



# CarboShield

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## CS-CarboBond200P CarboShield Adhesive Putty System CarboBond™200P-Part A CarboBond™200P-Part B

CS-CarboBond 200P  
CarboShield Adhesive Putty System

DESCRIPTION

CarboShield CarboBond™ 200P (CS-CarboBond200P) is a high strength, toughened, structural epoxy adhesive for bonding of composite fabrics to substrate. CarboBond™ 200P is a two phase (toughened) epoxy resin produced using a CTBN elastomer and a flexible resin backbone for maximum stress and fatigue resistance. CarboBond™ 200P bonds with an immediate high tack consistency, a long working life and a quick cure time. The hardener provides >2 hour working life with full cures occurring between 6 hours to 7 days, depending on the cure temperature. It is recommended that the minimum application temperature should be at least 3°C above the dew point temperature. Unlike most epoxy adhesives, CarboBond™ 200P adhesive cured at ambient temperatures provides heat resistance well in excess of most engineering limits (HDT of 180°F).

APPLICATIONS

CarboBond™ 200P adhesive is formulated to improve the intimate bond between the epoxy adhesive and composite laminates. This formulation technique results in increased physical properties due to better surface wetting and increased bond strength to fibers. Of equal, if not greater significance, is the retention of physical properties after exposure to heat, cycle fatigue, water, expected adverse environmental reagents such as salt spray, acid rain, etc. The formulation of CarboBond™ 200P adhesive results in minimal degradation of the cured adhesive's physical properties as compared to epoxy systems not containing the proprietary formulation constituents of CarboBond™ 200P adhesive. This technology offers the increased product life and long term durability.

MIXING CONDITION

The material mixes at 2:1 by volume, or 100:44 by weight (resin to hardener). The convenient color-coded components form a uniform color when properly mixed. CarboBond™ 200P adhesive is designed for high production meter/mix ram dispensing and although highly thixotropic, has very fast application rates. With low odor and toxicity, CarboBond™ 200P adhesive is solvent free, and 100% solids. CarboBond™ 200P adhesive is highly recommended for use as a "tack coat" in bonding pre-cured epoxy laminate to itself and dissimilar materials (concrete, steel, and or wood in the areas of seismic retrofit and structural upgrades. Avoid clothing contamination. Wash thoroughly after handling. These products may cause skin and respiratory allergic reactions. Consult Material Safety Data Sheets for complete precautions with this product.

	Part A	Part B	Mix
	Parts	Parts	A:B
<b>By Weight</b>	100	44	
<b>By Volume</b>	100	50	2:1

The information contained herein is offered without charge for use by technically qualified personnel at their discretion and risk. All statements, technical information and recommendations contained herein are based on test and data which we believe to be reliable, but the accuracy or completeness thereof is not guaranteed, and no warranty of any kind is made with respect thereto. Always read, understand, and comply with hazard warnings described in the products' Material Safety Data Sheet(s) before use.

CS-CarboBond 200P  
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TYPICAL PROPERTIES OF  
CarboBond™ 200P

Property <sup>(1)</sup>	Part A (Resin)	Part B (Hardener)
Weight per gallon (lbs)	9.7- 9.8	8.65- 8.75
Appearance	Yellow	Blue
Working Life, 1000 grams @ 77°F (min)		>240
Initial Cure Time (hrs)		6- 8
Shore D Hardness		85
Heat Deflection Temperature		85°C (175°F)
Glass Transition Temperature		75°C (167°F)
pH	7.75	10.65-11.0

(1) Typical values and should not be construed as specifications.

MECHANICAL PROPERTIES OF  
CarboBond™ 200P

Property <sup>(1)</sup>	Value	Method
Tensile Strength (Ksi)	4.5	
Tensile Modulus (Ksi)	344	ASTM D638
Elongation at break (%)	2.15	
Flexural Strength (Ksi)	12.2	
Flexural Modulus (Ksi)	410.7	ASTM D790
Flexural Maximum Displacement (inches)	0.178	
Compressive Strength (Ksi)	11.3	
Compressive Modulus (Ksi)	571	ASTM D695
Compressive Maximum Displacement (inches)	0.196	
Bond Strength to Concrete (psi)	440	ASTM D4541

(1) Typical values and should not be construed as specifications.

ADHESION AND FAILURE  
MODE OF CarboBond™ 200P

Epoxy Laminate to itself	Laminate fails prior to adhesive failure
Polyester Laminate to itself	Laminate fails prior to adhesive failure
Galvanized Steel to itself	Galvanized coating fails prior to adhesive failure
Carbon Steel to Epoxy Laminate	Laminate fails prior to adhesive failure
Carbon Steel to Polyester Laminate	Laminate fails prior to adhesive failure
Epoxy Laminate to Concrete	100% Concrete failure

CUSTOMER  
NOTICE

CarboBond™ 200P System is intended for use in the manufacture of composite articles associated with the infrastructure repair industry. The information provided in this data sheet is intended to help the user achieve positive results. It is the user's responsibility to fully test and qualify the resin system, along with ingredients, methods, applications, or equipment identified herein, by the user's knowledgeable formulator or scientist, and to determine the appropriate use conditions and legal restrictions, prior to use of any information given in this data sheet.

CLEAN UP

Flush with water. Dispose of in accordance with local and federal regulations. Uncured material can be removed with approved solvents. Cured material can only be removed mechanically.

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