

Product overview

Product description

ALKA 404 is a two-component zinc-rich epoxy primer for prepared steel in coordinated corrosion-protection systems. It is used beneath compatible epoxy build coats and finish coats where the specification calls for a zinc-rich primer. Surface preparation, zinc-rich film continuity and overcoating are key installation controls.

Key advantages

- Zinc-rich primer provides a dedicated corrosion-protection layer.
- Epoxy binder supports adhesion to correctly prepared steel.
- Compatible multilayer builds can combine priming, barrier and finish functions.
- Useful for new work and specifically approved repair areas.

Recommended uses

- Prepared structural steel in protective coating systems.
- Industrial equipment with an approved zinc-rich primer specification.
- Atmospheric infrastructure coating builds.
- Local coating repairs where ALKA approves the preparation and overcoating procedure.

Product and system selection

Use this overview with the technical data, preparation, application and limitations in the following pages. Confirm the complete build with ALKA for the actual substrate and service conditions.

Product & system selection

Two-component, zinc-rich epoxy primer

Priming prepared steel and approved repair areas in a complete corrosion-protection system.

Where this product fits

SYSTEM POSITION — CONCEPT ONLY	SELECTION / CONTROL
Weatherable finish, where specified	Colour/gloss and compatible recoat condition
Barrier / intermediate layer, where specified	Uniform film build and stripe-coat coverage
Primer on prepared metal	Substrate-specific adhesion and corrosion-control role

Specify the complete application

DECISION	SELECTION TO RECORD
Substrate	Exact substrate, condition, moisture and existing coating.
Duty	Traffic, weather, water, chemicals, temperature and cleaning as relevant.
Finish / interface	Required colour, sheen, texture and compatible adjacent layers.
Acceptance	Nominate the inspection, test method and release conditions before work.

Limits of use

No hot-dip galvanising equivalence, ISO corrosivity category or approved zinc-content class is assumed.

Technical data

Typical data and application conditions are listed below. Contact ALKA Technical Support for fields requiring confirmation before specification or use.

PROPERTY	VALUE / CONDITION
Chemistry / appearance	Two-component zinc-rich epoxy; grey, flat
Mix ratio / pot life	Not supplied in public ALKA TDS; approved component instructions required
Density	Source 1.20–1.40 kg/L; confirm for the actual zinc-rich mixed product
Volume solids	55–70% broad source range; grade-specific value required
Zinc content	Dry-film zinc percentage and test basis not supplied
DFT / coverage	Validated min/nominal/max DFT and yield required
Touch dry / recoat	15–30 / 30–60 minutes at 25°C in source; validate formulation
Full cure	5–7 days in source
Application conditions	10–40°C; RH below 85% in source
Pack / thinner	Matched kit sizes and exact approved thinner required

Interpreting the data

Values depend on the stated temperature, humidity, film build, test method and substrate. Typical laboratory figures are not automatic project acceptance criteria. Changes to colour, thinner, aggregate, mix proportion or layer build can change performance.

Units and test basis

Keep mass and volume mixing ratios distinct. State whether solids are by mass or volume and whether thickness is WFT (wet film), DFT (dry film) or total system build. Coverage is theoretical unless an actual site yield is stated.

Substrate & work preparation

PREPARATION STAGE	REQUIRED APPROACH
Exposure and system	Define atmospheric, splash or immersion exposure and the desired finish. Nominate primer, intermediate and topcoat by actual product code; do not infer a corrosion category from generic resin chemistry.
Steel condition	Remove oil and grease, rust, scale and contamination to the approved specification. Assess soluble salts where relevant and record the selected cleanliness and surface profile.
Edges and details	Prepare welds, sharp edges, bolts and difficult geometry. Stripe-coat with the selected compatible material where the specification requires it.
Old coatings / other metals	Identify retained coating type and adhesion. Test compatibility; prepare galvanised steel, aluminium or stainless steel by their separately approved methods.
Environment	Record air/substrate temperature, humidity and dew point. Maintain the approved condensation margin and ventilation throughout application and cure.

Establish the application release point

The applicator and responsible technical reviewer should accept the substrate, repairs, environmental conditions, material identity and system schedule before work starts. Record the moisture method and readings, substrate/air temperatures, humidity and condensation assessment where relevant.

Materials and equipment

Check labels, component pairing, batch numbers, expiry and storage history. Provide suitable mixing, application and inspection equipment, clean containers and calibrated measuring tools. Keep contaminated tools and residues away from fresh material.

Representative trial

Where condition or compatibility is uncertain, trial the complete proposed preparation and coating sequence. Agree the sample location, cure time, appearance and adhesion assessment before extending the work.

Mixing & application

STEP	PRODUCT-SPECIFIC PROCEDURE
01	Abrasive-blast steel to the approved cleanliness and profile and remove dust and soluble contamination. The zinc-rich layer normally needs the specified contact with prepared metal.
02	Redisperse settled zinc in the base, combine the matched components at the validated ratio and maintain homogeneity during application as required.
03	Apply within the approved DFT range. Excessive film build can impair a zinc-rich primer; do not use repeated heavy coats to compensate for poor preparation.
04	Inspect before overcoating and use the approved sealing/mist-coat procedure where necessary to prevent bubbling. Remove zinc salts or contamination using the validated procedure.

EDGE / WELD COVERAGE / CONCEPT SECTION

Prepared metal

Stripe difficult geometry before full coat



Specified profile + continuous build + accepted DFT; no dimensions implied

Concept drawing only; no dimensions, tested build, product compatibility or engineering approval are implied. Follow the approved project details.

Continuity and stopping points

Plan work to natural breaks and maintain a consistent application method. Do not stretch material beyond the approved coverage. Check intermediate surfaces before covering them; remove contamination and rectify defects using an approved repair procedure.

Out-of-window or interrupted work

When the permitted interval is exceeded, or rain, dust, condensation or site damage affects the surface, assess the condition before continuing. Use the validated cleaning, abrasion, re-priming or repair method; an apparently dry surface is not proof of intercoat adhesion.

Quantity, cure & sequencing

Set the accepted consumption and coat count before ordering. Measure actual area, include surface-profile demand, repairs and losses, and round reactive material to complete matched kits.

QUANTITY CONTROL	METHOD
Mass-rated product	Net kg = area (m ²) × kg/m ² per coat × number of coats. Add a documented allowance.
Volume-rated product	Net L = area (m ²) × L/m ² per coat × number of coats.
Film-forming coating	Theoretical m ² /L = 1,000 × volume-solids fraction / DFT (µm). Mass solids cannot replace volume solids.
Kits and losses	Order complete kits. State the basis of any waste allowance; profile, texture and application method affect practical yield.

Project quantities

A numerical ALKA ordering example has not been supplied where rate, density, solids or product identity is unresolved. Approve those inputs before finalising a project estimate.

Source timing / release references

STAGE	TIME / CONDITION
Mix ratio / pot life	Not supplied in public ALKA TDS; approved component instructions required
Touch dry / recoat	15-30 / 30-60 minutes at 25°C in source; validate formulation
Full cure	5-7 days in source

Plan around actual conditions

Temperature, humidity, ventilation, substrate absorption and thickness affect drying and cure. Pot life, open time, touch dry, overcoat time and service release describe different conditions. Record when reactive components are combined; do not extend working life with unapproved water or solvent.

Release to service

Use the technically approved schedule for the actual load or exposure. Chemical immersion, vehicle loading, water testing, stacking and washing may require different release points where those duties are specified. Do not infer readiness from surface appearance alone.

Inspection, safety & handover

HOLD POINT	RECORD / VERIFY
Before work	Accepted substrate and details; material/version; approved colour/build; environmental conditions and trial result.
During application	Component/tint batches; proportions; mixing and placement times; measured area, quantity and thickness; coat count and interruptions.
Before next layer	Surface condition; permitted interval; defects and repairs; primer/receiving-layer compatibility.
Before service	Cure conditions and elapsed time; final inspections; approved test results; repairs completed and rechecked.

Product-specific checks

- Check stripe coverage and DFT with calibrated equipment.
- Inspect runs, dry spray, misses, pinholes and intercoat contamination.
- Use continuity testing only for a specified lining duty and approved method.

Investigate defects before covering them

Softness or delayed drying calls for a review of identity, proportioning, conditions and thickness. Bubbles or pinholes call for a review of moisture, porosity, air entrainment and application rate. Loss of adhesion requires locating the failure plane and correcting preparation or interface problems. Isolate affected areas; do not conceal uncured or unsound material.

Safe handling and cleaning

Read the current SDS for the actual product and every component, thinner and cleaner. Use the specified ventilation, personal protection and site controls. Spray, abrasive preparation and confined-space work need competent planning. Do not assume water-based, low odour, cured appearance or high solids means non-hazardous.

Use only the product-approved cleaner before material cures; keep cleaning solvent separate from coating thinner. Collect residues and protect drains. Cured material normally needs an appropriate mechanical removal method; avoid damaging the sound substrate.

Maintenance and handover

Inspect coating damage, edge corrosion and drainage traps at suitable maintenance intervals. Clean and feather sound boundaries before repair, use the approved primer/finish sequence and restore the specified DFT. Repairs can differ in colour or sheen.

Retain the installed system, batch and application records, inspection results, repair details and agreed cleaning/reopening instructions. The approved TDS and current SDS should be available to the applicator and owner.