



E5

NANO SILICA TECHNOLOGY
**THE ULTIMATE CURE FOR
CONCRETE**

Liquid nano silica concrete admixtures and topical application for all concrete applications including:

Exterior and Interior Concrete
Parking Garages
Pavement and Driveways
Bridges and Infrastructure
Slabs, Walls, Columns and Foundations

**Carbon
reducing
PRODUCT**

Benefits of E5 Nano Silica Technology



Cure

Internally Cures

- Hydrates increased cementitious material
- Chemically binds water to cement
- Reduces bleed channels
- Eliminates curing compounds
- Eliminates wet curing
- Eliminates sealers & hardeners



Flatness

Consistent FF/FL

- Slumps are retained
- Surface remains workable longer
- Eliminates wet curing
- Eliminates sealers & hardeners



Shrinkage

Reduced Volume Loss

- Eliminates bleed water
- Retains water of transport in the mix
- Reduces early shrinkage
- Reduces evaporation at the joints
- Reduces curling at the joints
- Better hydration of cement
- Increased Calcium-Silica-Hydrate (C-S-H) bonds



Density

Reduced Porosity

- Increased hydration reduces voids
- Creates silica gel within the slab matrix
- Particle packaging at the surface



Hardness

Increased Abrasion Resistance

- Harder than traditional topical systems
- Grind or polish 7 days after placement
- Improves surface longevity
- Reduces control joint issues
- Immediate access to the slab
- Can be polished, burnished or left exposed



Durability

Extends life cycle

- Significantly improved in-service life
- Significantly reduces expansive cracking
- Protects against premature degradation
- Significantly reduces water penetration
- Reduces salts & brine penetration



SCM

SCM Reduction

- Sustainable SCM replacement or reduction
- Consistent performance
- Dust-Free liquid material
- Increases pozzolanic performance

E5 Integral Admixtures & Finishing Aids

Advantages of E5® Nano Silica Technology

Reduces or replaces most concrete admixtures products such as:

- Internal Cure admixtures (IC)
- Shrinkage Reducing admixtures (SRA)
- Water reducers (MRWR, HRWR)
- Superplasticizers (PEC)
- Accelerators and Retarders admixtures

E5 INTERNAL CURE

ADMIXTURE

- Increases concrete strength and durability with higher compressive strength
- Reduces shrinkage and cracking
- Better hydration of cement for improved performance
- Improves concrete workability time
- Can be utilized in difficult conditions such as low humidity, high winds, direct sunlight

E5 LIQUID FLY ASH

ADMIXTURE

- A sustainable replacement for Fly Ash, Silica Fume and other Pozzolan materials
- Higher Pozzolanic reactivity by promoting secondary calcium-silica-hydrate (C-S-H) bonding for increased concrete strength
- Reduces air entrapment and decreases permeability of concrete
- Reduces up to 15% cementitious material and lowers CO2 levels
- A more consistent silica-free and dust-free liquid material without off-white color issues

E5 MIRACLE AID

FINISHING AID

- Reduced bleed and segregation characteristics
- Enhanced workability and stability
- Improved pumpability, especially over long distances
- Improved sprayability and reduction of rebound
- Reduction in shrinkage of hardened concrete
- Weather will not affect the surface from drying or cause differential drying.



The Ultimate Cure for Concrete.

Recommended E5 Dosage Amounts

Successful use of the E5[®] Nano Silica Admixtures depend on the use of appropriate methods of batching and concreting. E5[®] Nano Silica Admixtures are supplied in ready-to-use liquid form and are added to the concrete at the plant or at the jobsite.

E5 Internal Cure is added at 4 ounces per 100 pounds of cementitious material.

E5 Liquid Fly Ash is added at 4-12 ounces per 100 pounds of cementitious material.

E5 Shot Cure is added at 8-20 ounces per 100 pounds of cementitious material.

- E5[®] Nano Silica Admixtures have a 18 month shelf life. It must be discarded after that time.
- Dosage Rate is based on cementitious content of the mix design.
- Compatible with all admixtures.
- Will not affect slump or air content

Batch Plant Dosing

E5[®] Nano Silica Admixtures *MUST be added to the ready mix truck at the end, after all materials are wetted and then mix for 15 minutes.*

- Add all E5[®] Nano Silica Admixtures with the flush water at the plant
- MUST be thoroughly mixed
- 70 revolutions at MIXING speed or 5 minutes at MIXING speed
- Mixing speed is typically 15 RPM
- Automatic dispensers should be calibrated on a regular basis



E5[®] Nano Silica

Employs patented, silicate free nano technology to transform Portland Cement Concrete (PCC) and improve performance, function and longevity.

