

VRE Shade & Save Systems

www.vresystems.com



An Introduction to Shade & Heat Retention System Design and options

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VRE - The Company

- Began with maintenance to shade systems being supplied with turnkey operations from Europe
- Then decided to manufacture systems to assist growers with different styles of North American greenhouse structures
- The patented VRE aluminum extrusion is used in all our curtain installations

The VRE Aluminum Extrusion

- Patented in both Canada and USA
- Provides the best possible seal, like a door closure at each curtain joint
- Locks support or suspension wires in place
- Adapts to any truss and post design
- Makes for neat and clean installation, no loose wires and minimizes use of plastic clips
- For both sliding and suspended systems

Growers have different responses to today's heating costs

- Wishing or hoping fuel costs will go down
 - Not likely this will happen
- Lowering set points to save fuel
 - This affects plant quality and timing
 - Negative effect on bottom line
- Wait to see what happens, do nothing
 - Which also does nothing for the bottom line

A Grower questions

- Do curtain systems really work?
- VRE has been designing and installing curtains for over 25 years and never had a customer come back and say “It didn’t work for me!”

We can however say that if a grower is heating 15 to 20,000 square feet year round and does not install a curtain system for the next 4 years he will have paid his fuel supplier the price of a curtain system and still won’t have one.

Another common question

- I am considering computerizing or curtain systems – what will provide the quickest return on investment?
- Curtains will pay back quicker
- After curtains, then consider a climate control computer, as the more functions there are to control, the more benefits you gain from automation

It is time to be Pro-active

- Shade and Heat retention has been proven to:
 - Lower heating and cooling costs
 - Improve soil temperatures
 - Improve air temperatures
 - Improve plant quality
 - Improve growing climate for plants means better working climate for people and customers as well

Fabric Choices

- **Shade and Heat Retention**
 - All fabric choices will provide both
- **Black-out and Heat Retention**
 - These fabrics will also provide heat retention
- **Roll up Walls for Black-out or Partitions**
- **LS fabrics are still the most popular choice**

Shade Fabrics – Indoor for Commercial Greenhouses

- XLS Firebreak Series with high UV resistance
 - Shade values from 15% to 82%
 - Energy saving values from 47% to 72%
 - 15” edges of manufactured roll are fire resistant
 - Combination of clear polyester and aluminum strips sewn together with strong polyester filament yarn
 - Allows moisture through but not air
 - Provides very compact fabric bundles
 - 5 year warranty, typically 8 to 12 year life, depends on controls, application and system type



XLS/15 Firebreak for Tree Seedling Production Greenhouse

Newest Fabric Introduction

made for Energy Saving purposes only-
Indoor type for Commercial Greenhouses

- XLS – A/A Firebreak with high UV resistance
 - Shade value of 97 %
 - Energy Savings value of 75%
 - Same properties as Firebreak shade fabrics
 - Fabric bundles are slightly larger due to all aluminum foil strips, less flexible than clear poly strips

Used for crops with high light requirements, no shade desired



Shade Fabrics for Institutional Greenhouses

- XLS Revolux Series with high UV resistance
 - Shade values from 16% to 69%
 - Energy Saving values from 45% to 65%
 - Totally fire retardant fabric
 - Combination of clear plastic and aluminum strips sewn together with strong polyester filament yarn
 - Allows moisture through but not air
 - Provides very compact fabric bundles
 - 5 year warranty, typically 8 to 12 year life, depends on controls, application and system type



**XLS Revolux 16
totally Fire Retardant
fabric for higher
occupancy rated
greenhouses with
public access areas**

Shade Fabric for Open Roof Structures

- COLS (open weave) and CPLS (closed weave)
 - High UV stabilization
 - Shade percentages from 49% to 65%
 - Heavier construction to withstand the full sun, wind and rain exposure in open roof houses
 - ABRI wire types and locking type hooks supplied for suspended installations

CPLS/60 ABRI suspended fabric



Black Out fabrics for Photo-period control

- XLS Obscura Firebreak A/A + B/B
 - High UV stabilization
- Two layer fabric, aluminum top exterior and black secondary inside layer
 - provides short day length control for growing mum, kalanchoe and euphorbia crops requiring short days
 - All silver exterior prevents heat stress
 - 15” edges of manufactured roll width are fire resistant
 - 0.1% light transmission, 75% energy savings



XLS Obscura A/A B/B
Truss to Truss Peak Profile

Black out fabrics from Phormium

- 2 x PH/1 two layer black
 - provides short day length control for growing mum, kalanchoe and euphorbia crops
 - Both layers are identical black/black
 - Similar to a ground cover with a binding stitch every ¼” to prevent strand movement
 - 0.1% light transmission, 70% energy savings

2 x PH/1 Fabric on Truss to Truss Flat system with Black Silver vinyl Roll up walls



Roll-up wall Fabrics - Shade

- ILS Ultra Series with high UV resistance
 - Shade values of 13% to 75%
 - Energy savings from 45% to 65%
 - For temporary partition or zoning
 - Specially designed for roll up applications

ILS/50 Ultra on
Center Rolling
side wall
roll up
application



Roll-up wall Fabrics – Black-out

- ILS Hortiroll Revolux
 - High UV stabilization
 - White/White for total black-out control
 - 0% light transmission, 70% energy savings

XLS/15 Firebreak Truss to Truss Flat top system
with Hortiroll White/White wall for lighting partition



Cost Oriented or Profit Oriented

- There are Cost Oriented Growers who
 - are willing to sacrifice quality for a lower price
 - do not take the time to do the research
 - purchase on price only
- We are looking for the Profit Oriented Grower who
 - looks for ways to make more money and receive a better Return on Investment
 - expect and demand a quality product
 - deal with companies that have earned a good reputation

Put curtains in New or Older Areas

- Usually growers want to do the older areas because those are the areas they have always run year round
- These are usually more costly to retrofit
- The older areas may also be less efficient
- Newer areas usually provide better climate control possibilities with more air volume

Initial Information for Curtain Quotes

- The greenhouse footprint, # and size of houses
- Post spacing and number of sections
- Orientation North/South or East/West
- Shade or Black out and Heat Retention
- Wall heights if black out walls are required
- Any specific fabric preferences
- Configuration (travel direction) that will work
 - truss to truss (flat or peak), or gutter to gutter
- Any preference for a sliding or suspended system
- Total installation or Supervision

Design considerations

- Determining where a system will fit with minimal changes to existing equipment
 - Truss to Truss flat
 - Truss to Truss Peak
 - Gutter to Gutter
- Photographs provide us with most of the information required to design a system

Measuring Posts and Drains



Truss depth and Chord Sizes



Post top details



Many different types



Gable wall framing and sizes



Mono-rail and Basket line elevations



Measuring Vent Rack Clearance at its lowest point during full open close cycle



Heater and Vent Stack, both mounting method and Elevations





Heater mounting from below or above

Heater Mounting Methods

Correct or Incorrect



Older style Vent systems and how close they are to truss lines





Make note of any

Unusual building practices

More unusual building practices





- Note bracing locations and elevations



Unusual building practices

Unusual building practices



Best Practices – keep the top chord
clean of any equipment



Raised roof vents and motor mounts

Best Practices – keep the top chord clean of any equipment



Lower in line post braces keep inflators high or low

Keep obstructions consistently on same side of truss but low enough to avoid drive cables



Why VRE and not XYZ

- VRE Extrusion for Seal suited to any truss style



Why VRE and not XYZ



- Pre-wired Ridder gearbox with both travel and safety limits, motor and reversing control c/w cord, plug, and computer hook-up terminals

Why VRE and not XYZ

Perimeter
seals that
work!



Why VRE and not XYZ



All curtains are prefabricated to fit the system purchased

Why VRE and not XYZ



Suspended or Sliding
Systems available

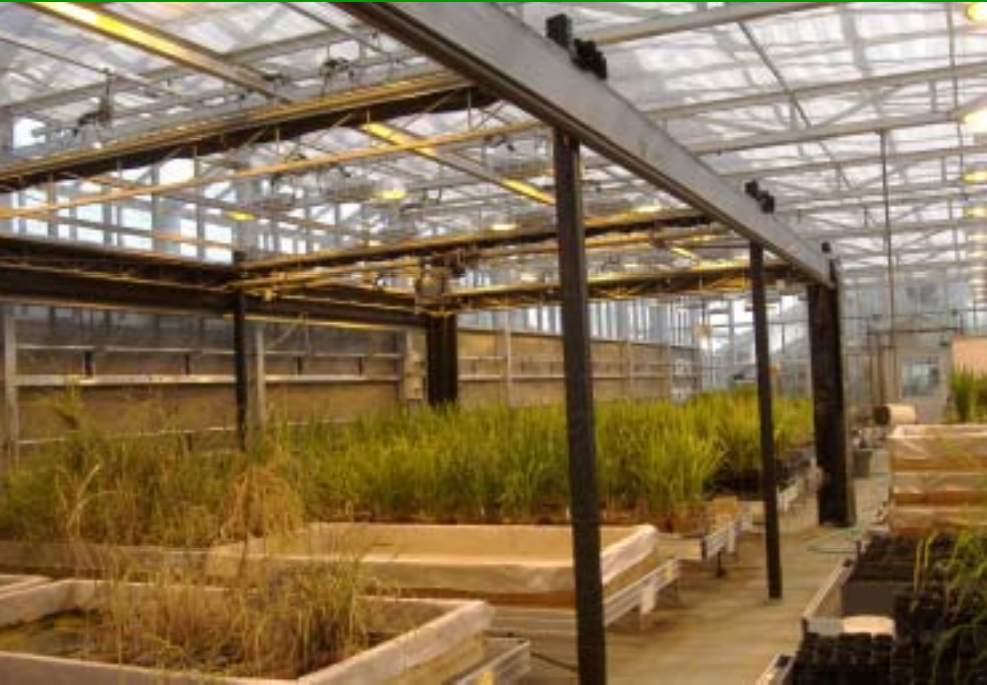


Why VRE and not XYZ



On site customization capabilities

Why VRE and not XYZ



Custom design capacities for unique applications

Why VRE and not XYZ



Total Installation or Supervisory available

Cable Driven VS. Push Pull drives

- VRE has not supplied a Push Pull driven system for over 15 years
- When a push pull system fails it is virtually impossible to get it back to 100% operation.
- We have converted many Push Pull systems to Cable drive
- Most new European systems are now Cable driven
- Cable drive can handle slight variations in structures; push pull systems require everything to be arrow straight
- Push Pull closure seals are very hard to adjust in our northern climate with larger temperature fluctuations
- Aluminum and Steel Greenhouse contraction and expansion rate differences, especially on long systems, add to the difficulties
- Push Pull systems were designed for a the Venlo type house construction with rigid gutter lines at each 10'6" multiple and a flush same size truss and post greenhouse design

Thank you for the opportunity to share
our experience to help you make an
informed purchasing decision