



## BETASEAL™ Advanced-Cure Adhesives



- Choose from BETASEAL™ Xpress30, BETASEAL™ Express+ or U-400HMNC in cartridges or sausage packs
- BETASEAL™ Xpress30 and BETASEAL™ Express+ are available in G-EZKits with primers, cleaners and accessories included
- Gun-n-Go – easy application, no heating required
- Crash proven
- All formulas are easy to use with superior decking and short cut-off string
- DuPont aftermarket products are tested to the harshest conditions from OEM standards, including long-term environments such as weatherometer and outdoor exposure
- Products are manufactured and tested for automotive application in an IATF 16949:2016 certified facility (IATF Certificate #0301635)

Adhesive	MDAT	Minimum Application Temperature
BETASEAL™ Xpress30	30 minutes	0°F (-18°C)
BETASEAL™ Express+	1 hour	0°F (-18°C)
BETASEAL™ U-400HMNC	2 hours	20°F (-7°C)



### Advanced-cure adhesives

Advanced-cure urethane adhesives are one-component materials that contain enhanced chemical crosslinking to speed bonding. BETASEAL™ Advanced-Cure Adhesives utilize DuPont's patented technologies: Reinforced Isotropic Network Adhesive technology (known as RINA) and Reinforced Polyisotropic Micronetworked adhesive (RPM for short).



### BETASEAL™ Xpress30 – 30-minute minimum drive away down to 0°F

- Exclusive RPM adhesive technology
- High modulus, non-conductive (HMNC)
- Excellent pumpability, no heating required and easy-to-tool
- Use with BETAPRIME™ 5504G All-in-One Primer
- Superior decking and short cut-off string
- 8-10 minute working time
- Single component – 600 ml sausage or 310 ml cartridge

**WARNING: BETASEAL™ Xpress30 is not compatible with BETAPRIME™ CLEAR Advanced**



### BETASEAL™ Express+ – fast, easy, trusted

- Exclusive RPM adhesive technology
- High modulus, non-conductive (HMNC)
- Formulated for all standard glass replacements
- Superior decking and short cut-off string
- Gun-n-Go – easy application, no heating required
- Use with BETAPRIME™ CLEAR Advanced primer sticks or BETAPRIME™ 5504G All-in-One Primer
- Excellent for cold-weather applications – one-hour minimum drive away in temperatures as low as 0°F (-18°C)
- 8-10 minute working time



### BETASEAL™ U-400HMNC – the tried and true evolves into the new modern standard

- High modulus for torsional stiffness to quiet and stabilize the vehicle's ride
- Non-conductive to preserve electronic signal reception in OEM antenna-encapsulated windshields and backlites
- Shorter minimum drive-away time – two hours down to 20°F (-7°C)
- Gun-n-Go – easy application, no heating required
- Use with BETAPRIME™ 5504G All-in-One Primer
- Crash proven and value priced OEM adhesive

**WARNING: BETASEAL™ U-400HMNC is not compatible with BETAPRIME™ CLEAR Advanced**



### BETASEAL™ G-EZKit – everything you need for a good day's work

Every BETASEAL™ G-EZKit contains:

- Choice of adhesives – BETASEAL™ Xpress30 or BETASEAL™ Express+ in cartridges or foil packs
- 12 oz can BETACLEAN™ GC-800 Glass and Surface Cleaner
- 12 BETAPRIME™ 5504G SA sticks (teal) with breaker bar for Xpress30 and 14 BETAPRIME™ CLEAR Advanced SA sticks for Express+
- 40 ml (1.4 oz) BETAPRIME™ 5504G All-in-One Primer
- Proof-of-Use stickers and precut nozzles

Maximum shelf life, as stated on product packaging, is achieved when the product is stored between 41°F (5°C) and 77°F (25°C). Temporary storage above 77°F (25°C) is permissible as long as it does not continuously exceed 110°F (43°C).



# Windshield installation instructions

1



## Wear appropriate safety equipment

- Protect yourself
- Wear safety equipment, such as work gloves, nitrile chemical-resistant gloves, safety glasses, work apron or other protection required by your company

2



## Inspect replacement glass

- Spray glass bonding surface and vision area with BETACLEAN™ GC-800 Glass and Surface Cleaner and wipe glass clean with a lint-free paper towel
- Inspect replacement glass for defects, damage or signs of contamination
- Verify primer and adhesives are within use-by dates

3



## Cut out the glass

- Protect the customer's vehicle
- Remove all hardware and reveal moldings
- Cut out the windshield using your preferred method

4



## Prepare the glass

- Many contaminants are difficult to detect and remove
- Spray glass with BETACLEAN™ GC-800 Glass and Surface Cleaner
- Use a BETACLEAN™ Easy-Go Cleaning Sponge or an abrasive pad to abrade the surface
  - This is a mechanical abrasion step, make sure to use some pressure
  - Ensure the entire bonding surface is treated
- While the surface is still wet, wipe surface with a clean paper towel
- Spray glass again with BETACLEAN™ GC-800
  - If the glass cleaner de-wets, repeat steps a through d
  - If the glass cleaner does not de-wet, proceed to glass priming step

4.1



## 4.1a Glass priming instructions using BETAPRIME™ 5504G All-in-One Primer

- Check the expiration date on the container
- If using BETAPRIME™ 5504G All-in-One Primer in bottle, open cap and use the loose cap to pry up the inner seal in a circular motion containing the inner seal in the cap or by pulling gently on the grab ring in the inner seal
  - If using BETAPRIME™ 5504G SA stick, slide breaker bar over date code on the tube with the prongs facing the foam. While holding the applicator with the foam facing up, press down on the breaker bar with the thumb until the inner container breaks releasing the contents. Point the foam head down toward surface to be primed. Allow the primer to saturate the foam head. Gently squeezing the tube will allow the foam head to saturate faster. Apply light pressure to the foam head (too much will damage the foam during application). Slowly draw the applicator around the surface to be primed to get an even glossy primer film. Apply in one even wet coat moving the stick in the same direction. Some applications on or next to rough encapsulations or moldings may damage the foam head. To avoid this, use caution and limit contact with these areas. Additionally, using a dauber to apply primer from a bottle may be advisable.

### For any fritted glass (internal or external):

- Apply BETAPRIME™ 5504G All-in-One Primer with a clean wool dauber or primer stick in one, even, wet coat, moving in the same direction
- Allow the primer to dry for 2 minutes at 20°F (-7°C) and above. From 20°F (-7°C) down to 0°F (-18°C), allow the primer to dry for 6 minutes.
- Surfaces primed with BETAPRIME™ 5504G are good for 24 hours after priming. If not used within 24 hours, apply another coat of BETAPRIME™ 5504G to reactivate.

### For glass without any frit:

- Apply BETAPRIME™ 5504G All-in-One Primer with a clean wool dauber or primer stick in one, even, wet coat, in the same direction
- Allow the primer to dry for 2 minutes at 20°F (-7°C) and above. From 20°F (-7°C) down to 0°F (-18°C), allow the primer to dry for 6 minutes.
- Apply a second coat of BETAPRIME™ 5504G and allow to dry for 2 minutes at 20°F (-7°C) and above. From 20°F (-7°C) down to 0°F (-18°C), allow primer to dry for 6 minutes. When using BETAPRIME™ 5504G SA primer stick on clear glass, two sticks may be required for proper application.

**Warning:** BETASEAL™ Xpress30 is not compatible with BETAPRIME™ CLEAR Advanced

## 4.1b Glass priming instructions using BETAPRIME™ CLEAR Advanced SA (Express+ only)

- Point pad of BETAPRIME™ CLEAR Advanced SA stick 1-Step Glass/Frit Primer toward the surface to be primed and pinch tube between thumb and forefinger to break internal vial, releasing the primer
- Allow the pad to saturate; it is not necessary to squeeze the tube
- Slowly draw the applicator twice around the surface to be primed to get an even glossy primer film (do not wipe off)
- Wait 2 minutes for the primer to dry before installing glass in temperatures down to 0°F (-18°C)
- If glass is not installed within 24 hours of original priming, reprime the glass with BETAPRIME™ CLEAR Advanced primer; do not reprime more than once
- When priming glass with BETAPRIME™ CLEAR Advanced primer in temperatures from 0°F (-17.8°C) to 40°F (4.4°C), the glass should be cleaned at a temperature at or above 40°F (4.4°C) and stored in a manner that will keep it clean and contaminant free

**Note:** On clear glass without any frit, apply two coats of BETAPRIME™ 5504G, allowing each coat to dry

4.2



## Prepare encapsulation or PAAS

- Clean encapsulation or PAAS bead with BETACLEAN™ GC-800 Glass and Surface Cleaner and a clean, lint-free paper towel
- "Wet scrub" the encapsulation with an abrasive pad and BETACLEAN™ GC-800, then clean again with BETACLEAN™ GC-800 and allow to dry completely
  - Note:** Lightly abrade if bonding to PAAS
- Apply BETAPRIME™ 5504G All-in-One Primer to the encapsulation or PAAS surface with dauber
- Apply BETAPRIME™ 5504G to any molding surface that contacts new urethane to promote adhesion
- Allow primer to dry for 2 minutes at 20°F (-7°C) and above and from 20°F (-7°C) down to 0°F (-18°C) allow primer to dry for 6 minutes
- Replace inner seal and cap on bottle immediately

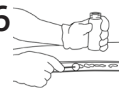
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## Trim back the urethane

- Clean any dirt and debris from around the existing urethane with BETACLEAN™ GC-800 Glass and Surface Cleaner or water and a clean towel
- Trim the urethane, leaving a 1 mm to 2 mm base of original equipment urethane on the pinchweld
- Take care not to damage the vehicle paint or pinchweld
- Any areas of trimmed urethane that require additional cleaning should be carefully wiped with BETACLEAN™ GC-800 or water and a clean towel

6



## For priming any areas of bare metal (large or small, including scratches):

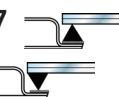
- Check the expiration date on the container
- Open the bottle of BETAPRIME™ 5504G All-in-One Primer carefully and insert a clean, unused dauber; to avoid spilling, never pour liquid on dauber
- Apply first coat of BETAPRIME™ 5504G with a clean wool dauber on any exposed bare metal
- Allow primer to dry for 2 minutes at 20°F (-7°C) and above and from 20°F (-7°C) down to 0°F (-18°C) allow primer to dry for 6 minutes
- Apply second coat of BETAPRIME™ 5504G with a clean wool dauber on any exposed bare metal and allow to dry
- Replace inner seal and cap on bottle immediately

**Warning:** Do not reinsert (double dip) the dauber into the primer bottle if it has touched the body of the vehicle. This could contaminate the remaining primer in the bottle.

## For priming painted bonding surfaces:

- Check the expiration date on the container
- Open the bottle of BETAPRIME™ 5504G All-in-One Primer carefully and insert a clean, unused dauber; to avoid spilling, never pour liquid on dauber
- Apply one coat of BETAPRIME™ 5504G with a clean wool dauber on any exposed bare metal
- Allow primer to dry for 2 minutes at 20°F (-7°C) and above and from 20°F (-7°C) down to 0°F (-18°C) allow primer to dry for 6 minutes
- Replace inner seal and cap on bottle immediately

7



## Apply BETASEAL™ Adhesive (Choose either glass or pinchweld application)

- Hold the applicator in a vertical position 90° to the glass and dispense the adhesive with a continuous motion in a uniform "V" shaped bead
- Apply adhesive to the glass on top of the bond line, matching the location of the original adhesive bead on the glass or apply adhesive to the pinchweld perimeter directly on top of the freshly cut original equipment urethane film
- Either application: Hold the applicator in a vertical position (90°) and dispense the adhesive with a continuous motion in a uniform "V" shaped bead
- Make sure bead is uniform and has no gaps; add material or gently tool joints, if necessary

8



## Install the glass

- Carefully place the glass in the body opening
- Adjust glass to precise alignment
- Lightly press it into position

9



## Clean up

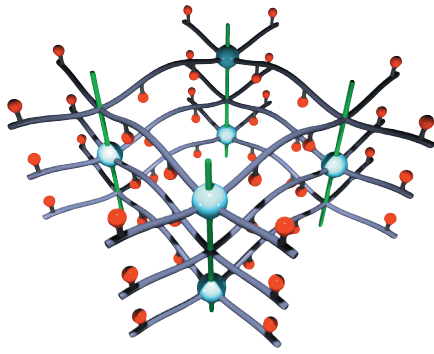
- Clean any excess uncured urethane
- Clean the newly installed glass with BETACLEAN™ GC-800 Glass and Surface Cleaner
- Clean up any remaining debris or broken glass on seats, floor, door handles and/or dash console

10

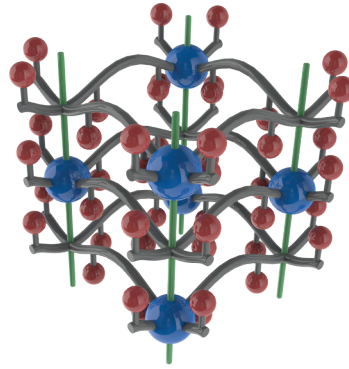


## Recordkeeping

- Attach master lot code sticker to paperwork or manually record primer and adhesive lot numbers
- Record D.O.T. number from glass part on sticker
- Communicate to the customer when MDAT will be reached and when the vehicle can be driven



RINA



RPM

### Advanced-cure urethane adhesives

Advanced-cure urethane adhesives are one-component materials that contain enhanced chemical crosslinking to speed bonding. Advanced-cure adhesives need less moisture to cure and create uniform, reinforced properties throughout the adhesive. The chemical structure is the same in every direction. They absorb and dissipate crash stresses better than conventional-cure adhesives and develop high initial green strength to enable faster drive-away times.

### RINA technology

Traditionally, DuPont has used its patented Reinforced Isotropic Network Adhesive (RINA) technology in adhesives to achieve short MDAT times that customers demand. RINA creates uniform chemical, physical and performance properties throughout the adhesive bead. Its reinforced structure allows it to absorb and dissipate crash stresses more effectively and enable faster drive away than conventional, one-component adhesives.

### RPM technology

Recently, DuPont developed the next step in advanced-cure adhesive technology, Reinforced Polyisotropic Micronetworked adhesive (RPM). RPM is an evolution of RINA technology. RPM offers the same highly crosslinked adhesive that RINA provides but, by shortening the distance between chemical bonds, the adhesive develops strength even faster, allowing for even further MDAT reduction. RPM technology is used in BETASEAL™ Xpress30 and BETASEAL™ Express+.

BETASEAL™ Xpress30, BETASEAL™ Express+ and BETASEAL™ U-400HMNC Adhesives are part of a simple, clean-prime-bond glass replacement solution

### Clean

Bonding surfaces must be clean of dirt, dust, water, oil, silicone and grease prior to priming and adhesive application. Use BETACLEAN™ GC-800 Glass and Surface Cleaner and a BETACLEAN™ Easy-Go Cleaning Sponge to abrade the surface and remove any contamination.

### Prime

Use BETAPRIME™ 5504G All-in-One Primer to prime glass, ceramic frit, paint, any nicks and scratches in the paint, large areas of bare metal and encapsulations (RIM, PVC, and PAAS).

If using BETASEAL™ Express+ G-EZKit, prime the glass with BETASEAL™ CLEAR Advanced SA sticks.



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