

Introduction to Nondestructive Evaluation

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At Kennedy Space Center, we demand the world from our materials. We make them soar higher, bear heavier loads, and withstand greater temperatures than anyone else on Earth. And, we use them again and again.

We carefully examine and test Shuttle and ground support equipment during the processing of each orbiter, external tank, and solid rocket booster. Nondestructive evaluation is a critical part of diagnosing potential problems long before launch.

Nondestructive evaluation tests a material for possible defects, or discontinuities, without damaging it. Destructive evaluation, on the other hand, destroys the piece being tested, which would be impractical for reusable Shuttle and ground support equipment components.

We use a number of nondestructive methods at Kennedy Space Center to evaluate flight hardware and ground support equipment, both in the field and the laboratory:

- Visual inspection.
- Liquid penetrant testing.
- Magnetic particle testing.
- Leak testing.
- Eddy current testing.
- Radiography.
- Ultrasonic testing.
- Infrared testing.

Each of these methods is performed at Kennedy Space Center by highly trained individuals with hours of classroom and hands-on experience in each method in which they are certified.

Their dedication and attention to detail ensure that our materials--Columbia, Endeavor, Atlantis, and Discovery--withstand the demands we place upon them.