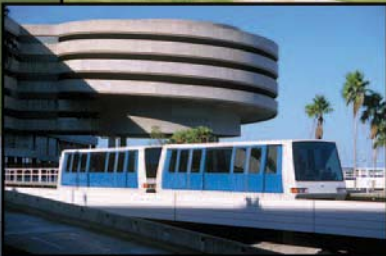


CLICK BOND®

*Bonded Fastener Technology for Enhanced Structural
Design, Repair and Streamlined Manufacturing*

RAIL & TRANSIT



PIONEERING > ADVANCED > SOLUTIONS

clickbond.com

Streamlining The Design And Production Of Modern Transit Systems

Attachment Applications For Passenger Rail



No drilling or welding necessary. Mount systems to difficult structures.

Systems retrofit simplified

Place attachments on challenging materials or within limited confines

Strong and secure system supports resistant to heat, solvents, oil and fatigue

Substantial Cost Savings Realized

- Streamlines manufacturing processes
- Reduces labor charges
- Cuts production time and cost
- Reduces weight and extends product life
- Eliminates welding and riveting operations
- Simplifies retrofit and maintenance

Attachment Applications For Heavy Railcar







Protects and repairs structural holes

MOUNTS

Image	Part No. & Description	Performance Guidelines
	CB3019 Cable Tie Mount Swivel	Exceeds MS3367 50lb (23kg) requirement
	CB4021 Standoff Cable Tie Mount	55lb (25kg) Lateral Shear 60lb (27kg) Lateral/Right Angle 85lb (40kg) Tension
	CB4022 Right Angle Nutplate	100lb (45kg) Right Angle Shear 250lb (115kg) Tension
	CB4023 Standoff Nutplate	70lb (30kg) Shear - 1.0in (25mm) offset 300lb (135kg) Tension
	CS120 Insulation Blanket Mount Pin	Contact Click Bond for specific application performance
	CB9120 Cable Tie Mount	Exceeds MS3367 50lb (23kg) requirement
	CB9151 Transverse Cable Tie Mount	Exceeds MS3367 50lb (23kg) requirement
	CB9173 - CB9174 Insulation Blanket Mount	35lb (15kg) Shear - .75in (19mm) offset 45lb (20kg) Tension
	CB9205 Loop Strap Fastener	600lb (270kg) Shear 600lb (270kg) Tension
	CB9302 Miniature Cable Tie Mount	Exceeds MS3367 50lb (23kg) requirement




STANDOFFS

Image	Part No. & Description	Performance Guidelines
	CN62 0.62" (15.9mm) Dia. Base	Contact Click Bond for specific application performance
	CN125 1.25" (31.8mm) Dia. Base	Contact Click Bond for specific application performance
	CN200 2.00" (50.8mm) Dia. Base	Contact Click Bond for specific application performance
	CB4002 1.25" Composite Base	120lb (35kg) Shear - 1.0in (25mm) offset 400lb (180kg) Tension


STUDS

Image	Part No. & Description	Performance Guidelines
	CS62 0.62" (15.9mm) Dia. Base	400lb (180kg) Shear 250lb (115kg) Tension
	CS125 1.25" (31.8mm) Dia. Base	2000lb (900kg) Shear 1000lb (450kg) Tension
	CB3200 / CS200 2.00" (50.8mm) Dia. Base	4000lb (1800kg) Shear 1700lb (770kg) Tension
	CB9522 Large Dia., Floating	9000lb (4000kg) Shear 6000lb (2700kg) Tension

NUTPLATES

Image	Part No. & Description	Performance Guidelines
	CN609 Open Style - Two Lug	Nutplates meet NASM25027 and ISO5858 strength requirements
	CN623 Two Lug - Extended Float	
	CN611 Open Style - One Lug	
	CN610 Sealed - Two Lug	
	CN614 Open Style - Non Replaceable Nut	

BUSHINGS

Image	Part No. & Description	Performance Guidelines
	CN505 0.62" Dia., Threaded	Contact Click Bond for specific application performance
	CN555 1.25" Dia., Threaded	
	CN305 / CB3005 1.50" Dia., Threaded	

Benefits Of Click Bond's Fastening System:

Eliminates drilling holes into structure for attachments

- Labor savings up to 80%
- Increases systems installation options
- Reduces rework caused by drilling errors

No hot work required

- Diminishes combustion potential
- Avoids preparation down time
- No additional tooling required

Extends product life

- Reduces stress related damage
- Improves structural integrity
- Reduces corrosion potential

Adhesives and Dispensers



Structural adhesives with convenience

Click Bond packages a selection of leading structural adhesives in convenient dual-component cartridges dispensed with hand tools through disposable static mixing tips. This format simplifies adhesive preparation while eliminating component ratio errors associated with hand mixing.

Suitable adhesives for bonding to nearly any substrate material as well as those tailored to high temperature or fuel immersion applications are available.

Click Bond's application engineers can assist with selection of the optimal adhesive product to meet your bonded fastener requirements. Extensive test data demonstrating bond strength to a wide variety of substrates, with environmental conditioning, is available from Click Bond's technical library.

Cost effective solutions

- Resealable cartridge reduces adhesive waste
- Static mixing tips ensure consistent and thorough component blending
- Dispensing tools and slides for various component ratios
- Industry standard acrylic, epoxy, and urethane adhesives from Hysol, Lord, and 3M available
- Convenient 40-50ml cartridge format for production or 3.5gm packets for repair
- Click Bond fasteners available kitted with adhesives and surface preparation materials



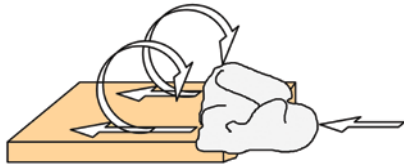
CB9522 Stud Bonded to Metallic Substrate with CB200 Acrylic Adhesive

Adhesives Quick Reference Chart

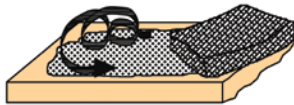
Adhesive	Mix Ratio (Vol.)	Cure Properties (at room temp. 72°F / 22°C)					Typical Strength		Service Temp		Shelf Life	
		Working Time	Handling Strength	75% Strength	90% Strength	Full Strength	Shear ASTM D1002	T Peel ASTM D1876	Min.	Max.	Room Temp. 72°F / 22°C	Refrigerated 32°F to 50°F 0°C to 10°C
CB200	8:1	5 Min.	30 Min.	--	2 Hrs.	24 Hrs.	4400 psi (30.3 MPa)	21 pli (3.7 kN/m)	-67°F (-55°C)	250°F (121°C)	6 Months	1 Year
CB250	1:1	5 Min.	30 Min.	--	2 Hrs.	24 Hrs.	3500 psi (24.1 MPa)	37 pli (6.5 kN/m)	-67°F (-55°C)	250°F (121°C)	2 Months	6 Months
CB359	2:1	60 Min.	24 Hrs.	--	--	5-7 Days	4500 psi (31.0 MPa)	60 pli (10.5 kN/m)	-67°F (-55°C)	200°F (93°C)	6 Months	1 Year
CB420	10:1	4-6 Min.	18 Min.	15-18 Min.	--	24 Hrs.	3050 psi (21.0 MPa)	28 pli (4.9 kN/m)	-40°F (-40°C)	250°F (121°C)	9 Months	9 Months

Click Bond's Unique Bonded Fastening System

Our proprietary disposable fixture eases part location and delivers consistent bondline control. Attention to surface preparation, as recommended in Click Bond process specifications, is critical to achieving optimal strength performance.



1. All surfaces to be bonded shall be initially clean and free of oil, dirt, and other foreign materials. Solvent wipe the substrate material to remove surface contaminants.

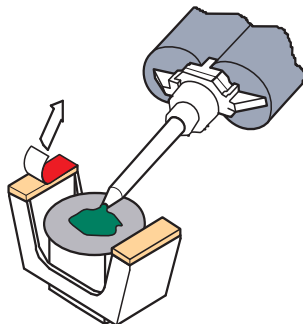


2. Remove the oxide surface layer and any treatments or coatings such as Alodine by abrading to reach bare metal. If primed, thin out, but do not remove the primer.

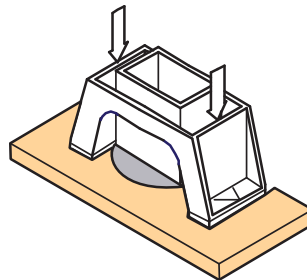
For laminates and composites, abrade with 100-180 grit aluminum oxide paper to remove surface gloss of matrix resin, but do not abrade into the fiberglass or carbon fiber reinforcement.



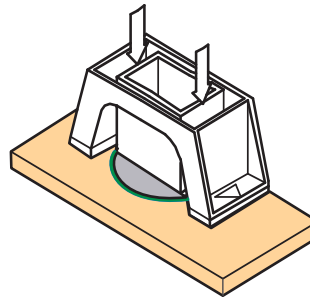
3. Solvent wipe area with clean paper or cheesecloth wipe, using single stroke motion while rolling wipe away from surface. Immediately after solvent wiping, dry wipe with a clean cloth.



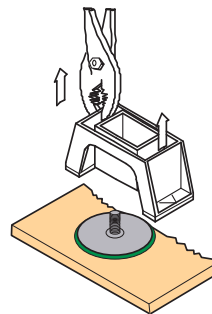
4. Remove and discard peel ply from foam tape pads on fixture. Apply adhesive to center of fastener baseplate.



5. Locate fixture on substrate using a template or by aligning index marks with drawn centerline. Press down on outer box to adhere foam tape to substrate.



6. Apply pressure to inner box to actuate fixture. Plastic springs extrude adhesive bondline and apply positive pressure during adhesive cure.



7. After adhesive has cured, grasp fixture with pliers, remove, and discard.

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Visit clickbond.com for additional product information and access to our technical library, including detailed installation and removal procedures for specific products. Or, contact your Click Bond Representative for assistance.

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