# WELD BONDING PROCEDURES

www.useies.com

## INTER-MIX 90

***Hybrid Panel Bonding Adhesive***

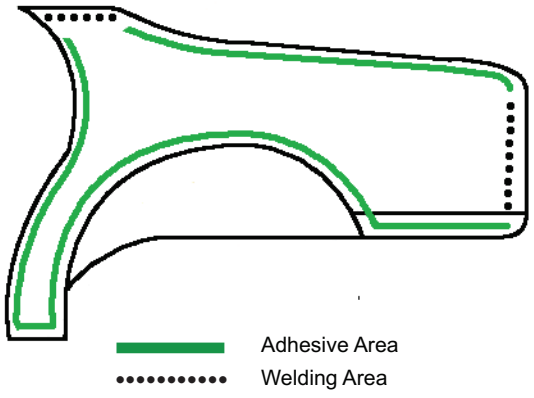
***Products # 8422, #8423***

### *Weld-Bonding*

### Directions

1. Wash all surfaces with soap or IES Super Foam *(#4535)* and rinse with water. Next, use IES Super Clean *(#1700)* or IES Specialty Adhesive Remover *(#1780)* to remove any grease, wax or other contaminates. Allow to dry completely.
2. Remove all paint, primer, corrosion and rust from surfaces to be bonded using a 36 grit abrasive Trim-Kut® Disc *(#7060)*.
3. Straighten all metal and clamp replacement panel for proper alignment and fit.
4. Remove replacement panel from vehicle.
5. Clean all areas to be bonded with IES Super Clean *(#1700)* or IES Specialty Adhesive Remover *(#1780)* to remove any grease, wax or any other contaminates. Other cleaners may leave an oil film and prevent proper bonding.
6. Apply IES Weld-Thru Primer *(#4525, #4526 or #4527)* to the weld areas to ensure there will be no bare metal areas between the weld areas and the adhesive bond area.
7. Place adhesive cartridge in the applicator gun.
8. Remove end plugs from the nose of the cartridge. Tilting the gun back, pump the gun until both parts (A & B) are equally flowing from the cartridge. *(See "Directions For Using IES Dual-Mix Cartridge products" for gun loading instructions)*.
9. Attach the static mixer nozzle to the cartridge and tighten. Prior to applying adhesive, dispense a bead of adhesive approximately 1/2 of the length of the mixer or longer to ensure a proper uniform mix.
10. Apply IES Hybrid Panel Bonding Adhesive *(#8422 or #8423)* to all areas to be bonded (all bare metal surfaces). This means the replacement panel as well as the vehicle. Using a plastic spreader, tool out the adhesive to provide a base coat for an additional adhesive bead, ensuring all bare metal surfaces are coated.
11. Apply a bead of IES Hybrid Panel Bonding Adhesive *(#8422 or #8423)* approximately 1/4" from the inside edge of the replacement panel.
12. Clamp the panel into its proper position. When repositioning, slide the panel. Never lift the panel when repositioning. Apply clamps at 12" intervals or closer if necessary. In areas where clamps can not be applied, use sheet metal screws to hold the panel in place.
13. Tool any adhesive "squeeze out" to seal the outside seam along the bonded edge of the panel.
14. Weld appropriate areas (see diagram for specific panel replacement details). **CAUTION: Adhesive is combustible. Keep any MIG welding to a minimum of two inches from the adhesive. KEEP APPROPRIATE FIRE EXTINGUISHING EQUIPMENT WITHIN REACH AND BE AWARE TO ANY SMOKE OR FLAME THAT MAY BE PRESENT.** Resistant spot welding through uncured adhesive is permissible.
15. Spray the inside of the quarter at the bonded seams with IES INTER-GUARD Rust Proofing Wax "Honey Coat" *(#4557)* or INTER WAX Rustproofing, Clear Coating *(#1695)*.
16. Clamps may be removed in approx. 6 to 8 hours. Panel may need to remain clamped if temperature is below 73°F or if there is any tension on the panel. Cure time is 24 hours. De-clamping time and cure time can be accelerated by applying heat with a heat gun or heat lamps. Be careful not to overheat. Do not exceed 180° F.

| | | |
|---|---|---|
| **Working Time:** | 60-90 Minutes | |
| **De-Clamping Time:** | 70°F - 80°F | 6-8 Hours |
| | 100° F | 3 Hours |
| | 140° F | 60 Min. |
| | 180° F | 30 Min. |
| **Cure Time:** | 24 Hours | |




### Quarter Panels

Cut or prepare the service panel for sectioning or replacement as per vehicle manufacturer's service replacement procedures.
The rear portion where the quarter attaches to the rear body should be welded.
Sectioning at the sail panel should be welded. Follow vehicle manufacturer's procedures for proper welding.
Adhesive may be used in all other areas, lower panel, wheel opening, door jam, trunk drip rail if applicable. Follow IES Metal Panel Bonding Adhesive directions for surface preparation and applying adhesive.



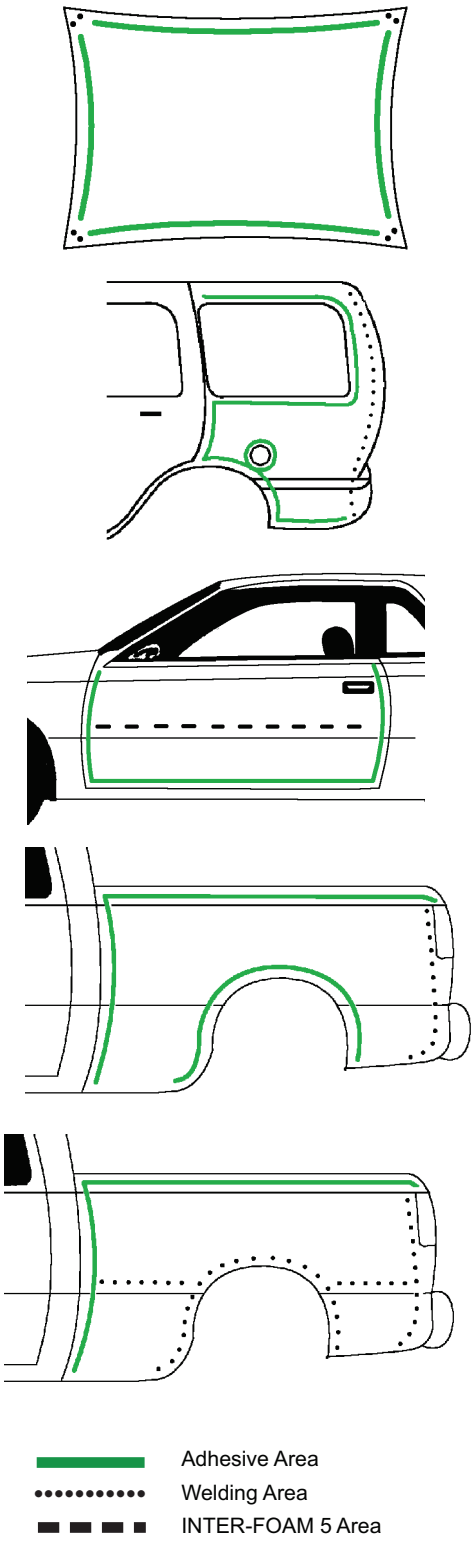


*IN-WELD 12-2011*

## INTER-MIX 90

***Hybrid Panel Bonding Adhesive***

***Products # 8422, #8423***




### Roof Panels

Cut or prepare the service panel for replacement as per vehicle manufacturer's service replacement procedures.
Leave a space of two to four inches at each of the four corners to allow for two plug welds or a two inch lap weld.
Adhesive may be used around entire perimeter of the roof and on the roof bows if applicable.
Follow IES Hybrid Panel Bonding Adhesive directions for surface preparation and applying adhesive.
NOTE: On extended length van roof panels, it is recommended to put one plug weld in the center of each side of the roof panel.

### Utility Vehicles and Van Side Quarters

Cut or prepare the service panel for replacement as per vehicle manufacturer's service replacement procedures.
The rear vertical portion should be welded and any joint/spliced/ section of the sail panel should be welded as per vehicle manufacturer's replacement procedures.
Adhesive may be used on the lowers, the wheel opening, door jam area, along the windows and where the panel meets the roof if applicable.
Follow IES Hybrid Panel Bonding Adhesive directions for surface preparation and applying adhesive.

### Door Skins

Prepare the service panel for replacement and the door frame as per vehicle manufacturer's service replacement procedures.
Adhesive may be used on the entire part. Use IES INTER-FOAM 5 *(#8451)* Reinforcing Foam in-between the intrusion beam and door skin.
Follow IES Hybrid Panel Bonding Adhesive directions for surface preparation and applying adhesive.

### Pickup Truck Box Sides (Outer Panel)

Prepare the service panel for replacement as per vehicle manufacturer's service replacement procedures.
The rear vertical portion should be welded.
Adhesive may be used on the top horizontal surface, where the outer panel hangs over the inner panel and the front edge of the box side.
Follow IES Hybrid Panel Bonding Adhesive directions for surface preparation and applying adhesive.

### Pickup Truck Box Sides (Inner Panel)

Prepare the service panel for replacement as per vehicle manufacturer's service replacement procedures.
The rear vertical portion should be welded as well as the bottom of the panel where it attaches to the box floor, as well as the wheel opening.
Adhesive may be used on the horizontal surface, where the inner panel slides under the outer panel and the front edge of the box side.
Note: If the inner and outer panels are already pre-assembled, the adhesive will only be used at the wheel opening and the front edge of the box side.
Follow IES Hybrid Panel Bonding Adhesive directions for surface preparation and applying adhesive.

**CAUTION: Although IES Hybrid Panel Bonding Adhesives *(#8422, #8423)* are classified as structural adhesives, it SHOULD NOT be used to bond structural components such as rails, core supports, pillars and rocker panels.**






© International Epoxies & Sealers P.O. Box 185 San Antonio, FL 33576 USA Toll Free 800-451-7206



*IN-WELD 12-2011*

# INTER-MIX 90

***Hybrid Panel Bonding Adhesive*** ***Products # 8422, #8423***

## *SMC Body Panel Replacement*

## Directions

1. Remove the damaged panel and all of the old adhesive from the vehicle. This can be accomplished by using a heat gun, putty knife and an air chisel. Be careful not to damage the vehicle structure. Mill and drill pads must be replaced if damaged and at appropriate height and length and width dimensions.
2. Wash all surfaces with soap or IES Super Foam *(#4535)* and rinse with water. Next, use IES Super Clean *(#1700)* or IES Specialty Adhesive Remover *(#1780)* to remove any grease, wax or other contaminates. Allow to dry completely.
3. Remove all paint, primer, corrosion and rust from metal bonding areas using a 36 grit Abrasive Trim-Kut® Disc *(#7060)*.
4. Straighten all metal bonding areas and temporarily clamp the replacement panel for proper alignment and fit.
5. Remove the replacement panel from the vehicle.
6. Clean all areas to be bonded with IES Super Clean *(#1700)* or IES Specialty Adhesive Remover *(#1780)* to remove any grease, wax or any other contaminates. Allow to dry.
7. Using a 36 grit Abrasive Trim-Kut® Disc *(#7060)*, scuff sand the mating edge of the new panel. Wipe clean with a clean, dry cloth.
8. Follow the enclosed *"Directions for using IES Dual-Mix Cartridge products"*.
9. Apply IES Hybrid Panel Bonding Adhesive *(#8422 or #8423)* to all areas to be bonded. This means the replacement panel as well as the vehicle. Using a plastic spreader, tool out the adhesive to provide a base coat for an additional adhesive bead, ensuring all bare metal surfaces are coated.
10. Apply a bead of IES Hybrid Panel Bonding Adhesive *(#8422 or #8423)* approximately 1/4" from the inside edge of the replacement panel.
11. Clamp the panel into its proper position. When repositioning, slide the panel. Never lift the panel when repositioning. Apply clamps at 12" intervals or closer if necessary. In areas where clamps can not be applied, use sheet metal screws to draw the panel down wherever there is not a flush fit.
12. Tool any adhesive "squeeze out" to seal the outside seam along the bonded edge of the panel.
13. Clamps may be removed in 6 to 8 hours. Panel may need to remain clamped if temperature is below 73° F or if there is any tension on the panel. Cure time is 24 hours. De-clamping time and cure time can be accelerated by applying heat with a heat gun or heat lamps. Be careful not to overheat. Do not exceed 180° F.

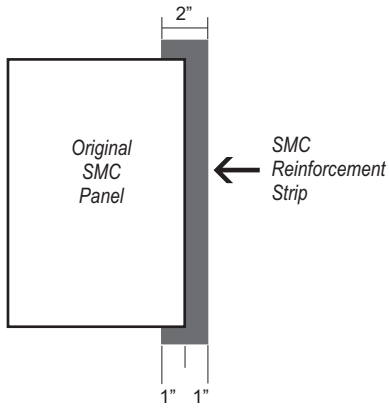
| | | |
|---|---|---|
| **Working Time:** | 60-90 Minutes | |
| **De-Clamping Time:** | 70°F - 80°F | 6-8 Hours |
| | 100° F | 3 Hours |
| | 140° F | 60 Min. |
| | 180° F | 30 Min. |
| **Cure Time:** | 24 Hours | |

**CAUTION: Although IES Hybrid Panel Bonding Adhesives *(#8422, #8423)* are classified as structural adhesives, it SHOULD NOT be used to bond structural components such as rails, core supports, pillars and rocker panels.**

## *Sectioning Panels*

Sometimes it is necessary to section body panels, especially when repairing portions of large body panels.

1. Cut the damaged panel at the point where the sectioning will occur.
2. Remove the damaged panel using a heat gun. Apply heat (about 400°F) to the bonding seams of the damaged panel and pry apart.
3. Wash all surfaces with soap or IES Super Foam *(#4535)* and rinse with water. Next, use IES Super Clean *(#1700)* or IES Specialty Adhesive Remover *(#1780)* to remove any grease, wax or other contaminates. Allow to dry completely.
4. Make sure all mill and drill pads are in place. Straighten all metal bonding areas and remove all paint, primer, corrosion and rust from metal bonding areas using a 36 grit Trim-Kut® Disc *(#7060)*.
5. Create a reinforcement strip by cutting a 2" wide strip the length of the seam from the old panel. This reinforcement strip will be bonded to the backside of the original body panel. (1" will underlap original panel and 1" will stick out to attach to the new body panel). Ensure that the reinforcement strip is the same contour as the front panels that it is going to be bonded to.




*(drawing not to scale)*

(continued)

## Sectioning Panels *(continued)*

6. To bond the reinforcement strip to the backside of the original panel, scuff sand the backside with 36 grit sand paper in the area to be bonded. Sand the complete bond side of the reinforcement strip.
7. Wipe clean with a clean, dry cloth.
8. Pre-fit reinforcement strip to ensure proper fit. Decide whether you will use clamps or screws to hold it in place.
9. Using a 36 grit Abrasive Trim-Kut® Disc *(#7060)*, scuff sand the mating edge of the new panel. Wipe clean with a clean, dry cloth.
10. Place adhesive cartridge in the applicator gun. Remove the end plugs from the cartridge. Tilting the gun back, pump the gun until both parts (A & B) are equally flowing from the cartridge. Install the mixing tip. *(See separate "Directions for using IES Dual-Mix Cartridge products" for gun loading instructions)*.
11. Apply a 1/4" - 5/16" bead of IES Hybrid Panel Bonding Adhesive *(#8422 or #8423)* to the bond area of the reinforcement strip that will mate with the original body panel. Clamp reinforcement strip into position and allow to cure. Clamp so the adhesive will spread over the bond area. Do not over tighten.
12. After the adhesive has cured, remove clamps and grind away all excess adhesive.
13. Follow the directions titled *"SMC Body Panel Replacement"* provided in the first section of these directions. Be sure to leave a 1/4" gap in-between the two panels. After you have installed the new sectioned panel, proceed to the following section titled *"Applying A Bridge Patch To A Sectioned Joint"*.

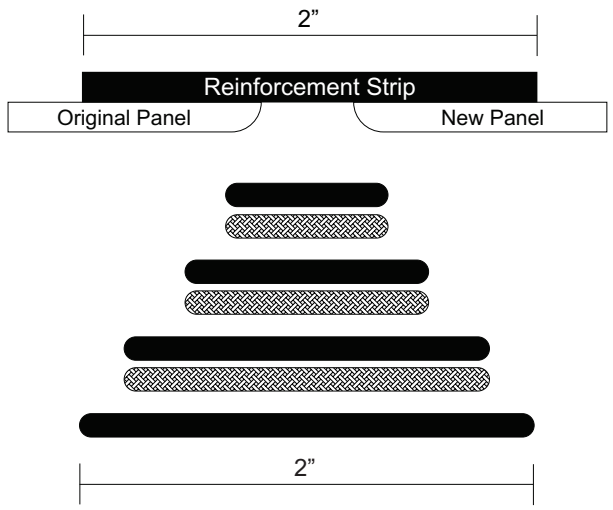
    NOTE: For smaller sections, you may want to use IES HI-STRESS Epoxy *(#8416)* which provides a faster set up time.

## Applying "Bridge Patch" To A Sectioned Joint

When completing a sectioned joint on some composites, thermal expansion must be considered as well to prevent "bull's eyes" or "read-throughs" in the final repair. To help prevent this, it is recommended to use a "Bridge-Patch".

1. In the joint area where the two body panels come together, grind down a 2" valley using a 36 grit Trim-Kut® Disc *(#7060)*. Grind from the center of the joint down to the reinforcement strip, then a gradual taper outward, creating a valley about 2" wide.
2. Build a "Bridge Patch" using fiberglass body repair tape and IES Hybrid Panel Bonding Adhesive. See illustration to the right.
3. Begin by cutting three pieces of fiberglass tape. Start with a small width, then gradually increasing in size to just slightly smaller than the perimeter of the sanded area.
4. Wipe with a clean, dry cloth to ensure a clean surface.
5. Using a 36 grit Abrasive Trim-Kut® Disc *(#7060)*, scuff sand the mating edge of the new panel. Wipe clean with a clean, dry cloth.
6. Place adhesive cartridge in the applicator gun. Remove the end plugs from the cartridge. Tilting the gun back, pump the gun until both parts (A & B) are equally flowing from the cartridge. Install the mixing tip. *(See separate "Directions for using IES Dual-Mix Cartridge products" for gun loading instructions)*.
7. Apply adhesive to the joint area. Using a spreader, smooth out to a thickness of 1/16". Place the narrowest piece of fiberglass tape onto the joint. Apply another coat of adhesive and smooth out with a spreader. Continue layering fiberglass tape and adhesive until the valley has been filled.
8. Apply a flexible plastic film over the completed "bridge-patch". A roller may be used to work the adhesive into the repair. Roll from the center, out toward the sides.
9. Allow adhesive to set or heat set using a heat gun or heat lamp for 30 minutes at 180°F. Be careful not to over heat as damage may occur to the panel and the adhesive.
10. After adhesive is set and cooled, remove the plastic film and sand off all excessive adhesive. Sand the repair with 80 grit sandpaper. Make sure to cut in slightly below the SMC surface.
11. Apply a skim coat of IES HI-STRESS Epoxy *(#8001 or #8416)* and finish.

(The reinforcement strip needs to be the same contour as the front panels it will be bonded to.)









**© International Epoxies & Sealers P.O. Box 185 San Antonio, FL 33576 USA Toll Free 800-451-7206**



*IN-SMC 12-2011*