



EUCLID CHEMICAL

TUNNELING SOLUTIONS



CONCRETE ADMIXTURES

PRECAST CONCRETE ADMIXTURES

TBM PRODUCTS

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SHOTCRETE ADMIXTURES

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CHEMICAL GROUTING PRODUCTS

ULTRA / MICRO FINE CEMENTS

TUNNELING

COMPLETE CONCRETE SOLUTIONS

Time-tested experience as a valuable partner in large tunnel projects throughout the Americas has earned Euclid Chemical the reputation as an innovative leader in tunneling and underground products.

Euclid Chemical serves the tunneling industry with the design and manufacture of a full line of products that improve production and performance at every stage of an underground project. Provided by EGECRETE Yapı Kimyasalları A.Ş. for tunnel construction, soil conditioning, annulus grouting and repair, the industry depends on The Euclid Chemical to deliver superior products and support



CONCRETE ADMIXTURES

COMPLETE CONCRETE SOLUTIONS

CONCRETE ADMIXTURES

High Performance and Specialty Admixtures

Euclid Chemical is your solution partner in tunnel projects to provide ASTM C494 and EN 934-2 standards with proven Accelguard, Eucon and Plastol brands with high performance concrete admixtures. These products provide the highest quality concrete from basic to the most challenging applications.

WATER REDUCERS

EUCON MR 412
EUCON NP 205

HIGH-RANGE WATER REDUCERS

EUCON 37
EUCON 1034
EUCON 1037
PLASTOL 502B
PLASTOL 508
PLASTOL 509
PLASTOL 511
PLASTOL 526

RETARDERS

EUCON RETARDER 100/130

AIR ENTRAINERS

EUCON AIRMIX 220/250/305

ACCELERATORS

ACCELGUARD NCA/ NCA 15 / NCA 19 / NCA 28

SPECIALTY PRODUCTS

DENSIFIED MICROSILICA-EUCON MSA
CORROSION INHIBITORS ADMIXTURES-EUCON ACI 2000M
WATER REPELLENT ADMIXTURES-EUCON BARACADE WPT 601
CRYSTALIZED WATERPROOFING ADMIXTURES-EUCON CW 105



PRECAST CONCRETE ADMIXTURES

Euclid Chemical enables you to achieve faster and more efficient results with high performance ULTRA concrete admixtures especially in your segment and precast beam productions in road tunnels, railway tunnels and subway projects.

HIGH-RANGE WATER REDUCERS

PLASTOL ULTRA 204
PLASTOL ULTRA 206
PLASTOL ULTRA 224

MECHANIZED TUNNELING

The importance of underground structures in the mining and construction sector is increasing day by day in parallel with technological development. The selection of the excavation method to be used in order not to damage the structure during the opening of the structures such as metro tunnels is especially important in large settlement centers. For this reason, Shield Tunnel Boring Machines (TBM) have the ability to prevent undesired underground movements. Due to its quieter vibration and faster operation, it is now the preferred excavation machine. TBM types vary according to especially hard ground conditions (hard rock-soft rock) and ground structure. There are three types of TBM machines: hard rock, EPB and slurry.



TBM MAIN PRODUCTS - Seal Greases

- Tail Seal Grease for Shielded TBM

- EUCON SG 715**

- First Filling Material Tail Sealant Grease for TBM

- EUCON SG 720 / 730 / 735**

- Continuous Tail Sealant Grease for TBM

- Main Bearing Seal Grease for Shielded TBM

- EUCON SG B 860**

- Mineral Oil Based Protective Main Bearing Sealant Grease



Main Bearing Seal Grease



First Filling Tail Seal Grease



Continuous Tail Sealant Grease

MECHANIZED TUNNELING

TBM MAIN PRODUCTS - Soil Conditioning

EUCON CHF 110 / 130

Standard liquid cutterhead foaming agent designed for soils to make the movement of TBM faster and easier by reducing the torque on the cutting head and making the floor more plastic and less permeable for shielded TBM.

EUCON CHF 230 / 240

Polymer based liquid cutterhead foaming agent designed for silty and sandy soils containing high water content to make the movement of TBM faster and easier by reducing the torque on the cutting head and making the floor more plastic and less permeable for shielded TBM.

EUCON AC 430 / 440 / 460

Anti-clay, high efficiency dispersant polymer based cutterhead foaming agent, designed especially for clayey soils with a high permeability alluvial ground to low permeability (clayed ground) to make faster and easier by preventing clays from clogging, reducing the spoil consistency and cutter torque.

EUCON SC P 280 / P 300

Polymer used to increase performance of TBM Foaming Agents in difficult soil conditions for shielded TBM.

EUCON ABF 520 / 590 / 595

Anti-abrasion and dust control agent for hard rock and EPB tunnel boring machines by reducing abrasive wear for cutterhead and dust formation during excavation.

EUCON DUSTROL

Concentrated agent formulated with the special surfactants used specially for use on hard rock tunnel boring machines, designed to reduce dust from the boring operation to improve the working environment for the operators.

EUCON SC S 400

Stabilizing high performance super water absorbent liquid polymer used to increase the performance of TBM in difficult soil conditions.

EUCON CT 800 / 850

Special formulated surfactants used as shield cleaner such as anti-sticking for clay treatment by adding water injection line for preventing sticking tendencies of the clay, keeping the cutterhead clean and allow the clay cuttings to move out from the screw conveyor easily.



BACKFILLING ADMIXTURES

The main reasons that the TBM applies an annulus grouting method between the TBM excavation and segmental lining, throughout the tail skin grout injection system and during the TBM advance, are to prevent the ground movement and the surface settlements due to the volume loss at the tail void; to stabilize the segment lining in the ground; to distribute the loads to the ring homogenously; to improve water tightness of the segmental lining.

Concrete Admixtures

EUCON 37

EUCON 1037 / 1038

EUCON-FILL 360 / 500 / 700

Accelerators

CreteShot NS 303 (Sodium Silicate)

EUCON SURESHOT AF

Retarders

EUCON RETARDER 100 / 108 / 110 / 130



SHOTCRETE ADMIXTURES

SET ACCELERATORS FOR WET/DRY SHOTCRETE

It is possible to make more efficient progress in a short time with Euclid Chemical's value-added shotcrete admixtures. The concrete admixture and microsilica choice to be used in the concrete mix are designed as preliminary tests in order to achieve the desired performance for shotcrete applications in NATM type tunnels. Set accelerators intended for use in shotcrete applications and provide fast and consistent setting characteristics in various conditions and environment with high early strength and less rebound. Euclid Chemical is your solution partner in tunnel projects to provide ASTM C1141 and EN 934-5 standards with proven Eucon Sureshot brands.

AT READY-MIXED CONCRETE PLANT

- **High Range Water Reducers**
Provides early and final high strength for high consistency shotcrete mixes with low water cement ratio.
- **Microsilica**
Microsilica is powder additive which is used to improve the pumping and viscosity performance of shotcrete mixtures.
- **Retarders**
The concrete admixture that prevents the loss of workability of the shotcrete concrete from the plant to the tunnel site.

AT SITE

- **Macro-Synthetic Fiber**
Non-corroding three dimensional reinforcement by providing abrasion fatigue and impact resistance while increasing service life through improved toughness and durability.

TUF-STRAND SF / TUF-STRAND MaxTen / CreteFiber SF 540

It is a patented polyethylene and polypropylene blend of macro-synthetic fiber specially engineered to replace conventional reinforcing such as wire mesh for shotcrete applications with the increased flexural toughness impact and fatigue resistance with the added benefit of superior plastic-shrinkage crack control.

CreteFiber STL 6560 / CreteFiber STL 5035

Used primarily for temperature and shrinkage crack control and limited structural applications in precast concrete, slabs on grade, elevated structures and shotcrete applications. They are available in crimped (blended with or without synthetic micro-fibers) and hooked-end configurations.

- **Liquid Set Accelerators For Wet/Dry Shotcrete**

CreteShot NS 303 (Sodium Silicate)

Sodium silicate based liquid set accelerator for shotcrete.

EUCON SURESHOT AL 21 / AL 23 / AL 24

Sodium aluminate based liquid set accelerator for shotcrete.

EUCON SURESHOT AF 20 / AF 30

High performance with low consumption alkali-free liquid set accelerator for shotcrete.

EUCON SURESHOT AF / AF 10

High performance alkali-free liquid set accelerator for shotcrete

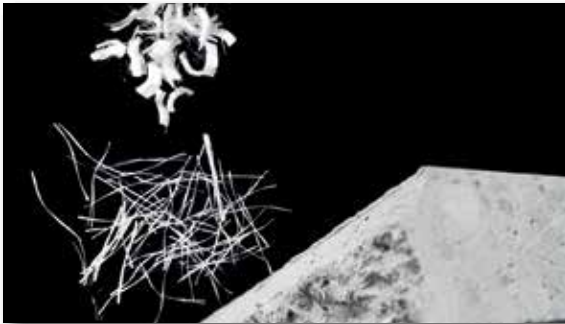
- **Powder Form Set Accelerators For Dry Shotcrete**

EUCON DRYSHOT AF 50 / AF 60

High performance alkali-free liquid set accelerator for shotcrete



FIBER PRODUCTS



Euclid Chemical provides micro and macro synthetic fibers and steel fibers for industrial concrete and shotcrete applications. Micro-Synthetic Fibers are used for plastic shrinkage crack control and are ideally suited to secondary reinforcing applications for slabs and pre-cast concrete. Macro-fibers designed to replace conventional reinforcing such as wire mesh for shotcrete applications and steel rebar precast segments with the increased flexural toughness impact and fatigue resistance. Euclid Chemical is your solution partner in tunnel projects to provide ASTM C1116, ASTM A820, EN 14889-1 and EN 14889-2 standards with proven Fiber brands.

Concrete Mix Design Assistance – Euclid Chemical’s technical sales team is experienced in concrete mix designs that work with fibers in combination with chemical admixtures.

Engineered Fiber Calculations – Design aids and other tools are available to all Euclid customer to help them determine and specified the appreciate engineered dosage rates for each individual application providing projects compliance.

MICRO-SYNTHETIC FIBERS

CreteFiber MF 106 / 112 / 119

MACRO-SYNTHETIC FIBERS

TUF-STRAND SF
TUF-STRAND MaxTen
CreteFiber SF 540

MACRO-STEEL FIBERS

CreteFiber STL 6560
CreteFiber STL 5035



CHEMICAL GROUTING PRODUCTS

Chemical grouts have been the solution for sealing leaking cracks and fractures within sound substrates and stabilization of unsound earthen materials. Cementitious grouts with micro / ultra fine cement provide soils consolidation and waterproofing, injection of fissures rocks and micro inter annular voids of precast concrete segments. Such an approach helps either to prevent from a likely circulation of water or even to consolidate the solid during the embankment or over the excavation works.

MICRO AND ULTRA FINE CEMENT

SPINOR A20 / A16 / A12 / A6

POLYURETHANE RESIN

DURAL AQUA-DAM LV
DURAL AQUA-DAM VH
DURAL AQUA-FLEX
DURAL AQUA-DAM 702

ORGANIC MINERAL RESIN

DURAL MUD PS
DURALCRETE PS

COLLOIDAL SILICA

CretelInject CS 100

ACRYLIC RESIN

CretelInject ACR 901 / 902 / 903

EPOXY RESIN

CretelInject EP 701



INDUSTRY LEADERSHIP

For more than a century, The Euclid Chemical Company has served as a leading supplier to the concrete and masonry industry offering a full line of engineered concrete admixture and construction products marketed under the EUACO brand name. These products include concrete admixtures, block and masonry additives, curing and sealing compounds, epoxy adhesives, floor and wall coatings, structural grouts for columns, equipment and machinery, joint fillers and repair products. The Euclid Chemical Company strives to bring innovative technologies and products to the concrete market with industry leading customer service.

CUSTOMER SOLUTIONS

The Euclid Chemical Company is unique in our offering of superior products, unparalleled customer service and industry support. The Euclid team delivers a range of value-added resources and in-depth industry experience to architects, designers, engineers, building contractors and owners. Comprised of highly trained professionals who are available in local offices across the Americas, our experts are active members on industry technical committees including American Concrete Institute (ACI), International Concrete Repair Institute (ICRI) and American Society for Testing and Materials (ASTM). Our experienced field team is available to support you and your projects using Euclid Chemical solutions and products manufactured under the stringent standards of our ISO 9000:2008 certified quality system. EGECECRETE Yapı Kimyasalları A.Ş. works hand-in-hand with customers:

- performing field evaluations, and troubleshooting on a project-by-project and technology basis.
- assisting in product selection, specification, installation and related technology.
- attending pre-design meetings, assisting in clarifying specifications and recommending product application techniques.

LABORATORY SERVICES

Our world class Cement and Concrete Reference Laboratory (CCRL) inspected facilities are equipped with state-of-the-art technologies and staffed by an exceptional team of professional, ACI certified technicians. These outstanding resources provide The Euclid Chemical Company the capability to offer comprehensive analytic and petrographic evaluation and testing services via programs that conform to the standards prescribed by the American Society for Testing and Materials, the U.S. Army Corps of Engineers (USACE), the American Concrete Institute and the International Concrete Repair Institute.



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