

Reliability and Failure Analysis Lab

Unique Item Identification and Parts Marking

Technology

UAH has developed several software tools to aid in parts marking and Item Unique Identification (IUID). One such tool is the Direct Parts Marking (DPM) Matrix. The DPM Matrix is an online repository that stores test data for various marking methods and materials. Responsible engineers can use the test data to make informed decisions about how DPM may affect the structural integrity of their components.

Large-scale parts marking efforts must consider many other factors to be successful. Parts must be prioritized to best utilize available funding. Marking determinations must be made: will the part receive a data plate, a label, or a direct part mark? In many cases, the location of the mark, application methods, and follow-up technical data must be documented. The Reliability and Failure Analysis Lab has developed the Parts Marking Decision Engine (PMDE) to facilitate this process. PMDE is a software tool that guides the decision making process and documents not only the engineering decisions made, but also the technical description of the mark and how the mark is applied.

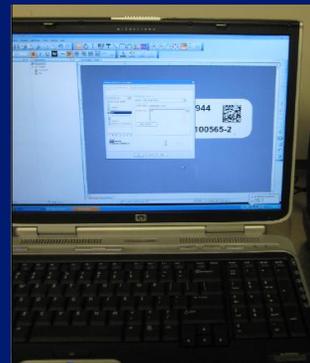
In addition to these web and software tools, the Reliability Lab is currently implementing a parts marking process in the Lab that is patterned after Department of Defense IUID programs. Using this process, the Lab can uniquely identify and track equipment as well as test samples.

Applications

- Industry parts marking and tracking
- DoD IUID Program and other similar initiatives



Material	Layer	Laser Etched Surface Improvement (LSEI)	Laser Etched Layer Structure	Laser Etched Layer Bond
Aluminum	X	X	X	X
Steel	X	X	X	X
Metals	X	X	X	X
Non Metals		X	X	X
Plastics		X	X	X
Composites		X	X	X
Coatings		X	X	X
Surface Treatments		X	X	X
Polymers		X	X	X
Resins and Glues		X	X	X
Brass		X	X	X



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