

# VACUBOND<sup>®</sup>

Free Air Exclusion Bonding / Void Exclusion Bonding  
For Explosion Protected Areas





## Explosion Protection - General



In the chemical and petrochemical industry, oil and gas extraction, mining and many other industries during production, processing, transportation and storage of flammable substances there escape gases, vapors or mists.

In many processes, especially in the food industry combustible dusts occur. These flammable gases, vapors, mists and dusts mix with oxygen in the air to form an explosive atmosphere. If this atmosphere is ignited, explosions occur, which may cause serious injury and damage.

## Prevent The Ignition of Explosive Atmospheres



If explosion hazards cannot be completely eliminated by avoiding the formation of explosive atmospheres, measures must be taken to prevent the ignition of explosive atmospheres. The required safety level of these measures depend on the possible danger potential in the installation and is classified in different stages according to IEC60079 xx.

## Limitation of Explosion Effects (Constructional Explosion Protection)



If the occurrence of a hazardous explosive atmosphere can not be safely avoided and also the ignition can not be prevented, measures must be taken to limit the effects of an explosion to a safe level, for example, by flameproof construction, including "free air exclusion" or "Void exclusion" bonding (to < 10cm<sup>3</sup> for highest ATEX certifications).



## VacuBond free air exclusion process

With VacuBond free air exclusion bonding air spaces within the display itself, which lead to restrictions in explosion protection certifications, are eliminated. The process is as follows:

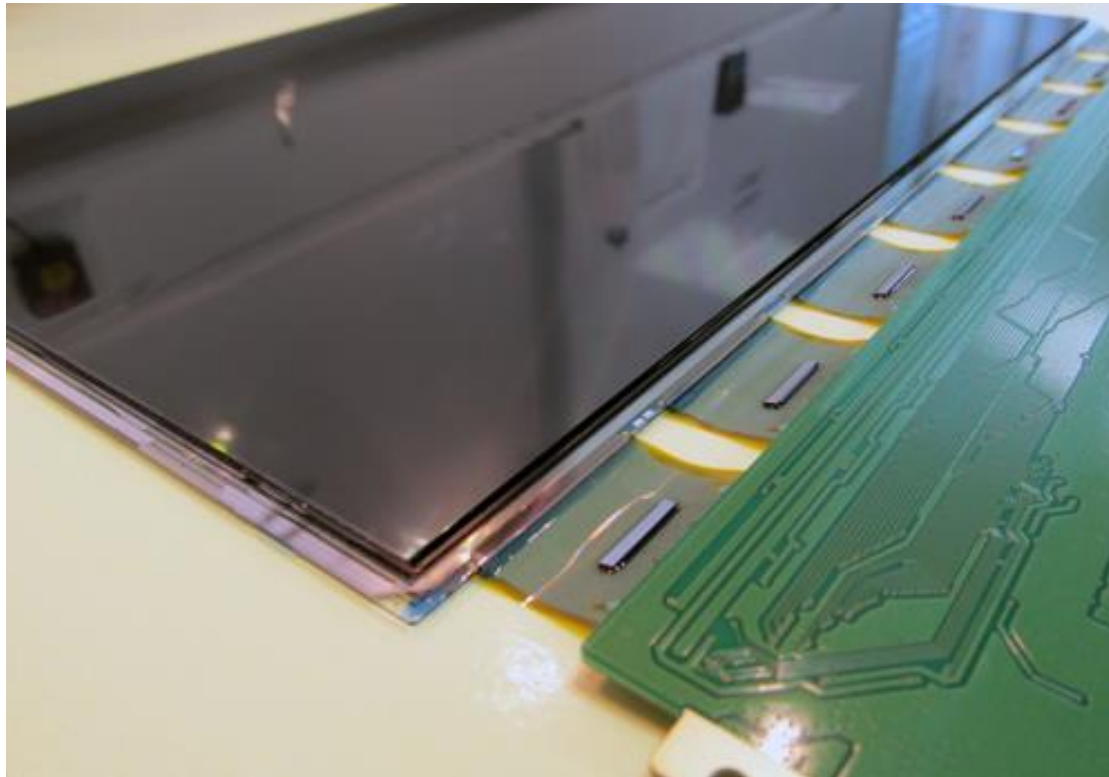
- ✓ We disassemble the TFT display completely up to the TFT cell



# Free Air Exclusion Bonding



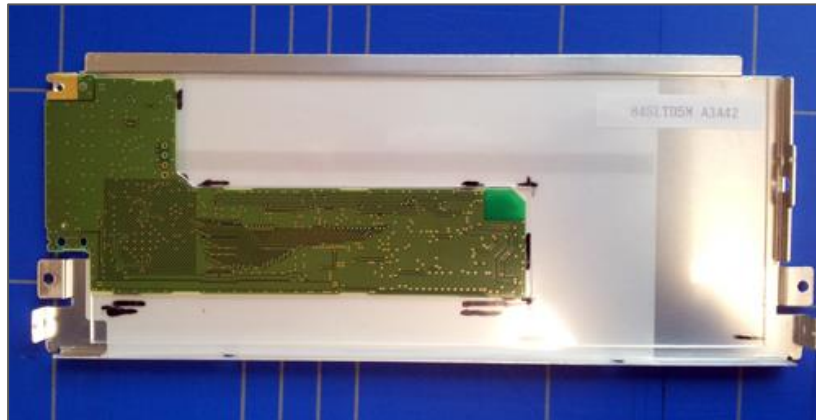
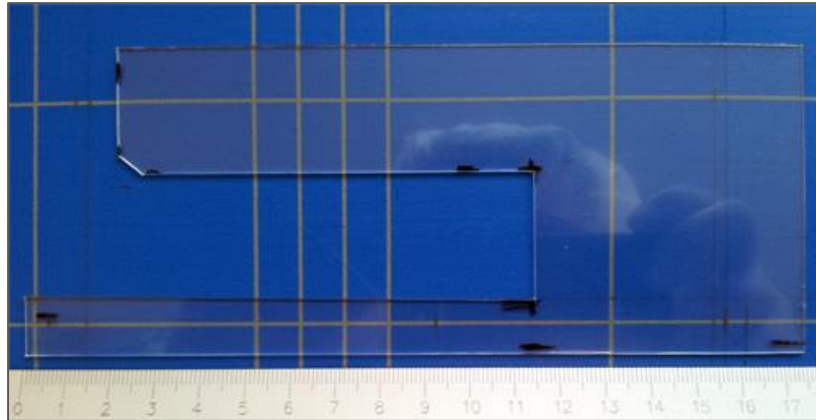
- ✓ We measure all free air spaces within the mechanical structure
- ✓ Depending on the possible depth we bond either 0.5mm, 1mm, 1.5mm or 1.8 mm Optogel on the entire rear of the TFT-cell





## Free Air Exclusion Bonding

- ✓ We fill the recesses in the rear cover with exactly cut Opto-Gel



# Free Air Exclusion Bonding



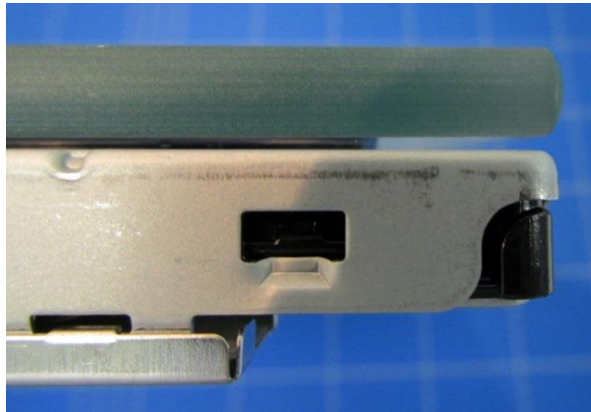
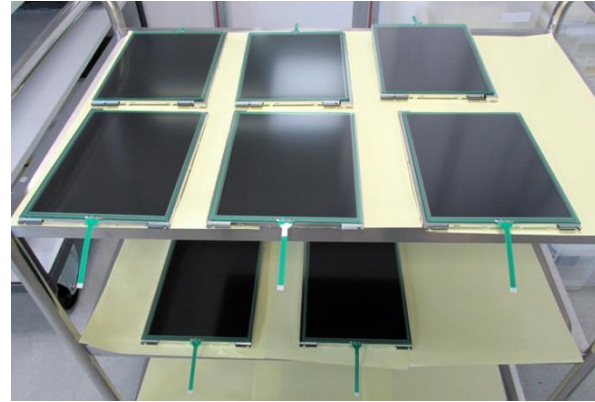
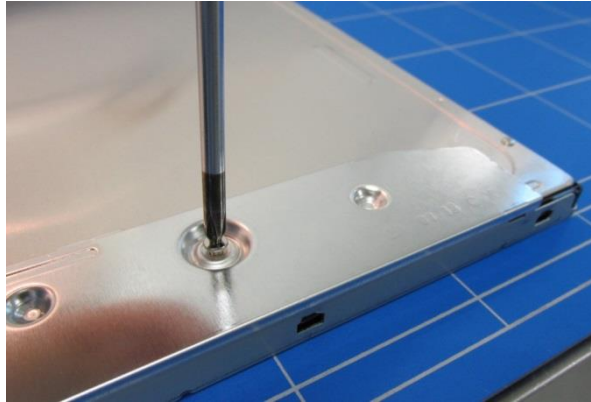
- ✓ We complete all small recesses and the honeycomb structure of the bezel with silicone



# Free Air Exclusion Bonding



- ✓ We reassemble the TFT display completely and then optionally bond a touchscreen or a protective glass

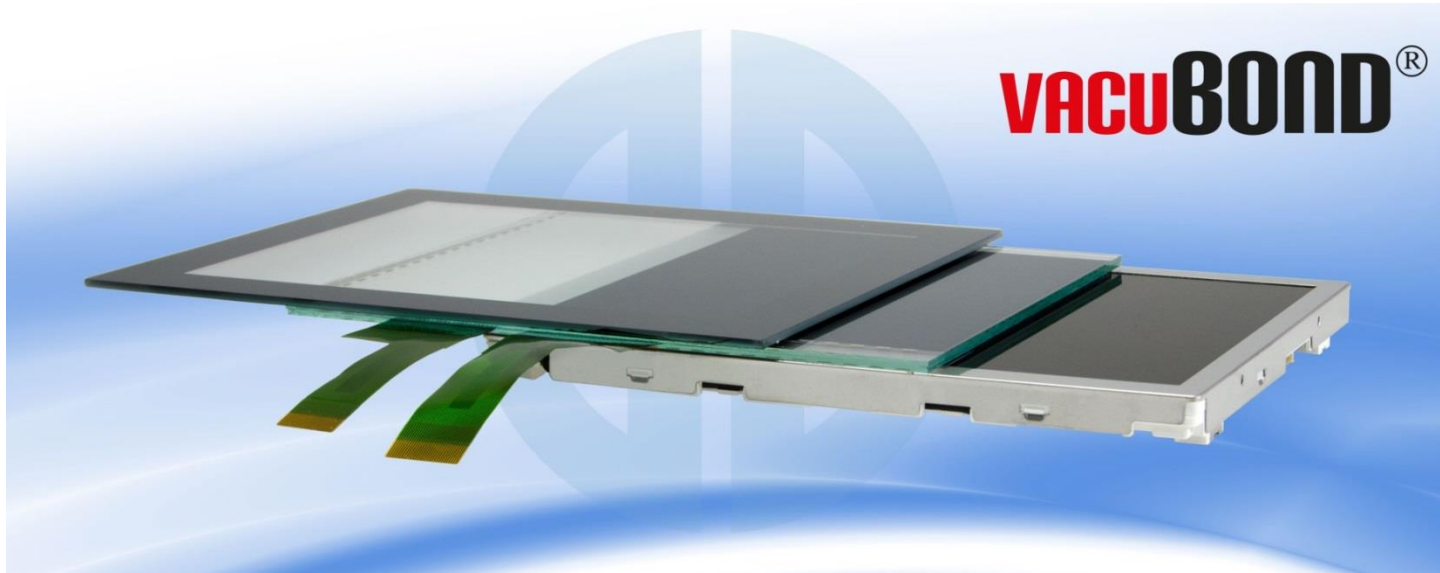




## VacuBond: High Quality optical bonding

The VacuBond Technology allows for a zero optical defect bonding. Moreover the bonding process is fully reversible. This means there is no wastage neither during the bonding process nor in case of later repairs (e.g. backlight exchange).

VacuBond is the innovative way to prepare for the highest ATEX certifications.



Please contact us, we will gladly advise you.



# Contact Information

## Headquarters

### Germany



**FORTEC Elektronik AG**  
Lechwiesenstr. 9  
86899 Landsberg am Lech  
Germany

Phone: +49 8191 91172-0  
E-Mail: [sales@fortecag.de](mailto:sales@fortecag.de)  
Internet: [www.fortecag.de](http://www.fortecag.de)

## Fortec Group Members

### Austria



**FORTEC Elektronik AG Office Vienna**  
Nuschinggasse 12  
1230 Wien  
Austria

Phone: +43 1 8673492-0  
E-Mail: [office@fortec.at](mailto:office@fortec.at)  
Internet: [www.fortec.at](http://www.fortec.at)

### Germany



**Distec GmbH**  
Augsburger Str. 2b  
82110 Germering  
Germany

Phone: +49 89 894363-0  
E-Mail: [info@distec.de](mailto:info@distec.de)  
Internet: [www.distec.de](http://www.distec.de)

### Switzerland



**ALTRAC AG**  
Bahnhofstraße 3  
5436 Würenlos  
Switzerland

Phone: +41 44 7446111  
E-Mail: [info@altrac.ch](mailto:info@altrac.ch)  
Internet: [www.altrac.ch](http://www.altrac.ch)

### United Kingdom



**Display Technology Ltd.**  
5 The Oaks Business Village  
Revenge Road, Lordwood  
Chatham, Kent, ME5 8LF  
United Kingdom

Phone: +44 1634 672755  
E-Mail: [info@displaytechnology.co.uk](mailto:info@displaytechnology.co.uk)  
Internet: [www.displaytechnology.co.uk](http://www.displaytechnology.co.uk)

### USA



**Apollo Display Technologies, Corp.**  
87 Raynor Avenue,  
Unit 1 Ronkonkoma,  
NY 11779  
United States of America

Phone: +1 631 5804360  
E-Mail: [info@apolloDisplays.com](mailto:info@apolloDisplays.com)  
Internet: [www.apolloDisplays.com](http://www.apolloDisplays.com)