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FLAP DUCT®

FLAP DUCT the industry's most versatile calf barn ventilation system. Delivering an unmatched level of control.

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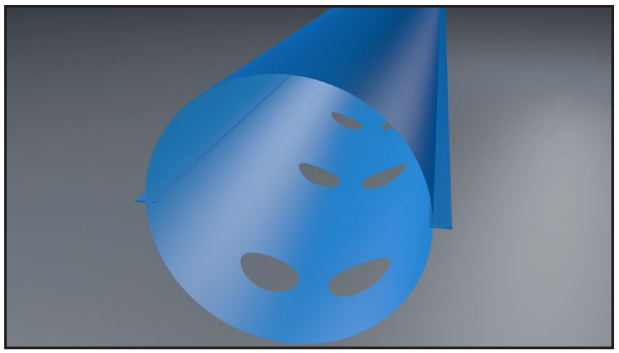

It builds on the versatility of FLIP DUCT, featuring

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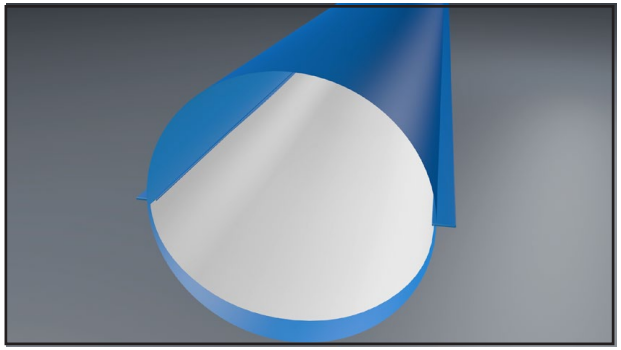

an internal membrane that can be airtight...

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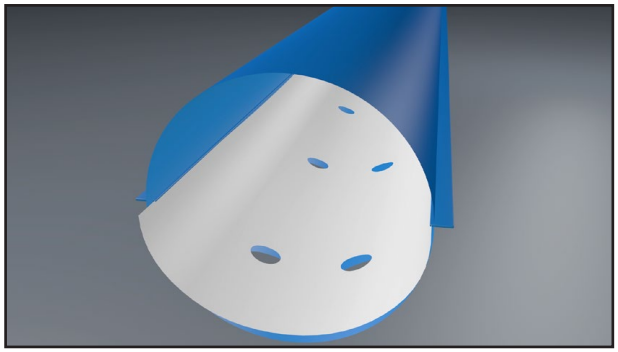

perforated...

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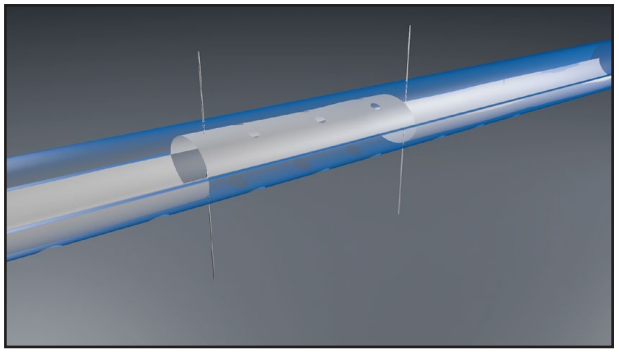

layered...and segmented.

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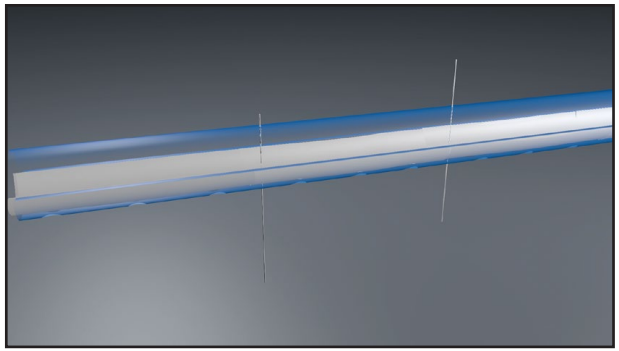

These internal membranes, or flaps, can be moved up or down to control air flow based on seasonal need.

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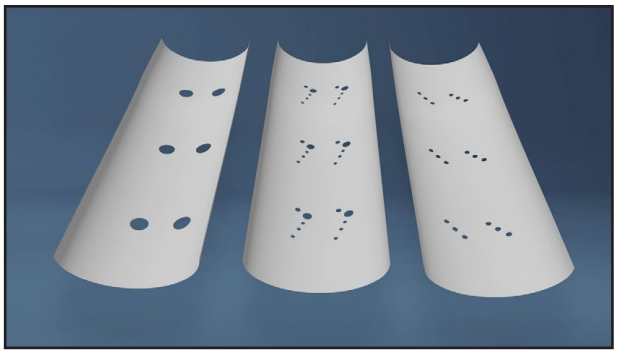

FLAP DUCT's external hole patterns and internal membranes are customized to each barn's unique pen layout.

Visual: Transition to images of ducts and membranes with different hole patterns

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Let's look at how easy it is to install FLAP DUCT, then see it in action.

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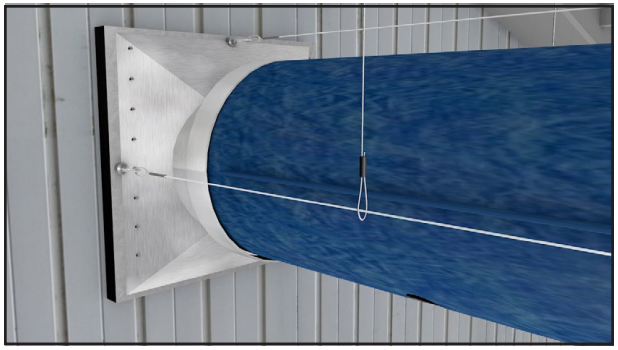

Two horizontal cables span the length of the barn and attach to eye bolts at each end. FLAP DUCT's lightweight, inflatable material easily slips over the barn's ventilation fan shroud. A clamp secures it to the fan.

10

Metal snaps securely sewn into the sides and top of FLAP DUCT attach to the cables at 12, 3 and at 9 o'clock. Vertical cables suspended from the barn roof attach to the horizontal cables, preventing sag. FLAP DUCT can be designed to perform at any height or location in a barn.

11

Watch how each of these patented membrane technologies can be applied to different calf barn housing situations.

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Many stanchion barns have been retrofitted into housing for calves. These barns often present challenges, such as low ceiling height and a lack of natural ventilation; making it difficult to achieve good air quality at calf level.

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FLAP DUCT's airtight membrane is an ideal solution for this type of calf housing, as it can direct and control the fresh air exiting the duct based on seasonal need.

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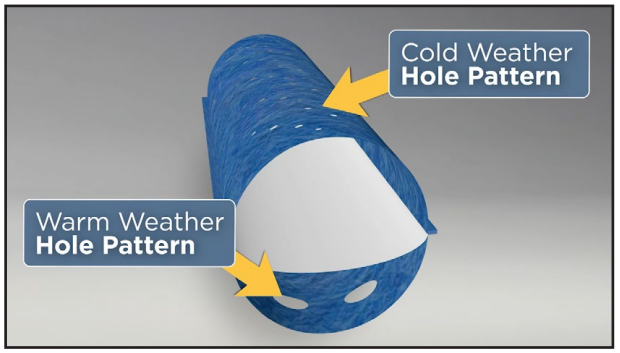

A cold weather hole pattern is placed on the top of the duct and a warm weather hole pattern is placed on the bottom of the duct.

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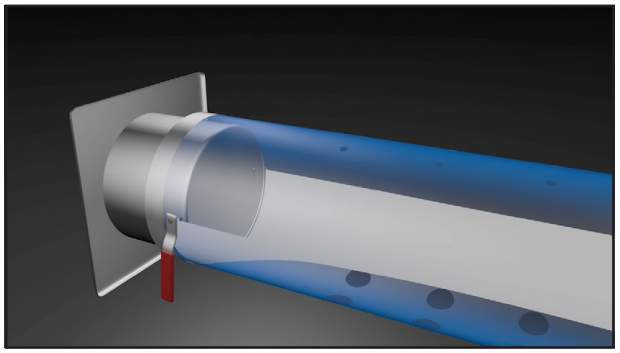

The end of the membrane is first attached to a lever control mechanism. Then, the duct is attached to the fan shroud.

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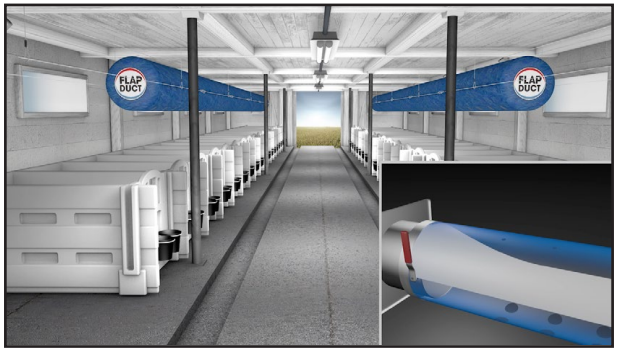

In warm weather, turn the variable speed fan to high, Increasing air flow and position the internal membrane to the top of the duct using the lever control mechanism.

17

Air from the fan will force the airtight internal membrane to the top of the duct, blocking the holes on the top and forcing air through the series of large-diameter holes at the bottom of the duct...showering calves with high speed, cooling air. This high-speed air also blows away annoying flies and helps to keep bedding dry.

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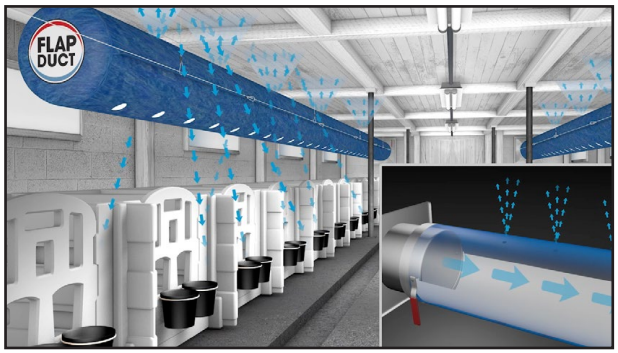

In cold weather, turn the variable speed fan to low, decreasing air flow and use the lever control mechanism to position the airtight internal membrane to the bottom of the duct, blocking the large diameter holes. This diverts the fresh air through multiple small holes in the top of the duct, causing it to deflect off the ceiling and gently fall into the calf pen.

19

Now let's see how FLAP DUCT works in naturally ventilated barns with curtain sidewalls.

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In this barn setting, FLAP DUCT's perforated membrane allows for quick and easy changing between cold weather and warm weather ventilation systems.

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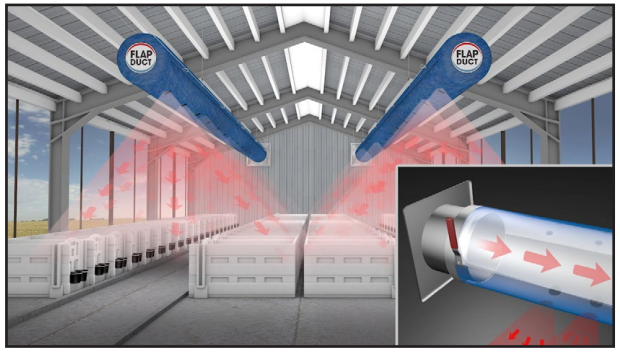

During summer, the variable speed fan is set to HIGH and the membrane is in the up position, allowing the large diameter holes in the bottom of the duct to discharge high volumes of fast cooling air to the calves.

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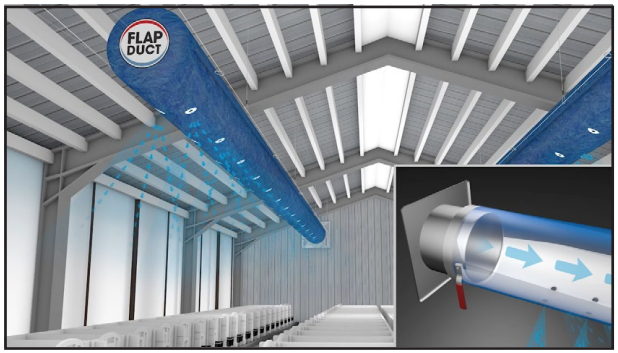
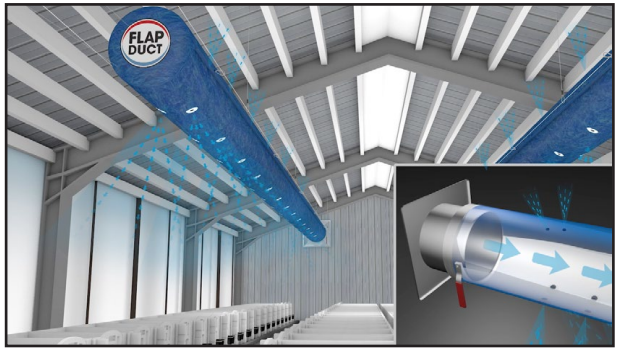


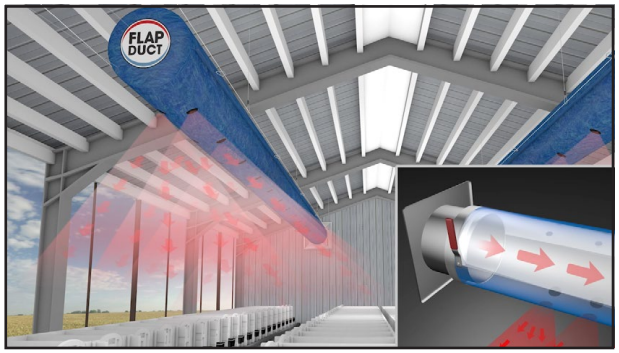
In the winter, turn the variable speed fan to low and move the membrane to the down position, overlapping the large diameter exterior holes with the smaller holes in the membrane, creating weak, thready air jets that deliver low volume, slow, non-drafty air to calves.

23



Additional "relief" holes can be added to the top of the duct to discharge excess air safely away from calves in cold weather.

24



Being able to rapidly switch between a cold weather and warm weather system, with just the flick of a lever, is particularly useful in the spring and fall when the nights are cold and the days warm.

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Next, lets see how FLAP DUCT works in this post weaned barn where calves are grouped in pens by age.

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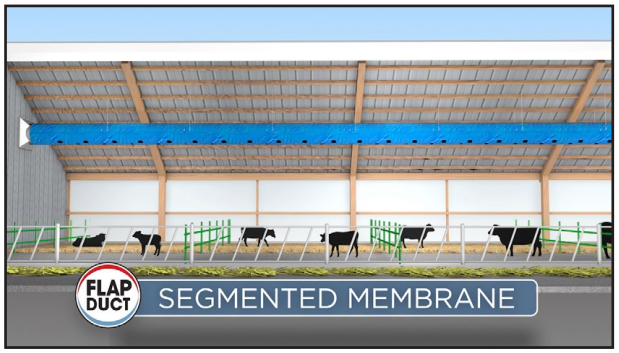

Many post-weaned calf barns have pens containing groups of different sized animals along their length. As the size of the calves in each pen increases.... the ventilation requirements for them increase as well. The versatility afforded by FLAP DUCT's segmented membranes allows those varying ventilation requirements to be met.

27

A clear duct is used in this animation to show the independently functioning membranes in action.
When it's time to change from the warm weather setting to the cold weather setting, all the membranes can be easily adjusted.

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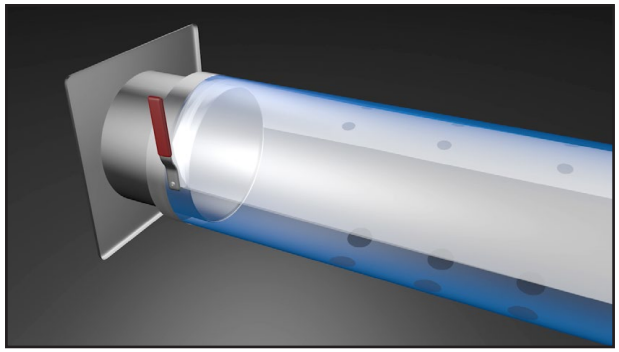

Use the lever control mechanism to move the first segment of membrane over the first group of calves.

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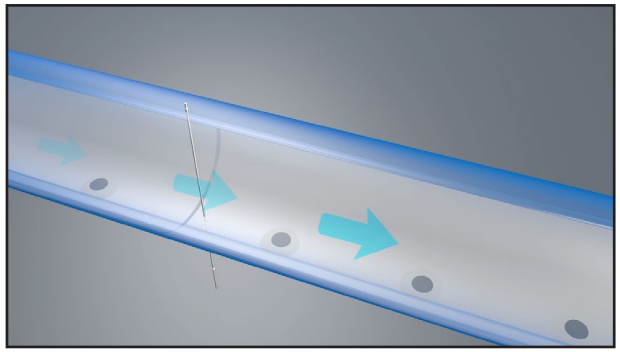

Vertical rods are attached to the remaining segments of membrane. Pulling down on a rod will move the leading edge of its membrane, allowing air to flow over the top, forcing it to the bottom of the duct.

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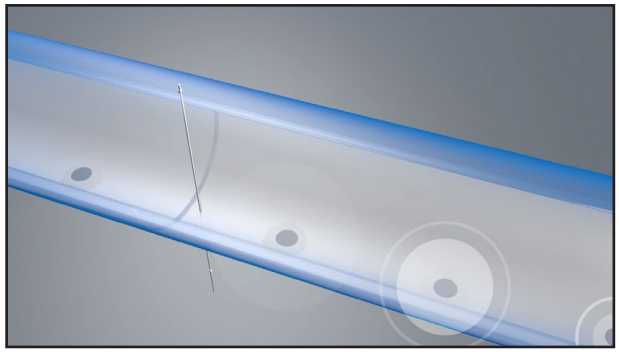

The smaller holes in the membrane will overlap the larger exterior holes in the bottom of the duct, reducing air speed to calves.

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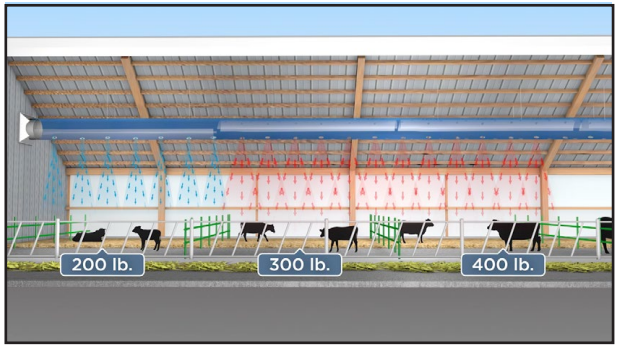
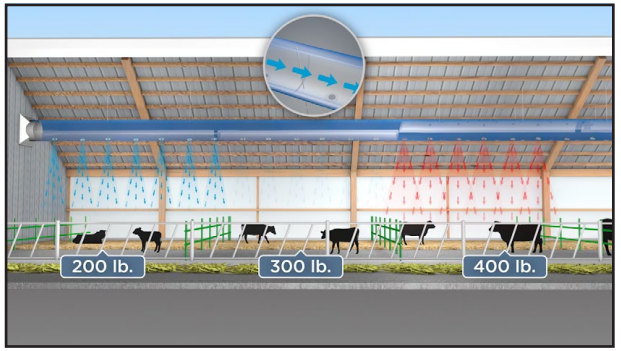


The calves in the first pen are the youngest and smallest calves in the barn. As such, they require the least amount of fresh air and are the most susceptible to a draft in cold weather. As fall approaches and temperatures get to 50 degrees Fahrenheit, use the lever control mechanism to adjust the first segment of the internal membrane down, reducing the volume and air speed delivered to that first pen.

32



The other pens have larger, heartier animals that can handle more air flow, but as fall temperatures drop, air speed and volume should be reduced accordingly. Use the vertical rods to adjust the internal membranes to the down position so that each pen is ventilated appropriately.

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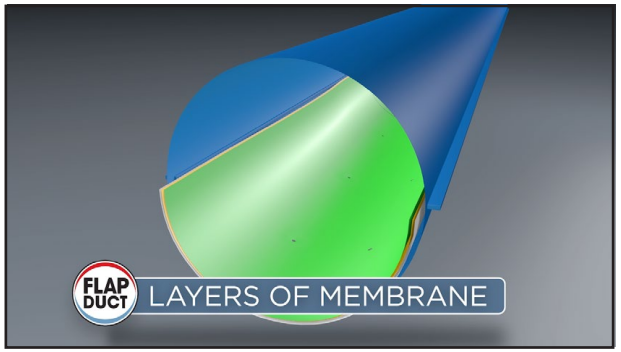

Now, watch as FLAP DUCT is customized to an even greater degree, with the addition of multiple layers of membrane.

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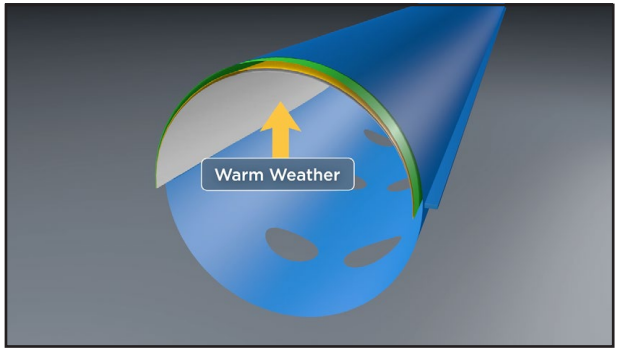

The three membranes seen here are positioned at the top of the duct for warm weather.

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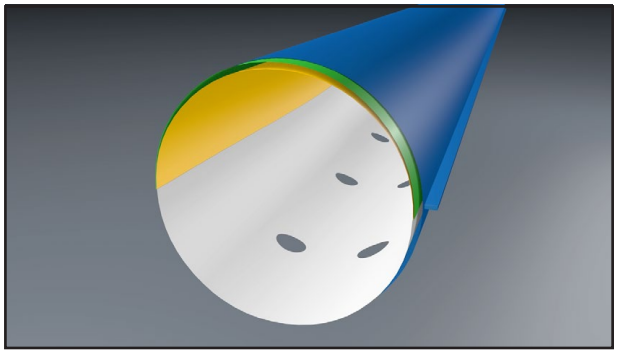
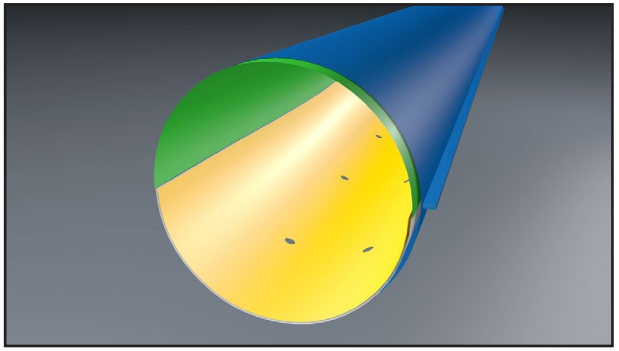


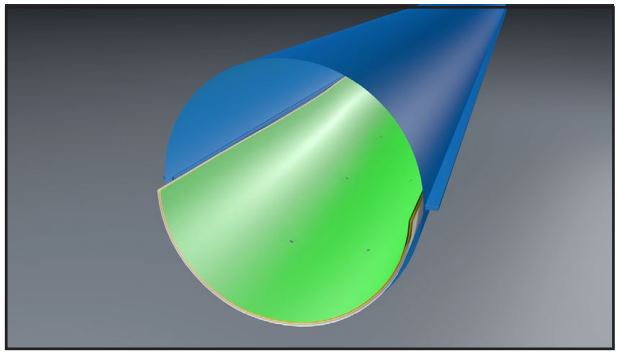
At the first sign of cooler weather, disconnect FLAP DUCT from the fan shroud. Pull down the first membrane by hand and position it at the bottom of the duct. Reattach FLAP DUCT. Air flow will ensure the membrane remains at the bottom of the duct, reducing hole size and air speed.

36



As weather gets cooler, repeat the same step with the next membrane, further reducing hole diameter and subsequent air speed.

37



If even colder weather dictates slower speeds, adjust the last membrane to the down position.

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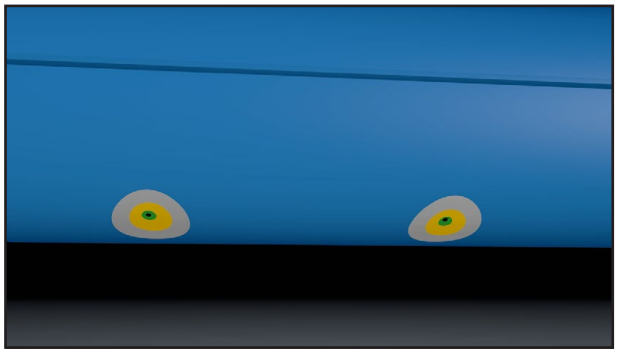

The final membrane contains the smallest hole size and delivers an even slower rate of air.

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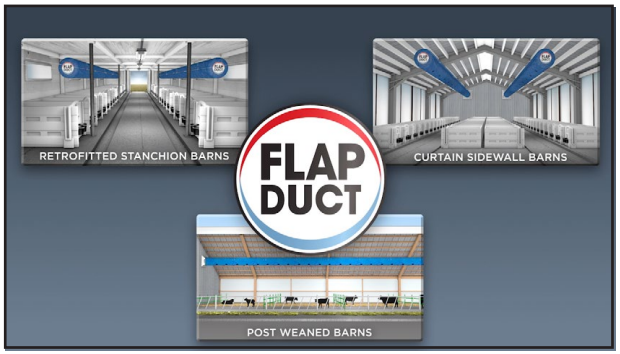

With FLAP DUCT the ability to regulate air speed is virtually limitless. Regardless of the calf housing setup, the requirements for delivering fresh air at safe speeds can always be met.

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