

# 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 include galvanic corrosion.



#### Extra Fast Setting

**Description:**  
Extra fast setting for quick repairs. Excellent adhesive for bonding

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

**Work Time:** 3-5 minutes  
**Handling Strength:** 45-60 minutes  
**Color:** Amber  
**Viscosity:** Honey      **Reorder #** 04009

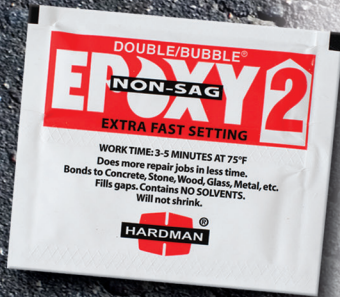


#### Clear Impact-Resistant

**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 hours  
**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 thing 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



2001 W. Washington St, South Bend, IN 46628 574-246-5000 [www.royaladhesives.com](http://www.royaladhesives.com)

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## 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 after-market 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.

#### 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 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®

Hardman 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



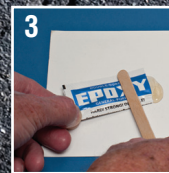
### Mixing Instructions



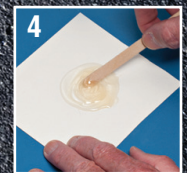
1 Fold glue pak in half.



2 Snip off ends with scissors.



3 Squeeze out glue with wooden stick.



4 Stir combined mixture together with stick.



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# 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	
<b>EPOXIES</b>																												
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	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>URETHANES</b>																												
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	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
<b>MISC.</b>																												
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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