

STORIES OF STRENGTH

Stormwater Drainage Tray

Denver, CO



Increased resistance to deicer chemicals and impact damage

Because of the heavy runoff and seasonal flooding Denver is famous for, stormwater drainage systems carry a lot more than water. They also ferry rocks, pebbles, deicing chemicals, and other abrasive materials that slowly abrade away and scale the surface of concrete channels. These small impact craters become cracks and holes, allowing water to seep into the structure. Colorado concrete producer Metro-Mix warned the contractor, CASI Concrete [CASI], of these potential problems when CASI was contracted to pour several concrete drainage systems for new multi-family residences around the greater Denver area. Metro-Mix recommended CASI use **EdenCrete®** to help prevent these impacts to the drainage systems.

CASI was open to exploring new ways to improve the longevity of their concrete and **EdenCrete®** was chosen to reduce the surface degradation from abrasion and deicer chemicals, impact damage from snowplows and service vehicles, and cracking from vehicle loads.

In a new townhome complex in Denver, CASI placed one large “control” section of stormwater drainage tray using the standard concrete mix design. The control section was about 250’ in length, 4” thick, and 30” wide. Adjacent to that, a test section of drainage tray with the same dimensions was placed using the same concrete mix design with **EdenCrete®**.

The Results

EdenCrete® significantly increased abrasion resistance and tensile strength of the new concrete over the control mix design. CASI Concrete reported no negative impact on the fresh concrete properties. After several years in service, the drainage tray containing **EdenCrete®** is in great shape. There are no cracks from vehicle loads and the concrete resembles relatively new concrete with minimal staining. The broom-finish is still present on the surface and there is no scaling from deicer chemicals. After 1 year in service, the control section had already become abraded, cracked, and pitted from exposure to chemicals. After only a few years in service, the control section continued to degrade even more significantly, becoming cracked to such a point that it will soon require maintenance or replacement. The estimate for replacing the damaged sections of the control concrete exceeds the upfront cost had **EdenCrete®** been included in the entire project.

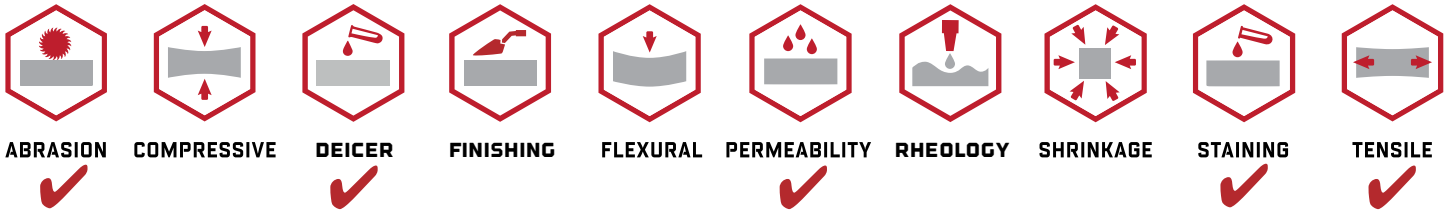
EdenCrete® is perfect for use in concrete applications where maintenance or replacement is not an option.

To ensure your concrete looks and performs like new for a longer period of time, please contact info@edencrete.com, or call **(303) 468-1705**.



After 18-months in service the trays containing **EdenCrete®** are in great shape with no cracks or chemical pitting. The control trays are cracked and severely damaged.

Areas of significant improvement for this application



EdenCrete[®] enhances concrete in all seven areas, but was specifically selected to improve abrasion, permeability, staining, and tensile strength for this project.

“The contractor had no idea that EdenCrete[®] was in the concrete mix design because it did not influence the fresh properties or the finishability of the concrete. Test results showing enhanced abrasion and tensile strength certainly indicate that EdenCrete[®] should have no problem extending the life of the concrete’s [application] in-service conditions typical in a drainage basin.” – Stuart Ponting, Vice President of CASI Concrete



The EdenCrete[®] surface is still intact with minimal degradation. Reference was abraded, pitted, and scaled within 1-year of placement.

Harness the strength of carbon nanotubes for your next pour.

Developed by Eden Innovations LLC, EdenCrete[®] is a carbon nanotube-enriched liquid admixture that elevates concrete structures to new levels of strength and toughness. When added to concrete mixtures, it performs like multiple admixtures rolled into one. It boosts surface abrasion resistance and produces extremely low permeability while improving strength properties [i.e., compressive, flexural, and tensile] like no other product on the market today.



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