SPAN CARBONFIBER STRUCTURAL SOLUTIONS

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410 Pike Road • Huntingdon Valley, PA 19006

CARBONBOND
SUPERIOR STRUCTURAL ADHESIVE

CarbonBond 1C Enhanced Hybrid Adhesive – Black - TDS

High-Performance Adhesive for Carbon Fiber, Composites & Building Materials

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Product Overview

CarbonBond 1C Enhanced Hybrid Adhesive is a one-component, professional-grade hybrid adhesive/sealant engineered for **bonding carbon fiber and other composite materials to themselves and to most common building materials — except low-surface-energy (LSE) plastics such as polyethylene, polypropylene, and TPO unless properly treated**.

Formulated with advanced **silyl-terminated polymer (STP) technology**, CarbonBond 1C combines the flexibility and UV stability of silicone with the strength, paintability, and adhesion of polyurethane — without solvents, isocyanates, or odor.

The 100 % solids, non-shrinking formula delivers long-term strength that resists vibration, temperature extremes, and outdoor exposure. It cures in the presence of moisture and adheres even to slightly damp surfaces, making it ideal for both **shop and field installations**.

Primary Applications

- Bonding **CarbonBar** concealed support brackets to quartz, granite, and solid-surface countertops
- Bonding **carbon fiber, fiberglass, and other composites** to metal, wood, stone, or concrete
- Structural reinforcement of countertops, vanities, and architectural overhangs
- Composite-to-composite and composite-to-substrate assemblies in industrial fabrication
- General construction and manufacturing applications requiring flexibility and durability

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Key Features & Benefits

- **Engineered for Carbon Fiber & Composites** – Excellent adhesion to composites, stone, metal, wood, and masonry
- **Bonds to Most Common Building Materials** – Ideal for stone, concrete, wood, metal, and glass (LSE plastics require surface treatment)
- **One-Component Moisture Cure** – Ready-to-use formula; no mixing required
- **100 % Solids, Solvent- and Isocyanate-Free** – No shrinkage or bubbling
- **Flexible & Durable** – Withstands vibration and thermal movement
- **Cures on Damp Surfaces** – Performs in real-world jobsite conditions
- **Excellent UV and Weather Resistance** – Non-yellowing and non-brittle after prolonged exposure
- **Wide Service Temperature Range** – –75 °F to 220 °F (250 °F intermittent)
- **VOC Compliant** – 18 g/L; meets Prop 65, CARB, and SCAQMD requirements
- **Made in USA** – Formulated and filled in Pennsylvania

Typical Physical Properties

(Tested @ 77 °F and 50 % RH under laboratory conditions)

Property	Test Method	Result
Cure System	—	Hybrid, Moisture Cure
Movement Capability	ASTM C-719	± 25 %
Modulus	ASTM D-412	High
Specific Gravity	—	1.66
Extrusion Rate	ASTM C-1183 (Modified)	320 g/min @ 1/8″ orifice @ 50 psi
Temperature Range	—	–75 °F to 220 °F (250 °F intermittent)
Accelerated Weathering (2,000 hrs)	QUV Weatherometer	UV-A – No Change
Skin Over Time	MNA Method	20 min
Tack Free Time	ASTM C-679	40 min
Cure Rate	MNA Method	1/8″ per 24 hrs
Tensile Strength	ASTM D-412	225 psi
Elongation @ Break	ASTM D-412	450 – 500 %
Durometer Hardness	ASTM C-661	Shore A 46
VOC Content	ASTM D-2369	18 g/L
Shelf Life	—	12 months @ 70 °F (50 % RH, unopened)
Color	—	**Black** (standard; custom colors available by special order)

Standards & Certifications

- ASTM C-920 Type S, Grade NS, Class 25, Use NT, A, M, G
- TT-S-00230C
- USDA Non-Food Contact
- AAMA 808.3, 805.2, 803.3 (Type I), 802.3 (Type II)
- VOC Compliant (CARB, SCAQMD)
- Prop 65 Compliant

Application Guidelines

- **Surface Preparation:** Surfaces must be clean and free of oil, dust, and contaminants. Clean with isopropyl alcohol; avoid petroleum solvents.
- **Application Temperature:** 32 °F to 150 °F (optimum 70 °F). Low temperatures slow cure.
- **Tooling Time:** Within 20 minutes of application.
- **Cure Rate:** Approx. 1/8″ per 24 hrs @ 77 °F, 50 % RH. Allow 7 days for full bond development.
- **Cleanup:** Uncured adhesive can be removed with isopropyl alcohol; mechanically remove after cure.
- **Paintability:** Compatible with most latex paints after full cure. Test first.
- **Storage:** Store unopened at 70 °F and 50 % RH. Avoid excess heat or humidity.

Limitations

- **Not recommended for polyethylene, polypropylene, TPO, or other low-surface-energy (LSE) plastics without testing or special surface treatment (flame, corona, or Pyrosil treatment).**
- Not intended for continuous submersion or below-grade waterproofing.
- Allow treated wood or asphalt surfaces to cure six months before bonding.
- Always test adhesion on actual substrates prior to production use.

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