

FT4 Powder Rheometer® Methodologies

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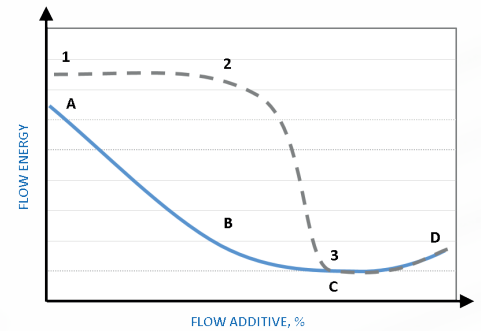
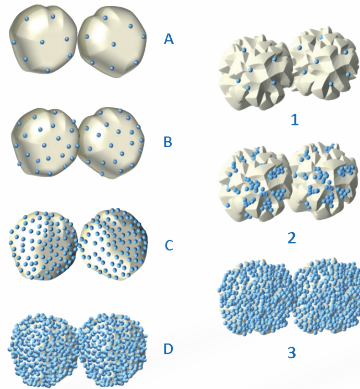


DYNAMIC FLOW

Basic Flowability

Used for measuring the effects of:

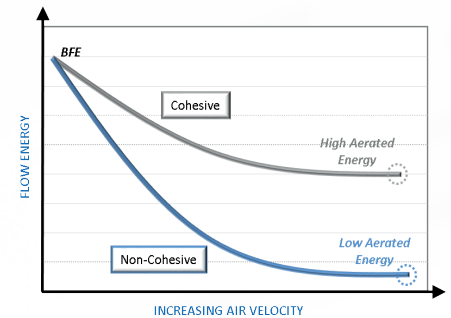
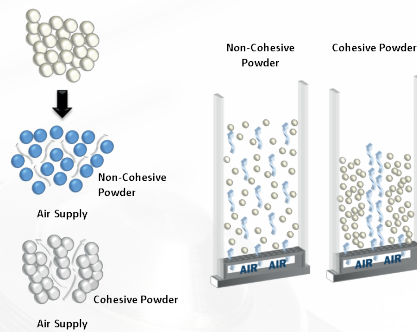
- Flow additives
- Wet granulation end point
- Moisture content
- Attrition / Segregation
- Physical properties (particle size, shape, surface texture, ...)
- Electrostatic charging



Aeration

Used for measuring:

- Cohesion
- Low stress, gravitationally induced flow
- Dosing / Mass uniformity
- Fluidisation behaviour
- Blending / Mixing
- Segregation potential

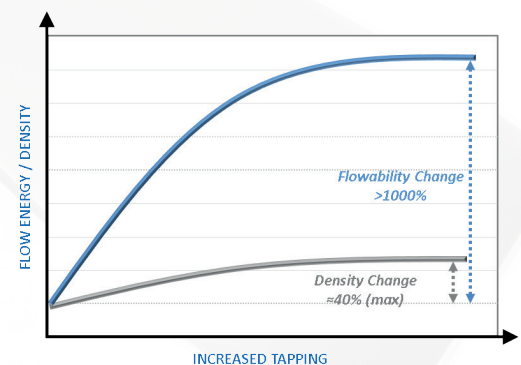
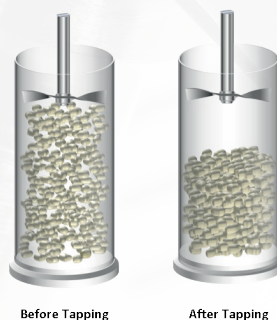


Consolidation

- Direct Pressure
- Tapped

Understanding the effects of:

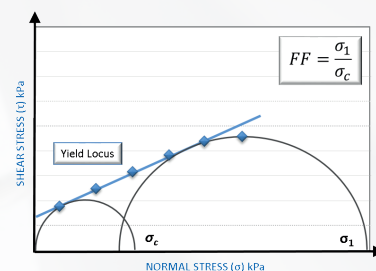
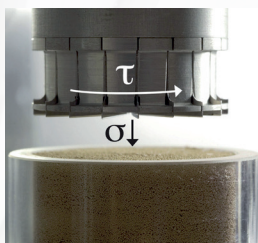
- Transport
- Storage
- Processing
- Caking



SHEAR PROPERTIES

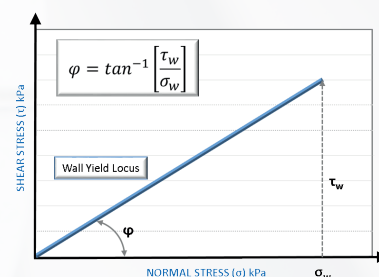
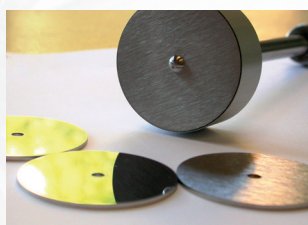
Shear Cell

- Unconfined Yield Strength (UYS)
- Flow Function
- Cohesion
- 1ml Shear Cell
- Hopper design



Wall Friction

- Measure friction between powder and surface material - Hopper, IBC, Punch
- Wall friction angle, for hopper design

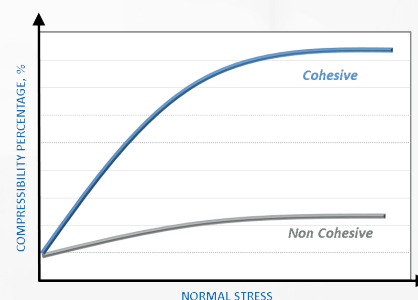
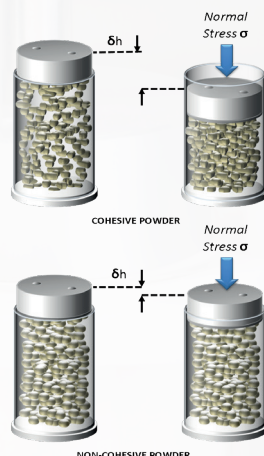


BULK PROPERTIES

Compressibility

Changes in density due to:

- Transportation
- Storage
 - Hoppers
 - Kegs
- Processing
 - Direct compression
 - Roller compaction
 - Screw feeding



Permeability

Powder behaviour during:

- Aerosolisation / DPI
- Hopper flow
- Compression
- Pneumatic transfer

