LORD® ADHESIVES FOR SMC & BMC COMPOSITE BONDING

Structural bonding solutions engineered for closed-mold composites

What Are Composites?

Simply put, a composite is two or more materials with a recognizable interface combined to yield a material that performs better than the individual materials. The field is broad and often filled with names and acronyms referring to composition or to the manufacturing method, which can make composites difficult to navigate. This brochure focuses on closed-mold composite solutions, specifically SMC and BMC, and how Parker Lord adhesives enable strong, durable bonds in these materials.

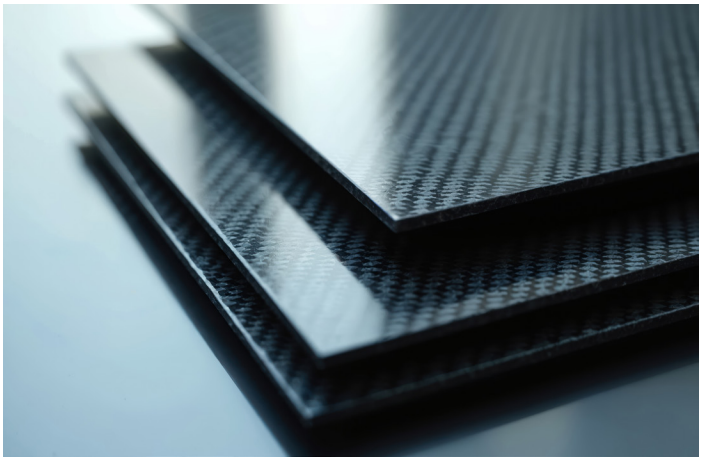
Closed-Mold Composite Solutions

SMC — Sheet Molded Composite

- Uses essentially the same resin as BMC—most often polyester.
- Produced as sheets—most often with woven reinforcement—layered into a mold and cured with heat and pressure.
- Alternating layers of woven reinforcement create greater strength, producing stronger parts.

BMC — Bulk Molded Composite

- Uses essentially the same resin as SMC—most often polyester.
- Loaded into molds quickly; an auger pushes BMC into the cavity, accelerating throughput.
- Enables more complex geometries due to its injection molding process.
- Generally produces weaker parts than SMC and does not produce a Class A paintable surface.



Bonding Challenges in SMC/BMC

- Mold release residues that can inhibit adhesion
- Variable glass content and surface porosity
- Thermal expansion mismatch with metals and inserts
- Need for gap filling and tolerance to bond-line variation
- Fast-cycling production with minimal fixturing
- Resistance to impact, peel, vibration, and environmental exposure

Typical Applications

- Body panels, covers, and enclosures
- Ribs, bosses, and stiffeners for structural reinforcement
- Brackets, mounts, and insert bonding
- Assemblies requiring vibration damping and impact resistance

How We Support Your Selection

- Collaborative engineering to define joint design, bond area, and cure strategy
- Adhesive screening tailored to substrates, environment, and cycle-time targets
- Sample provision and lab validation (lap shear, peel, impact, environmental aging)
- Scale-up guidance for dispensing, fixturing, and quality control

Parker | Lord

Recommended Products

Product	Chemistry	Description	Components	Mix Ratio by Volume	Work Time	Full Cure Time
LORD 7800	Urethane	Bonds composites, SMC, plastics and prepared metals, rapid strength development, excellent sag resistance and gap filling capability, low exotherm, high elongation, free of heavy metals, environmentally recommended	7800-A Resin 7800-C Curative 7800-D Curative	1:1	-- 2-4 min* 5-7 min*	24 hr*
LORD 7542	Urethane	Structural bond to FRP, SMC and other plastics and prepared metals with minimal surface preparation, lower viscosity, suitable for gravity fed MMD, wide range of work times, non-sag paste, non-flammable, environment and chemical resistant, UL 746C certified	7542-A Resin 7542-B Curative 7542-C Curative 7542-D Curative 7542-B Black Curative	1:1	-- 4-7 min* 11-15 min* 20-30 min* 4-7 min*	24 hr*
LORD 7545	Urethane	Structural bond to FRP, SMC and other plastics and prepared metals with minimal surface preparation, non-sag, remains in position on vertical and overhead surfaces, Non-flammable, environmental and chemical resistant	7545-A Resin 7545-B Curative 7545-C Curative 7545-D Curative 7545-E Curative 7545-F Curative 7545-G Curative 7545-B Black Curative 7545-D Black Curative	1:1	-- 3-5 min* 6-8 min* 11-18 min* 22-38 min* 45-65 min* 1.5 min* 3-5 min* 11-18 min*	24 hr*
LORD 606	Acrylic	Bonds composites, cross bonds metals to plastics and composites, fast set, non-sag	606 Adhesive 6GB Accelerator	10:1	6-10 min	24 hr
LORD 661	Acrylic	Bonds composites, cross bonds metals to plastics and composites, non-sag, excellent for long work time, large beads and gap filling applications	661 Adhesive 6GB Accelerator	10:1	11-19 min**	24 hr**
LORD 320/322	Epoxy	Toughened, durable, impact resistant, very high viscosity, excellent environmental resistance	320 Resin 322 Hardener	1:1	20-40 min	24 hr

*Can be accelerated by heat.
** Given a 1-inch diameter bead @ 90°F (32°C).

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