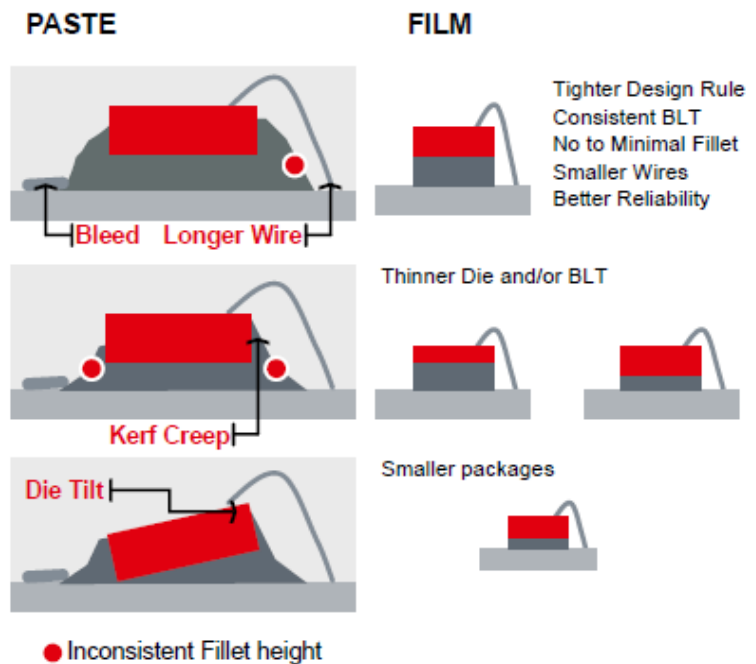


## Cost-Competitive Conductive Die Attach Film Breakthrough Material Enables Cost-Effective Laminate Packages

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Since its introduction in 2010, when Henkel developed the market’s first-ever conductive die attach film (cDAF), the semiconductor packaging industry has readily embraced the technology as a cost-effective and, in many cases, superior performance alternative to traditional paste-based die attach materials. With the formulation of LOCTITE ABLESTIK CDF 200, Henkel broke new ground in the packaging sector and has steadily innovated new cDAF materials, expanding on the initial development with the addition of LOCTITE ABLESTIK CDF 500P and LOCTITE CDF 800P to the portfolio. Each material was designed with specific performance and manufacturing needs in mind, but all of them offer the undisputed advantages of film over paste, including:

- Design flexibility and ability to integrate more die per package due to tight clearance between the die and die pad
- Enables thinner packages with higher densities
- Facilitates thin wafer handling
- Provides for a clean process with no bleed, uniform bondlines and no kerf creep

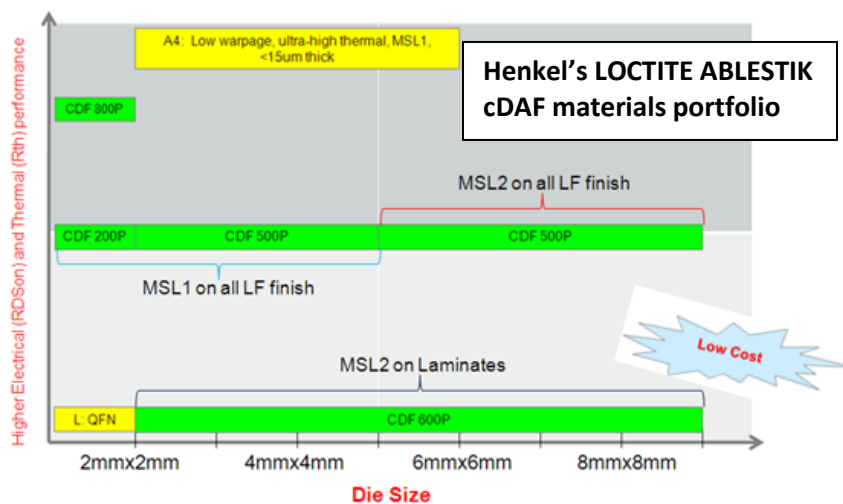


To date, Henkel’s cDAF material development has centered on solutions for leadframe packages – and to overwhelming market acceptance. Now, Henkel brings the unmatched benefits of cDAF to manufacturers of laminate-based devices and does so cost-competitively. LOCTITE ABLESTIK CDF 600P is the industry’s first cDAF material designed for use with many of today’s laminate packages. In addition to the above-mentioned advantages, cDAF can also offer overall cost reduction benefits for laminate device manufacturers. Because many of these packages are more expensive to produce, incorporating gold wire interconnects, cDAF’s ability

to streamline design rules and tighten the die to pad ratio means packaging specialist can achieve results as good as or better than that of paste and at lower cost.

LOCTITE ABLESTIK CDF 600P has been formulated for use on large die, laminate-based LGA and PBGA applications. The material – which is priced competitively – has shown excellent performance and MSL 2 capability on die sizes that range from 1 mm x 1 mm up to 10 mm x 10 mm. This wide range of die sizes offers package manufacturers extreme flexibility, allowing the sourcing of a single material for multiple package configurations. With electrical and thermal conductivity that is comparable to commercialized paste materials used in similar applications, LOCTITE ABLESTIK CDF 600P now affords laminate-based package designers and manufacturers a cost-effective, high-performance and design-rich alternative to die attach paste. Lower stress and high adhesion are also critical characteristics of the new cDAF and facilitate production of larger die sizes that are particularly susceptible to stress and warpage.

Like the other Henkel cDAF materials, LOCTITE ABLESTIK CDF 600P is a two-in-one, pre-cut dicing die attach conductive film that combines dicing tape and die attach material into single 8" or 12" wafer-sized film formats. The material is compatible with most lamination equipment used in the field and has shown good results with lamination temperatures as low as 65°C. The two-in-one construction also helps reduce cost by enabling an in-line process for thinner wafers and a single lamination process in one, combined step. Compatible with various substrates including Cu, Ag spot and NiPdAu, LOCTITE ABLESTIK CDF 600P can be used with wafers thinner than 75µm and has an architecture that has been designed to provide excellent wetting for the unique topology of laminate substrates.



The undisputed performance and processing advantages of cDAF are now available for laminate package manufacturers in an exceptionally cost-effective formula. Henkel's complete portfolio of cDAF materials capability now spans a broad spectrum of package type, die sizes and cost/performance ratios.

For more information on Henkel's complete portfolio of cDAF materials or to find out more about the company's new laminate-compatible film, LOCTITE ABLESTIK CDF 600P, log onto [www.henkel.com/electronics](http://www.henkel.com/electronics), send an e-mail to [electronics@henkel.com](mailto:electronics@henkel.com) or call 1-888-943-6535 in the Americas, +44 1442 278 000 in Europe and +86 21 3898 4800 in Asia.