



The FEECO Innovation Center offers a variety of options for those looking to test agglomeration processing methods. Whether you're looking to develop a product, solve a material problem, or optimize your existing product or process, the FEECO Innovation Center can help.

Capable of testing both non-pressure (tumble growth) and pressure agglomeration methods, the FEECO Innovation Center is well-equipped to suit small batch tests on a single piece of equipment, as well as a continuous process loop with multiple pieces of equipment. Testing in a continuous process loop allows you the opportunity to work out process variables, providing a recipe for success and process scale-up. Depending on your needs, we offer comprehensive testing options in four categories:

- 1. Feasibility/Proof of Concept** - An initial, non-witnessed batch testing phase in which the possibility of creating a product is explored.
- 2. Proof of Product** - A more in-depth batch testing phase in which more time is spent determining whether a product can be made to desired specifications.
- 3. Proof of Process** - A continuous testing phase that aims to establish the equipment setup and parameters required for continuous production of your specific material.
- 4. Process/Product Optimization** - An in-depth study to optimize your specific material's characteristics and/or production parameters in an industrial setting.

Tests commonly conducted in the FEECO Innovation Center include:

Non-Pressure

- Pelletizing (Drum or Disc)
- Conditioning
- Mixing
- Coating
- Micro-Pelletizing

Pressure

- Briquetting
- Compaction Granulation

Available Test Equipment

The FEECO Innovation Center offers a wide range of available test units and support equipment, as well as the necessary material handling component. This includes:

- Disc Pelletizers
- Pin Mixers
- Granulator
- Pug Mill
- Compactor/Briquetter
- Hammer Mill
- Screens
- Coating Drum
- Dryers
- Kilns
- Feeders

Questions that can be answered through testing:

- Will my material agglomerate?
- Can agglomeration solve my material problem?
- Which method of agglomeration will best suit my material?
- What equipment configuration will be required to produce the desired results?
- What binder, if any, will work best for my material?
- Can my product be improved?
- How can I optimize my existing process?

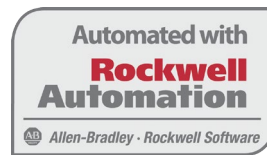
REPORTING & DATA IN REAL-TIME

Our state-of-the-art system allows you to monitor various data points, trending them, and even adjusting process variables in real-time, all from a single interface, or even from a remote device. This allows for a user to view process data and respond accordingly during production.

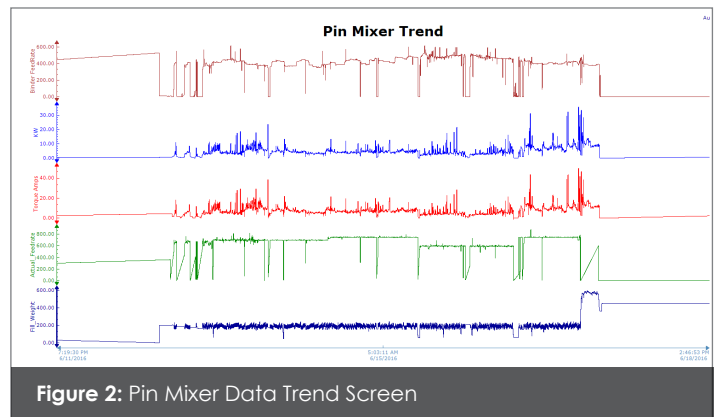
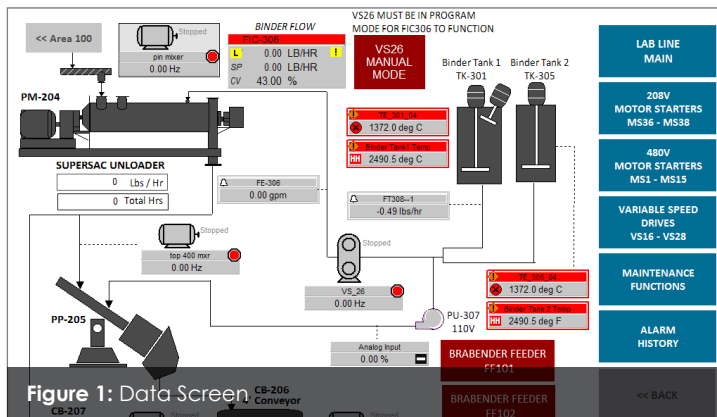
FEECO is a Rockwell Automation partner, providing integrated process control solutions, both as a service in the Innovation Center, and as part of a system purchase. FEECO and Rockwell Automation process control solutions are provided with current technology, motor control centers, programmable logic controllers, and data collection systems with advanced technologies for reporting. The Innovation Center features a Rockwell Automation MCC system, which utilizes current technologies for optimizing testing operations.

Data gathered includes:

- Current (Amps) ^{RT}
- Feed & Product Rates ^{RT}
- Flow Rates ^{RT}
- Fuel Usage ^{RT}
- Horsepower ^{RT}
- System Pressures ^{RT}
- Temperature ^{RT}
- Torque ^{RT}
- Screen Analysis of Feed & Product



(^{RT}) indicates that the data can be tracked in real-time.



FEECO can integrate third party equipment into your control system, giving you complete process tracking and visualization. Secure remote access to the system by a Rockwell Automation expert provides unparalleled troubleshooting capabilities.

MATERIAL TRANSFORMATIONS

Completed Through Testing in the Innovation Center

Beginning Material	Final End Product	Agglomeration	Drying	Blending	Thermal	Compaction
Sulphur Stack Emissions	Granulated Fertilizers	●	●			●
Calcium Sulfate	Fertilizer Pellets	●	●			
Ash (Wood, Fly)	Fertilizer Pellets	●	●		●	
Bentonite Clay	Cat Litter Granules	●	●			●
Calcium Chloride	Ice Melt Pellets	●	●			
Calcium Carbonate	Fertilizer Pellets	●	●			
Carbon Black Dust	De-dusted Pellets	●	●			
Cement Kiln Dust	Calcium Fertilizer Pellets	●	●			
Cell Phone Batteries	Lithium, Zinc Metal Recovery				●	
Clay	Cat Litter, Oil Dry Granules, Encapsulate Seeds	●	●	●		
Coal Dust	De-dusted Coal Pellets	●	●			●
Composts(Yard Waste)	Fertilizer Pellets	●	●	●		
Copper Dust	Metal Recovery Pellets	●	●	●		
Corn Cobs	Cat Litter, Oil Dry Pellets	●	●	●		
Clay	Proppants				●	
Dredge Sludges	Non-leaching Granules	●	●	●		
Electric Arc Furnace(EAF) Dusts	Metal Recovery	●	●	●		
Ethanol Plant Waste(DDG)	Animal Feed	●	●	●		
Foundry Dust	Metal Recovery	●	●	●		
Gold Ore Dust	Precious Metal Recovery	●	●	●		
Grain Dust	Non-explosive Pellets	●	●	●		
Gypsum Wallboard Waste	Fertilizer, Cat Litter Pellets	●	●	●		
Humate	Fertilizer Pellets	●	●	●		
Iron Oxide	Metal Recovery Pellets	●	●	●		
Lime(Waste Water Treatment Sludge)	Calcium Fertilizer Pellets	●	●	●		
Limestone	Calcium Fertilizer Pellets	●	●	●		
Talc Ore	Sterilized Baby Powder				●	
Manure – Cattle / Chicken / Hog	Fertilizer Pellets	●	●	●		
Soda Bottles	Recycled Plastic				●	
MAP Fertilizers	Fertilizer Pellets	●	●	●		
Municipal Wastes	Fertilizer, Fuel Pellets	●	●	●		
Nitrogen Fertilizers	Fertilizer Pellets	●	●	●		
NPK Blends	Fertilizer Pellets	●	●	●		●
Paper Sludge	Fertilizer, Cat Litter	●	●	●		
Petroleum Coke Dust	Fuel Pellets	●	●	●		●
Phosphates Powder	Fertilizer Pellets	●	●	●		
Potassium Chloride	Fertilizer Pellets	●	●	●		●
Saw Dust	Cat Litter, Fuel Pellets	●	●	●		●
Soy Flour	Animal Feed	●	●	●		
Steel Dusts and Sludges	Metal Recovery Pellets	●	●	●		●
Sugar	Sugar Pellets	●	●	●		
Sulphur Dust	Non-explosive Pellets	●	●	●		
Tar Sands Waste Sludge	Substitute Fuel Pellets	●	●	●		
Titanium Metal Shavings	Metal Recovery	●	●	●		
Iron Ore	Metal Recovery Pellets	●	●			
Glass Batch	Glass Blend	●	●	●		
Ceramic / Aluminum	Refractory	●	●			
Paper Sludge	Bright White Clay				●	
Gypsum	Fertilizer Pellets	●	●			
Zinc Oxide	Metal Recovery Pellets	●	●			●
Nickel Ore	Metal Recovery Pellets	●	●			
Kaolin Clay	Coating Paper	●	●			
Tungsten Oxide	Metal Recovery Pellets	●	●			●
Raw Coal	Purified Coal				●	
Bone Meal	Fertilizer	●	●			
Ammonium Sulfate	Fertilizer					●
Diatomaceous Earth	Filter Agent	●	●			
Titanium Dioxide	Pigment Pellets	●	●			●

Agglomeration: Drum, Pan Pelletizer, Pin Mixer

Drying: Rotary Drum Dryer, Fluid Bed Dryer

Blending: Ribbon Mixer, Pug Mill

Thermal Process: Rotary Kiln

Roll Compaction: Roll Compactor

SCHEDULE A TEST

To discuss your testing needs with one of our process engineers and schedule a test, contact us today at:

FEECO.com/contact