

E-Align100 by CondAlign – Product sheet

The novel Anisotropic Conductive Film

E-Align is CondAlign's range of adhesive anisotropic conductive films. These products are designed for application at room temperature with very low bonding pressure (<5 bar). They do not require high temperature during bonding, or any post processing in the form of heat curing or high pressure.

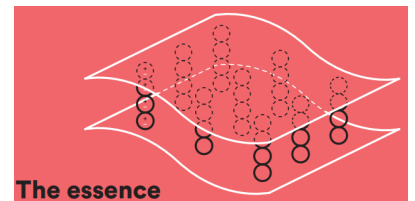
These ACFs are well suited for bonding in flexible, printed and hybrid electronics, where the components or substrates may be sensitive to high temperature or pressure.

The technology supports production of high performance, robust and **cost-efficient bonding** films, which are **simple to apply** and open for a **reduced carbon footprint**. It is ideal for IoT, organic, printed, flexible and hybrid electronics applications, as well as for EMI shielding/grounding.

E-Align is an enabler for new material- and component combinations that are challenging to bond with existing techniques.

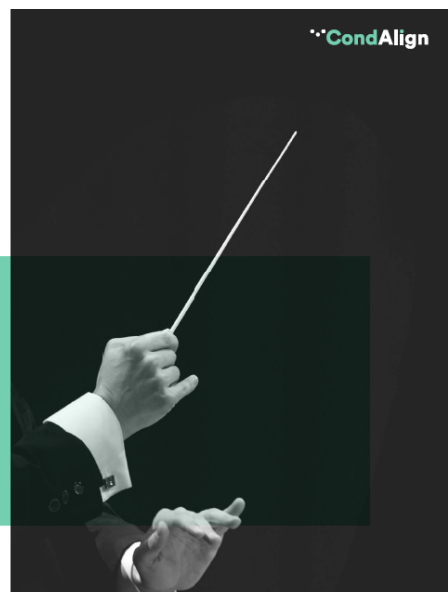
CondAlign's **E-Align100** is suited for bonding and connecting Flex on Flex (FOF), Flex on Board (FOB), Chip on Flex (COF), as well as thin, flexible batteries in IoT products.

Anisotropic materials have directionally different properties. Electrically conductive particles are arranged in chains that enable conductivity through the adhesive thickness (Z-axis), while simultaneously being electrically insulating in the film plane (XY-axis).



**Conducting
the future**

..with E-Align100 adhesive ACF



E-Align100

Adhesive Anisotropic Conductive Film

Product characteristics

Property	Typical Value	Material Type
ACF thickness / material	95 μm	Acrylic PSA Ag coated glass
Liner thickness / material	50 μm	PET – Silicone coated
Available size and form factors	On request (see notes)	

Performance

Property	Test Method	Typical Value
In plane resistance (xy-axis)	ASTM D-257 ¹	$\gg 10 \text{ G}\Omega$
Through plane resistance (z-axis)	CondAlign test method ²	$< 100 \text{ m}\Omega$
Recommended minimum pad distance	CondAlign test method ³	0.3 mm
Recommended minimum overlap area	CondAlign test method ⁴	1 mm ²
180° Peel adhesion to stainless steel	ASTM D3300 ⁵	$> 3,5 \text{ N/cm}$

1. Specific surface resistance measured with ring electrode with 5 mm distance between electrodes.
 2. Measured using 5 mm² copper probe head. Resistance value includes copper to ACF contact resistance + ACF resistance. Final values must be tested on end user assembly substrate and in assembly environmental conditions (temperature, humidity, application technique, etc.), to confirm value indicated in the table. Depending on substrate surface properties some additional method of applying constant minimum pressure across the surface may be required.
 3. Minimum distance between two neighboring conductor pads, to ensure electrical isolation between those elements. CondAlign test method, microscopy-based and custom PCB.
 4. Minimum contact area between the pads and film, to ensure conductivity. CondAlign test method and custom PCB.
 5. ASTM D3330 standard, method F. Peeling of 25 mm wide sample performed at speed of 5 mm/s in "standard environment conditions" (23 °C), sample dwell time 1 hour.
- E-Align can be slit, die cut and supplied in a range of sizes and form factors, on request from customers.

Notes

- End user application temperature range: -40 to +85 °C.
- Shelf life: 18 months from date of manufacturing, in original packaging and in a controlled environment (21 °C, 50% RH).
- Stated values are for guidance only. End user is advised to verify the performance for specific application.
- See Data Sheet for additional details.