



Tempest Dryers

FPFC

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Presenter



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**No one dryer is the best choice for all
drying applications.**



Moisture Content

Ways Moisture is held within Products

- Free Water – Gravity
- Floc Water – Mechanical
- Capillary Water – Compaction
- Bound Water – Destruction of Cell
- Matrix Water – Destruction of Matrix



Process Benefits

Benefits of the Tempest Drying Process

- Temperature of Product remains “cool”.
- Uniqueness of air dried product.
- Ability to mill the product
- Low energy to water removed ratio

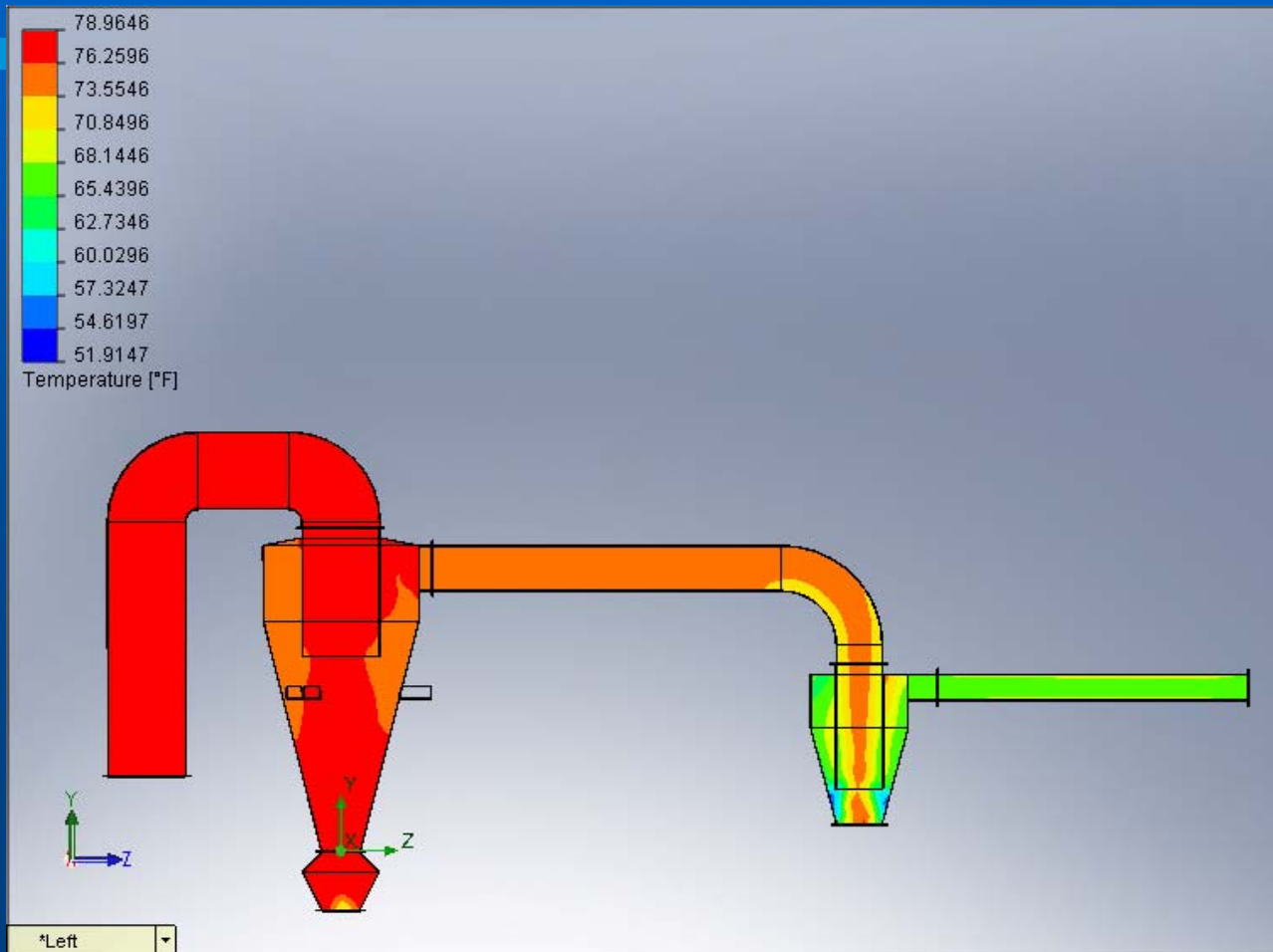


Cool Temperatures

**Tempest Process typically maintains process
Temperatures below 100 degree F.**

- Provides an efficient drying process for products that degrade with elevated temperatures.
- Provides a drying process for products that are prone to catching fire.

System Temperature





Air Dried Product

**Centripetal
Air Dried
vs.
Evaporation
Thermal Dried**





Process Milling

Effects Of Milling





Energy Efficient

The newest generation of Tempest Dryers operates at 182 KW per Hour.

- This is name plate power usage, actual is anticipated to be lower.
- At \$0.06 per KW this equates to \$10.92 per hour of operation.
- Energy usage would be 311 BTU per pound processed (1 ton/hr) and approximately 800 BTU per pound of water removed (total energy).

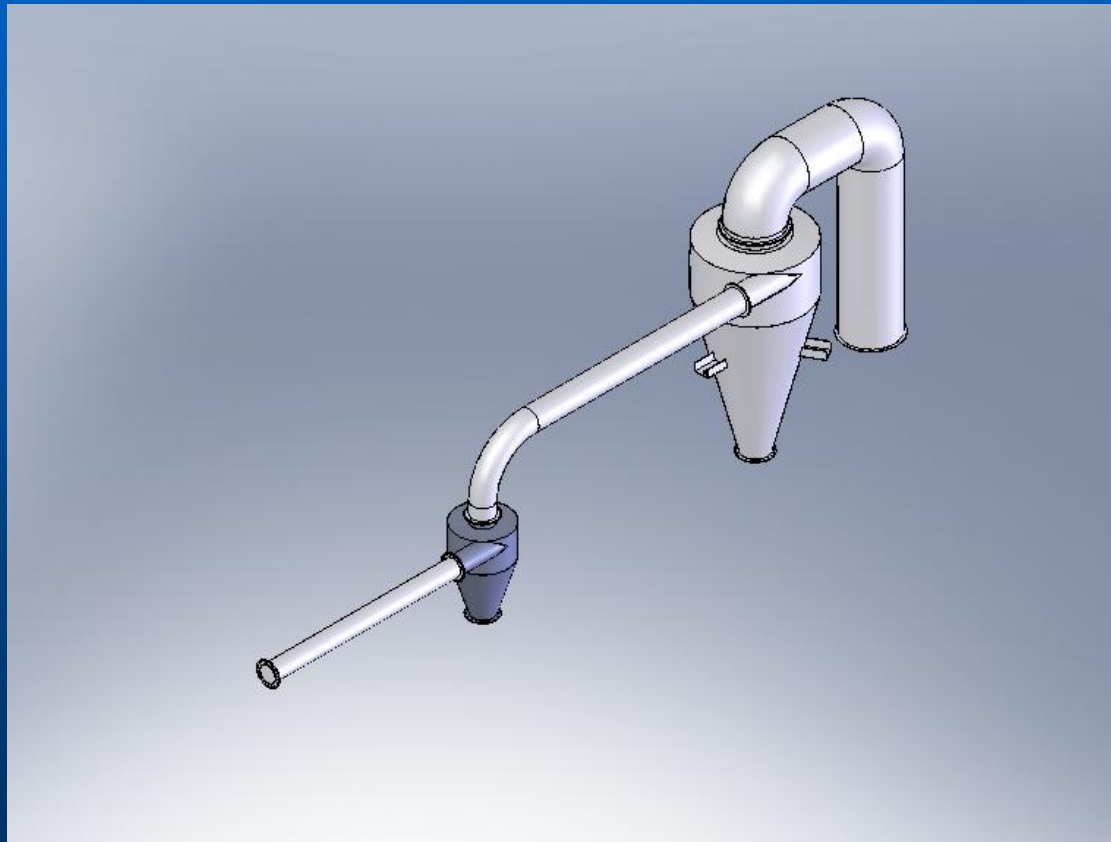


Science

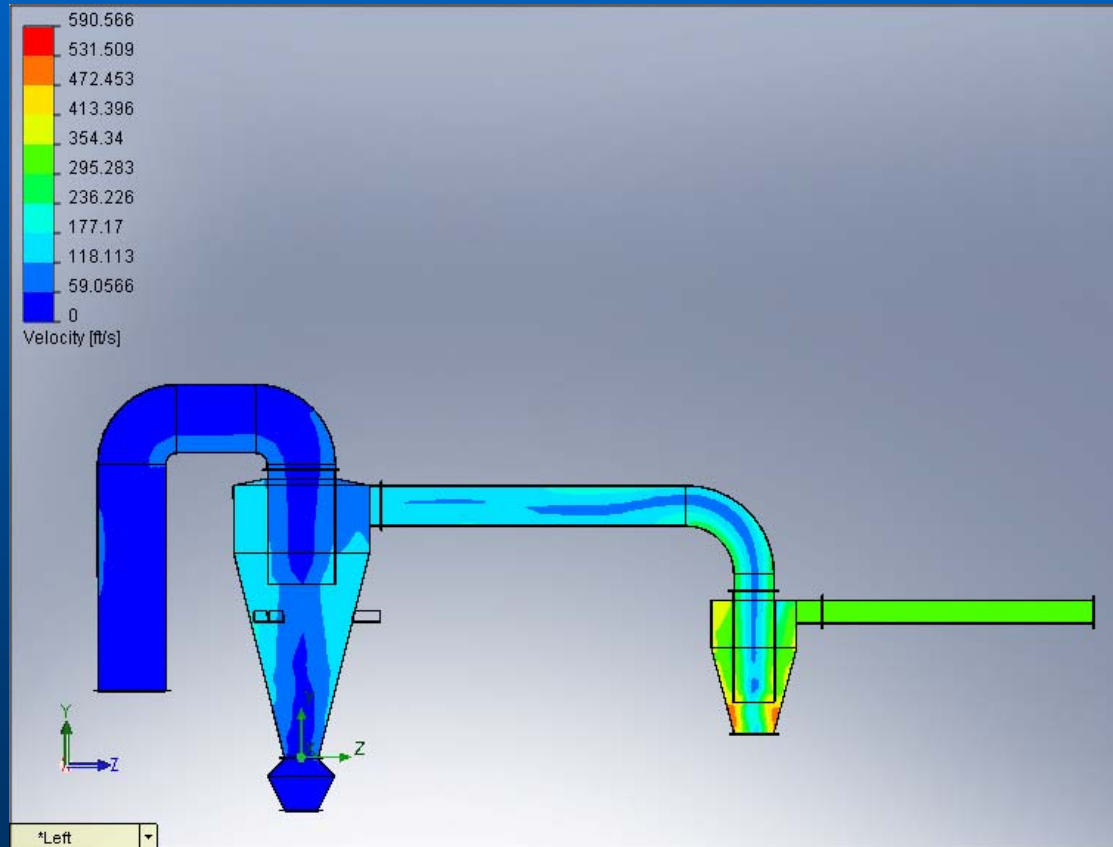
Science behind separation:

- Mechanical Separation (non-phase change)
- Form of Atomization – 10 to 200 micron droplets
- Millions of collisions causes the milling action.
- Exposes additional moisture to be atomized.
- Centripetal forces separate based on specific gravity.

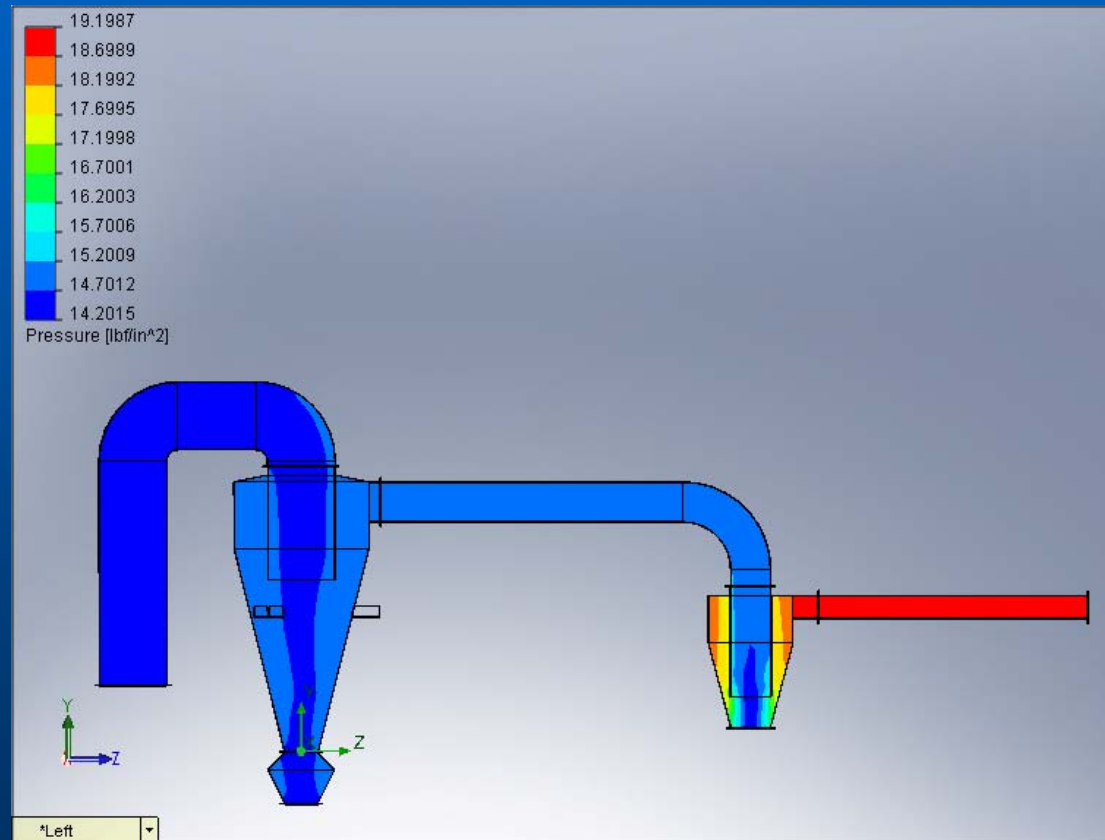
Science



Science



Science





GLOBAL RESOURCE
RECOVERY ORGANIZATION

Process Methodology

Material
Loading





GLOBAL RESOURCE
RECOVERY ORGANIZATION

Process Methodology

Material
Loading





GLOBAL RESOURCE
RECOVERY ORGANIZATION

Process Methodology

Material
Drying
and
Milling



8/30/2010

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GLOBAL RESOURCE
RECOVERY ORGANIZATION

Process Methodology

Material Dispensing





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Process Methodology

Engine and
Blower
Assembly





Thank-you