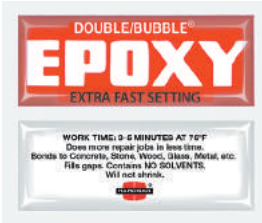


DOUBLE/BUBBLE®

HIGH PERFORMANCE ADHESIVES

EPOXIES

Hardman® DOUBLE/BUBBLE epoxies are strong and versatile. They contain no solvents, will not shrink, and cure at room temperature. Epoxies are effective over a wide range of temperatures for bonding to metal, glass, ceramics, wood, concrete and most hard plastics. They are cost-efficient adhesives and do not induce galvanic corrosion.



Extra Fast Setting

Description:

Extra fast setting for quick repairs. Excellent adhesive for bonding wood, glass, metal, stone, concrete, ceramics and leather.

Typical uses:

Repairing of tools, auto parts, electrical and electronic components, furniture and other applications that require a fast-setting adhesive.

Work time: 3 minutes

Handling strength: 15-30 minutes

Color: Light amber (translucent)

Viscosity: Syrup

Reorder #04001



Clear Impact-Resistant

Description:

Use as an adhesive or coating. Bonds to metal, ceramics, glass, porcelain and wood. Covers and fills scratches. Impact resistant.

Typical uses:

Repair of printed circuit boards (does not electrically corrode copper), optical fibers, lenses and other optical equipment, jewelry, art objects and other applications where a clear bond is desired.

Work time: 2 hour

Handling strength: 8 hours

Color: Clear

Viscosity: Motor oil

Reorder #04004



Non-Sag Extra Fast Setting

Description:

Extra fast setting, non-sag (thixotropic) adhesive for quick repairs. Bonds to wood, glass, metal, stone, ceramics, and leather.

Typical uses:

Ideal for quick, permanent, vertical and overhead repairs. For fixturing, tacking, sealing, gap filling and staking in electrical and industrial applications.

Work time: 3 minutes

Handling strength: 15-30 minutes

Color: White (translucent)

Viscosity: Paste

Reorder #04008



General Purpose

Description:

A long work-life adhesive for bonding wood, metal, ceramics, concrete, rubber and plastics.

Typical uses:

Repair of tools, furniture and sports equipment. An excellent adhesive for use with fiberglass cloth.

Work time: 2 hours

Handling strength: 8 hours

Color: Amber

Viscosity: Heavy syrup

Reorder #04005



Machineable, Fast Setting

Description:

A machineable tooling and body patch that adheres to metal, wood and hard plastics. Can be machined, sanded, drilled and tapped.

Typical uses:

Patching and filling voids and scratches in plastic and metal tooling, patterns and furniture.

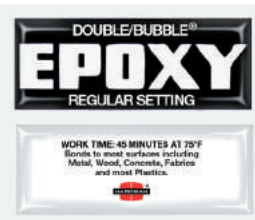
Work time: 25 minutes

Handling strength: 4 hours

Color: Aluminum

Viscosity: Honey

Reorder #04002



Regular Setting

Description:

A low-viscosity adhesive, with a fairly long work-life. Cures to a light color and bonds well to wood, metal, concrete, fabrics and most plastics.

Typical uses:

Excellent for applications requiring a thin glue line. Ideal for fine furniture, hobby use and sports equipment repair.

Work time: 45 minutes

Handling strength: 4 hours

Color: Light (almost colorless)

Viscosity: Maple syrup

Reorder #04006



Wet Surface Patching

Description:

A gap-filling adhesive for use in damp or moist environments. Cures and bonds under water. Bonds to stone, concrete, metal, glass, china, wood and fiberglass.

Typical uses:

Wet crack sealant and plumbing patch. For repair of gutters, battery cases and boats. Excellent adhesive for use with fiberglass tape.

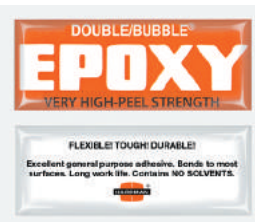
Work time: 25 minutes

Handling strength: 5 hours

Color: Gray

Viscosity: Heavy syrup

Reorder #04003



Very High Peel Strength

Description:

A flexible, tough and durable vibration resistant adhesive. High peel and shear strengths. Bonds to polystyrene, ABS nylon, metal, wood, masonry and rubber.

Typical uses:

For repair of sports equipment, marine, aircraft, auto, truck and tractor parts. Excellent adhesive for grinding wheel hubs, door and window gaskets.

Work time: 3 hours

Handling strength: 18 hours

Color: Gray

Viscosity: Soft paste

Reorder #04007



DOUBLE/BUBBLE®

HIGH PERFORMANCE ADHESIVES

URETHANES

Hardman DOUBLE/BUBBLE urethanes are strong, two-part, rigid and flexible adhesives with excellent resistance to tearing, abrasion, wear and scratching. Quick curing, they are recommended for bonding metal, glass, ceramics, most plastics and flexible materials of all types. They contain no solvents and cure with very low shrinkage.



Flexible

Shore Hardness D-50

Description: A good combination of high peel and lap shear strengths. It is semi-flexible and will bond to rubber, leather, china and many plastics.

Typical uses: For automotive repairs, bonding aftermarket replacement mirrors, etc., repair of shoes, ski boots, and other sports equipment, repair of conveyor belts.

Work time: 3-5 minutes

Handling strength: 1 hour

Color: Beige

Viscosity: Light syrup

Reorder #04022



Semi-Rigid

Shore Hardness D-85

Description: Extra fast setting, semi-rigid. Combines very high lap shear strength with good peel strength.

Typical uses: For repair of urethane RIM parts. Recommended for repair of rubber hoses and flexible electrical connections.

Work time: 3-5 minutes

Handling strength: 1 hour

Color: White

Viscosity: Heavy syrup

Reorder #04023



Very Flexible

Shore Hardness A-85

Description: Fast setting with high peel strength. Tough and flexible. Bonds to most metals, plastics, rubber, glass and leather. Good for low-temperature, sub-zero applications.

Typical uses: Repair of construction and off-road tires, flexible conveyor belts, printing press rollers, rubberized fabrics, shoes, ski boots and other sports equipment. For bonding refrigeration and air-conditioning equipment.

Work time: 8 minutes

Handling strength: 45 minutes

Color: Black

Viscosity: Heavy syrup

Reorder #04024

SILICONE

Hardman Specialties Silicone is a versatile, non-sagging adhesive/sealant that cures at room temperature to a tough, rubbery solid. It has excellent temperature, moisture, vibration and ozone resistance. It performs throughout a wide temperature range of -85°F to 450°F.



Versatile Adhesive/Sealant

Description: Fast-setting and non-sag (thixotropic). Excellent temperature, moisture, vibration and ozone resistance. It will not sag on vertical surfaces. Silicone bonds to most materials including metal, glass, wood, ceramics and many plastics.

Typical uses: For caulking around tubs, replacing loose tiles or repairing rubber and glass. Excellent for forming in-place gaskets. Sealing of joints and lead wire entries, weather-stripping and auto glass sealing.

Work time: 10 minutes

Handling strength: 24 hours

Color: Off-white

Viscosity: Paste

Reorder #04030

ONCE

Elementis Specialties ONCE® hand cleanser quickly and safely cleans tough to remove stains like epoxies, resins and grease. It is specially designed for maintenance use. No water needed!



Waterless Hand Cleaner

Removes:

- Resins • Epoxies • Gasket cement
- Partially dried paint • Pitch • Polyesters
- Silicones • Tars • Urethanes • Carbon black
- Dirt • Grease • Grime • Inks • Putty

Features:

- Dispensable "One-Wash" Portion.
- Soothing lanolin formula... no harsh solvents or abrasives.
- Floating "beadlets" promote scrubbing action — gentle on hands.

Reorder #04040



600 Cortlandt Street, Belleville, New Jersey 07109-3384 • 888-442-7362 • www.royaladhesives.com

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DOUBLE/BUBBLE[®]

EPOXY AND URETHANE ADHESIVES.
FOR FAST, CONVENIENT, ON-THE-SPOT REPAIRS IN ONE-SHOT PACKETS.

SUGGESTED USES

General Repairs

- Offers multiple, highly-reliable, one-time use possibilities for job-site and home repair use.

Sports

Ideal for repairs on:

- Skis/Snowboards & Surfboards
- Hockey Equipment
- Sporting goods that need to withstand rugged use, moisture and extreme temperatures.

Marine

- Perfect for fiberglassing, coating, and gluing new wood construction and repair as well as for gelcoat blister repair and general repair of fiberglass boats.
- Repairs traditional plywood construction, stitch and glue plywood construction, and cold molded construction.
- Provides advanced adhesion, toughness, resiliency, and moisture resistance
- Helps prevent cracking, splitting, or delaminating.
- May be applied underwater.

Striking Tools

- Ideal for the replacement of fiberglass, wood, metal and plastic striking tool heads.
- Maintains a super-strong bond under constant, high-impact use.

Special line of Golf DOUBLE/BUBBLE available

- Effective on graphite, steel and alloy shafts as well as classic wood shafts.
- Suitable for fixing heads of irons, woods and putters, regardless of material.
- Durable enough to withstand consistent use, striking, torque, general wear and temperature extremes.

Tips for Better Bonding

Surface Preparation

- Parts (substrates) to be bonded must be clean; remove oil, grease, paint and residue.
- Roughen surfaces with emery cloth or sand paper.
- Wipe parts with alcohol (if possible) and let dry.

Application Techniques

- Apply a thin, even coat of mixed adhesive to each substrate to be bonded.
- Connect parts to be bonded. Hold secure with clamps, if possible.
- Allow maximum cure time.



Fold



Cut



Squeeze Out



Mix Thoroughly and Apply



DOUBLE/BUBBLE®

SUBSTRATES

METAL

PLASTIC

OTHER

A variety of epoxy and urethane adhesives for fast, convenient and reliable on-the-spot repairs.



	Work Time (Minutes)	Max. Surface Temperature (°F)	Water Resistance	Carbon Steel	Stainless Steel	Aluminum	Copper / Brass	Tin	Zinc	Acetate	Acrylic	Epoxy	Phenolic	Polycarbonate	Polyester	PVC	Polystyrene	Urethane	ABS	Fiberglass	Nylon	Rubber	Stone	Wood	Glass	China	Leather	
EPOXIES																												
Red 04001	3	180	F	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Red 04008 (non-sag)	3	180	F	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Yellow 04002	25	300	E	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Purple 04003	25	225	E	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Green 04004	120	180	E	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Blue 04005	120	200	G	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Black 04006	45	125	G	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Orange 04007	180	250	G	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
URETHANES																												
Green/Beige D-50 04022	5	175	G	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Blue/Beige D-85 04023	5	200	V/G	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Purple/Beige A-85 04024	5	150	F	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
MISC.																												
Silicone Brown 04030	10	450	E	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

KEY

● First Choice
○ Second Choice

Water Resistance Codes

Excellent E
Very Good VG
Good G
Fair F

① Cures on wet surfaces
② Silicone is an adhesive as well as an excellent moisture resistant sealant.

NOTES: When joining different substrates, select the adhesive recommended for both substrates, e.g., for bonding steel to nylon, DOUBLE/BUBBLE orange epoxy package is the product of choice.

Surface Preparation: Surface must be clean and dry before application. Remove all chemicals, dirt, wax and oil.

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