Alka 414

Glass Flake Epoxy System

| Introduction

Alka 414 or Glass Flake Epoxy is a high-performance protective coating formulated with epoxy resin and microscopic glass flakes to provide exceptional corrosion and chemical resistance. It is widely used in heavy industrial, marine, offshore, and chemical processing environments where steel and concrete structures are exposed to aggressive conditions such as seawater, chemicals, moisture, and abrasion.

The coating contains thin, plate-like glass flakes that align parallel within the epoxy film during application. These overlapping flakes create a highly impermeable barrier that significantly slows the penetration of water, oxygen, chemicals, and corrosive agents. This layered structure greatly improves the durability and service life of the coating system compared to conventional epoxy coatings.

Glass Flake Epoxy offers excellent adhesion, mechanical strength, abrasion resistance, and resistance to chemical attack. It is commonly used on offshore platforms, storage tanks, pipelines, ship hulls, wastewater treatment plants, bridges, and refinery equipment. The coating can be applied as a high-build system, allowing thick protective films to be achieved in fewer coats.

Most glass flake epoxy coatings are two-pack systems consisting of epoxy resin and a curing agent. Once cured, the coating forms a hard, dense, and highly durable protective layer capable of withstanding harsh industrial environments.

Due to its superior barrier protection and long-term corrosion resistance, Glass Flake Epoxy is considered one of the most reliable coatings for severe service conditions.

| Where it could be used.

Glass Flake Epoxy is mainly selected for environments involving:

- Severe corrosion
- Chemical exposure
- Saltwater immersion
- High humidity
- Abrasion and erosion
- Long-term industrial service conditions

Its excellent barrier protection and durability make it ideal for critical assets requiring extended maintenance intervals and long coating life.

| Compatible Substrates

This coating system may be applied over:

- Zinc rich epoxy primers

A common coating system is:

1. **Primer Coat** – Zinc Rich Epoxy Primer
- Provides cathodic (sacrificial) corrosion protection
- Excellent adhesion to blast-cleaned steel
2. **Intermediate / Build Coat** – MIO Epoxy or High-Build Epoxy
- Adds barrier protection and coating thickness
3. **Top / Protective Coat** – Glass Flake Epoxy
- Provides superior chemical and moisture resistance
- Creates an impermeable barrier against corrosion

In some systems, Glass Flake Epoxy itself may serve as an intermediate or lining coat rather than the final topcoat.

Can It Be Applied Directly?

Some specially formulated Glass Flake Epoxy coatings can be applied directly to properly abrasive-blasted steel, especially in maintenance or lining applications. However, using a zinc-rich epoxy primer generally provides much better long-term corrosion protection.

Surface preparation remains very important. Steel is usually blast-cleaned to Sa 2.5 standard before primer application to ensure maximum adhesion and coating performance.

How to Apply

Surface Preparation

- Remove all grease, oil, dirt, salts, and loose contaminants before coating,
- Abrade glossy or weathered coatings to promote adhesion,
- Ensure substrate is dry and free from surface contamination prior to application,
- Ensure repaired or exposed steel areas are appropriately primed.

Recommended Application Methods

- Conventional spray
- Airless spray
- Brush or roller for small areas and touch-up work
- Temperature: 10°C – 40°C
- Relative Humidity: Below 85%
- Thinner: Toluene / Xylene blend
- Equipment cleaning: Same as thinner

Storage Conditions

Store in a cool, dry, and well-ventilated area away from direct sunlight and sources of ignition. Recommended storage temperature: 5°C – 35°C.

Property	Typical Value
Flash Point	Approx. -3°C
Dangerous Goods Classification	Flammable Liquid
Storage Conditions	Cool, dry, ventilated area

Shelf life

12 months in unopened original containers under recommended storage conditions

Health & Safety

Use only in well-ventilated areas. Wear appropriate PPE during application. Keep away from heat, sparks, and open flames. Refer to SDS before use.

Environmental Information

- Prevent coating materials and solvents from entering waterways or drainage systems.
- Dispose of waste coatings and solvents according to local environmental regulations.
- Clean application equipment using approved handling and disposal procedures.

| Important Notes

- Do not add any water.
- Do not apply Alka 414 on any substrates where significant vapor pressure may occur.
- Always ensure good ventilation when using Alka 414 in a confined space.
- Freshly applied Alka 414 should be protected from damp, condensation and water for at least 24 hours.
- If in doubt about the use or application of this product, or further information please contact our Alka Technical Department.
- Avoid contact with skin and eyes.
- Wear protective gloves and eye protection during work.
- If skin contact occurs, wash skin thoroughly.
- If in eyes, hold eyes open, flood with warm water and seek medical attention without delay.
- Avoid contact with foodstuffs and utensils.

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A full Material Safety Data Sheet is available from Alka on request.

Property	Typical Description / Value for Glass Flake Epoxy
Appearance	Smooth to slightly textured high-build coating
Colours	Custom Industrial Colours
Surface Hardness	Very hard, tough, and abrasion-resistant
Solvent Resistance	Excellent resistance to solvents, chemicals, oils, and fuels
Dry Film Condition	Dense, highly impermeable, durable protective film
Recommended Reducer	Epoxy thinner / glass flake epoxy reducer recommended by manufacturer
Recommended Thinning	Typically, 0–10% depending on application method
Theoretical Coverage	Approximately 3–6 m^2/L at recommended DFT
Initial Surface Dry	2–4 hours at 25°C
Recoat Window	Minimum 6–12 hours; maximum depends on temperature and product specification

Performance Notes:

- Actual spreading rate depends on surface texture, film build, and application losses.
- Increased coating thickness or adverse weather conditions may extend drying times.

All products are subject to Alka terms and conditions. Read the full version on our website prior to any purchase.

| Contact us

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