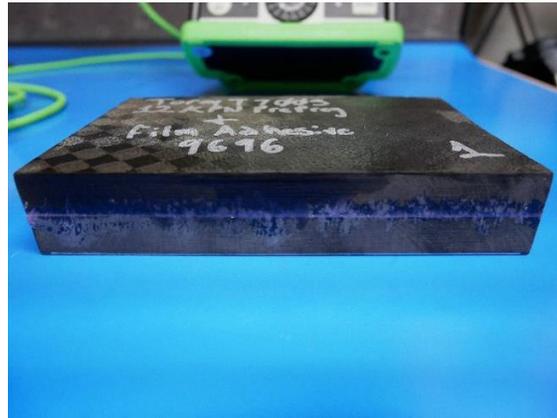
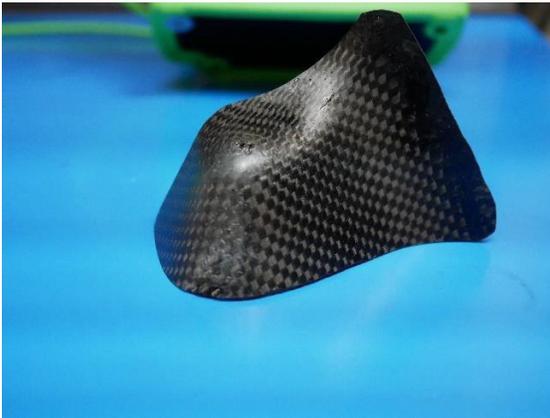


Application Note

Our Application department was presented with carbon fiber laminate samples to determine the ability of our Raptor Flaw detector to resolve FOD, voids, and delaminations. These samples came in two different ply types and in a variety of shapes and sizes. The acoustic properties of the composite materials were not conducive to flaw detection using traditional UT solutions and the difficulty in obtaining reliable information prompted testing with the Bondascope 3100.

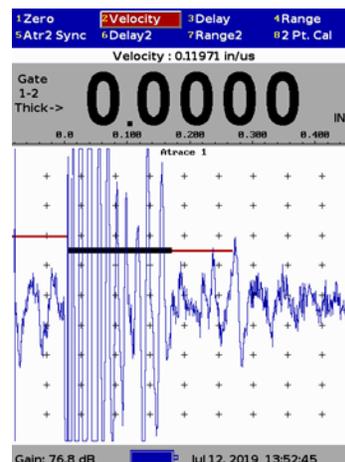
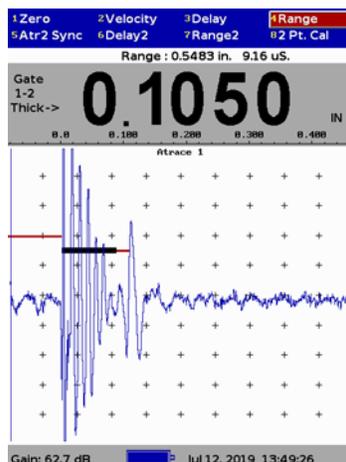
Test Samples:



The following instruments were used:

1. Raptor Flaw Detector with a D11 10MHz delay line probe.
2. Bondascope 3100 Bond Tester with L3250 and L3370 resonance probes.

Starting with the Raptor on the test object, the back echo is present, but the ringdown from the interface echo is significant. The Raptor must be tuned for each sample, as using the same tuning settings for both test objects makes it impossible to effectively resolve the back echo. Tuning for each sample is not only prohibitively time consuming, but the margin of error also increases.

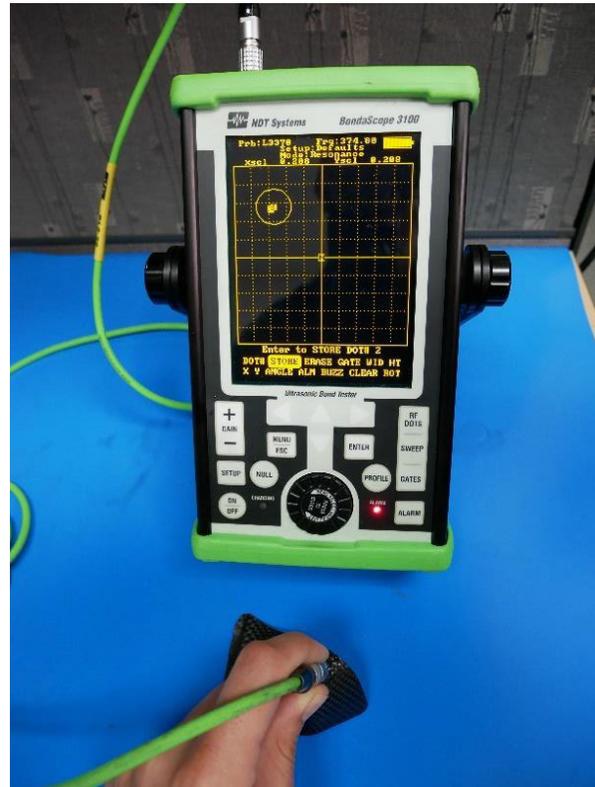


Application Note

Utilizing the Bondascope 3100 on these test objects yielded much better results. Nulling on a good flat section of the sample created a solid baseline to compare with flawed sections of the sample. The ridge of the curved section of the test object has areas of delamination. Using resonance instead of traditional UT provided a stronger indication of the flawed area.



Null



Delamination

Comparing traditional UT with Resonance inspection, the benefits of resonance for inspecting composite parts are significant. Resonance inspection not only improves upon UT with similar flaws, it can also reveal flaws and imperfections that are otherwise invisible to traditional UT. Therefore, the best solution for detecting FOD, voids, delaminations, and other flaws is the Bondascope 3100, paired with a selection of resonance probes.

NDT Systems Inc. is a leading supplier of nondestructive testing equipment with 47 years of experience producing a wide range of ultrasonic thickness gages, bond testers, portable flaw detectors, and precision ultrasonic transducers. Give us a call at (714) 893-2438 or visit our website at www.ndtstystems.com.