

GEA CYCLONE EXTRA EFFICIENCY (CEE)

For your powder separation needs



FOR YOUR POWDER SEPARATION NEEDS.

The latest GEA cyclone solution, Cyclone Extra Efficiency (CEE), can help you overcome smearing and attrition challenges in your powder separation applications. In many cases, cyclone designs are prone to both of these challenges because of the high velocity swirl inside them. The CEE overcomes this by maximizing cyclone performance with its tried-and-tested design.

What is Smearing?

- Depositing of powder in the cyclone
- Highly problematic with powder that contains fat
- Causes blockages that can lead to stubborn deposits during cleaning-in-place (CIP)

What is Attrition?

- Attrition occurs when powder particle size distribution is downgraded, which:
 - Lowers the separation efficiency
 - Interrupts the drying process

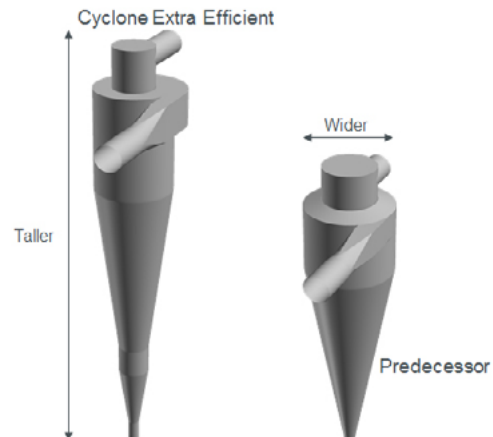
Key benefits of CEE

- Higher powder separation efficiency resulting in lower emissions
- Lower risk of smearing and attrition
- Cleaning-in-place nozzles can be applied
- Sturdy, proven design
- Better drying economy
- Possible omission of baghouse installed downstream

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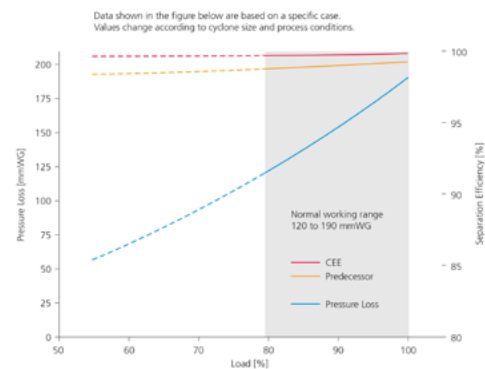
Proof of concept

The CEE is suitable for applications in food, dairy and chemical drying. Since 2017, approximately 70 Cyclone Extra Efficiency units have been installed globally. Their success so far with existing customers is proof that it delivers. To learn more about the CEE, book a meeting with a GEA cyclone specialist today.



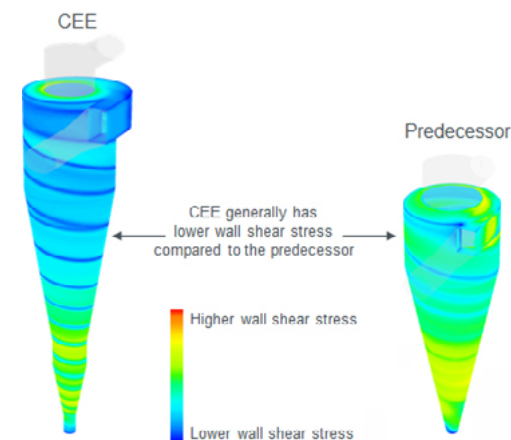
Improved design.

The CEE is taller and slimmer than its predecessor, exhibiting a considerably higher powder separation efficiency.



Minimized powder loss.

Minimized powder separation is an essential performance indicator. In the chart below, the CEE displays a higher separation efficiency than its predecessor when operating within the same pressure loss ranges.



Comprehensive design process

The CEE was developed using extensive laboratory tests, a literature review and computational fluid dynamics (CFD) modelling. Its mechanical integrity was also thoroughly examined.

During development, we discovered that wall shear stress is a useful measure of the risk of both shearing and attrition. Our testing showed lower wall shear stress in the CEE.

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