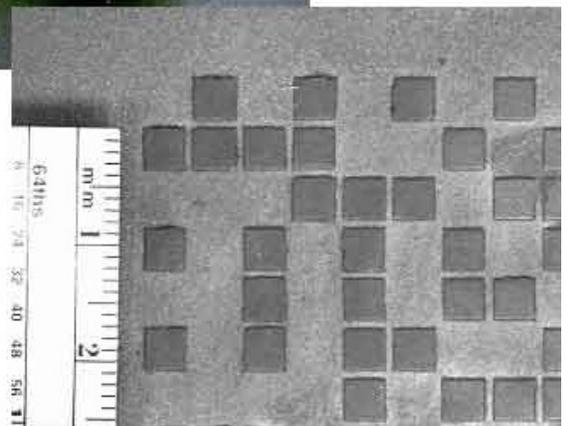
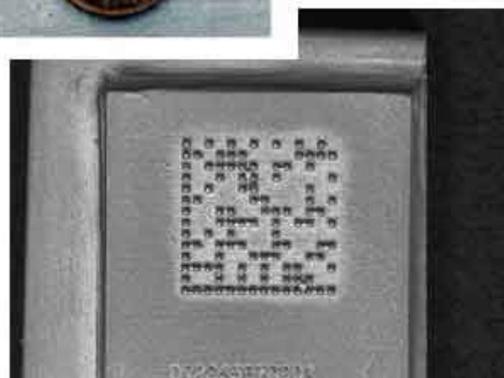
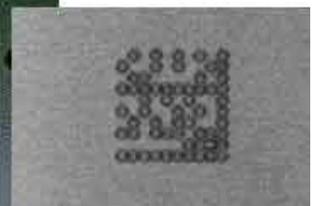
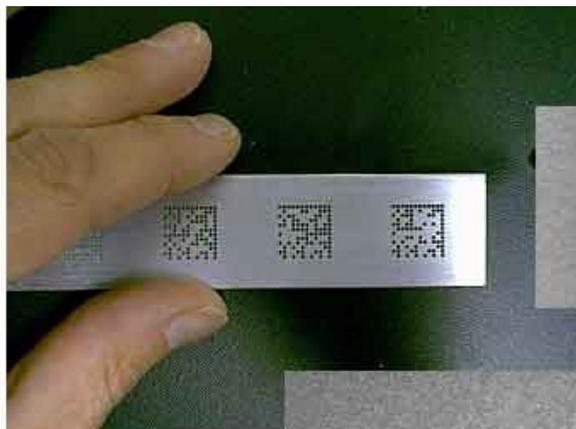
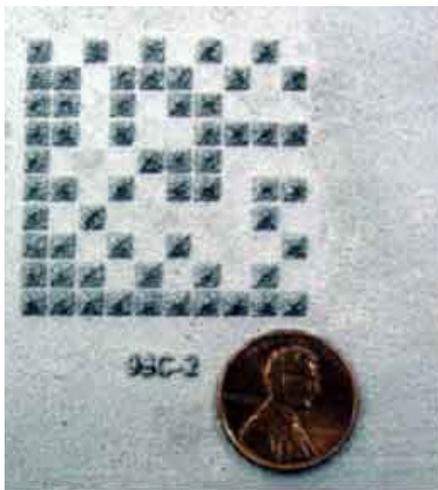


IUID

Item Unique
Identification

University of Alabama in Huntsville: Direct Parts Marking Guide

Unique Identification Policy Office Integration Project



DPM

To improve the identification, tracking, and management of Department of Defense (DoD) assets, the Office of the Secretary of Defense has funded multiple projects, including the University of Alabama in Huntsville Direct Parts Marking Guide Integration Project.

Description

The University of Alabama in Huntsville (UAH), in collaboration with the Joint Marking Qualification Working Group (JMQWG) and the Government Electronics and Information Association (GEIA), performed an integration project to assemble, review, and collate all existing data on applying direct part marks to various components in order to develop a standard direct parts marking guide for government and industry use. This materials matrix guide is currently available to the public at: <https://rsesc.uah.edu/DPM/>

To initiate the action for components that require direct marking on material using such techniques as laser etching, dot peening, or chemical etching, there is a need to secure engineering approval to document that the marking techniques do not degrade the material of the components. That engineering approval leans heavily on material testing that is suitable for the environment of the component in question.

In a cooperative effort, the government and industry members of the GEIA, combined with UAH's materials engineering assets, launched an effort to create a single repository to catalogue the existing materials testing data. The Direct Parts Marking Guide is available in a web environment to permit ease of access for both government and vendor material engineers. Additionally, this web site will be used to help define what future tests are required to keep up with the changing marking technologies. UAH, with guidance from the standards group within GEIA, maintains the matrix as a current and viable resource tool.

The recent emphasis on UID within the vendor community has seen a large growth in the amount of data available concerning new label techniques and materials. This data has been added to the matrix to expand the reach of the site to make it a "one stop shop" for UID marking information.

Challenges & Obstacles

- ◆ Recent participation has been slow
- ◆ Current, ongoing industry testing limited
- ◆ Time consuming review and approval process for new submissions
- ◆ Identification of the agency responsible for providing funding to continue maintaining the matrix

Benefits & Achievements

Following compilation of part-marking research, a conversion of the data was performed to provide it in a fully web accessible format. It was necessary for the test material, which serves as the core of the information, to be put in a format that is downloadable directly from the matrix. This format makes the data available to the widest audience possible.

The materials matrix is designed as a tool to assist engineering staffs determine appropriate marking techniques. The testing literature that is available may be sufficient in many cases to preclude the requirements for further testing. This is the core value of the matrix in that it will not only speed up the literature search for the engineers but it will in many cases negate the need for costly testing. Present cost analysis, which puts potential savings in the hundreds of millions of dollars, bases savings on the ability to eliminate testing requirements in the approval process for direct part marking.

Additional achievements realized during this project include:

- ◆ Matrix utilization standardizes and consolidates available, reviewed data in one place
- ◆ Research discovered that a good amount of test data exists
- ◆ The JMQWG began an effort to encourage organizations to complete testing on DataMatrix marking methods, perform internal and legal release reviews, and share the results in the UAH matrix
- ◆ The matrix is focused on reasonable combinations of materials and marking methods, which consequently indicates to users the methods to avoid due to lack of information or past marking successes
- ◆ Label information has been added to the matrix based on user input

The UAH Direct Parts Marking Guide project team continues to emphasize that the materials matrix is not a competitive advantage item, as all DoD suppliers are required to provide UID 2D DataMatrix marking in accordance with MIL-STD-130. It is hoped that any future testing that is accomplished across industry, within the DoD, and by GEIA members will be added to the source data within the matrix.

Contact

For further information about this project, please contact:

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	Laser Engrave			Laser Etch	Laser Bond	Laser Coloring
	Laser Engrave	FO...	La...			
Aluminum	X	X		X	X	X
Steel	X	X		X	X	X
Metals				X		
Non-Metals		X		X	X	X
Painted				X		
Titanium		X		X	X	X
Copper		X		X	X	X
Nickel		X		X	X	X

A portion of the Direct Parts Marking Guide at: <https://rsesc.uah.edu/DPM/>



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