



Shaping the same tough raw materials as our larger extruders:

- Bauxite
- Biosolids
- Blast furnace sludge
- Board scrap
- Cement
- Clays and shales
- Coal fines
- Dust and sludge from flue gas purification
- Filter cakes
- Fly ash
- Gypsum
- Iron ore and oxides
- Laterite
- Lignite
- Lithium clay
- Manganese ore
- Metallic fines
- Mill scale
- Mine paste
- Mullite
- Nickel laterite
- Paper sludge
- Salts
- Sand
- Sawdust
- Scrap fiber
- Slag
- Sludges
- Tailings
- Wallboard
- Wash plant products
- And more

Benchtop analysis for faster prototyping and product development

The **Steele 3EX** is our laboratory extruder. It's designed and engineered for fast evaluations of material mixes and extruded products.

You can replicate production at a smaller, more affordable scale — for product development ROI measured in weeks or months, instead of years.

Proven over 20+ years in our lab

Steele has qualified millions of tons of customer products with the 3EX. Its benchtop footprint has the muscle to extrude products at the same stiffness as our production extruders.

Like all Steele machines, this laboratory extruder offers robust construction, reliable operation and fast die changes.

It's available for purchase or lease, to demonstrate proof of concept with reduced risk and cost.

Machinery, engineering, and service

For more information on the new 3EX and Steele product development resources, talk to your regional Steele sales or service representative, or contact us.

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How the 3EX works in your laboratory

Compact, modular unit requiring only a 3-phase power connection

Sealing section applies vacuum to de-air during shaping

Rear opening for filling with homogenous mix

Front-mounted die handles wide range of product shapes and sizes

Self-contained vacuum power unit designed for easy installation and small footprint



Operator's panel offers ergonomic controls and HMI

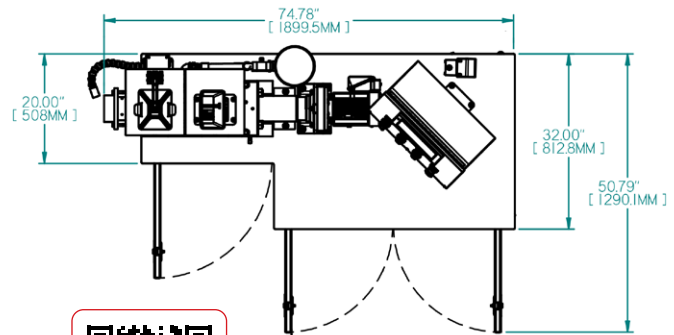
We designed the 3EX for hand-feeding small test batches, approximately five liters minimum. Steele has a wide range of dies available for extruding structural shapes or pelletizing.

Extruded shapes exit the die ready for product analysis. Measure drying, firing and curing cycles, compressive strength and density, and conduct drop testing or the ISO 3271 Standard Tumble Test.

Understand the effects of change — one variable at a time

The 3EX gives you instant feedback on variable changes:

- ✓ Adjust material mix.
- ✓ Increase or decrease percentage of binder or water.
- ✓ Experiment with different shapes.
- ✓ Change out die plates for more or fewer holes.
- ✓ Run no vacuum, full vacuum or partial.
- ✓ Analyze adding more or less shear to raw materials, relative to binder, water, and power consumption.



Scan the QR code to visit us online for more details and information.



Start small. Then go big.

When you're ready to scale, we offer a complete range of material preparation and extrusion solutions. Steele also provides single-source plant and application engineering, plus global technical support, parts, and service.

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