CRL UV GLASS BONDING

Uso de adhesivos UV

La unión del vidrio con adhesivos de curado UV se puede lograr fácilmente tomándose su tiempo y siguiendo cuidadosamente estos pasos básicos:

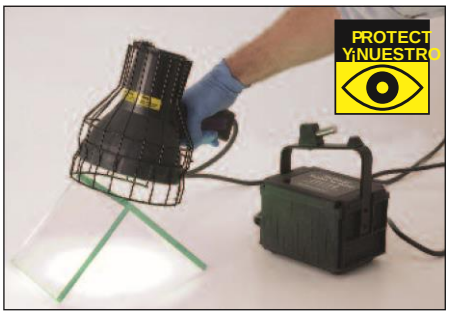
1. Selección de materiales

La elección del vidrio y la selección del adhesivo son fundamentales, ya que ambos predeterminan los resultados. Una mezcla diferente de vidrio y adhesivos dará como resultado diferentes resistencias de unión. El vidrio flotado transparente, el vidrio espejado, templado y el vidrio liso y plano con cable se pueden unir sin problemas. El vidrio estructurado como el vidrio estampado, arenado o cableado puede causar resistencias de unión más bajas o no se puede unir en absoluto. La permeabilidad a la luz UVA depende del grosor del vidrio y la intensidad del color del vidrio. El vidrio con alta absorción UV, como el vidrio laminado o el vidrio de color, no se puede unir con adhesivos UV comunes y requiere un adhesivo altamente sensible como nuestro UV678 (página GB20). La unión de metal al vidrio requiere un adhesivo adecuado como nuestro UV682 (página GB20).

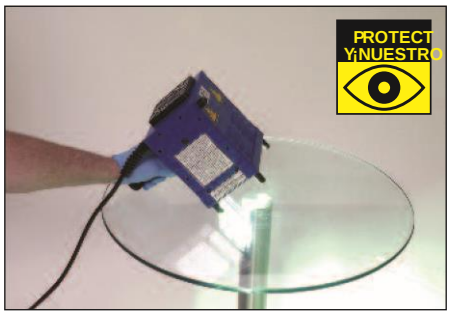
2. Preparación de la superficie

Todas las superficies de unión deben estar absolutamente limpias, libres de grasa y secas. Cuando se une a los rayos UV, use limpiadores apropiados como CRL7528 (página GB06) que estén libres de surfactantes (jabón) u otros contaminantes. Los limpiadores comunes de vidrio y de uso general no son adecuados en la mayoría de los casos. Para obtener una unión estable y duradera, el adhesivo y todas las partes a unir deben estar a temperatura ambiente. Calentar todas las superficies a 155ºF (68 °C) antes de la unión eliminará cualquier condensación que pueda afectar negativamente la resistencia de la unión.

CRL7528



UV665 Unión de vidrio a



UV682 Unión de vidrio a

3. Selección de adhesivos

El adhesivo UV correcto depende de los materiales de unión, la aplicación del producto terminado y la carga de tensión resultante.

- Para las uniones de vidrio a vidrio, se recomienda la construcción "cerrada" autoportante para obtener la mayor estabilidad posible. Los adhesivos como nuestros UV678 y UV690 (páginas GB20-GB21) son los más adecuados para este tipo de construcción "cerrada". Cuando la construcción "cerrada" autosoportada no sea posible, use adhesivos UV740, UV665, UV770, UV760 o UV682 para la construcción "abierta" no autoportante (páginas GB19-GB21).

- Para las uniones de vidrio a metal, utilice nuestro adhesivo UV682 (página GB20).

Construcción "cerrada" autosostenida

Construcción "abierta" no autosoportada

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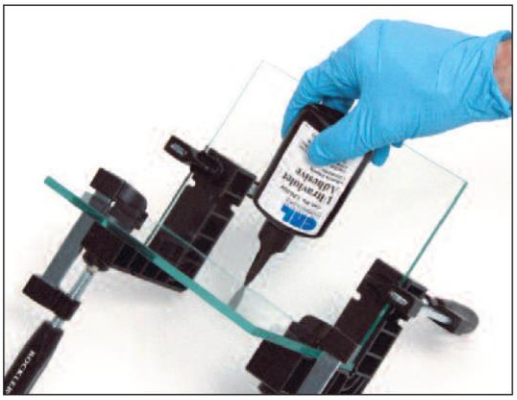
4. Applying UV Adhesive

Before applying the adhesive it is recommended to check if the bonding parts will fit in their intended position. This is best done by first assembling the project without bonding by using the CRL Fixation Devices shown on pages GB10 to GB17 to securely hold the surfaces in position.

- The adhesive should be applied within five minutes after the parts have been heated. Should a longer time period have passed, the parts should be re-heated.
- Bonding surfaces should preferably be in a horizontal position when the adhesive is applied.
- Precise and economic application of the adhesive can be achieved by using CRL Dispensing Systems and Application Needles shown on page GB24.



An important fact to always remember is that the smoother the bonding surface and the thinner the layer of adhesive, the stronger and more resilient the bond will be. A layer of too much adhesive reduces the strength of the bond, and increases the workload of removing excess adhesive.

Applying the adhesive BEFORE joining the parts:

With medium/high viscosity adhesives, such as UV770 (page GB19), the adhesive should be applied in a wiggly pattern before the parts are joined.

- When bonding horizontally, the bonding parts should be evenly and carefully joined to avoid trapping any air bubbles.
- The weight of the bonding parts should be sufficient to evenly spread the adhesive over the entire bonding surface.
- When bonding metal-to-glass, apply a liberal amount of the adhesive to the center of the part and gently squeeze or clamp to eliminate any air bubbles.
- Air bubbles appearing in adhesive may be removed by carefully moving parts in a circular motion until bubble moves to the edge and is released.

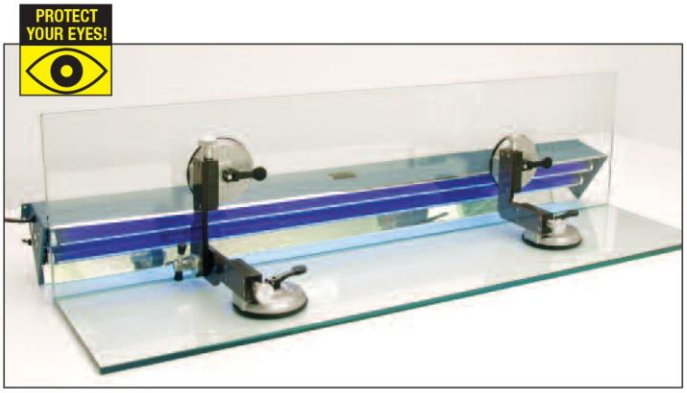
Applying the adhesive AFTER joining the parts:

With low viscosity adhesive, such as UV740 (page GB19), the adhesive seeps into the bondline gap by itself. Therefore, the bonding parts can be joined in their final position before the adhesive is applied.

- Do not work on several parts at the same time, instead build the project one step at a time.
- To achieve an optimum distribution of adhesive over the entire bonding surface, the parts should be slightly lifted and lowered to increase coverage before curing. Care should be excercised as to not create air bubbles in adhesive.

5. Structural Stability

It is absolutely critical that the bonded surfaces are kept stable and in a fixed position. This is made possible by using the CRL Fixation Devices shown on pages GB10 to GB17.



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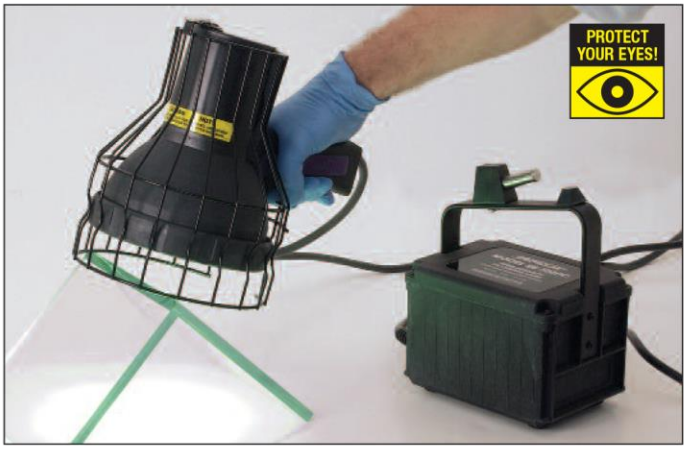
6. Curing UV Adhesive

CRL UV Lamps are equipped with UV filters that reduce potential damage to eyes and skin. For your own safety, however, you should use additional suitable protection, such as UVS30 Safety Glasses with UV filtering (page GB32), and 700512 Disposable Gloves (page GB32).

- Use a suitable size CRL UV Lamp (page GB28). The Lamp should not be shorter than the bonding edge to avoid tension build-up due to uneven curing.
- Position Lamp as close as possible to the bonding surface during curing.
- Never move parts during the curing process, and do not expose the project to vibrations.



The Exposure to UV Light is Done in Two Steps: Pre-Cure and Finish-Cure

- **Pre-Cure** the bond by exposing to UV light from at least 10 seconds to approximately two minutes, depending on the type of Curing Lamp used and glass thickness. By pre-curing, a working strength (approximately 30% of the final strength) is achieved. This allows excess adhesive outside the bonding surface to be removed easily.

- Remove any Fixation Devices and clean the object of any adhesive residue.
  CRL Loctite Chisel® Paint Stripper: 79040 (page GB09)
  CRL Glass Scraper: RS65 (page GB09)
  CRL Extra Fine Steel Wool: Z100 (page GB09)

- **Finish-Cure** the bond by exposing to UV light for at least 60 seconds to approximately five minutes, depending on the type of UV Curing Lamp used and glass thickness.

  NOTE: Exposing the bond for a longer time has no negative or positive effects on the bond.

- After final curing (approximately 24 hours), the bond is fully functional, and can be put under load.

7. Bond Test

- Test strength of bond by subjecting it to stresses exceeding those it would normally incur by impacts, tilting, sudden movements, etc. **IMPORTANT NOTE:** Protect yourself from future liability claims by advising your customers in writing that no construction performed solely with adhesives is 100 percent fail safe. Conditions outside of your control, such as excessive loads, whether accidently or intentionally placed on the completed project, can cause a bond to fail, and that you are by no means responsible in those situations.

- For technical assistance, contact CRL Technical Sales at (800) 421-6144 in the U.S., (877) 421-6144 from Canada, or (323) 588-1281 International. Ask for Ext. 7720. You can also e-mail us through our web site at **crlaurence.com**. From the home page click on Contact Us, and then click on Technical Sales for Glass and Glazing Products.