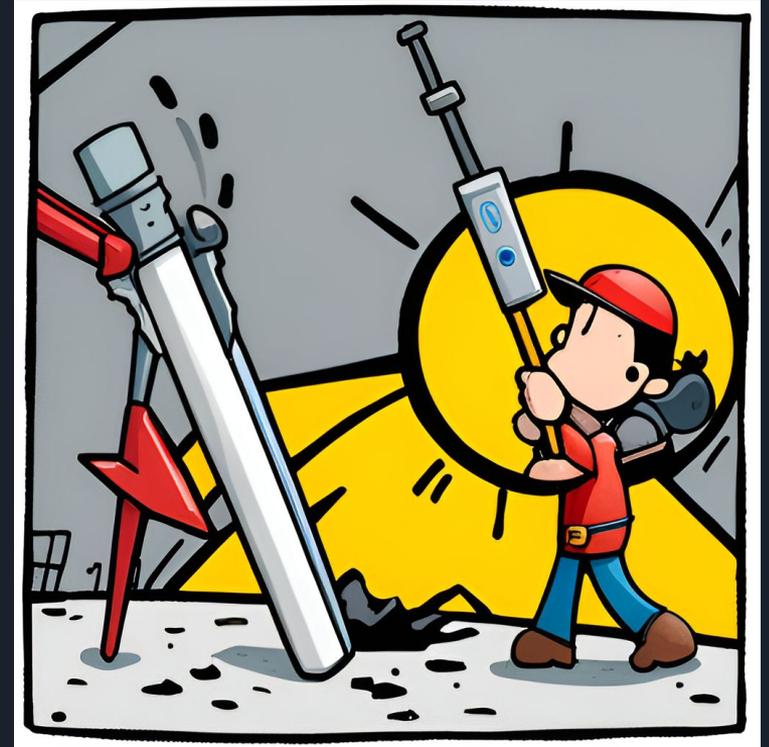
Methods of Concrete Crack Repair

EPOXY



Epoxy injection is also a repair method. It involves injecting an epoxy resin, which hardens and seals the crack. This method is also effective for both small and large cracks, and it can be used on horizontal or vertical surfaces.

Epoxy Injection is the only method for structural concrete repair. The comprehensive strength of epoxies exceed most concrete. Epoxy can be very versatile; it can be made very thin to paste-like, to accommodate various crack widths. If made too thin it may travel through the negative side whereas made too thick and it may not fill the entirety of the crack. There are advantages and disadvantages to using epoxy. That's why it's best to contact your crack repair specialist for the right concrete repair method.



DIY vs Professional Concrete Crack Repair



CONWORX
GROUP

DIY concrete crack repair can be a tempting option for those looking to save money. However, it's important to consider the potential drawbacks. One of the main risks of DIY repair is that it may not address the underlying cause of the crack, leading to further damage down the line. Additionally, improper repair techniques can actually make the problem worse.

On the other hand, hiring a professional comes with its own set of benefits and drawbacks. Professionals have access to specialized equipment and training that can ensure a more thorough and long-lasting repair. However, this expertise comes at a cost and may not be necessary for smaller or less severe cracks.



Conclusion



In conclusion, concrete crack repair is an essential part of maintaining the integrity and safety of any structure. We have discussed the different types of cracks that can occur in concrete, their causes, and the various methods of repair available.

It is important to address concrete cracks promptly, as they can worsen over time and lead to more significant damage and safety hazards. Whether you choose to tackle the repairs yourself or hire a professional, taking action on any existing cracks is crucial for the longevity of your structure.

If you require professional help or advice, Conworx is here for you.

Phone: 604.CONWORX (604.266.9679)

Email: CCS@ConworxGroup.com

