

# CUSTOM-ENGINEERED SYSTEMS

FOR DRY PARTICLE PROCESSING, SEPARATION AND CLASSIFICATION



# VAN TONGEREN: PROVEN ENGINEERING SKILL AND INNOVATION SINCE 1927

## GET TO KNOW THE COMPANY THAT INVENTED CYCLONE SEPARATION

Yes, nearly every cyclone separation system in operation today owes its existence to the concepts developed by Hermannus van Tongeren, the brilliant, over-achieving engineer who founded the company in Holland in 1927. Licensing this breakthrough dust collection technology, dozens of companies put their own names on thousands of systems installed all over the world. Each one provided unprecedented control over particulates for dramatic strides in air pollution prevention and worker safety. Yet they all share the design imprint of Van Tongeren.

Today, Van Tongeren and its acclaimed engineering team accept the label as brilliant and over-achieving with both pride and

reverence for the company's history. In fact, the company has recently earned acclaim among a growing community of in-the-know process engineers for developing the breakthrough technology to classify aggregates and other materials in a dry process that saves millions of gallons of fresh water daily.

For dry particle processing, Van Tongeren offers an unmatched combination of skill, experience and ingenuity. The company designs, manufactures, installs and services a proprietary line of gravitational classifiers, centrifugal classifiers, mobile classifiers, and gravitational-

inertial classifiers, in addition to cyclone separators and dust collection filters, all custom-engineered to meet specific production goals and end product specifications. Talk to the sales engineers at Van Tongeren to learn more and for ideas on improving your process or recovering waste material.



**On the cover:** Light shines on the Luck Stone Goose Creek Plant in Leesburg, VA. Dual Van Tongeren Gravitational-Inertial Classifiers allow this quarry to run 24/7 as a dry sand process that protects precious water resources.

# DESIGN ENGINEERING -





**MANUFACTURING - INSTALLATION - SUPPORT**

# CLASSIFICATION SYSTEMS

Van Tongeren classifiers separate fine from coarse particles at any cut point desired ranging from 15  $\mu\text{m}$  to 1,651  $\mu\text{m}$  using only air and gravity.

- No water – saves millions of gallons daily versus wet processes
- No moving parts – nearly zero maintenance for smooth, unattended operation, 24/7

For particle sizing, dedusting, and defuming, these classifiers handle high throughput production needs with impressive efficiency at feed rates of hundreds upon hundreds of tons per hour. The result is a non-stop flow of quality products from a dependable system that not only costs less to operate and maintain than traditional screening systems but also often costs less up front.

**“Our classification system has performed exactly as promised, our operators are very pleased and support from Van Tongeren has been superb. We’ve lowered the overall cost of production and I’d strongly encourage people involved in manufacturing sand to take a look at this technology.”**

*– Steve Demeyer,  
Process Management Manager, Luck Stone*

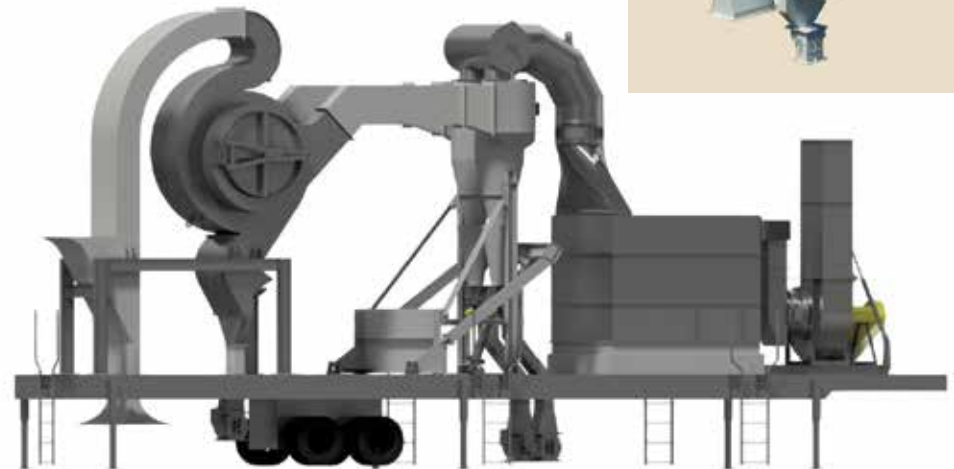
## GRAVITATIONAL CLASSIFIERS

In simplicity there is brilliance. A continuous feed curtain of material enters the classifier where an airstream directs the dry material towards a series of vanes. Coarse particles impinge on the vanes and drop into the discharge while a dust collector handles the fine particles. These classifiers separate particles at any cut point between 2 mm and 150  $\mu\text{m}$  (10 to 100 mesh).



## CENTRIFUGAL CLASSIFIERS

Recognized for its signature sharp bend, this classifier separates the feed material from the gas by centrifugal action. The novel design directs the gas stream into the curtain of material. Larger particles quickly exit the discharge outlet as finer particles follow a spiraling flow path in a controlled vortex until exiting with the airstream to a dust collector. This system separates at any desired cut point from 15  $\mu\text{m}$  to 100  $\mu\text{m}$  (950 to 150 mesh).





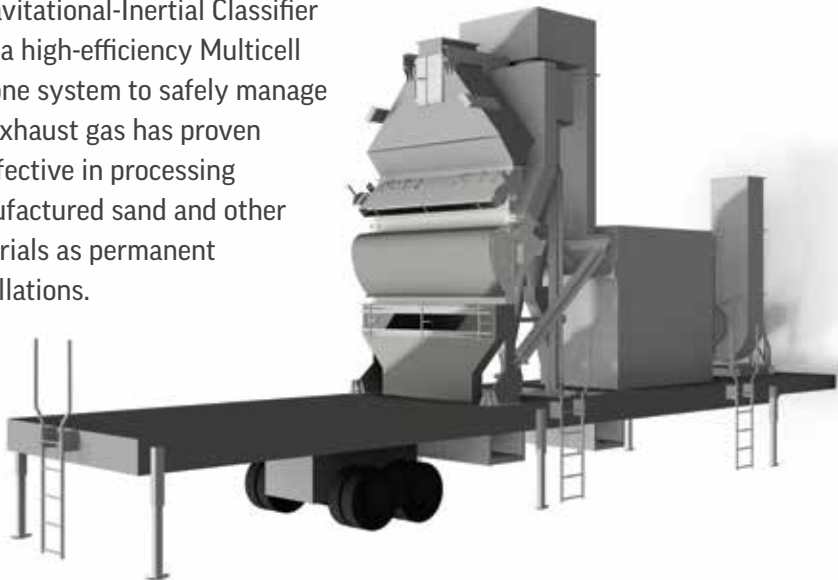
## GRAVITATIONAL-INERTIAL CLASSIFIERS

The pinnacle of engineering achievement in dry particle classification, this classifier design has single-handedly saved millions of gallons of fresh water by enabling aggregate companies to replace the traditional wet process with a completely dry process. The GIC system, known for its proprietary, heart-shaped design, harnesses gravitational, inertial, centrifugal and aerodynamic forces at the same time to separate particles at any cut point from 300  $\mu\text{m}$  to 63  $\mu\text{m}$  (50 to 230 mesh), excelling at removing fine particles under 75  $\mu\text{m}$  from clean, crushed stone.



## MOBILE CLASSIFIERS

To bring Van Tongeren classification technology nearly anywhere, these mobile classifiers set an entire dry processing plant onto a standard truck base. This approach combining a Gravitational-Inertial Classifier with a high-efficiency Multicell cyclone system to safely manage the exhaust gas has proven as effective in processing manufactured sand and other materials as permanent installations.





# CYCLONE SEPARATION

As the pioneer of cyclone separation technology for dust collection, Van Tongeren offers a unique blend of manufacturing experience and applications engineering expertise based on an extensive track record spanning hundreds of installations worldwide. These high-efficiency cyclones automatically separate gases from particulates, typically removing air from dry powders, aggregates, and even abrasives and

corrosives, then collecting the materials with ease. Consider custom-engineered cyclones for challenging, hazardous, high-temperature and other processes where efficiency, throughput, safety and longevity are paramount:

- Petrochemical
- Mineral
- Cement
- Aggregate
- Pharmaceutical
- Food
- Power Generation
- Cleanroom

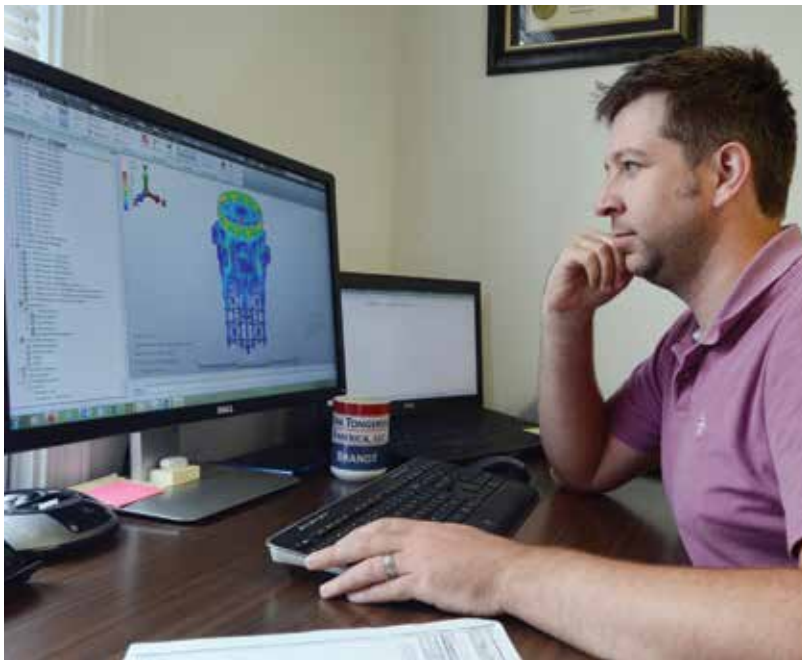
For processes that demand an especially high degree of efficiency without the costs associated with bag houses and precipitators, Van Tongeren offers the Multicell cyclone. These proprietary systems nest many small-diameter cyclones together within a steel casing to harness their high particle separation efficiency while managing high volumes of gas and material. Multicells excel in processes with aluminum, cement, coke, coal, and a variety of other materials.



# EXPERT ENGINEERING SERVICES

Knowledge, skill, and decades of accumulated wisdom form the foundation of every Van Tongeren particle processing system. This in-house team of full-time engineering professionals designs the classifiers, cyclones, dust collectors, and other systems using an intelligent blend of advanced, 3-D modeling, Finite Element Analysis, and traditional, hand calculations. Its range of engineering services also includes:

- Performance evaluations of existing systems
- On-site field technical support
- Spare parts design and fabrication
- Training for operations and maintenance
- Design drawings with high level of detail
- And more



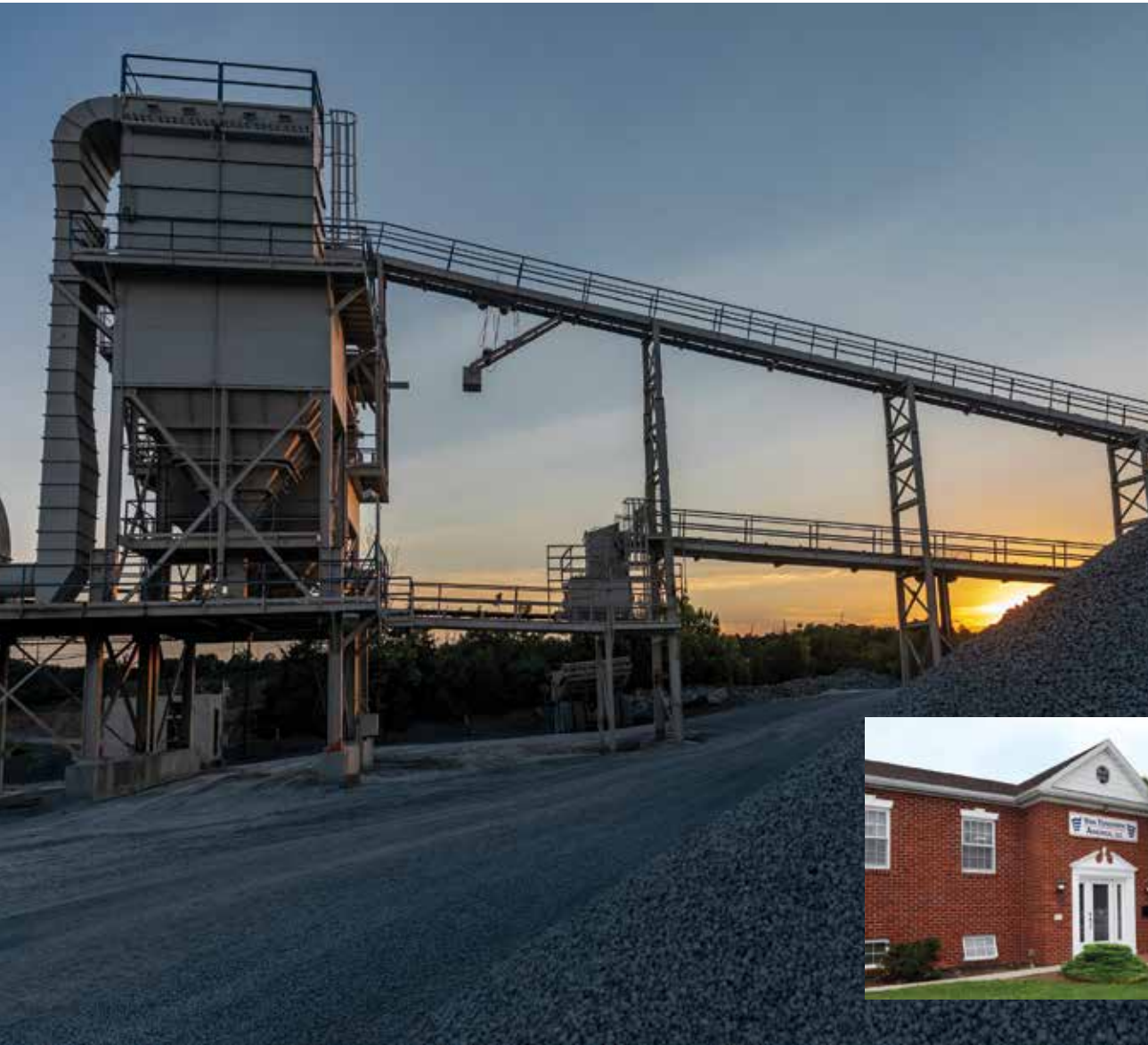
For a free conversation with our engineering team, call 717-450-3835.

## PULSE JET DUST COLLECTION

Van Tongeren designs and manufactures dust collection systems as the final step in the dry process. Custom-engineered to enhance the efficiency of the application, these dust collectors feature a proprietary pulse jet fabric filter design that collects 99% of the particulates entrained in the gas stream. The clever, modular concept enables multiple fabric filters to be joined together as needed to manage the dust load without over-specifying.







VAN TONGEREN AMERICA, LLC  
518 South 8th Street  
Lebanon, PA 17042  
717-450-3835

[Van-Tongeren.com](http://Van-Tongeren.com)

