

Bond Test Mode Selection Guide

Requirement	Pitch-Catch	Mechanical Impedance Analysis (MIA)	Resonance
Couplant required for testing	No	No	Yes
Surface geometry	Flat or curved to >1" radius	Flat or curved to <1" radius	Flat or slightly curved
Typical minimum detectable flaw size	>0.5" (12.7mm)	>0.25" (6.4mm)	>0.25" (6.4mm)
Flaw Depth determination in multi-layered bonding	No	No	Yes
Far-side flaws or core damage on sandwich constructions	Best	Poor	Fair
Applications			
Metal to metal bonded skins (Disbonds)	Fair	Good	Best
Multi-layer carbon laminate (Delaminations, voids, porosity)	Fair	Poor	Best
Metal skin to metal honeycomb (Disbonds, crushed core)	Good	Good	Good
Carbon skin to metal or Nomex™ honeycomb (Disbonds, delaminations crushed core)	Best	Good	Good
Carbon skin to foam core (Disbonds, delaminations)	Best	Good	Fair
Multi-core sandwich structures (Inter-core disbonds, core damage)	Best	Poor	Fair
Bonded Stiffeners (Disbonds)	Good	Poor	Good
Glass fiber skin to foam or wood core (Disbonds, delaminations)	Best	Poor	Good
Perforated metal skin to honeycomb core, used for acoustic liners (Disbonds)	Good	Good	Poor
Carbon-Carbon, used for heat shields (Delaminations)	Best	Poor	Poor
Carbon or Glass reinforced pipes or pressure vessels (Disbonds, delaminations)	Good	Poor	Poor
Carbon Overwrapped Pressure Vessels (COPV) (Disbonds, delaminations)	Good	Poor	Poor
Composite Repair Validation (Disbonds, delaminations)	Best	Poor	Good

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