In-house product development and metallurgical services—a new industry standard

Dayton Progress Metallurgical Laboratory Services

www.daytonprogress.com
Dayton’s latest major new investment—our in-house, state-of-the-art metallurgical lab—is now in operation. The lab is designed to develop new products and to test and analyze the quality and viability of materials used in the manufacture of Dayton punches and punch products. Laboratory services include: hardness testing; metallography (e.g., coating thickness); and failure analysis.

Dayton’s metallurgical lab utilizes leading-edge equipment; employs professional, experienced metallurgists and others; and is the first full-service laboratory of its kind in our industry!

Testing and Analysis
Dayton provides a wide range of metallurgical testing and analytical services in-house and to our distributor network, our subsidiaries, and end-users. These include raw bar stock evaluation (quality assurance prior to manufacturing), product development, and customer service (e.g., product/application failure analysis).

All test data is archived and/or linked to our computer network, which allows fast, accurate statistical and analytical control. This assures viable and repeatable data for customer inquiries and other testing activities.

Specimen Preparation
- Automatic grinding and high-finish polishing
- Etching techniques for most common materials

Mechanical Testing
- Rockwell hardness
- Microhardness tests

Metallography
- Microstructures
- Coating thickness
- Heat treatment analysis
Quality Assurance
Dayton Progress takes great pride in the quality of its punches and punch products. As our product line continues growing, however, it is clear that materials testing will play an even more pivotal role in maintaining our high quality standards.

Our in-house metallurgical laboratory was developed to allow us to perform routine, non-standard, and product/application failure tests and analyses as a quality control method.

Routine Testing
Metallurgical, mechanical, and chemical testing is performed on raw materials, semi-processed, and finished parts to determine compliance with quality requirements and design/manufacturing specifications.

Metallurgical—metallography and microstructural analyses; Rockwell hardness testing; Vickers microhardness testing; and density/porosity testing.

Chemical—identification of alloys, platings, and coatings.

Mechanical—hardness.

Optical Microscopy
Dayton’s metallurgical lab is equipped with optical microscopes for high-resolution digital photography; digital image analysis; and Knoop/Vickers microhardness testing.

Heat Treating Evaluation and Troubleshooting
Dayton’s metallurgical lab includes world-class metallurgical microscopes for microstructural identification of decarburization, carburized case, and nitrided case (surface conditions), as well as martensite and retained austenite (phase constituents).

Failure Analysis
Dayton’s in-house metallurgical lab performs comprehensive tests to determine the cause and prevention of product failure. We consider this service a key part of our ongoing customer support role.

For more information on our metallurgical laboratory services, contact your local Dayton Progress representative.