INNOVATIVE INK TECHNOLOGY

TECHNICAL DATA SHEET

Version 1.0 | April 2026

Black Solvent-Based

Solvent-based dye formulation for construction layout printing

1. PRODUCT IDENTIFICATION

Product Name:	Black Solvent-Based
Product Type:	Solvent-based dye ink
Manufacturer:	Innovative Ink Technology
Date of Issue / Revision:	April 2026 (Version 1.0)
Intended Use:	Ink formulated for construction layout printing via automated and manual application methods on jobsite surfaces, including concrete, plywood (HDO/MDO), steel, and other common construction substrates.
SDS Reference:	Refer to the Safety Data Sheet (SDS) for all hazard, handling, and regulatory information.

2. PRODUCT DESCRIPTION

This ink is a solvent-based, dye solvent formulation designed specifically for construction layout applications using automated printing systems such as the Dusty FieldPrinter. It is engineered to deliver high-visibility, durable markings on a variety of jobsite substrates, including concrete, plywood (HDO/MDO), and steel.

The formulation balances adhesion, drying performance, and mark clarity to perform reliably in typical construction environments including dusty, variable, and high-traffic conditions. It is optimised for consistent output through controlled application systems, ensuring accurate communication of design intent from digital models to the field.

3. PERFORMANCE CHARACTERISTICS

Opacity / Visibility	High contrast black dye; clear visibility on light substrates	**Adhesion to Surfaces**	Contains dye dispersion with solvent carriers and surfactant system which help adhesion, drying behavior, and surface wetting.
Dry Time	Fast drying; typically dries to touch within minutes depending on temperature, airflow, and substrate.	**UV / Light Stability**	Moderate; prolonged UV exposure may cause gradual fading
Abrasion Resistance	Moderate to high; suitable for construction traffic conditions	**Transfer Behaviour**	May transfer to adjacent surfaces (e.g., concrete from formwork) depending on substrate and moisture conditions.
Smear Resistance	Good after initial dry; susceptible before full cure		

4. ERASABILITY / REMOVABILITY

Permanence:	Formulated for permanent marking; not considered erasable under standard cleaning methods.
Removal Methods:	Solvent-based ink is formulated for permanent marking and, based on internal testing, is not considered erasable under standard cleaning methods. Removal may require the use of aggressive chemical agents or mechanical abrasion techniques, such as grinding, which may impact the underlying surface finish. Ink exposed to direct sunlight (UV) may break it down faster but not completely remove the marks.
Ghosting / Residue:	Possible on porous or coated surfaces.
Surface Finish Impact:	May affect sensitive finishes. Test on a small area before full application.

5. LIMITATIONS

Condition	Impact
Wet or high-moisture substrates	Reduced adhesion; performance decreases
Oily, waxed, or coated surfaces	Reduced adhesion; performance decreases
Highly porous or saturated materials	Increased ink bleeding/feathering
Extreme temperatures / high humidity	Adversely affects drying, adhesion, and longevity
Sensitive surface finishes	Potential surface staining or finish damage; test first

6. APPLICATION GUIDELINES

Compatible Equipment: Dusty FieldPrinter; inkjet-based marking systems; compatible handheld devices

Recommended Print Parameters: Typical firing voltage ~10.2 V pulse. Flow rate and speed dependent on system calibration.

Surface Preparation: Clean, dry, and free of dust, oil, and debris.

Application Conditions

Temperature Range

-4°C – 35°C (25°F – 95°F)

Humidity Range

>30% RH recommended

7. ENVIRONMENTAL & JOBSITE CONSIDERATIONS

Performance in Moist Conditions: Slight feathering may occur. Performs better than water-based ink in moist conditions.

Behavior on Treated Surfaces: Compatible with treated surfaces (e.g., those with oil, wax, or coatings); optimal performance on clean, untreated substrates.

Indoor / Outdoor Use: Suitable for both indoor and outdoor use cases.

Durability Under Foot Traffic / Equipment: Designed for high durability under sustained foot traffic, mobile equipment, and material transport.

8. CURING / DRYING INFORMATION

Stage	Time
Dry to Touch	< 5 seconds
Full Cure	< 1 minute

Factors Affecting Dry Time: Surface should be clean and dry.

9. STORAGE CONDITIONS

Storage Temperature: -20°C – 35°C (-4°F – 95°F)

Storage Environment: Sealed containers in a dry, ventilated environment.

Shelf Life: 12 months from manufacturing date.

Avoid: Do not store ink cartridges in enclosed spaces exposed to heat or direct sunlight (e.g., gang boxes, vehicles). Temperatures exceeding safe limits may cause cartridge failure.

10. SHIPPING & HANDLING

Packaging: Single cartridge per unit.

Recommended Shipping Temperature: Greater than 0°C (32°F)

Handling: Handle with care to avoid physical damage to cartridge. Keep away from heat sources and direct sunlight during transit.

Hazard Classification (DOT): UN1210, Printing Ink, Flammable, Class 3, Packing Group II. Refer to SDS Section 14 for full transport information.

11. CONTACT INFORMATION

Manufacturer / Supplier	Dusty Robotics Customer Support
Innovative Ink Technology sales@innovativeink.com	support@dustyrobotics.com For product installation and field support queries.

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