

# NORMET Construction Chemical

## ADMIXTURE

**NORMET TamCem 60** is a new-generation hyperplasticiser (superplasticizer) for concrete, formulated with advanced polycarboxylate ether (PCE) polymers. It delivers exceptionally high water reduction, superior slump retention, and enhanced workability, making it ideal for ready-mix, precast, and sprayed concrete applications.

### Key Features

- Type: Polycarboxylate ether-based hyperplasticiser.
- Form: Non-chloride liquid admixture.
- Compliance: Meets EN 934-2 (Table 3.1 & 3.2) and ASTM C494 Type F standards for high-range water-reducing admixtures.
- Compatibility: Works with all cements meeting international standards.
- Technology: Based on versatile polycarboxylate copolymer chemistry.

### Applications

- Ready-Mix Concrete (RMC): Ensures consistent slump retention during transport and placement.
- Precast Concrete: Improves compaction, surface finish, and dimensional accuracy.
- Sprayed Concrete (Shotcrete): Enhances pumpability and adhesion in tunneling and mining projects.
- High-Performance Concrete: Enables low water-cement ratios for strength and durability.
- Infrastructure Projects: Suitable for bridges, highways, dams, and large-scale civil works.

### Benefits

- High Water Reduction: Allows lower water/cement ratio, improving compressive strength.
- Superior Slump Retention: Maintains workability over extended periods.
- Durability: Reduces permeability, shrinkage, and cracking.
- Efficiency: Optimizes cement usage while achieving target strengths.
- Versatility: Effective across diverse concrete mix designs and climates.

### Performance Advantages

Property	Benefit
Water Reduction	Achieves high-range reduction for stronger concrete
Workability Retention	Maintains slump for longer durations
Pumpability	Smooth concrete flow in pipelines and shotcrete
Strength Development	Enhances early and ultimate strength
Durability	Reduces permeability and shrinkage

## NORMET TamCem 53

**TamCem 53** is a polycarboxylate ether (PCE)-based high-range water-reducing admixture (superplasticizer) from Normet, designed to deliver excellent workability, slump retention, and strength development in concrete. It is particularly suited for ready-mix, precast, and infrastructure projects requiring durable, high-performance concrete.

### Key Features

- **Type:** PCE-based hyperplasticiser/superplasticizer.
- **Form:** Liquid admixture, chloride-free.
- **Compliance:** Meets international standards for high-range water reducers (EN 934-2, ASTM C494 Type F).
- **Shelf Life:** ~9 months in sealed containers.
- **Base Polymer:** Advanced polycarboxylate copolymer chemistry.

### Applications

- **Ready-Mix Concrete (RMC):** Ensures consistent slump retention during transport and placement.
- **Precast Concrete:** Improves compaction, dimensional accuracy, and surface finish.
- **Infrastructure Projects:** Bridges, highways, dams, and tunnels requiring durable mixes.
- **Industrial Floors & Water Tanks:** Provides dense, impermeable concrete with reduced shrinkage.
- **Masonry & Repair Mortars:** Enhances workability and bonding

### Benefits

- **High Water Reduction:** Enables lower water/cement ratios, improving compressive strength.
- **Superior Slump Retention:** Maintains workability over extended periods.
- **Durability:** Reduces permeability, shrinkage, and cracking.
- **Efficiency:** Optimizes cement usage while achieving target strengths.

### Performance Advantages

Property	Benefit
Water Reduction	Achieves high-range reduction for stronger concrete
Workability Retention	Maintains slump for longer durations
Pumpability	Smooth concrete flow in pipelines
Strength Development	Enhances early and ultimate strength
Durability	Reduced permeability and shrinkage

# AUXILIARY PRODUCTS

**Normet's Auxiliary Products** cover a wide range of support equipment, spare parts, and complementary solutions that enhance underground mining, tunneling, and civil construction operations. They include auxiliary machinery, drilling tools, spare parts for engines and hydraulic systems, and other support components that ensure reliability and efficiency in demanding environments.

## Key Categories of Normet Auxiliary Products

- **Auxiliary Machinery & Equipment**
  - Support vehicles and machines used alongside core mining/tunneling equipment.
  - Includes utility vehicles, transport systems, and specialized support gear.
- **Drilling Tools & Components**
  - Spare parts for hydraulic and pneumatic drifters.
  - Rotation units and drilling accessories to maintain operational uptime.
- **Spare Parts for Engines & Equipment**
  - Covers engines from major OEMs (Cummins, Deutz, Volvo, CAT, Komatsu, Hyundai, etc.).
  - Ensures compatibility and reliability across underground and open-pit machinery.
- **Hydraulic & Pneumatic Systems**
  - Spare parts for hydraulic drifters, rotation units, and pneumatic drifters.
  - Designed to withstand heavy-duty underground conditions.
- **General Support Products**
- Filters, pumps, and auxiliary components sourced from trusted manufacturers (e.g., Sika, Grindex, Montabert).
- Complements Normet's core spraying, transport, and scaling equipment.

## Applications

- **Underground Mining:** Auxiliary machinery supports drilling, scaling, spraying, and transport operations.
- **Tunneling Projects:** Spare parts and auxiliary systems ensure continuous operation of TBMs and support vehicles.
- **Civil Construction:** Enhances durability and efficiency in large-scale infrastructure projects.
- **Exploration & Geological Work:** Auxiliary drilling tools and spares for exploration rigs.

# ACCELERATORS

**Normet Accelerators** are alkali-free, high-performance admixtures designed for sprayed concrete (shotcrete) applications in tunneling, mining, and underground construction. They provide rapid setting, early strength development, and safer handling compared to traditional alkaline accelerators.

## Key Features

- **Alkali-Free Formulation:** Safer for workers and reduces environmental impact.
- **Rapid Setting:** Ensures quick adhesion of sprayed concrete to rock surfaces.
- **Early Strength Development:** Critical for stabilizing underground structures.
- **Compatibility:** Works with modern sprayed concrete equipment and dosing systems.
- **Liquid Form:** Easy to dose and control during spraying.

## Product Range

Normet offers several accelerator variants under the TamShot brand:

- **TamShot 80AF:** Quick-set accelerator for sprayed concrete.
- **TamShot 90AF:** High-performance alkali-free accelerator.
- **TamShot 110AF:** Highest performance accelerator for demanding conditions.
- **TamShot 210AF:** Clear liquid accelerator for sprayed concrete.

## Applications

- **Tunneling Projects:** Stabilizes freshly excavated rock surfaces.
- **Mining Operations:** Provides immediate support in underground headings.
- **Civil Infrastructure:** Used in underground stations, dams, and shafts.
- **Sprayed Concrete Linings:** Ensures fast setting in wet and dry shotcrete processes.

## Benefits

Feature	Value
Safety	Alkali-free, safer for workers
Performance	High early strength, rapid set
Durability	Long-term stability in underground structures
Efficiency	Reduces rebound and waste
Sustainability	Lower environmental impact

# SOIL CONDITIONING POLYMER

**Normet Soil Conditioning Polymers** are specialized additives used in Tunnel Boring Machine (TBM) operations to improve soil properties, reduce friction, and enhance excavation efficiency. They are designed to modify the rheology of excavated material, making it easier to transport, manage, and dispose of.

## Key Features

- **Type:** High-performance polymers for soil conditioning in mechanized tunneling.
- **Function:** Reduce friction between soil and TBM cutting tools.
- **Form:** Supplied as liquid or powder concentrates, easy to dose.
- **Compatibility:** Works with foaming agents and other TBM additives.


## Applications

- **Tunnel Boring Machines (TBMs):** Improves soil flow through screw conveyors and pipelines.
- **Difficult Ground Conditions:** Effective in clay, silt, and mixed soils.
- **Urban Tunneling Projects:** Reduces settlement risks and improves muck management.
- **Mining & Civil Infrastructure:** Enhances excavation efficiency in underground works.

## Benefits

- **Reduced Friction:** Minimizes wear on TBM cutting tools and screw conveyors.
- **Improved Soil Flowability:** Converts sticky soils into pumpable, manageable material.
- **Energy Efficiency:** Lowers torque and power consumption during excavation.
- **Operational Safety:** Stabilizes soil behavior, reducing clogging and blockages.
- **Environmental Compatibility:** Designed to be safe and biodegradable.

**Consumption :** is in the range of 0.2 to 2.0kg/ m3 by volume of soil. Quantity of polymer used will vary according to the ground conditions

 Performance Advantages	
Property	Benefit
Friction Reduction	Less wear on TBM tools
Soil Flowability	Easier muck transport
Energy Savings	Lower torque and power demand
Safety	Reduces clogging and blockages
Eco-Friendly	Biodegradable formulations

# Normet TamCrete

**Normet TamCrete CCA** is a cementitious crystalline waterproofing admixture designed to protect concrete structures by blocking water ingress through capillaries and microcracks. It provides permanent, integral waterproofing and durability for underground, water-retaining, and exposed concrete applications.

## Key Features

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- **Type:** Cementitious crystalline waterproofing admixture.
- **Mechanism:** Active chemicals react with moisture and cement hydrates to form insoluble crystals inside pores and capillaries.
- **Effect:** Permanently seals concrete against water penetration from both positive and negative sides.
- **Form:** Powder additive, mixed directly into concrete or mortar.
- **Compliance:** Meets international waterproofing standards for integral admixtures

## Applications

- **Underground Structures:** Basements, foundations, tunnels, shafts.
- **Water-Retaining Structures:** Reservoirs, swimming pools, water tanks.
- **Infrastructure Projects:** Dams, bridges, sewage treatment plants.
- **Exposed Concrete:** Roof slabs, podium decks, retaining walls.
- **Repair Mortars:** Enhances waterproofing in patch repairs.

## Benefits

- **Permanent Waterproofing:** Integral protection, not surface-applied.
  - **Self-Healing:** Seals hairline cracks up to ~0.4 mm.
  - **Durability:** Resistant to waterborne salts, aggressive chemicals, and reinforcement corrosion.
  - **Versatility:** Effective against water ingress from both sides (positive and negative pressure).
  - **Non-Toxic:** Safe for potable water applications.
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## **Applications**

- For curing all freshly laid concrete
- Smooth or textured concrete
- Indoor or outdoor concrete
- Floor slabs, roadways, run ways, concrete tanks, etc

## **Features and Benefits**

- Achieves water retention of 90%
- Eliminates the need for curing by covering with damp hessian or polyethylene sheeting
- Reduces concrete dusting & shrinkage

## **Usage Guidelines**

- Single coat application
- Complies with AS 3799 – 1998

TamCrete CCA should be applied immediately after the final finishing and as soon as the surface has hardened sufficiently to prevent marks. It's suggested to mix material before use

50kg and 200kg 1 litre per 5 m<sup>2</sup>. For more details Please refer technical data sheet

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## **Applications**

- Rock support in tunnels and mines
- Slope stabilisation
- TBM tunnel linings / backfilling
- Soil stabilization in poor ground conditions

## **Features and Benefits**

- Fast setting times and high early strength
- High final compressive strength development after 28 days and excellent long term durability
- High early strength allows for spraying in thicker layers

## **Usage Guidelines**

TamShot 80AF should be added directly at the nozzle of the spraying equipment at a suggested dosage of 3% to 10% of the cement weight in the concrete.

TamShot 80AF is supplied in IBCs, drums and bulk. Packaging size may vary subject to local regulations and requirements.

## **Consumption**

3% to 10% of the cement weight in the concrete mix. Please refer to technical data sheet

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