



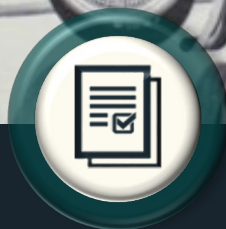
SEI

FLÄKTGROUP SEMCO: FUSION WHEEL & FUSION 3Å





Energy
& Environmental
Focus



Patented &
Certified
Products



U.S & Global
Footprint



Engineered
Air Quality &
Data Center
Solutions



Engineered
Air Distribution
& Sound
Solutions



OEM,
Key Account &
Sales Rep
Route To Market



Service
& Support

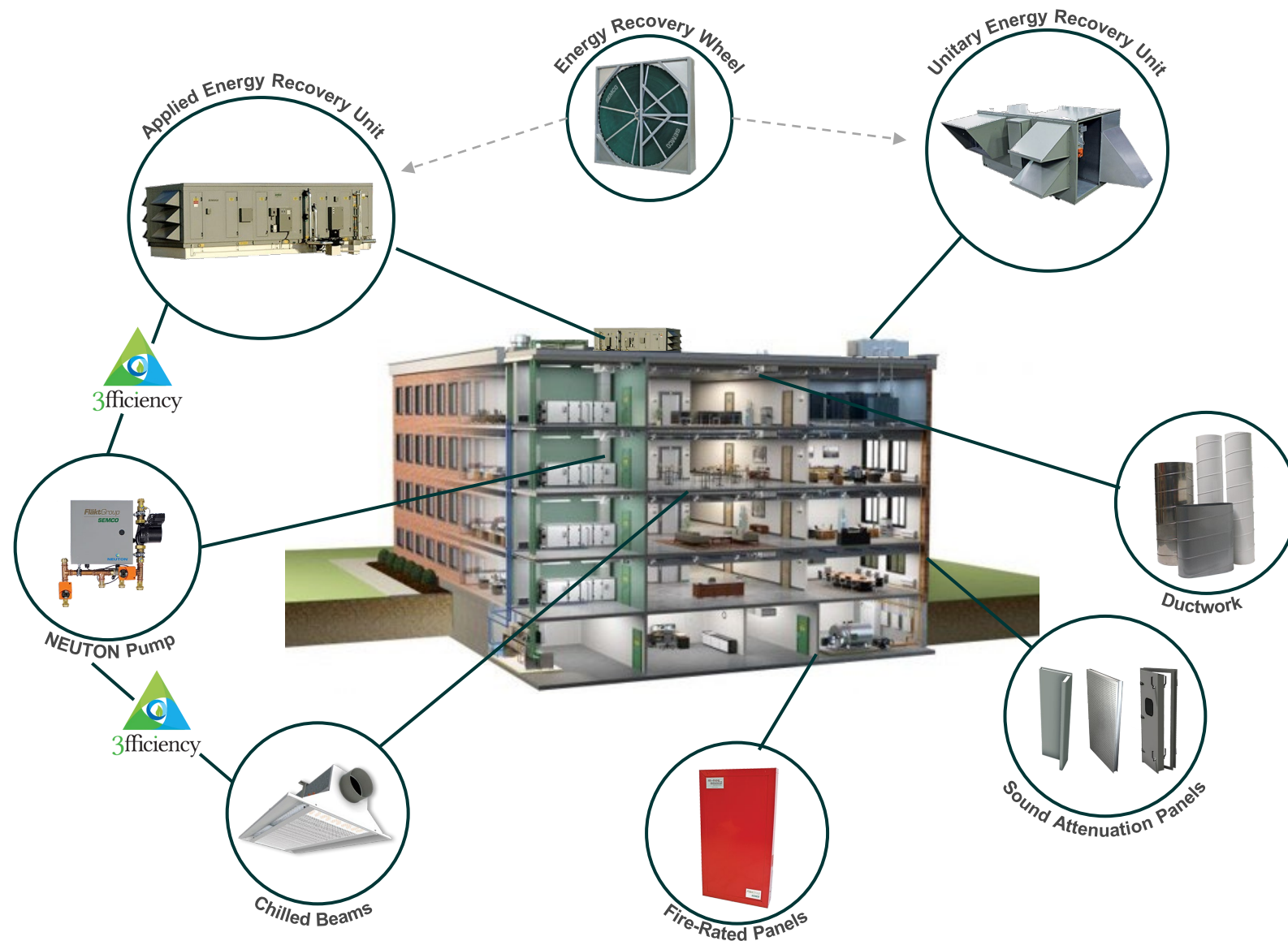


Award Winning
& Industry
Recognized

Who we are & what we do

FläktGroup
SEMCO

FläktGroup SEMCO Products For Commercial Applications



Education



Offices



Healthcare & Labs



Manufacturing & Automotive



Public Buildings & Entertainment



Sports Facilities



Datacenters





FläktGroup SEMCO Superior Sales Support & Service



FläktGroup SELECT

WELCOME TO SELECT - YOUR RESOURCE FOR OPTIMAL INDOOR AIR CLIMATE

Quick Select

Calculate

Project

Product Catalogue / Chilled Beams / IQ STAR ORION II Chilled beam (IQHA) IQHA-100-I-03-03-1

Properties	Value
Length:	100
Coil function:	Cooling
Coil:	Cooling left
Pt Function:	With
Flexible hoses:	Without
Grille:	Adjustable horizontal z

ADVANCED PRODUCT PROPERTIES

Horizontal deflection: 0

Vertical deflection: 0

Parameters

Number of units: 1

Air pressure drop: 100 Pa

RESULT	VISUALIZATION	DESCRIPTION	DOCUMENTS	ACCESSORIES (1)
Power	481	1892	2230	btu/h
Coil power	437	1175	1247	btu/h
Supply air power	44	517	992	btu/h
Power (all units)	481	1892	2230	btu/h
Sound Lp10A dBA	< 20	< 20	25	dB(A)

EXPRESS SELECT

FläktGroup SEMCO

Colleen Devlin Semco
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Home | Selection Tool | Quote Request | Administrator | Account | Sign Out

Print Schedule | Preview Proposal

Read-only mode

Project | Global Input | Input | Output | Energy Analysis

Project Information

Project Date	08/28/2018
Quote Valid Through	2nd Half 2018
Project Name	Assembly Dental



FläktGroup SEMCO Fusion & Fusion 3Å

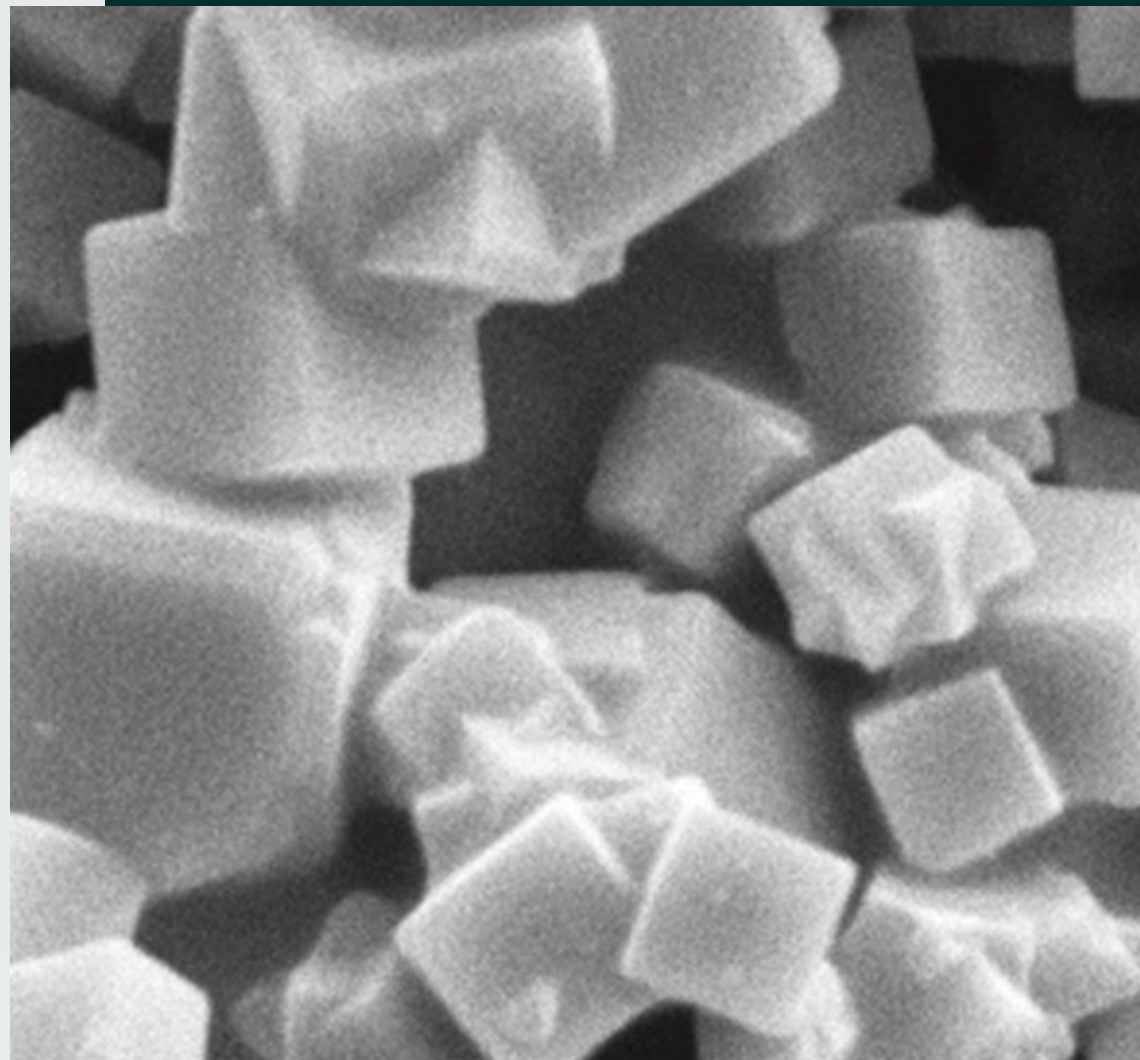
- Sensible & latent energy transfer
- Substantially reduces the initial cost of the newly installed energy recovery system and its reliance on the cooling & heating plant.
- High latent transfer efficiencies allow for full recovery even in low outdoor temperatures without frosting . (i.e. -10°F with return air humidity at 20% relative humidity)
- Recovers temperature and humidity during both heating and cooling seasons.
- Saves up to 80% of the heating & cooling loads associated with outside air.
- Expected life greater than 20 years.



AHRI CERTIFIED®
www.ahrdirectory.org

Air-to-Air ERV
AHRI Standard 1060
Energy Recovery COMPONENT is certified. Actual performance
in packaged equipment may vary.

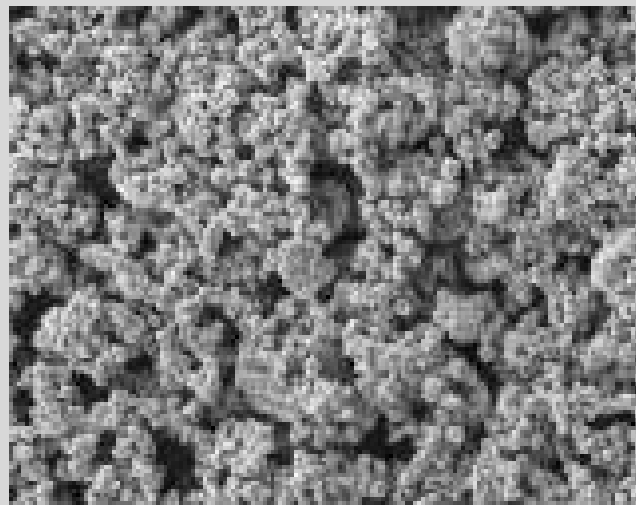
- Solid adsorbent layer allows for equal transfer of latent and sensible energy.
- 3Å / composite desiccant surface limits the transfer of contaminants.
- Acid resistant face coating for critical applications and seaside environments.
- Anti-stick face coating limits the buildup of particulate, simplifies cleaning.
- Anti-microbial face coating and media properties.



Electron microscopic image of a 3Å molecular sieve

FläktGroup SEMCO: Uniform Coating

- Provides a uniform desiccant layer.
- Latent capacity is maximized (equal to sensible).
- Dense composite desiccant layer maximizes corrosion resistance.

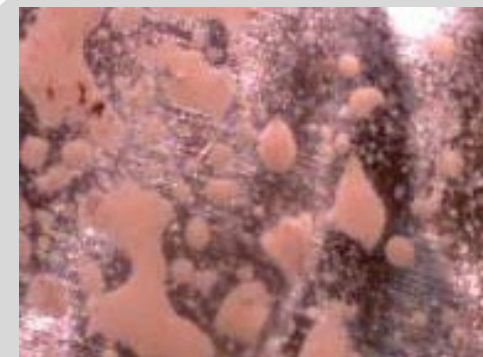


FläktGroup Semco uniform coating

WHEEL COATING

Competitors: Dipped Coating

- Dipping wheels after forming saves cost, but results in low latent performance and significant corrosion.
- If the wheel oxidizes, the rough surface will transfer contaminants regardless of the desiccant used.
- Poor coating causes greatly reduced latent performance.
- Increased potential for condensation.

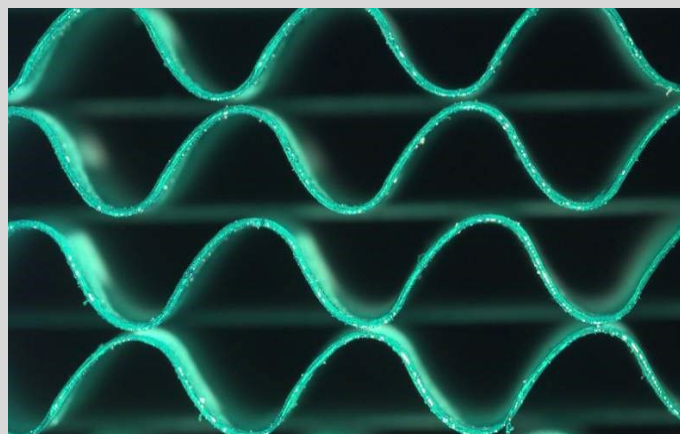


Competitors dipped coating

Large Fluted Media Minimizes Buildup

FläktGroup SEMCO: Large Flutes Without Plugging

- Flute spacing is larger than competitors.
- Alternating flat and corrugated layers maintains consistent flute sizing.
- A 600-micron pass allows MERV 8 filtration to be more than adequate to prevent plugging.
- Some applications have removed exhaust filters without plugging.



FläktGroup Semco large flutes (10x magnification)

WHEEL FLUTES

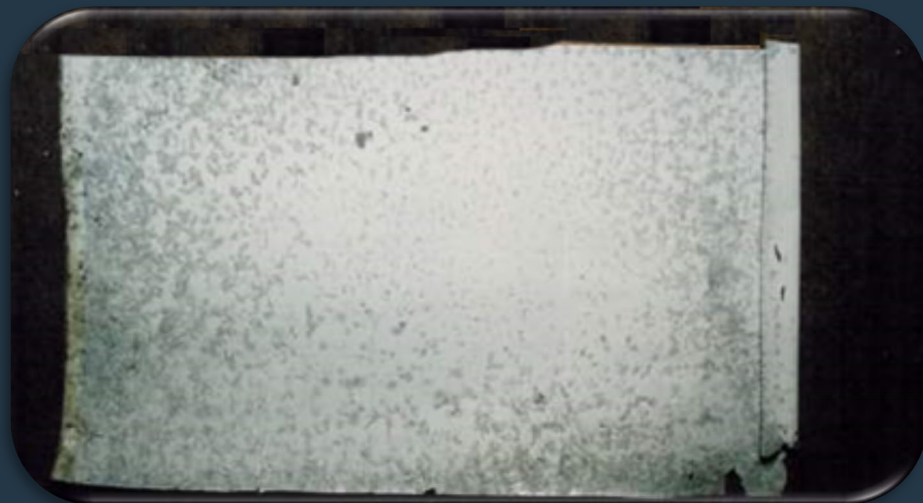
Competitors: Smaller Flutes With Plugging

- Some competitor's wheels require MERV 13 filters to prevent plugging.
- Pressure drop is very high.
- Some state "when pressure drop is 150% of new, clean the wheel."



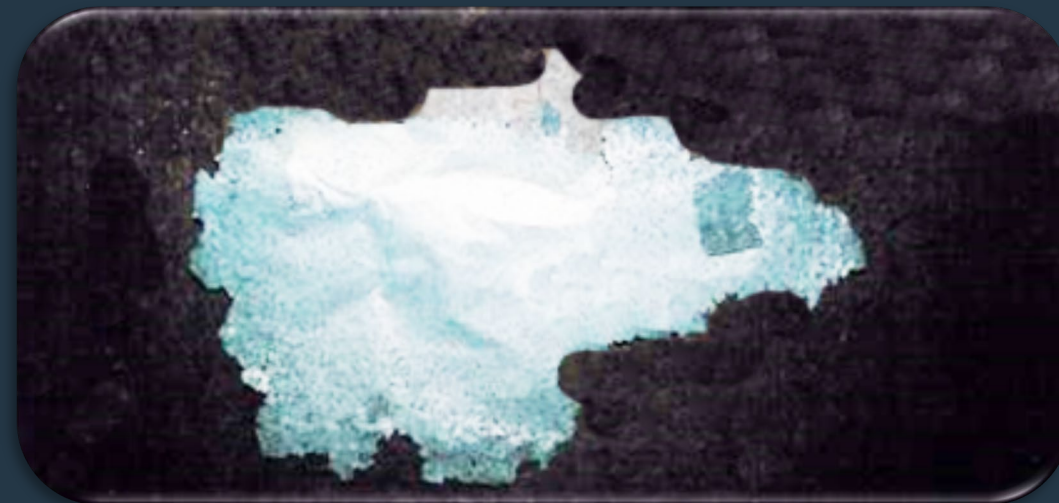
Competitor's small flutes with plugging

Molecular sieve media with face coating was determined to be **150 times more corrosion resistant** than plain aluminum based on the ASTM test method (muratic acid/high humidity)



Plain Aluminum Foil

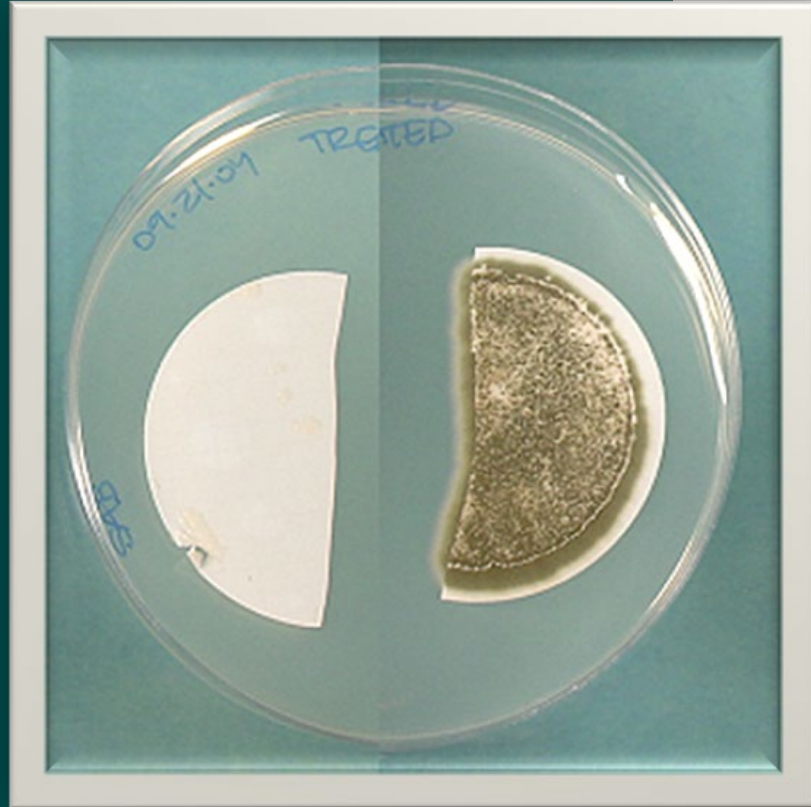
Muratic acid test PH of 0, high humidity chamber, 80°F
3-month period, samples ½" over liquid surface,



FläktGroup Semco Wheel Surface in Lab With Edge Coating

Current 3Å coated foil (with Roymal edge coat)
muratic acid test PH of 0, high humidity chamber 80°F
3-month period, samples ½" over liquid surface

(See technical report entitled "Corrosion Resistance of the FläktGroup Semco Energy Wheel" for more information)



Aluminum wheel media with and without FläktGroup Semco anti-microbial face coating additive.

- EPA- approved active anti-microbial coating is a standard feature on 3Å Fusion wheels.
- FläktGroup Semco has developed an effective anti-microbial face coating additive which has been shown to be very effective as supported by independent test data.
- The TE 3Å molecular sieve surface has also been shown to have unique properties that will not support the growth of micro-organisms.
- This feature is beneficial for all projects, but especially important for hygienic applications like hospitals and research laboratories

Anti-Stick Face Coating

Developed for casino applications to greatly reduce time to clean wheels (if needed).



Tobacco build-up on a wheel surface with anti-stick coating face additive.

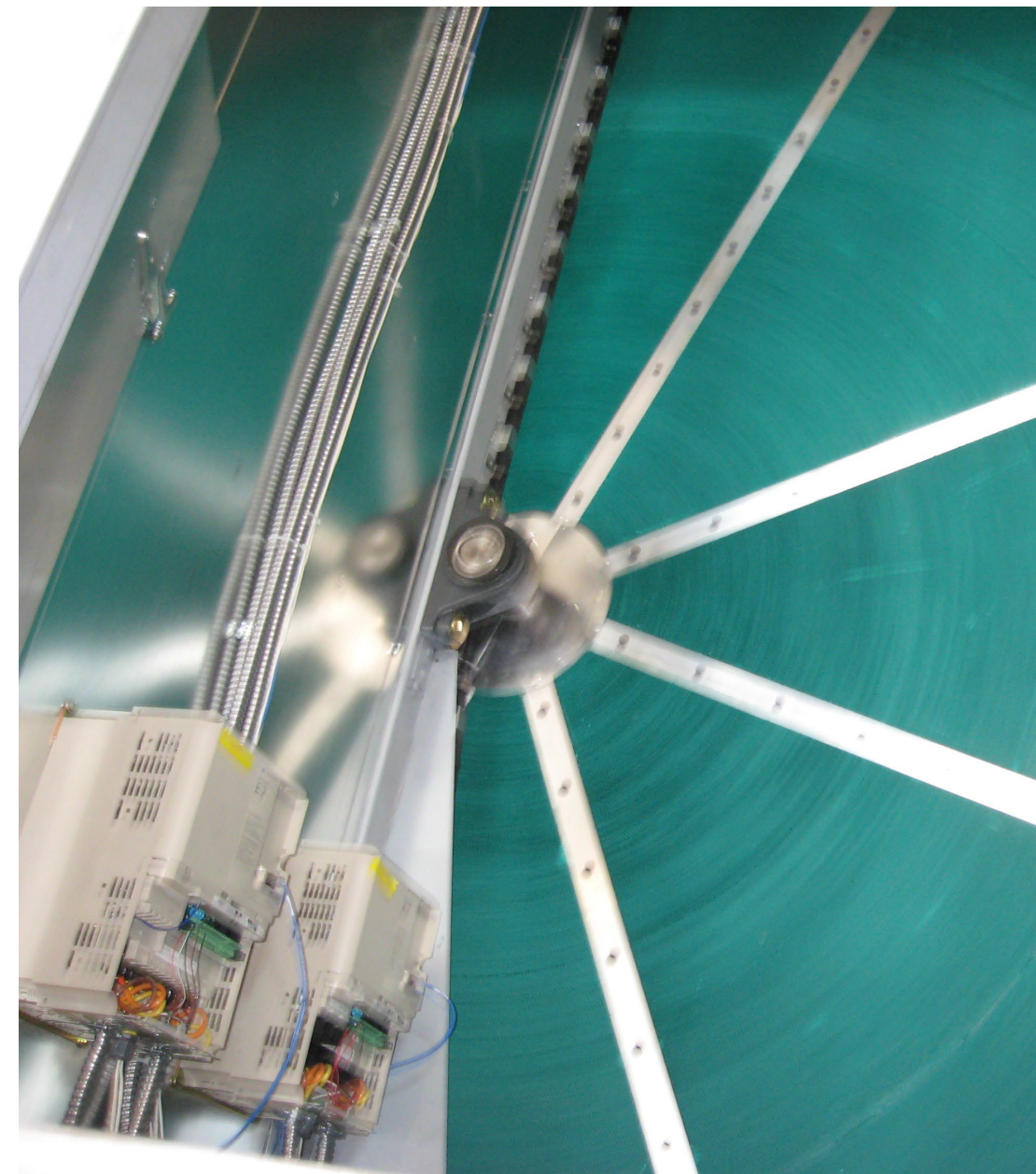
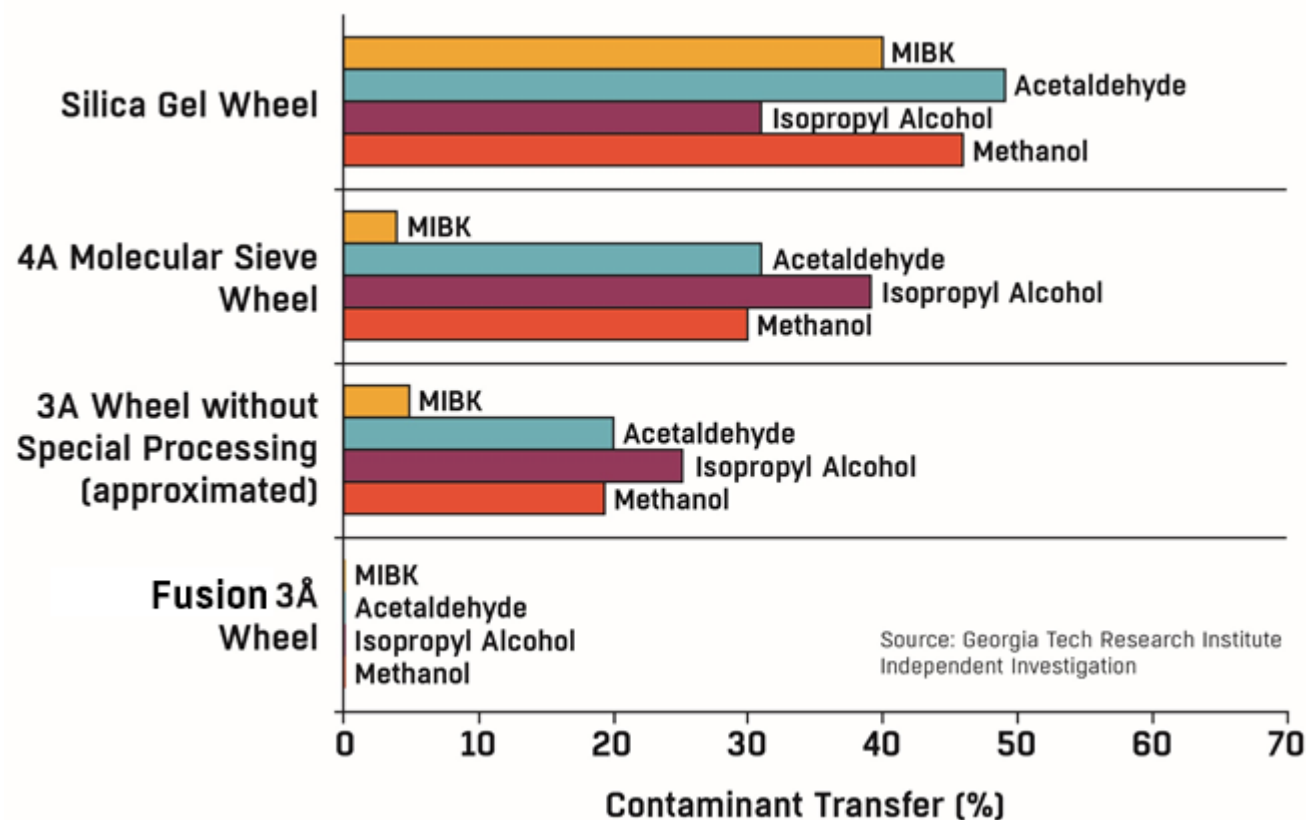


Tobacco build-up on a wheel surface without anti-stick coating face additive.

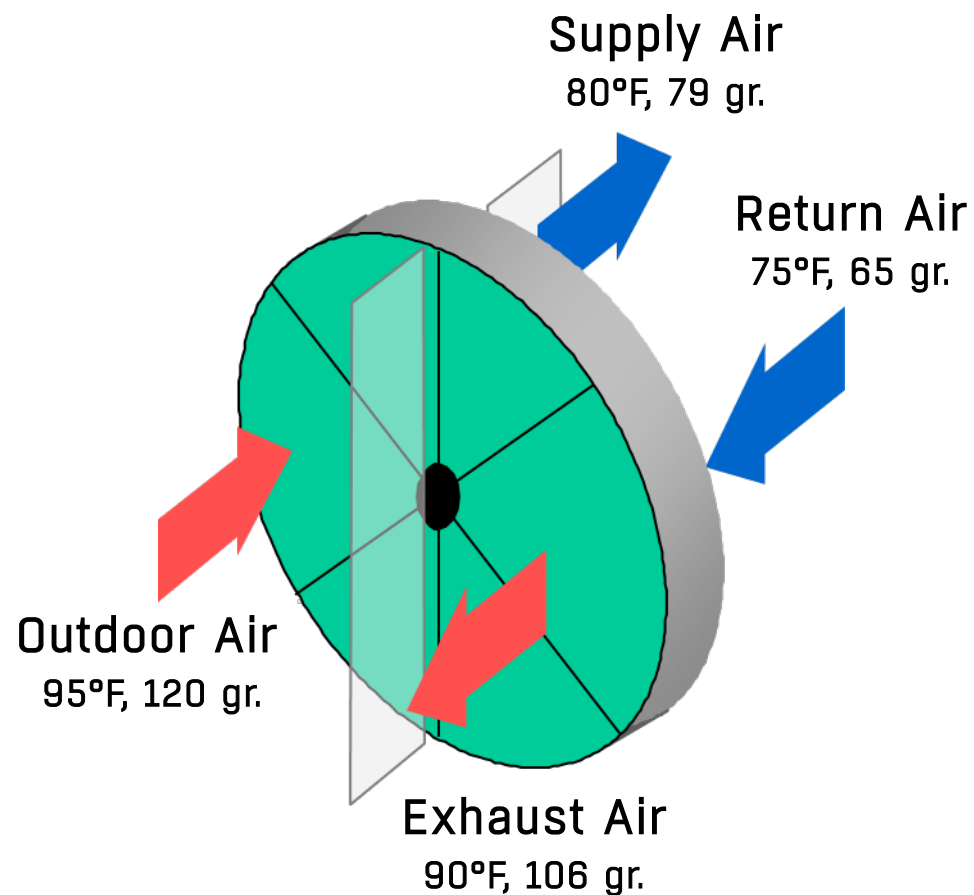


Desiccants and Cross Contamination Levels

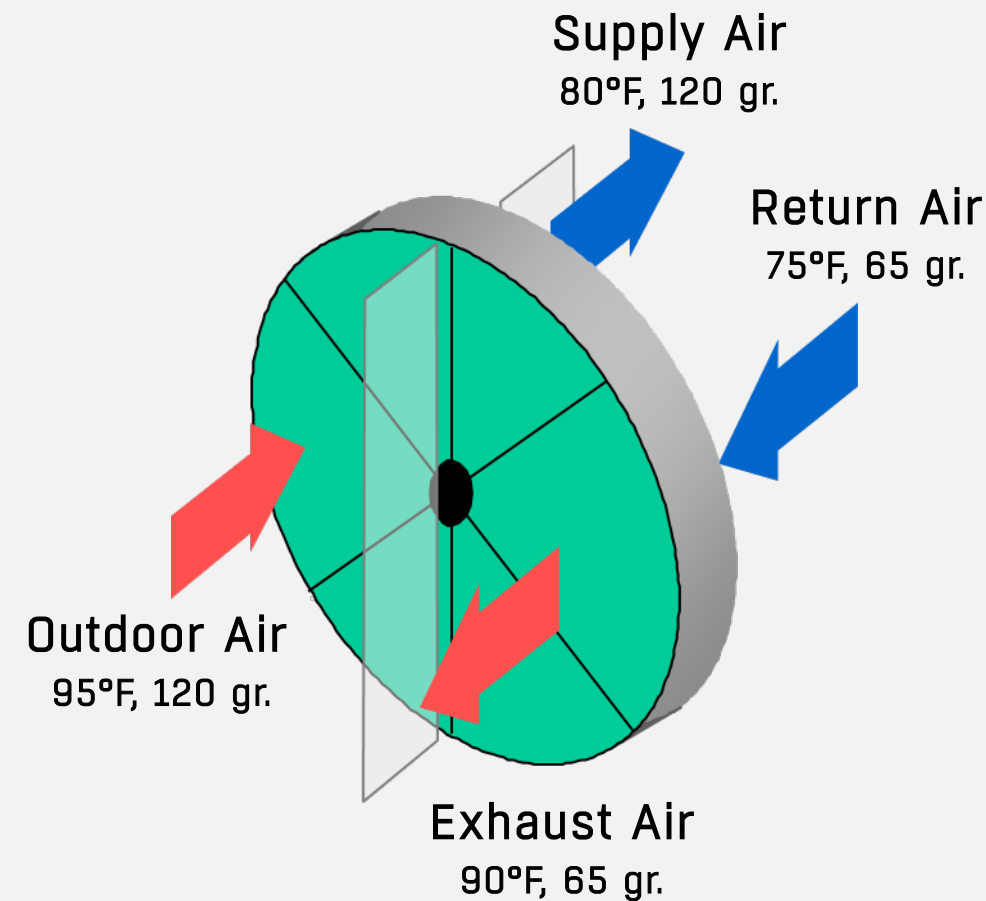
FläktGroup SEMCO pioneered an application of 3Å desiccant to improve indoor air quality in buildings by not transferring exhausted VOCs back into the fresh outdoor air.



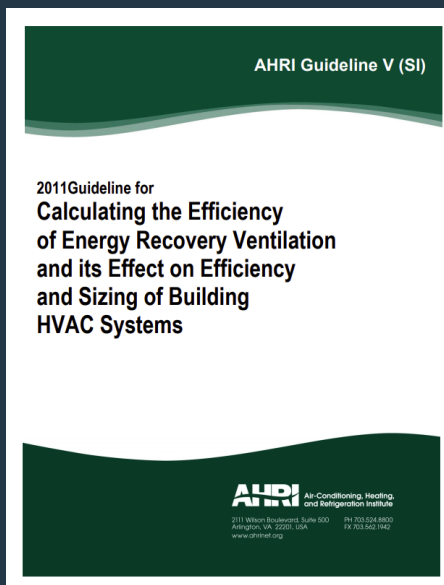
Total Recovery (temperature & humidity)



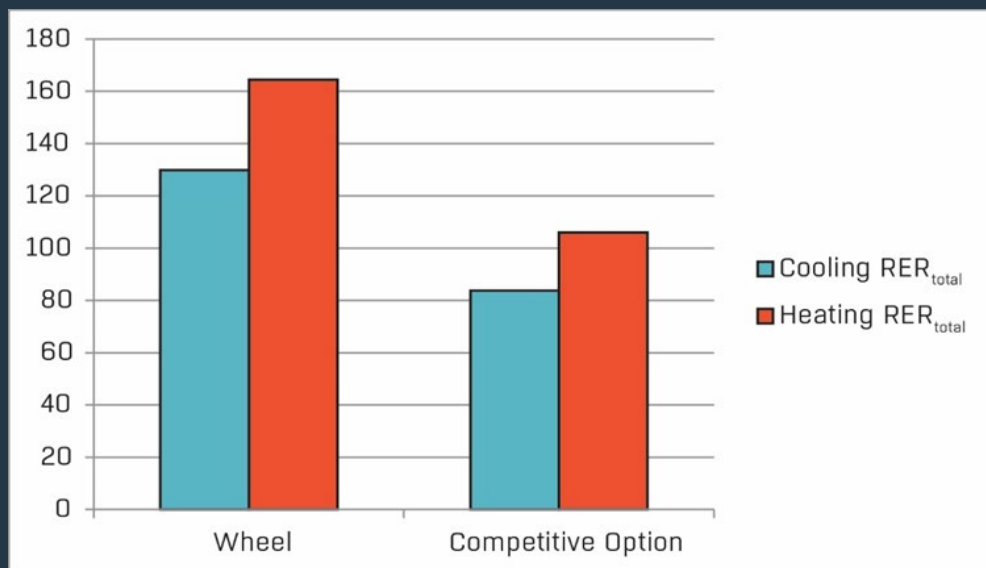
Sensible Recovery (temperature only)



AHRI Guideline V — Recovery Efficiency Ratio (RER) & Sample RER Comparative



- A metric developed to report: “recovered energy divided by the power used to recover that energy.”
- Can be used as a method to compare energy recovery devices.
- Reflects the impact of pressure loss (fan power) and wheel drive power.
- RER_{total} reflects total recovery at cooling or heating design conditions, expressed in BTUs/Watts.
- **A higher RER value reflects a more efficient overall system design.**



Plant Capacity Savings	Wheel	Competitive Option
Total Effectiveness	73.30%	77.30%
Supply Air Pressure Loss	0.63 inwg	1.04 inwg
Return Air Pressure Loss	0.56 inwg	0.96 inwg
RER _{total} Comparison	Wheel	Competitive Option
Cooling RER _{total}	129.8	83.7
Heating RER _{total}	164.4	106

Contact Information & Thank You

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Duct: duct.semco@flaktgroup.com

Panels: panels.semco@flaktgroup.com

Refresh Wheels & Components: refresh.semco@flaktgroup.com

Datacenters: datacenters.semco@flaktgroup.com

Parts/Service Contact Information: service.semco2@flaktgroup.com

Warranty/Quality Claims: <https://info.semcohvac.com/claim-form>

Service Request: <https://info.semcohvac.com/service-request>

Parts Request: <https://info.semcohvac.com/parts-request>

Thank you for your attention!