LOCTITE®

PACKAGE LEVEL EMI SHIELDING SOLUTIONS

COMPARTMENTAL AND CONFORMAL SHIELDING TECHNOLOGIES

Radio-frequency (RF) emitting devices require effective isolation to limit the propagation of their interference to neighboring components and protect from performance degradation. As electronics move toward miniaturization, lighter weight and higher speeds, these challenges become more significant as conventional shielding methods present functional and operational limitations. To address this, Henkel has developed innovative electromagnetic interference (EMI) shielding material technologies that provide compartmentalized shielding inside a package and conformal shielding directly on the surface of a package.

KEY BENEFITS

Compartmental and Conformal EMI Shielding:

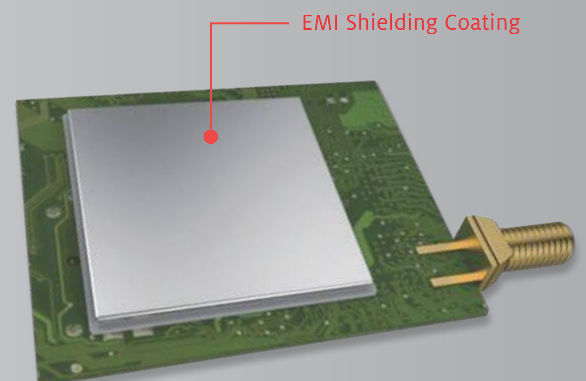
- Enables smaller, thinner and lighter electronic designs

Material Technology:

- Flexibility to address diverse requirements with a single layer
- Excellent reliability and adhesion performance
- Compatible with various spray-coating and dispensing methods

Spray-Coating and Dispensing Solutions:

- Minimal capital investment and cost of ownership
- Easily scalable, simple, clean process



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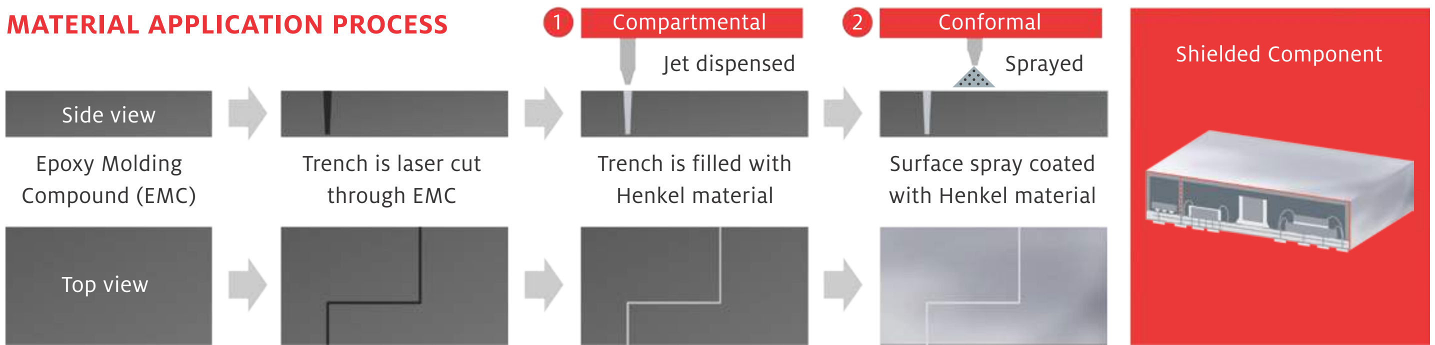
MATERIAL APPLICATION PROCESS



COMPARTMENTAL SHIELDING SOLUTION

- Jet-dispensed, highly flowable, extremely conductive material with ability to fill a narrow trench with very high aspect ratio, high adhesion to the walls and bottom of trench
- Applicable at high frequencies greater than 1 GHz
- Compatible with all methods of conformal shielding

CONFORMAL SHIELDING SOLUTION

- Spray-coated, highly flowable, extremely conductive material with ability to coat a shielding layer with minimum shrinkage and excellent adhesion to untreated organic surfaces
- Applicable at high frequencies greater than 1 GHz
- Compatible with all methods of compartmental shielding

PACKAGE LEVEL SHIELDING TECHNOLOGY COMPARISON

	CONVENTIONAL SPRAYING	SPUTTERING	HENKEL'S SPECIALIZED SPRAYING SOLUTION
EMI SHIELDING (CONDUCTIVITY)	Low performance	Good performance	Good performance
RESISTANCE	Low	Good	Good
POTENTIAL BROAD FREQUENCY SHIELDING	No material	Multiple layers	Single layer (filler technology)
THICKNESS AND UNIFORMITY	• Thick Coating (20 μm) • Low sidewall thickness	• Thin coating (5 μm) • Good uniformity	• Thin coating (5 μm) • Good uniformity
PROCESS AND DEPLOYMENT COST	• Low cost • Small floor space • Inexpensive equipment • No pre-treatment	• High cost • Large floor space • Expensive equipment • Pre-treatment	• Low cost • Small floor space • Inexpensive equipment • No pre-treatment
THROUGHPUT (UPH)	High	Moderate	High
PROCESS FLOW AND SCALABILITY	Simple	Complex	Simple

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