



# TechFin® CemPro SA 40 Plus

Polymer modified, Fibre reinforced, Low rebound  
Spray Applied Repair Mortar.

## Description:

**TechFin®CemPro SA40 Plus** is a pre-bagged factory quality controlled ready-to-use product, easy to apply fiber-reinforced polymer modified cementitious spray applied repair mortar with reduced rebound. **TechFin®CemPro SA40 Plus** is specifically designed for the structural repair and reinstatement of concrete for civil and mining applications using either the wet or dry shotcreting systems. It gives high early strength, reduced rebound and allows for maximum application thickness and with resistivity values in the range accepted for cathodic protection overlays.

**TechFin®CemPro SA40 Plus** incorporates a blend of Portland cements, fibers, supplementary cementing materials, advanced polymer additives and is polymer modified to provide a mortar with good handling characteristics, while minimising water demand. This results in a rapid hardening, low density and high strength mortar with enhanced polymer properties. The thixotropic nature of the product enables easy high build spray application for the structural repair of voids and the rendering and re-profiling of both vertical, horizontal and overhead surfaces. The product is supplied as a single component system requiring only the addition of clean water.

## Application Includes:

**TechFin®CemPro SA40 Plus** are particularly suitable for structural and non-structural concrete repair in large volumes or areas by wet spray application, such as:

- Precast elements and concrete structures in tunnels basements and below grade concrete structures.
- Repairs to the underside of bridge decks, bridge piers and beams, tunnels, drains, sea walls, and culverts.
- Tunnel linings and embankment stabilisation.
- Refurbishment of columns, bridges, tunnels and retaining walls.
- Single high build application.
- Repair of fire damaged structures, marine structures, piers, quays, off shore platforms etc.
- Cathodic protection overlays.

## Features & Benefits:

- **Factory mixed & Pre-packaged material-** requiring mixing with clean water on-site to give a mortar which can be applied by wet process techniques with a maximum application thickness in vertical, horizontal and overhead situations hence no onsite variations
- **Easy to use-** Requires only the addition of potable water for mixing or spraying
- **Economical-** Reduces handling and clean-up costs and speeds up repairs

## Application Instructions:

### Surface Preparation

Mechanically remove all damaged concrete back to a sound core. Wherever possible, the full circumference of the steel reinforcement should be exposed to at least 25mm behind the bars and 50mm beyond the point at which corrosion is visible. On cutting back, feather edges must be avoided. The perimeter of the repair area should be stepped to a depth of 10mm by means of saw, disc cutting or preferably using a power chisel. The areas to be repaired must be free from all unsound material, i.e. dust, oil, grease, corrosion by-products and organic growth. Smooth surfaces should be roughened, all loose material and surface laitance removed, and reinforcement cleaned to bright steel using wet grit blasting techniques or equivalent approved methods.

The strength of the concrete sub-base should be a minimum of 20 MPa. The prepared substrate should be thoroughly soaked with clean water until uniformly saturated without any standing water.

### Priming:

**Steel-**The cleaned steel should be coated within 3 hours. Apply one coat of **TechnoCoat® ZR Special-** two component Epoxy Zinc rich Primer, continuously with brush onto the cleaned bar reinforcement ensuring that the whole steel surface area is completely covered. Allow to dry before proceeding with the repair.

**Concrete-** The prepared substrate concrete should be thoroughly soaked (preferably 24 hours before) with clean water until uniformly saturated without any standing water. Highly porous substrates should be primed with **TechnoCrete® AcrylBond-**Acrylic bonding agent.

If the concrete deterioration is due to Chloride attack, it is recommended to use **TechnoCoat®BondEP-**epoxy bonding agent for old to new concrete. It will cure to form a barrier against Chloride ions. However if the cause is Carbonation, dampen the surface with clean water (avoiding free standing water) and apply thin coat of **TechnoCrete®AcrylBond-**Acrylic bonding agent. **TechFin®CemPro SA40 Plus** must be applied before the bonding agent dries while it's still tacky to achieve a better bond between the fresh and cured section.

### Mixing:

The product has to be mixed using a suitable forced action mixer (400-600rpm). The mixing head must be completely immersed in the powder. Add 4/5 of the required quantity of water into the mixer and mix for 2 minutes. Add the remaining quantity of water. The water content can be varied to obtain the desired consistency. Never use more than the maximum water quantity. Mix for an additional 2 minute until a lump-free, homogeneous mixture is obtained. The mixing time depends on the type of mixer. 4 minutes is the minimum. Once the mortar is ready mixed, apply immediately. Do not prepare more material than can be used within the open time of the material. When the mortar starts to set, remix but never add more water. Mix **TechFin®CemPro SA40 Plus** with approximately 2 - 2.55litres of water per 30kg bag. **TechFin®CemPro SA40 Plus** can be shotcreted in depths ranging from 10 - 80mm in one pass.

- **Versatile-** Is easily sprayed using the wet mix shotcrete system or dry mix systems
- **Good working time-** Over one hour at 23°C
- **Controlled shrinkage-** Reduced cracking tendency
- **Low resistivity-** suitable for cathodic protection overlays
- **High bond strength-** exceeds tensile strength of concrete, thus ensuring monolithic performance of the repair.
- **Superior Quality-** incorporates the latest proven cement chemistry, microsilica fibre and styrene acrylic copolymer technology.

### Packaging:

**TechFin®CemPro SA40 Plus** is supplied in 30 Kg HDPE Bag.

### Cleaning:

**TechFin®CemPro SA40 Plus** should be removed from tools, equipment and mixers with clean water immediately after use. Cured material can only be removed by mechanical means.

### Storage & Shelf Life:

12 months from the date of manufacturing when stored in unopened, original sealed and dry condition at a temperature range from +5°C to 35°C.

### Coverage:

One 30kg bag of **TechFin®CemPro SA40 Plus** mixed with 2.55 L water yields approximately 13.5litres (0.0135m<sup>3</sup>). Allowance must be made for rebound and cut off for finishing which will reduce the coverage accordingly.

### Health & Safety Instructions:

As a powder containing Portland cement **TechFin®CemPro SA40 Plus** may cause irritation to skin or eyes. Protect your health while working with this material, always use safety goggles, gloves and safety clothing. When handling hazardous materials or pressurized materials, or during any application that may result in spills, splashes or airborne particles, a full face shield is strongly recommended. Protect yourself and others on the jobsite.

Consider property in proximity of the application area to prevent loss or damage. Protect your jobsite from unauthorized persons. Store all materials and equipment safely and out of reach of children and animals.

Observe container labels, SDS, applicable laws and regulations and all instructions before using the product and equipment. In case one of the components comes in contact with the skin, wash thoroughly with soap and water. Provide adequate ventilation in volume and pattern in working area.

### Mortar application and finishing;

**TechFin®CemPro SA40 Plus** can be applied using wet process spray techniques, resulting in application thicknesses of 80mm, even in soffit situations. If necessary, support with shuttering to allow for compaction if working to reveals, etc. The application thickness achievable is dependent upon the substrate and care must be taken to ensure that an initial thickness of mortar, typically 5-10mm, is applied to the area before building up to larger depths. For repairs which require multi-layer applications, it is important to ensure that previous layers are well keyed and stable, but not fully set, prior to the application of subsequent layers. No inter-layer priming is required. Final profiling of a high quality is easily achieved with a steel float.

### Protective coatings

Subsequent coatings of **TechnoFinish® ACP 200-** Anti carbonation barriers or silane impregnations should be applied as recommend on the individual datasheets.

### Curing

**TechFin®CemPro SA40 Plus** is a cementitious based material, it should be cured in a similar method to concrete. Proper curing is extremely important. Wet curing is recommended for the first 3-5 days, after that time continue curing by the use of a quality curing compound such as **TechnoFinish®ConKure101/102 range**, which is compatible with most subsequent protective coatings or by wet hessian sheets covered with polyethylene sheets.

### Typical Properties at 25°C

Appearance	Grey granular powder	
Pot Life @ 20°C	30 - 40 minutes	
Initial Set @ 20°C	1 hour	
Water/powder ratio, by weight	0.085	
Tensile strength (ASTM C190)	>6 MPa @ 28 days	
Compressive strength (ASTM C109 7cm cube)	15N/mm <sup>2</sup> @ 24	40N/mm <sup>2</sup> @ 28 Day
Density	Dry bulk -1700k	Applied - 2400kg/m
Alkali contents	< 3.0 kg/m <sup>3</sup> (as Na <sub>2</sub> O)	
Mixing water per 30kg bag	2.55 liters	
Recommended application temperature	5 to 40°C	

Note: All technical data stated herein is based on tests carried out under laboratory conditions. All performance data is determined by testing of actual, in-place shotcrete specimens such as cores and beams taken from test panels. Reasonable variations from the data shown can be expected, depending on the care taken in evaluating test specimens, and jobsite conditions such as the quality of substrate preparation, level of expertise of the nozzle man, curing procedures and weather.

# STERLING TECHNO TRADE INDIA PRIVATE LIMITED

## The Specialist Construction Chemical Company®

**Head Office:** 109-111-112, 1st Floor, Vijaya Building, No. 17, Barakhamba Road, Connaught Place, New Delhi- 110001

**Manufacturing Unit:** Plot No-J-3, UPSIDC Site C, Surajpur Industrial Area, Greater Noida, Uttar Pradesh 201306

**WEB:** sterlingtechnotrade.com | **EMAIL:** support@sterlingtechnotrade.com | **TEL:** 01145084212

**Disclaimer:** The product information & application details given by the company & its agents has been provided in good faith & meant to serve only as a general guideline during usage. Users are advised to carry out tests & take trials to ensure on the suitability of products meeting their requirement prior to full scale usage of our products. Since the correct identification of the problems, quality of other materials used and the on-site workmanship are factors beyond our control, there are no expressed or implied guarantee / warranty as to the results obtained. The company does not assume any liability or consequential damage for unsatisfactory results, arising from the use of our products.

Edition: 10/2019/001 Identification No: PD-373  
This datasheet supersedes all previous versions.

**Additional Information:** Techno Builders Solutions® By Sterling Technotrade India Pvt.Ltd -The Specialist Construction Chemicals Company® range of associated products includes high performance concrete Admixtures, Adhesives, Protective Coatings, Concrete Repairs, Industrial Flooring, Grouts & Anchors, Joint Sealants, Surface Treatments, curing compounds, repair mortars, release agents, Grinding Aids & Waterproofing.

\*Separate datasheet are available on these products

## Precautions/Limitations:

- Do not apply the product at temperature less than +5°C and do not add water once the mix has begun to set.
- **TechFin®CemPro SA40 Plus** should not be exposed to running water either during application or prior to final set, Do not mix the bags partially. In warm weather, store the material in cool place.
- Make sure to use cool water to keep the mixed mortar temperature below 30 °C.
- Under certain conditions in combination with nonferrous metals (such as aluminium, copper, zinc).
- Low temperatures delay the early strength development. High temperatures accelerate the strength development and decrease the open time of the material.
- Repaired areas can be coated after 7 days with protective or waterproofing coatings depending on the ambient conditions.