

THE IDEAL WISCONSIN CALF PEN CONCEPT

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Many choices exist when selecting calf housing. Although individual calf hutches are the industry's

preferred housing for the pre-weaned calf, dairy operators continue to build calf barns to address the discomfort and inconvenience of cold weather, snow and rain for the calf raiser. Choosing the right one for your operation depends on the environment and the capital, labor and management resources available. There is no single "best design". Every design involves a trade-off. Regardless of the type of housing provided, the facility must meet certain criteria to provide a healthy environment to optimize calf health:

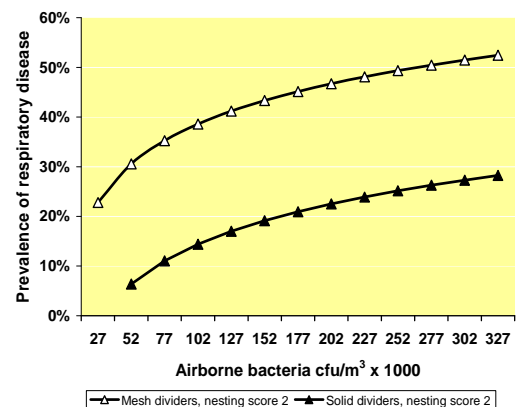
- Minimize calf stress
- Provide fresh air, while limiting drafts
- Provide clean, dry and comfortable resting places
- Provide adequate feed and water
- Manage effects of extreme weather

Individual calf pens can be "microenvironments" within the calf barn. Inside the calf barns, even when naturally ventilated and maintained as "cold barns", many calf pens are enclosed on three or four sides to prevent direct contact between individual calves. Some calf pens, in the winter, may have a hover on the back one-third of the pen to minimize draft conditions. Even though air movement appears to be fine in the barn, the enclosed calf pens were found by UW School of Veterinary Medicine Researchers to restrict air movement within the calf's individual environment. This can result in increased bacteria counts and increased incidence of respiratory disease.

To minimize the effect of individual calf pens becoming microenvironments for the calf, UW-School of Veterinary Medicine's Dr. Ken Nordlund developed the "Ideal Wisconsin Calf Pen" to promote a healthy pen environment for the calf in a barn scenario. The concept has these criteria:

• **Resting space and surface:** Calves housed in an individual pen should have 32 square feet per animal with a six-inch layer of bedding as a cushion to minimize physical trauma. Research shows young calves spend most of their time laying down (over 50 percent of the time during the day and nearly 100 percent of the time during the night). A clean, dry resting surface ensures a dry hair coat that helps insulate the calf against the cold floor or ground, low air temperatures and sudden changes in temperature.

• **Solid panels between calves:** Researchers at the UW-School of Veterinary Medicine (Lago, et. al. 2006) found a substantial difference of respiratory health in calves housed with mesh pens versus solid walls.



As recommended by industry experts and veterinarians, solid panels limit the disease transfer from one calf to another by minimizing/eliminating nose-to-nose contact. Solid panels also help minimize draft on the individual calf. Pen walls should be at least four feet tall to minimize drafts and limit nose-to-nose contact.

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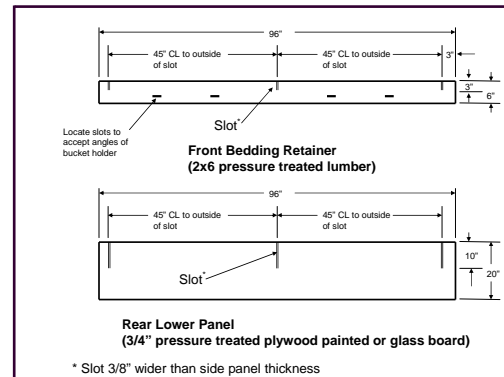
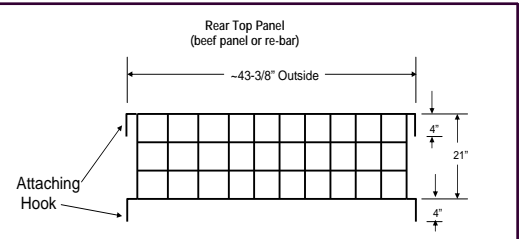
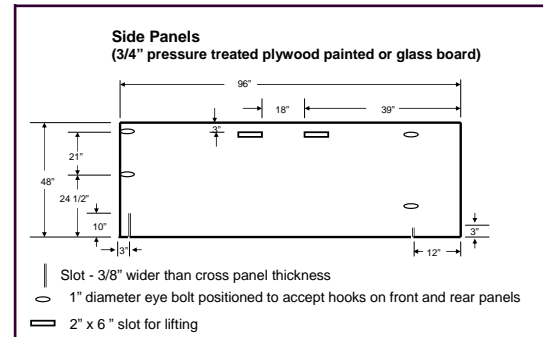
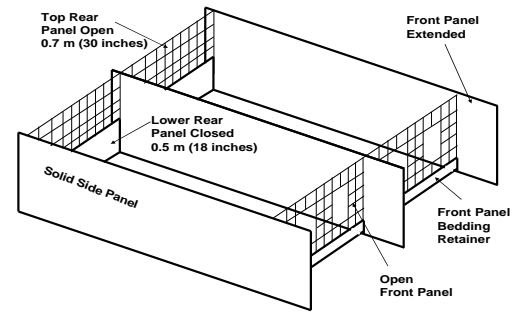
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- **Side panel extends 12 inches past the front of the pen:** Extending the side partition of the individual pen a minimum 12 inches past the front will minimize/eliminate nose-to-nose contact from one calf to another.
- **Open front and rear panels:** Even though it is recommended to have solid sided calf pens to reduce disease transfer and minimize draft, too many sides can impede ventilation. The solid panels separating calves should be limited to two per pen. The front and rear panels should be open to promote good air quality and ventilation within the individual calf pen.
- **Maximum 18 inches solid panel on the back of the pen:** To help maintain bedding, the pen should be designed to have a solid wall limited to 18 inches to keep bedding in place. When pens are placed back to back, provide at least one foot between open pen back panels to avoid facial contact.
- **Two holes in the front panel to allow access to feed and water/milk buckets:** To minimize contamination of feed in the water bucket and water/milk in the feed bucket, provide two holes in the front panel for the calf to access feed and water. When using one hole for feed and water access, a calf can dribble feed or water into the other pail as it eats and drinks. Providing two holes allows the calf to dribble in the pen area as it brings its head back into the pen leaving less contamination and saving on grain costs. Pails and feeders should generally be positioned low - 12 to 16 inches above the floor - to allow calves to quickly find and access feed and water.
- **Deep bedding November-March:** Even though we want to minimize draft on the calf, it is recommended not to use a hover on the back one-third of the pen since it eliminates ventilation and increases airborne bacteria counts within the pen. Instead, it is strongly encouraged to use deep straw bedding for calves to nest in as well as calf blankets to maintain body heat.

Dimensions of the Ideal Wisconsin Calf Pen:



References:

- "Housing Factors Optimize Respiratory Health of Calves in Naturally Ventilated Calf Barns in Winter", ASABE Publication #701P0507e, Dr. Ken Nordlund
- "Practical Considerations of Ventilating Calf Barns in Winter" Pre-Conference American Bovine p Conference, 2007, Dr. Ken Nordlund
- "Calf Respiratory Disease and Pen Microenvironments in Naturally Ventilated Calf Barns in Winter, A. Lago, et al, JDS 2006.

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