



RESURFACE STRONG

8K PLUS

STRUCTURAL CEMENT

GENERAL DESCRIPTION

Resurface Strong 8k plus is a type of mortar that contains micro-silica fume, specific cement ad-mixtures, polymer modifiers, consistent gradation sand, and poly-fiber reinforcement. This mixture was designed to fully renew sub-surface structures through Cast-In-Place procedures. It is perfect for restoring various types of structures such as CMP and RCP pipe, pre-cast Box-Culverts, brick, clay, and coated steel structures. Resurface Strong 8k plus hardens into a dense matrix, resulting in very high compressive strengths. Additionally, it can be coated with top coatings for composite applications.

SUBSTRATE PREPARATION

After performing high-pressure water blasting, it is imperative to remove any debris or materials that are unstable or not firmly attached. If any rusted re-bar reinforcement steel exhibits signs of spalling, a rust treatment plan should be implemented, following the steps outlined in the project procedure. Any voids in the substrate must be filled with Resurface Strong 8K Cement, ensuring that they are flush with the structure's surface. During the application process, the concrete and brick culverts should be pre-wetted, and the CMP substrate should be moistened.

MIXING

To achieve optimal mortar hydration, it is essential to use clean potable water. For each 50 lb. bag of mortar, the recommended amount of water for mixing is approximately $\leq 3/4$ gallon. However, this amount may need to be adjusted based on desired consistency, bonding, climate conditions, and texture, as these factors can directly impact workability. It is crucial to avoid over-hydrating the cement mix, as this can have a significant impact on the compressive strength measure. Before use, the mortar must be conditioned to a temperature range between 50°F and 90°F (10°C and 32°C).

APPLICATION

After achieving a thorough mixture, the material can be placed using either shot-crete hand spraying or the Spin Cast Nozzle System for Cast-In-Place lining. The Resurface Strong 8K plus product is specifically designed for restoring sub-surface structures, and it may be necessary to apply multiple layers to reach the desired build thickness that was pre-calculated. It is recommended to perform trial batching to ensure that the Mortar Hydration is appropriate for the climate and existing work conditions. Resurface Strong 8K typically provides 50 to 70 minutes of work-time before the initial set when the temperature is between 70°F to 78°F (21°C to 25.5°C).

CURING

To achieve the best results, the curing process should be as slow as possible. One method to aid in the curing process is to apply a curing compound that meets the requirements of ASTM C-309. It is recommended to consult the material distributor for guidance on extending the curing process, taking into account the specific conditions of the project. However, the use of a curing compound is not recommended in composite applications. Extending the curing time can help reduce cement shrinkage.

LIMITATIONS

The temperature of both the ambient and structure surface should be at least 40°F (4.5°C) or higher for cement application. Avoid direct exposure to rain and water flow until after the initial curing stage. For optimal productivity, apply Resurface Strong 8K plus in layers of 1/2" to 3/4" thickness in each lining pass until the pre-calculated project requirement is achieved. A 1/4" thickness can also be applied.

EQUIPMENT

Contact the Resurface Strong 8K plus provider for advice on mixing and pumping equipment to improve application productivity. TCI Carbon Fibre offers a customized Spin Cast System for centrifugal cement lining projects. Skilled applicators who are experienced with operating cement pumping machinery, mortar spraying, troweling, and cement mixing expertise are recommended.

STORAGE & HANDLING

Maximum shelf life is 12 months when stored in the original unopened packaging and stored within a controlled environment. Storage requires a dry area, with temperature and humidity control, avoiding exposure to direct sunlight.

NET WEIGHT: 50 LB

PRECAUTIONS

For safety reasons, members of the application crew must wear protective eye safety glasses. It is also recommended that a mask or respirator be used during material handling to prevent inhaling cement dust, which could potentially cause lung irritation. Contact with the skin should be limited due to the presence of free silica and fused calcium hydrates. Wash hands thoroughly with soap and water after handling. In case of eye contact, rinse thoroughly with fresh water for several minutes and seek medical attention if necessary. Keep the material out of reach of children and follow OSHA safety and health standards. For more detailed information, refer to the material safety data sheet (SDS).

CLEAN UP

Mortar spills should be collected in an approved container and water rinsing will remove material prior to set. Dispose of material in accordance with local, state or federal regulations.

TECHNICAL DATA

ASTM C-190 Tensile Strength at 24 hrs & 7 days			
Compressive Strength ASTM C-109	24 Hr. 2,750 PSO	7 Day 6,300 PSI	28 Day 8,000 PSI
Tensile Strength ASTM C-496			700 PSI
Shrinkage ASTM 596			0.08%
Bond Strength ASTM C-882 (modified)			2,450 PSI
Modulus of Elasticity	3,330,300		4,365,300
Chloride Permeability ASTM C-1202			<300 Coulombs
Freeze Thaw Durability ASTM C-666	300 Cycles		No Damage
Flexural Strength ASTM C-293	580 PSI		1,060 PSI
Packaging: 50lb./22.7 kg Poly-Lined Paper Bags			

Danger

Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause cancer.

Wear impervious clothing/gloves to eliminate skin contact with wet cement. Wear impervious boots to eliminate foot/ankle exposure. Use ventilation to control inhalation of cement dust.

First Aid

Eye contact: Immediately flush eyes with water. Get medical attention.
Inhalation: Move to fresh air. Seek medical help if coughing or other symptoms persist.
Skin contact: Immediately wash with water and non-abrasive pH neutral soap.
Ingestion: Get medical attention. DO NOT INDUCE VOMITING.

