

Introduction

Conventional phased array (PA) probes have significant limitations when inspecting heavy composites thicker than 50 mm (2 inches). Even traditional PA probes at 2.0 MHz frequency are not the appropriate solution for such high signal attenuation and long sound path. The 0.5 and 1.0 MHz PA probes are available that can successfully provide C-scan mapping over large glass fibre surfaces. Furthermore, lamination defects can be identified in aluminium slabs.



Figure 1 – X6B positioned on thick walled composite

Frequency recommendation according to the GFRP thickness:

- 1 MHz probe: T= 30 to 200 mm. Better resolution, main solution for glass fibre reinforced plastic
- 0.5 MHz probe: T< 50 to 500 mm. Very high attenuation material (Such as low-density polyethylene)

Industries

- Chemical & Petrochemical Sector
- Oil & Gas Sector
- Nuclear Energy Sector
- Wind Power Renewables Sector
- Rail Sector
- Military Sector
- Maritime Shipping Industries
- Mining Sector
- Construction and Infrastructure
- NDT Service Providers

Application

- Corrosion / Thickness measurement
- Casting / Forging Inspection
- Composite Material Inspection
- Plastics Inspection
- Storage Vessel Inspection
- Material Bonding Inspection
- Asset integrity

Typical Parts

- Thick Composites
- Spar caps on wind blades
- Large Castings
- Raw aluminium

Inspection Techniques

- Phased Array L-Scan

Features and Benefits

- Expand VEO3 and RSFlite inspection down to 0.5MHz
- Scan stitching capabilities on UTMap
- Increase productivity over conventional UT
- Best signal to noise ratio on resolution mapping on exotic composites

For further information or support, please contact the Sonatest Applications Team: applications@sonatest.com

Recommended Tool Package

Category	Part #	Description
Acquisition Unit	VEO3 32:128 Phased array data acquisition unit	
Probe	X6B	
Wedge	X6BHG-001	Designed for direct contact with maintained water coupling
Direct contact inspection	FT1 Tape 100mm	Polyester tape made for direct contact inspection to protect the test piece surface and the probe face
Encoder	AXYS encoder	
Software	UT MAP / UTStudio+	

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