ACTFLEX DENSIFIER.

Technical Data Sheet | **Silane-Treated Colloidal Silica Concrete Densifier and Surface Hardener** | **Issue date: 25 August 2026**

Description

ACTFLEX DENSIFIER is a concrete strengthening treatment built on silane-treated colloidal silica particles engineered to penetrate far deeper than conventional silicate densifiers. Once in the capillary structure the particles react directly with free lime to form pure calcium silicate hydrate gel — the same binder phase that gives concrete its strength — filling the pore network from within and lifting compressive strength, abrasion resistance and impermeability together.

The near-neutral pH of 8.0 to 10.0 is what separates it in practice from traditional densifiers running at pH 11 to 14: there is no extensive neutralisation step, no aggressive residue to wash down and a faster return to work. The treatment markedly reduces dusting and efflorescence, cuts surface permeability against staining and moisture vapour transmission, and leaves a surface that can be polished to any specified gloss level. Suitable for commercial, industrial, institutional and residential concrete.

Advantages

- Silane-treated colloidal silica penetrates deeper than standard densifiers for efficient wetting and profound reaction.
- Reacts directly with free lime to form pure calcium silicate hydrate gel throughout the concrete matrix.
- Near-neutral pH of 8.0–10.0 — no extensive neutralisation step, unlike densifiers at pH 11–14.
- Increases compressive strength and abrasion resistance for a more wheel-resistant surface.
- Drastically reduces surface permeability, combating staining and moisture vapour transmission.
- Significantly reduces dusting and efflorescence for a cleaner working environment.
- Accelerated reaction time allows quicker resumption of project activities.
- Polish compatible at any specified gloss level, adding aesthetic versatility.
- Very low odour and simple spray, mop or roller application.

Uses

- Commercial floors — retail, malls and offices.
- Industrial surfaces — factory floors and warehouses.
- Residential driveways, walkways and patios.
- Institutional buildings — schools, hospitals and public structures.
- Public spaces — parks, plazas and community areas.
- Parking garages, for enhanced abrasion resistance.
- Historical sites, monuments and cultural structures.
- Sports courts and athletic surfaces.
- Transport terminals — airports, train stations and bus stops.
- Hospitality areas — outdoor dining and recreational spaces.

Compliance Status

No accredited certificate is currently held on file for ACTFLEX DENSIFIER. All performance values are published as typical R&D characteristic values. Strength gain, abrasion resistance and permeability reduction are dependent on the concrete being treated and are not warranted to a numeric value.

STANDARD / TEST	STATUS	REFERENCE
Compressive strength gain	Manufacturer claim — dependent on the concrete treated; accredited verification outstanding	To be commissioned
Abrasion resistance improvement	Manufacturer claim — accredited verification outstanding	To be commissioned

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Compliance Status (continued)

STANDARD / TEST	STATUS	REFERENCE
Permeability reduction	Manufacturer claim — accredited verification outstanding	To be commissioned
AS/NZS 4020 — potable water contact	No certificate held — no claim made	Not applicable
VOC certification	Not currently held	Certificate to be commissioned

Technical Data

Certified values are stated against their governing report. All other values are typical R&D characteristic values and are asterisked.

PROPERTY	VALUE	BASIS
Product type	Silane-treated colloidal silica concrete densifier and surface hardener	—
Appearance	Water-clear to slightly cloudy solution	—
Odour	Very low odour	—
Density	1.2–1.4 g/L	*
Solubility in water	Complete	—
pH	8.0–10.0	—
Coverage	6–10 m^2/L, concrete porosity dependent	—
Dwell time	10–15 minutes, kept wet throughout	—
Cure before heavy traffic (at 25°C, 50% RH)	Minimum 24 hours	—
Full densification development	Several days *	*
Service temperature	−10°C to +65°C	—
Application method	Low-pressure sprayer, microfibre mop or roller	—
Packaging	To current pack schedule *	*
Shelf life	12 months, unopened, stored frost-free *	*

Reaction time varies with environmental conditions, concrete composition and surface porosity, all of which affect penetration depth and the rate at which densification develops.

* Typical R&D characteristic values, not for engineering design without written FORSPEC confirmation.

Coverage and Yield

MEASURE	VALUE	BASIS
Coverage per litre	6–10 m^2	Concrete porosity dependent
Consumption	Approx. 0.10–0.17 L/m^2 *	At 6–10 m^2/L
Coverage — 5 L pack	Approx. 30–50 m^2 *	At 6–10 m^2/L

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Coverage and Yield (continued)

MEASURE	VALUE	BASIS
Coverage — 20 L pack	Approx. 120–200 m² *	At 6–10 m²/L
Reapplication during dwell	Additional product as required to keep the surface wet for 10–15 minutes *	Porous concrete consumes more

Coverage varies significantly with concrete porosity. Highly porous or previously untreated concrete consumes substantially more product, particularly during the dwell period where the surface must be kept wet. Establish actual consumption on a trial area before ordering. * Typical R&D characteristic values, not for engineering design without written FORSPEC confirmation.

Limitations

- Not a waterproofing membrane and not a standalone waterproofing solution — ACTFLEX DENSIFIER strengthens the surface and reduces permeability but does not replace a dedicated FORSPEC waterproofing system.
- Not effective on non-porous surfaces — the product requires an open, porous concrete surface to penetrate. It will not work on sealed, coated or highly polished surfaces.
- Limited crack-bridging ability — the product does not fill or repair structural cracks. All crack repair must be completed before application.
- Not recommended for extremely deteriorated concrete — severely damaged or weak concrete may require structural reinforcement first.
- Requires proper curing conditions — performance is affected where the treated surface is exposed to excessive moisture or low temperature during curing.
- May cause slight surface discolouration where application is uneven or where concrete composition varies.
- Incompatible with some coatings — always test compatibility before applying paints, epoxies or other coatings over a treated surface.
- Reaction time varies with environmental conditions, concrete composition and surface porosity.
- Do not allow the product to dry on the surface during the dwell period — reapply to any area drying out too quickly.
- Do not rinse the surface unless a specific procedure requires it.

Surface Preparation

- Clean the concrete surface thoroughly to remove all dirt, dust, grease, oil and other contaminants.
- Confirm the surface is free from coatings, sealers, curing compounds and any material that would prevent penetration — mechanically remove anything present.
- Address all cracks, divots and surface imperfections before applying the densifier, using a FORSPEC concrete repair system such as FORBUILD 100 or FORCRETE 100, or the FORSPEC epoxy crack repair range.
- Confirm the concrete is porous and open enough to accept the treatment — test a small area where the surface may be sealed or burnished.
- Confirm the concrete is not so deteriorated that structural reinforcement is required first.
- Vacuum the area thoroughly immediately before application.

Application and Film Build

- Shake or stir the container before use to ensure the product is uniform.
- Apply evenly across the concrete surface by low-pressure sprayer, microfibre mop or roller, working in manageable sections to ensure even coverage.
- Apply at approximately 6–10 m² per litre, adjusting for the porosity of the concrete.
- Allow the densifier to dwell on the surface for 10–15 minutes to achieve full penetration.
- Keep the surface WET throughout the dwell period — reapply product to any area that dries out too quickly. A surface allowed to dry mid-dwell will not densify uniformly.
- Allow the densifier to dry naturally, ensuring the entire surface has absorbed the product.
- Do not rinse the surface unless a specific procedure requires it.
- Remove excess material by buffing with a microfibre pad where required.
- Polishing (optional): once the densifier has dried, continue the polishing process through the required grit levels to achieve the specified gloss and finish.
- Sealing (optional): after full cure, a compatible concrete sealer may be applied for additional stain resistance and durability — test compatibility first.

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Drying, Curing and Testing Times

All times below are measured at 25°C and 50% RH. Low temperature, high humidity, poor ventilation and substrate porosity extend every stage — verify the primer is fully dry on site before overcoating.

STAGE (AT 25°C, 50% RH)	TIME
Dwell on surface — kept wet	10–15 minutes
Natural drying	Allow to dry without rinsing *
Buffing off excess	Once dry, where required *
Polishing	After the densifier has dried
Cure before heavy traffic or additional treatments	Minimum 24 hours
Full densification development	Several days *
Application of compatible sealers or coatings	After full cure, subject to a compatibility test *

* Typical R&D characteristic values, not for engineering design without written FORSPEC confirmation.

Clean Up

Clean all tools, sprayers and equipment immediately after use with clean water. Where the densifier has begun to harden, mechanical cleaning will be required. Remove excess product from the surface before it dries to avoid residue build-up, using a damp cloth or mop. Where the product has dried on the surface, light abrasion or a diluted acidic cleaner may be required — always test a small area first. Do not allow wash water to enter drains, sewers or waterways.

Container and Waste Disposal

Dispose of waste material, cleaning water and empty containers in accordance with State and local environmental requirements and Section 13 of the Safety Data Sheet. Do not pour excess material into drains, sewers or waterways.

Quality Records

Record the batch numbers of all ACTFLEX DENSIFIER used, substrate preparation method, crack and divot repair undertaken, coverage achieved, dwell time observed and any reapplication during dwell, drying and buffing method, polishing grit sequence where applied, the 24-hour cure period before traffic, compatibility test results for any subsequent coating, and inspection results, as part of the project quality assurance records.

Storage

Store in original, sealed containers in a cool, dry place protected from frost, heat and direct sunlight. Keep containers tightly closed when not in use. Shelf life: 12 months from the date of manufacture when stored as specified.*

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Safety Precautions and First Aid

Refer to the current Safety Data Sheet before use. ACTFLEX DENSIFIER is a mildly alkaline colloidal silica solution at pH 8.0–10.0 and may cause skin and eye irritation; inhalation of spray mist should be avoided. Wear protective gloves, safety goggles and appropriate respiratory protection where the product is spray applied or where ventilation is inadequate. Ensure the work area is well ventilated. Avoid direct skin contact. Do not eat, drink or smoke when handling; wash hands thoroughly after use and before breaks. Do not ingest. Do not seal or stopper drums being decontaminated — carbon dioxide is generated and may pressurise the container. The Chemwatch SDS number for this product is to be confirmed — refer to the Change Register.

First aid — Eyes: rinse immediately with plenty of water for at least 15 minutes and seek medical attention if irritation persists. Skin: wash with soap and water; remove contaminated clothing. Inhaled: move to fresh air and keep comfortable. Swallowed: do NOT induce vomiting; rinse mouth and seek immediate medical attention. POISONS INFORMATION CENTRE: 13 11 26 (Australia-wide, 24 hours). In an emergency, dial 000. KEEP OUT OF REACH OF CHILDREN. Read the Safety Data Sheet (SDS) before use — available at www.forspec.com.au.

Warranty

Standard Product and Performance Warranty: Forspec Protective Coatings Pty Ltd as Trustee for Forspec Protective Coatings (ABN 11 204 033 631) warrants that ACTFLEX DENSIFIER will be free from manufacturing defects and will not fail under normal usage for a period of ten (10) years from the date of purchase, when installed and used strictly in accordance with this Technical Data Sheet and Forspec's written instructions. This warranty covers the supply of the product only; it does not cover installation, application or workmanship. Remedies are limited, at Forspec's discretion, to replacement of the defective product (or defective portion) or a refund of the purchase price. The full terms, conditions and exclusions are set out in the Forspec Standard Product and Performance Warranty, available at www.forspec.com.au — key conditions include application by a suitably qualified and, where required by law, licensed applicator; use within shelf life; and installation as part of a Forspec approved system without non-approved third-party products.

Project and system warranties: extended project-specific warranties are available at the request of the applicator and must be applied for using the Forspec Warranty Request Form prior to commencement of works. Issue is subject to Forspec approval and is conditional on the use of the complete specified FORSPEC system, application in strict accordance with the current TDS by suitably qualified applicators, and completion of the project quality records described above. The warranty period and terms are as stated in the issued warranty certificate.

Claims: notify Forspec in writing within thirty (30) days of discovery of the alleged defect and within the warranty period, by post to 22/872 Canterbury Road, Roselands NSW 2196 or by email to info@forspec.com.au, including proof of purchase, installation details (date, location, installer), a description of the defect with supporting evidence, and your contact details. Forspec may inspect the site, perform testing and collect samples before determining a claim.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

Data Sheet Currency

This Technical Data Sheet (TDS) and the corresponding Safety Data Sheet (SDS) are subject to revision as necessary to ensure compliance with relevant Australian Standards and to incorporate technological advancement. Read the most current versions before use, as application and performance data may be updated. For the latest technical information, contact Forspec Protective Coatings on (02) 8021 3517 or info@forspec.com.au. The information provided is representative and does not serve as a comprehensive specification. For specific projects, consult directly with Forspec Protective Coatings for tailored specifications. This data sheet was issued on 25/08/2026 and is valid for three years from the date of issue unless superseded by a later revision — always confirm the current version at www.forspec.com.au before use.

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Data Sheet Currency (continued)

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