The dual curing mechanism developed by DELO® combines two advantages: curing on demand and reliable curing in shadowed areas. This is especially important in areas where structures on the cover glass very often block light in parts of the bonding area. In these areas, standard light- or heat-curing adhesives would remain uncured. The consequence: The adhesive remains liquid and may leak from the gap later.

Two-component silicones would cure in these shadowed areas but they offer only limited processing times. In addition, accelerating the curing process requires additional heating steps.

DELO®’s dual curing technology combines two advantages: curing on demand and reliable curing in shadowed areas. This is especially important in areas where structures on the cover glass very often block light in parts of the bonding area. In these areas, standard light- or heat-curing adhesives would remain uncured. The consequence: The adhesive remains liquid and may leak from the gap later. Two-component silicones would cure in these shadowed areas but they offer only limited processing times. In addition, accelerating the curing process requires additional heating steps.

DELO®’s dual curing technology combines two advantages: curing on demand and reliable curing in shadowed areas. This is especially important in areas where structures on the cover glass very often block light in parts of the bonding area. In these areas, standard light- or heat-curing adhesives would remain uncured. The consequence: The adhesive remains liquid and may leak from the gap later. Two-component silicones would cure in these shadowed areas but they offer only limited processing times. In addition, accelerating the curing process requires additional heating steps.
Display bonding

DELO’s newly developed optically clear adhesives combine excellent adhesion and durability with high transparency. They enable fast and flexible production processes. The index-matched adhesive improves the readability of the display in bright surroundings, for example under direct sunlight, and reduces fogging.

Product properties
- Optical clarity and high transparency
- No yellowing under sunlight
- Excellent bonding flexibility
- Dual curing capability for light and humidity
- No disturbing internal reflections
- UV-cure resistant
- Dual curing capability for light and humidity
- Low shrinkage

Customer’s benefits
- Excellent adhesion and durability
- High transparency
- No disturbing internal reflections
- Reduced fogging
- Excellent shock and vibration resistance
- Low shrinkage
- No contamination, condensation or fogging
- Reliable and complete curing even in shadowed areas (with dual-curing products)
- No disturbing internal reflections
- Reliable and complete curing even in shadowed areas (with dual-curing products)
- No contamination, condensation or fogging
- Improved shock and vibration resistance
- Low viscosity allows easy dispensing and joining without bubbles
- Liquid adhesives facilitate fast product developments and new designs

DELOLUX® 80 enables short cycle times and fast curing within seconds.

Bonding process

1. Pretreatment
   - Plasma treatment
   - Polarizer and improves surface energy of the display and the polarizer.
   - Depending on the atmospheric pressure, the display adhesive is prepared.

2. Dispensing of dam
   - To set a defined gap between cover glass and LCD, a dam is dispensed onto the bezel (see picture below).
   - For dual-curing products, this time dispensed as a dam onto the bezel (see picture below). The cover glass is joined either parallel or under a slight angle. The joining process and the dispensing process can be completed.

3. Dispensing of sealant
   - The same adhesive is used for sealing the gap between bezel and display glass. This prevents air from leaking under the bezel and reduces air gap.

4. Curing of dam and sealant
   - The adhesive is cured using an array of DELOLUX® LED area lamps.
   - The adhesive is cured using an LED curing lamp. The adhesive is ready for handling. For dual-curing processes, the adhesive in shadowed areas will reliably cure afterwards.

5. Dispensing of fill material
   - The optically clear fill material is dispensed in a defined pattern.
   - The optically clear fill material is dispensed in a defined pattern.
   - The adhesive is cured within seconds using the DELOLUX® LED area lamps.

6. Joining
   - The cover glass is joined either parallel to the display or under a slight angle. The joining process and the dispensing process can be completed.

7. Curing
   - The adhesive is cured using an array of DELOLUX® LED area lamps.
   - After the fill, the display is ready for handling. For dual-curing products, the adhesive in shadowed areas will reliably cure afterwards.

DELOadhesives
www.youtube.com/watch?v=3zKhAN23s8I
Watch the videos for customers can be carried out with a display bonding machine from company PVA (Precision Valve & Automation).

DELOadhesives
www.youtube.com/watch?v=3zKhAN23s8I

DELOadhesives
www.youtube.com/watch?v=3zKhAN23s8I

DELOadhesives
www.youtube.com/watch?v=3zKhAN23s8I

The adhesives are available in 50 oz cartridges. The containers are particle-free and suitable for both UV-curing and dual-curing products. Larger containers are also available on request.