BUILDING TRUST

PRODUCT DATA SHEET

SikaColor®-40 L CB

Carbon black liquid integral coloring admixture for permanently coloring concrete and other cementitious materials

PRODUCT DESCRIPTION

SikaColor®-40 L CB is a concentrated carbon black dispersion designed to permanently color concrete and other cementitious materials in varying shades from light gray to black. It may be poured or pumped directly into concrete mixers and quickly disperse with minimal effort to develop uniform streak-free color.

USES

- Concrete flatwork installations
- Vertical concrete installations
- Interior concrete floors and exterior concrete hardscapes
- Precast, tilt-up, shotcrete, overlays, and cast-in-place applications
- Municipal pavements
- Exposed aggregate
- Stamped concrete

CHARACTERISTICS / ADVANTAGES

- Carbon black liquid-coloring dispersion formulated for use with the SikaColor® Liquid Dispensing System
- High tinting strength
- Cost-effective liquid black dispersion
- Enhanced color vibrancy
- Batch-to-batch color consistency
- Increased plant productivity and reduced labor
- Clean and simple
- Verifiable color batching results
- Faster dispersion into concrete
- Single-source producer support for chemical, mineral, and coloring admixtures
- Contains no materials that initiate, accelerate, or promote the corrosion of steel, coated metal, plastic, or rubber concrete reinforcements
- Will not migrate from standing water, allowing it to safely color concrete fountains, pools, water features, or concrete that will be polished and encounter damp environments

PRODUCT INFORMATION

Chemical Base	Carbon Black
Packaging	2500 lb. (1134 kg) fill in 275 gal. (1041 L) caged IBC tote
Appearance / Color	Varying shades from light gray to black depending on the dosage rate used
Shelf Life	12 months in original unopened container
Storage Conditions	Mix regularly and store in original, unopened containers, in dry storage, between 40-100°F (4.4-37.8°C). Product stratification and mild separation are normal after transit or prolonged standing. If this occurs, mix or recirculate until the mixture is uniform before use. Do not freeze.

Viscosity	Brookfield #4 @ 60 rpm	1,500-2,000 cP at @ 72°F (22.2°C)

TECHNICAL INFORMATION

Concreting Guidance

SikaColor®-40 L CB is designed to have minimal effect on concrete plastic and hardened properties and to interact with other Sika concrete admixtures minimally. As all competitive chemical admixture interactions cannot be predicted, always test final mix designs with actual materials to be used and perform job site test sections as described later in this bulletin. Changes in the water/cementitious materials ratio will always impact concrete performance. To maintain performance, water shall be held from the mix at a rate of 40% of the colorant used.

When competitor admixtures are used, the following guidelines may prove helpful in adjusting concrete mix designs.

Mix Design Modification Guidelines:

Ingredient	Recommendation	Comments
Water	Reduce water content by 40% of the total weight of color admixture used.	If water is not reduced, slump, flow, and water content ratio may be impacted.
Water Reducer (WR)(Mid-Range or High-Range Water Reducer)	Reduce WR dose by 2% of the total weight of color admixture used. Fluid ounce reduction will be about 0.307 x total color dose in lb.	If not adjusted, a higher-than-desired slump may result.
AEA	Reduce AEA doses by 50% to 75% in designs that use AEAs.	If not adjusted, high air content may result.

Concrete Mix Design

Concrete is recommended to have a minimum of 5 sacks of cement per cubic yard of concrete. Exterior concrete requiring freeze-thaw resistance is recommended to have a minimum of 6 sacks of cement per cubic yard of concrete. If cement substitutes such as fly ash or blast furnace slag are utilized, that mix shall be used for all adjacent pours as it will affect color. All cementitious material shall be considered part of the cement content for dosage rate purposes. Concrete must be free of reactive aggregates and poured at the appropriate slump pertaining to the job. The water/cement ratio needs to be consistent throughout the entire project. In hot weather, a retarder or hydration stabilizer shall be considered. When an accelerator is necessary during cold weather, choose a non-chloride accelerator. Do not use calcium chloride. SikaColor®-40 L CB is compatible with most chemical admixtures and fibers. SikaColor®-40 L CB is not recommended for use in air-entrained concrete.

SikaColor®-40 L CB is always consistent. Other variables can affect the appearance of concrete. Therefore, you must discuss your project with your Ready Mix supplier. The same cement, sand, and aggregates must be utilized throughout the project. Any deviations will affect the final color. Contact Sika with any questions concerning admixtures and mix design.

APPLICATION INFORMATION

Recommended Dosage	Color saturation and intensity will determine the amount of liquid required. Typical dosages range between 0.2 to 15.5 lb. of liquid per 94 lb. sack of cement. If supplementary cementitious materials such as fly ash or blast furnace slag are used in the mix, their weight must be added to the weight of the cement when determining the correct dosage.

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

LIMITATIONS

Like all carbon black products for concrete, SikaColor®-40 L CB is subject to fading when exposed to weathering and repeated wetting and drying.

- SikaColor®-40 L CB is not recommended for use in air-entrained concrete.
- SikaColor®-40 L CB shall not be intermixed with standard SikaColor® liquid-coloring admixtures.
- Mineral admixtures may affect color and shall be checked for potential adjustments.
- To avoid discoloration, do not store objects on colored concrete for at least seven days after placement.
- Do not use chloride-based accelerators.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

APPLICATION INSTRUCTIONS

Cast a job site mock-up before the installation for approval of color and finish. Utilize all materials, tools, and techniques from the actual job in the mock-up. Consistent batching, pouring, finishing, curing, sealing, and preparation techniques will ensure the uniformity of architectural concrete. Verify adequate wet and dry slip resistance. Maintenance requirements shall also be discussed.

BATCHING

The maximum loading of SikaColor®-40 L CB shall not exceed 10% by weight of the total cement and cement substitutes in the mix. Higher loadings may reduce the strength of the finished product. A loading below 1% may appear muted and or mottled. The ideal loading is between 2% and 6%.

The mixer drum shall be in good condition with little or no buildup on the fins. One-quarter (1/4) of the mixer volume is the minimum amount of concrete that shall be batched to develop a consistent mix.

- When introducing color at the Ready Mix plant, introduce SikaColor®-40 L CB into the mixer, then batch the concrete.
- When introducing color on the job site into a pre-mixed Ready Mix truck, spin the drum in reverse until the concrete load backs up to the top, and then add SikaColor®-40 L CB directly onto the concrete.

Once SikaColor®-40 L CB is added, ensure that any colorant retained on the fins is thoroughly mixed into the load by slowly reversing the drum so that the concrete contacts and removes the colorant from the fins. Rotate the drum at optimal mixing speed as the mixer manufacturer recommends for a minimum of 100 revolutions.

INSTALLING COLORED CONCRETE FLATWORK

Subgrade

When placing and finishing, the subgrade shall be leveled and compacted to ensure a uniform concrete thickness. The subgrade must be free of frost with no standing water. Before placing concrete in hot conditions, dampen the sub-base uniformly with water without pooling.

Placing and Finishing

Once placing has begun, do not randomly add water to the mixer drum or the surface of the colored concrete. This will create color variations and a strength loss. Water may be added to the drum before initial discharge to attain but not exceed the specified slump. Once discharged, the specified slump must be maintained throughout the installation, particularly for adjacent concrete pours. Never retemper concrete that has started to set. Water-reducing and plasticizing admixtures may be used with SikaColor®-40 L CB. The use of such admixtures may affect the finishing characteristics of the concrete. The use of SikaCem®-190 Concrete Control shall be considered in hot or adverse conditions.

After placing and initial bull floating, no further finishing shall be performed until the bleed water has dissipated, after which final finishing can occur. Texture all exterior surfaces adequately and uniformly for slip resistance. Apply a broom finish or swirl finish for exterior installations using a float. When broom finishing concrete, shake off any water left on the broom after rinsing, as it may cause discoloration. Finishing techniques must be consistent. Differing finishing methods will change the appearance of the color.

Control Joints
The timely and correct placement of control joints minimizes random cracking of a concrete slab. Control joints may be introduced during concrete placement with a groover or after the concrete has reached the initial set by power sawing. Each method shall be evaluated before installation and incorporated into the pre-job mock-up. Refer to American Concrete Institute publications for additional information: Guide to Concrete Floor and Slab Construction (ACI 302.1R-15), Joints in Concrete Construction (ACI 224.3-95).

INSTALLING VERTICAL-COLORED CONCRETE

Unless a specific form liner has been specified, use a clean epoxy-coated or urethane-coated plywood form. Use non-leaking snap-tie cones. Clean and then tape or seal all joints to prevent leakage. Any bleed water leaking along joints may discolor the wall. Choose a release agent that does not discolor concrete. Do not use metal form ties or chairs within 1.5 in. (38.1 mm) from the surface.

Keep the slump consistent from load to load. Do not add water after a portion of the load has been discharged. Never retemper concrete that has started to set. Cast all walls in a continuous pour to their full height between engineered horizontal joints. When possible, use both external and internal vibrators. Vibrate the concrete in lifts up to 2 ft. (61 cm) or less. Do not touch the interior face of the form with the vibrator. Perform vibration long enough to consolidate concrete and dislodge entrapped air. Do not over-vibrate the concrete, as this can cause mix segregation.

Strip all forms when the concrete is the same age. Lightly sandblast all surfaces sufficiently to remove form marks and form release residue.

Note: Excessive sandblasting may expose sand and aggregates, substantially changing the color of the finished wall.

CURING AND SEALING

Never use plastic sheeting or water spray to cure colored concrete; it will mottle and streak the surface. Use liquid, membrane-forming compounds. Use SikaCem®-100 Clear Guard®, SikaCem®-100 PRO 350®, or SikaCem® water-based sealers for exterior applications. Use SikaCem® water-based sealers for interior applications. Consult the most current SikaCem® sealer local Product Data Sheets for complete Application Instructions.

CLEANING OF TOOLS

SikaColor®-40 L CB is water-based and can be cleaned with soap and water.

MAINTENANCE

MAINTENANCE

Periodically inspect cured and sealed surfaces for wear or damage. Consult the most current SikaCem® sealer local Product Data Sheets for complete Maintenance Instructions.

OTHER RESTRICTIONS

See Legal Disclaimer.

LEGAL DISCLAIMER

- **KEEP CONTAINER TIGHTLY CLOSED**
- **KEEP OUT OF REACH OF CHILDREN**
- **NOT FOR INTERNAL CONSUMPTION**
- **FOR INDUSTRIAL USE ONLY**
- **FOR PROFESSIONAL USE ONLY**

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