

# METRO MATERIALS

## Cement Treated Base 101

**Metro Materials Introduced Cement Treated Base** to this area in this over 40 years ago. It's delivered in dump trucks, spread and compacted with standard compaction equipment. Metro's CTB is elevated above other products due to an exceptional blend of renewable aggregates that are superior than most all virgin materials. These materials are then combined with water, and cement ensuring the jobsite receives full-depth placement. Metro's CTB is an exceptional and reliable choice for any construction project.

**Uniform Strength and Stability:** Metro's central mixing plant method guarantees consistent strength and stability across the entire completed base section. Our CTB ensures the necessary structural integrity to support the pavement loads that will result in a strong and reliable roadway section.

**Aggregates:** Metro Materials of Memphis uses only the highest-quality, very angular, premium recycled, environmentally responsible and very sustainable aggregates in its CTB production. This crucial difference is the catalyst for creating the absolute best-performing base available.

**Full-Depth Placement:** CTB is unlike in-place stabilization with soils or gravel. When cement is added to existing compacted materials, the depth of mixing cement with water often falls short or below the optimal threshold for complete cement hydration. This leads to wasted cement particles and inconsistent results. Also, with on-site mixing, the addition of optimal water can make mid-south soils become gummy and cause a ball-bearing effect, which locks out more cement particles. This hinders the full hydration of the cement by compromising the structural integrity and overall performance and finish of the base. Whereas Cement Treated Base ensures consistent full-depth placement and allows for the maximum amount of water to be added at the plant to a loose, non-compacted product, ensuring full cement hydration. This yields a more uniform, stronger, and significantly more durable base, providing our customers with the highest quality and reliability in base products.

**Environmental and Jobsite Benefits:** With CTB, there are no jobsite environmental concerns or complaints from neighbors or authorities about the large dust clouds that occur with soil stabilization. The amount of equipment used is a fraction of what the soil stabilization method requires, thus jobsite noise levels are much less. More importantly, the construction traffic on the subgrade is at a minimum. These factors ensure that CTB is a cleaner and more community friendly option for construction projects, ensuring minimal disruption and a better working environment.

**Enhanced Durability:** The granular materials used in Metro Materials CTB are always crushed and sustainable recycled products. Besides the obvious benefits of reusing natural resources, the residual portland cement from crushed concrete is reactivated with the addition of water. Added cement then coats each particle effectively, forming a tightly bound angular matrix. This contributes to CTB's high durability and resistance to weather, even with increased traffic loads.

**Improved Compaction:** The combination of crushed angular materials with uniformly mixed cement and sufficient water allows for better compaction, resulting in a highly compressed and solid base. When compacted, this very dense product minimizes voids and ensures a more stable base that enhances the overall strength and stability of the pavement structure.

**Better Load Distribution:** When placed and compacted, the CTB distributes loads evenly across the subbase, reducing localized failures and prolonging the life of the surface pavement. This "bridging" factor minimizes base deflection and helps to bear high traffic volumes and heavy loads. Roadways constructed using CTB as a base have consistently required less resurfacing compared to those with mix-in-place bases.

**Moisture Resistance and Freeze-Thaw:** Utilizing only the highest quality aggregates, water, and cement in CTB creates a superior barrier against surface water and moisture infiltration. This composition effectively resists freeze-thaw cycles, preventing the base deformation commonly seen in other base products.