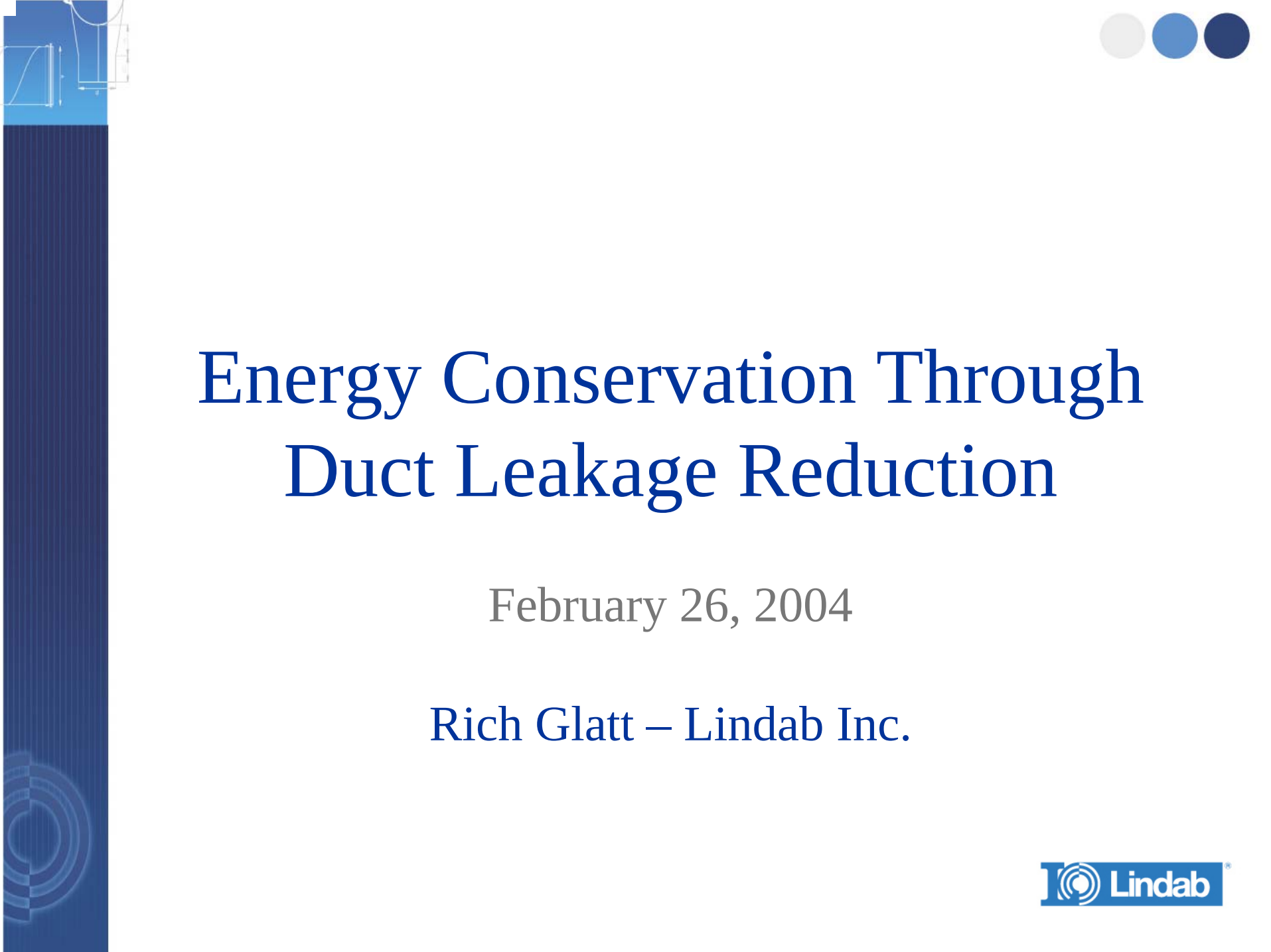




Energy Conservation Through Duct Leakage Reduction

February 26, 2004

Rich Glatt – Lindab Inc.

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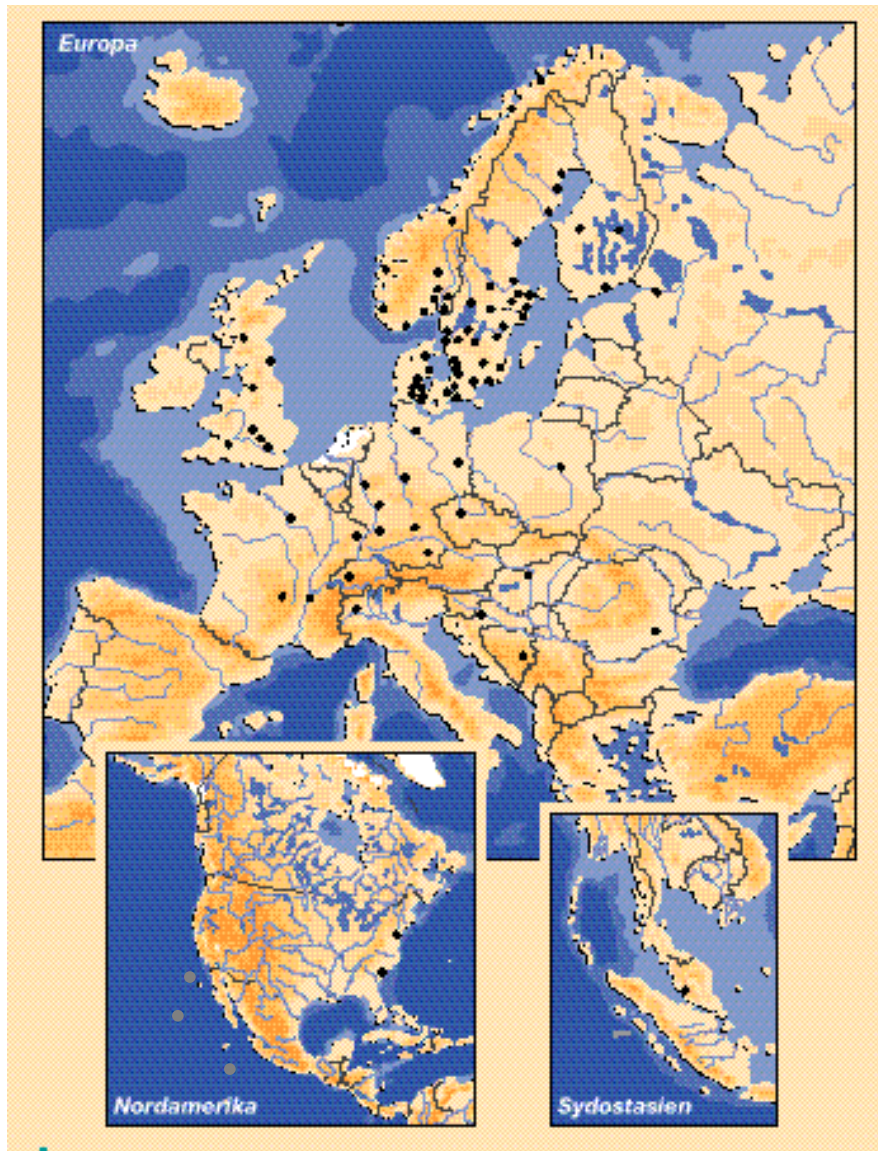
Agenda

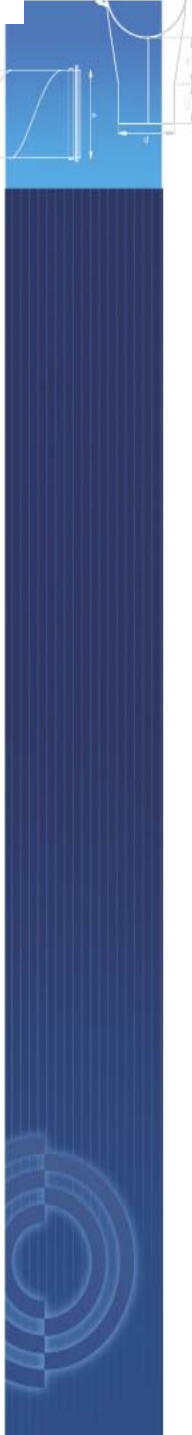
- Lindab worldwide
- Lindab USA
- Product lines
- Operating cost and energy savings
- Installed cost labor savings
- Additional cost reduction opportunities
- CADvent[®] duct design and drafting software



Lindab Worldwide

- World's largest duct manufacturer
- As of 2000, largest duct manufacturer in US
- 2003 sales \$700 million
- Solidly profitable
- Over 3,500 employees
- Operations in 25 countries

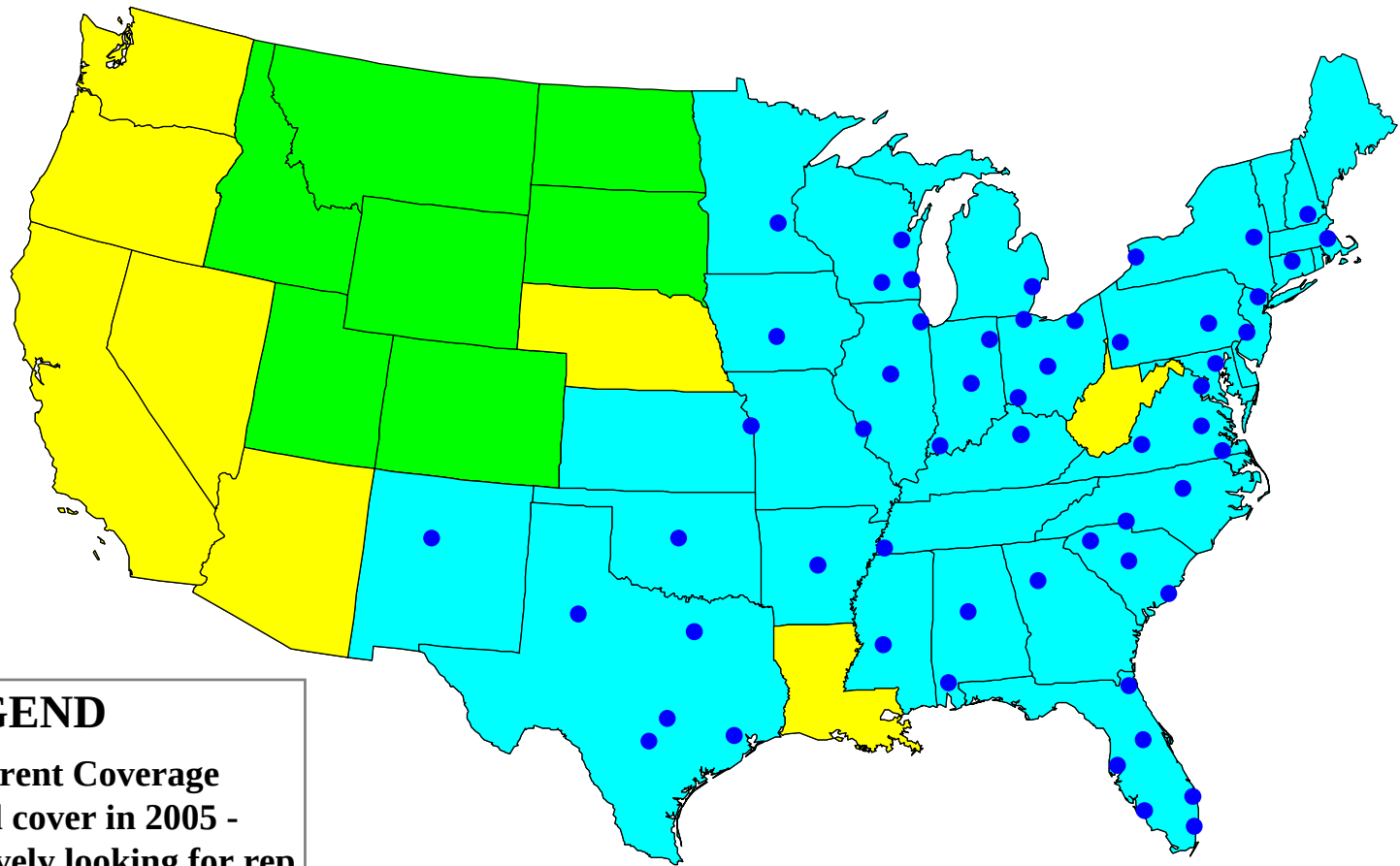




Lindab USA

- Started in US in 1993
- 280,000 sq ft of manufacturing and warehousing
 - Headquartered in Stamford, CT
 - 120,000 sq ft in Portsmouth, VA
 - 70,000 sq ft in Tampa, FL
 - 50,000 sq ft in Skokie, IL
 - 40,000 sq ft in Memphis, TN
 - Sales office in Cincinnati & Dallas
- West coast operations - 2005
- \$2 million inventory
- 15 Truckloads/150 orders per day

Current Distribution

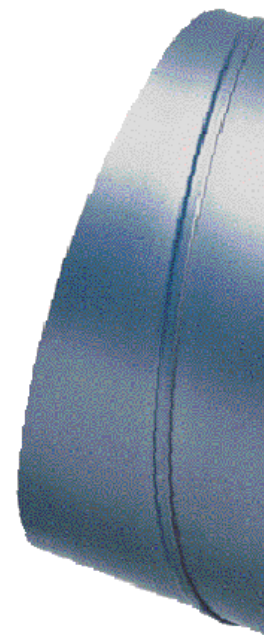


LEGEND

-  Current Coverage
-  Will cover in 2005 - actively looking for rep
-  Will cover in 2004
-  Distributor location



SPIROsafe[®]
and
other Lindab product
lines



Lindab product lines

- SPIROsafe Single Wall
 - Leakage Class 3 performance guaranteed (–20” WG to +12” WG)
 - Galvanized G90 standard on pipe and fittings
 - 3” Dia to 60” Dia @ +/- 0.25% tolerance
 - Unique design features – rolled edges, flat dimpled seams, double lipped gaskets, etc
 - Also available in SS 304 & 316
 - Easy to paint in the field



Lindab product lines

- SPIROsafe Double Wall
 - DW that installs like SW - easiest installing DW system on the market
 - Eliminates the need for costly flanged connections
 - SMACNA Leakage class 3 performance and guarantee
 - Slip fit without aligning inner liners
 - Fiber retention system
 - Available in 1" and 2" wall thickness



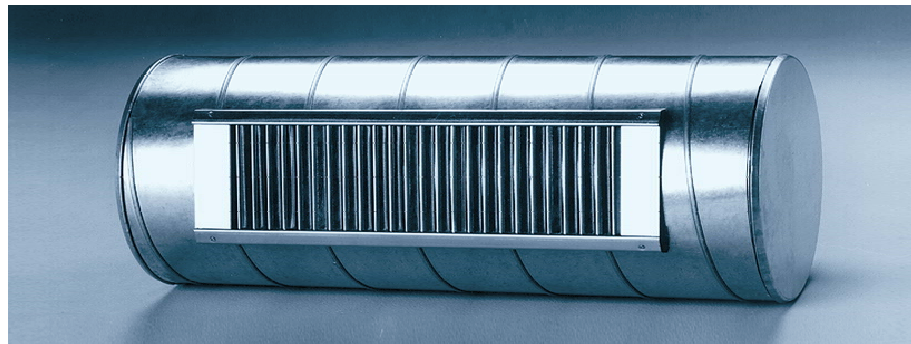


Lindab product lines

- SPIROoval
 - Available in single wall and double wall
 - New flanging system called SPIROflange
 - Lower cost alternative to industry accepted methods
 - Only one weld for better strength and easier sealing
 - Side inserted drive cleat for tight-to-slab installations

Lindab product lines

- SPIROcomfort RGS-3
 - Register for supply or return air
 - Mounts directly to round duct without rectangular tap
 - For single wall or double wall spiral duct
 - Single blade type adjustable volume damper
 - Double deflection adjustable blades
 - Flanges and end caps provide flush fit



Lindab product lines

- SPIROcomfort DRLA
 - High air volume drum louver
 - Mounts directly to round duct
 - Adjustable mounting flanges
 - Rotating “drum”
 - Individually adjustable vanes
 - Extractor damper operable from face



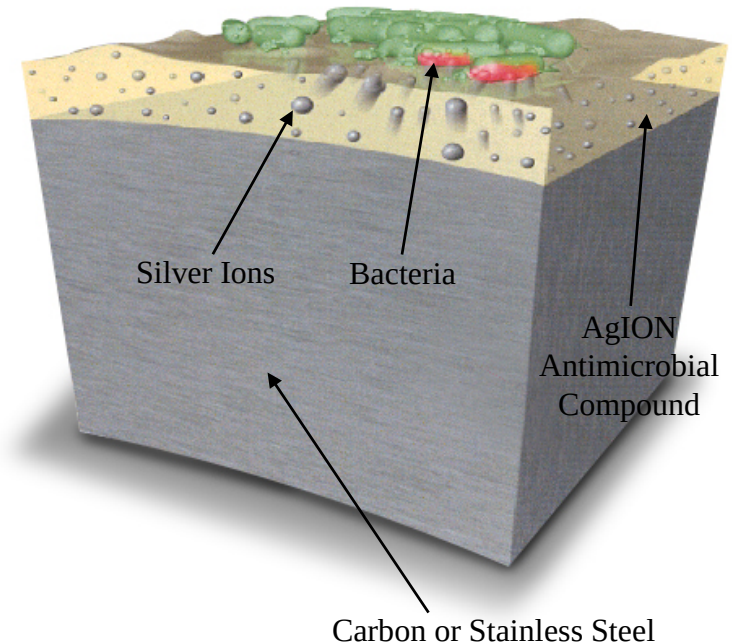
Lindab product lines

- SPIROsilencer
 - Straight silencers with or without baffle
 - Elbow silencers
 - Fiber retention fabric
 - Equipped with SPIROsafe gaskets
 - 2", 4", 6" wall thickness
 - 1'-8' lengths



Lindab product lines

- SPIRO® + AgION™ antimicrobial coating
 - How does AgION work?
 - Silver ions are encapsulated in a ceramic called zeolite
 - The zeolite acts as an ion pump to exchange silver ions with other ions (Na⁺, Ca⁺, etc.) present in moisture
 - This mechanism provides a controlled time release of silver ions
 - The released silver ions inhibit growth of bacteria
 - All products available with AgION coating



Operating cost savings on a typical system

Duct System Type	Leakage Class	Air Volume (CFM)	Annual Operating Cost per System	Additional Annual Operating Cost	Lindab Savings
No Leakage	0	10,000	\$5,595	N/A	N/A
SPIROsafe®	1.5	10,165	\$5,876	\$281	0%
Conventional Spiral	6	10,659	\$6,776	\$1,181	15%
Rectangular	12	11,318	\$8,112	\$2,517	38%

– SPIROsafe vs. rectangular duct

- $\$2,517 - \$281 = \$2,236$ savings per system per year
- $\$2,236/\text{system} \times 4 \text{ systems} = \$8,944$ per location per year utility savings
- $\$8,944 / \text{location} \times 50 \text{ locations} = \$447,200$ total annual utility savings

Installed Cost Comparison

- Labor 70% - Material 30%

	<u>Conventional</u>	<u>SPIROsafe</u>
LABOR		
SPIROsafe = Labor savings (20% - 30%)	70%	$\begin{array}{r} 70\% \\ \times 0.70 \\ \hline 49\% \end{array} \longrightarrow 49\%$
MATERIAL		
Duct	15%	$\longrightarrow 15\%$
Fittings	15%	$\begin{array}{r} 15\% \\ \times 1.14 \\ \hline 17\% \end{array} \longrightarrow 17\%$
TOTAL COST	100%	81%

Installed Cost Comparison

- Labor 60% - Material 40%

	<u>Conventional</u>	<u>SPIROsafe</u>
LABOR		
SPIROsafe = Labor savings (20% - 30%)	60%	$60\% \times 0.75 = 45\%$
MATERIAL		
Duct	20%	20%
Fittings	20%	$20\% \times 1.14 = 23\%$
SPIROsafe = SPIROvent + (10% - 14%)		
TOTAL COST	100%	88%

Installed Cost Comparison

- Labor 50% - Material 50%

	<u>Conventional</u>	<u>SPIROsafe</u>
LABOR		
SPIROsafe = Labor savings (20% - 30%)	50%	$\begin{array}{l} 50\% \\ \times 0.80 \\ \hline 40\% \end{array} \longrightarrow 40\%$
MATERIAL		
Duct	25%	25%
Fittings	25%	$\begin{array}{l} 25\% \\ \times 1.14 \\ \hline 28\% \end{array} \longrightarrow 28\%$
SPIROsafe = SPIROvent + (10% - 14%)		
TOTAL COST	100%	93%



Additional cost reduction opportunities

- System designed knowing leakage class allows for:
 - Air handling equipment downsizing opportunity
 - Ductwork downsizing opportunity
- Achieve design performance regardless of installing contractor
- Standard lead times – 8 working days
 - Easier to stay on project schedule
- Consistent product quality across the U.S.
- Total system performance – 10 year guarantee

