



Dairy Housing



INTRODUCTION

IAE have been manufacturing cubicles of varying designs since the early 1970's, starting with basic designs such as Simple Stalls, Newton Rigg and Mushroom cubicles. Over the years industry experts have put greater focus on improving cubicle housing solutions, as a result IAE developed their first "post and rail" cantilever system – the Super Comfort cow cubicle. This was followed by the Supreme and culminated with our flagship Ultima® cow cubicle.

IAE have been involved in cubicle housing solutions throughout the UK and abroad, successfully helping farmers to improve conditions for their animals. The reduction in disease assisted by better housing and improved animal welfare, coupled with the greater comfort offered by the latest designs, leads to enhanced milk production and better profitability.

THOUGHTS ON GENERAL DAIRY BUILDING AND DESIGN

The quality of the housed environment has a major impact on dairy herd welfare and economic performance. Time spent on the building design will reap the benefits many times over on both the life of the cows and even more over the life of the building.

There are many sources of information which will aid in the design of your building, some useful sources include publications by DairyCo and RIDBA's 'The Farm Buildings Handbook' as well as material freely available on the internet by Jamie Robertson from Aberdeen University.

Points to think about!

- Natural ventilation is a must as a starting point (ongoing costs are minimal if effective ventilation is achieved from the outset)
- A single span building of a width between 24.4m and 30.5m is the optimum for natural ventilation
- A low pitched roof will give a reduced stack effect; a reduced stack effect will negatively impact natural ventilation which is not desirable.
- Too many clear roof lights could potentially cause hotspots for the cattle below. Cattle may avoid hotspots if there are alternative places to lie
- Cubicle space allowance (See pages 16 & 18)
- Red Tractor and FAWC state that there should be a minimum of 1 space per animal but 5% extra spaces within a building is desirable
- Feed space allowance is important (See page 19)
- Access to clean fresh drinking water (See page 28)
- Loafing area space allowance
- Grooming points (cow brushes)
- Removing dead ends (bullying prevention)

SERVICE

For complicated layouts and made to measure livestock systems, IAE offer an on site technical design and advice service by one of our own experienced Sales Managers. **Please contact the office to arrange an appointment Tel: 01782 339320.**



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NEW

Cow Mats



Page 36-38

1990

SUPER COMFORT

From inception the "post and rail" cantilever type cubicle loops have been designed to offer flexibility and improved cow comfort. The Super Comfort had several benefits over the older Free Standing designs of the time. A dual support rail afforded a greater lunge zone, the removal of a rear leg meant an animal would rise more easily whilst also creating a better lying position through space sharing. The clamp and rail design meant that cubicle centres could be adjusted at any time and easily configured for either head to head or single runs.



2000

SUPREME

Maintaining the successful elements of the Super Comfort, the Supreme evolved to incorporate an increase in head rail height to encourage a better standing position and in turn quicker positioning on the bed. An increase in upper support rail height created a greater lunge zone.



2010

ULTIMA®

Our best selling and most highly recommended cubicle loop, the unique shape of our Ultima® maintains the same high head rail position of the Supreme but with the added option to raise the head rail still further if necessary. By dropping the lower support rail closer to the bed we have further increased the lunge zone for the cow whilst at the same time removing a potential trap for heads or legs. The upper support rail has also been lowered, this inhibits animals from walking through the bed but coupled with the moving of the lower support rail maintains the same lunge space created by the Supreme cubicle.

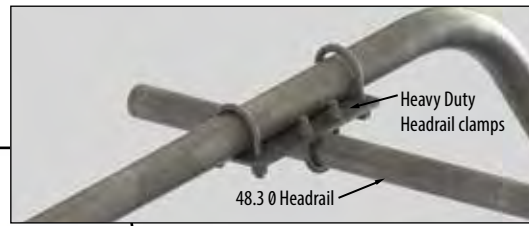
These improved design features offered by the Ultima® have improved acceptance rates into the bed and achieved a higher percentage of animals lying correctly for the longest time. By maintaining the "post and rail" system adopted at inception, you can easily upgrade to the Ultima® from either the Super Comfort or Supreme.



Today



KEY POINTS TO UNDERSTANDING THE ULTIMA® CUBICLE



High headrail position improves standing position and increased acceptance into cubicle bed

Upper support rail positioned high enough not to interfere with the 'Lunge Zone' yet still low enough to inhibit walk through for open fronted or head to head runs

The "lunge zone" which is now set with the upper support rail in a position to deter walkthrough, inhibits separated groups from merging with one another

PIPE brackets may require cutting back in some applications

PREMIUM COMFORT P.I.P.E (POLYETHYLENE IDEAL POSITION ENHANCER)
A cow friendly and hygienic positioning aid at the animals brisket
(See page 24 for more)

P.I.P.E allows the animal to lie with the front leg extended if desire, increasing comfort and lying times

Lower support rail is positioned very close to the ground which clears space in the "lunge zone" encouraging the animal to manoeuvre more naturally into and out of the cubicle

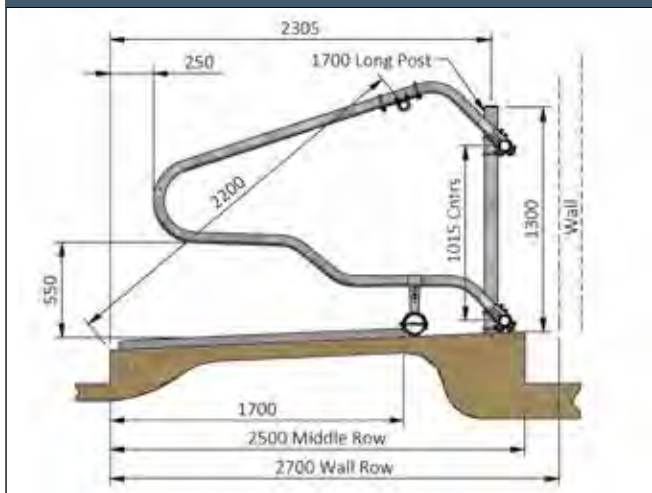
The Ultima® is the modern choice for a successful dairy housing solution.

- **Improved initial standing position** prior to lying down
- **Reduced pressure** on back legs due to correct preliminary position (no perching)
- **Lying in correct position** with large "lunge zone"
- **Superb acceptance rates** from improved comfort

ULTIMA® - Single Run (suitable for stock over 22 months)

Ultima® cubicles are quick and easy to install. Once the posts are in position, other components are simply attached using high quality clamps and fastenings. The Ultima® cubicle offers optimum body space, head space and lunge zone. Combine your Ultima® cubicle with P.I.P.E. for the Ultima® solution.

2100mm - SINGLE RUN



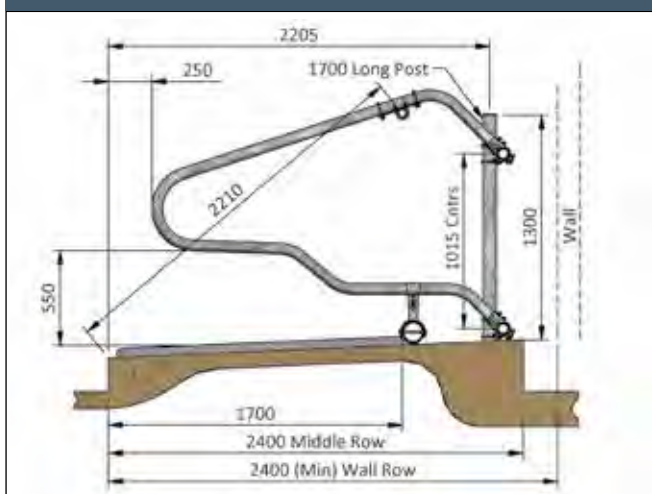
Whilst IAE offers a selection of cubicle loop lengths to accommodate individual requirements, not all offer an optimum solution.

This table highlights our recommended solutions, those not highlighted are suitable compromises for refurbishments, existing buildings or when cost is an obstacle. Cross reference the information on this page with the information provided on page 16.

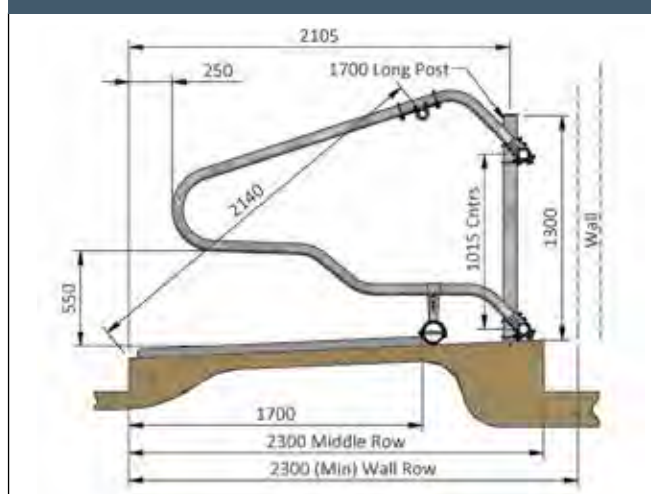
Cubicle Length	Head To Head Bed Length	Wall Row Bed Length	Middle Row Bed Length	Cubicle Centres
2100	4800	2700	2500	1100-1150
2000	4600	2400 (Min)	2400	1100-1150
1900	4400	2300 (Min)	2300	1100-1150

Note: IAE recommendations are typically based on an 800kg dairy cow (Source: DairyCo "Dairy Housing A Best Practise Guide")

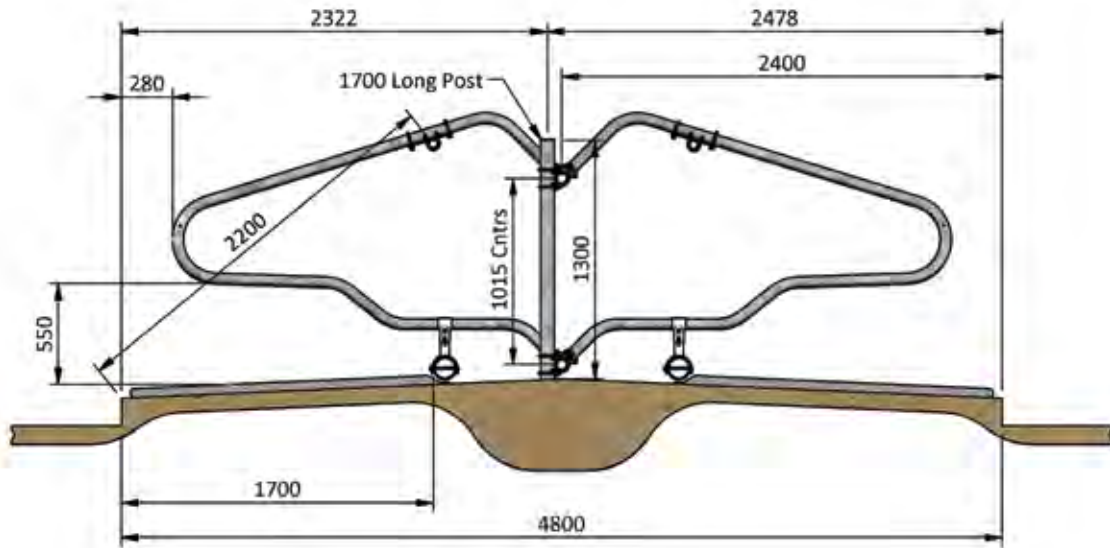
2000mm - SINGLE RUN



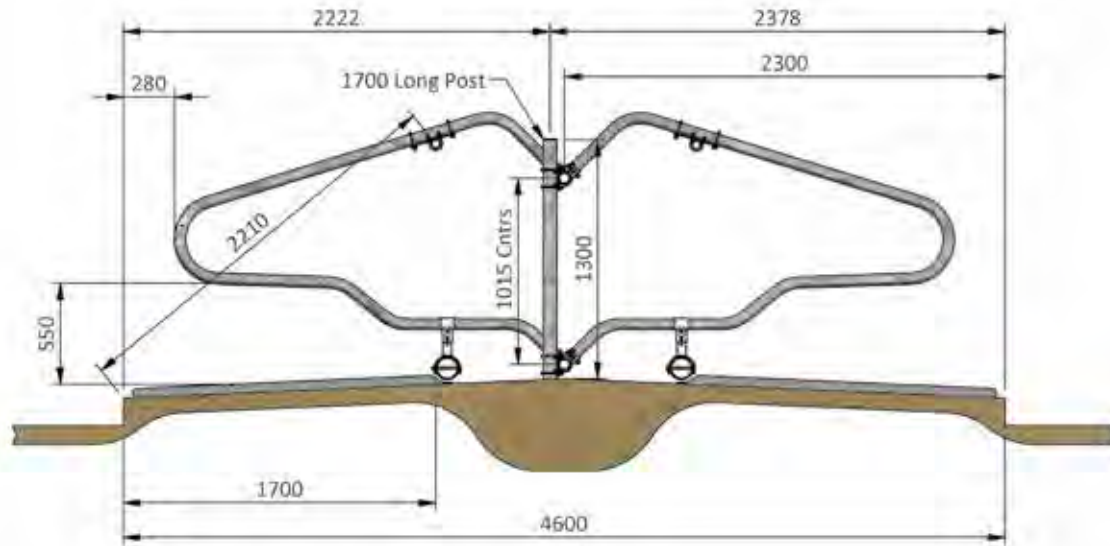
1900mm - SINGLE RUN



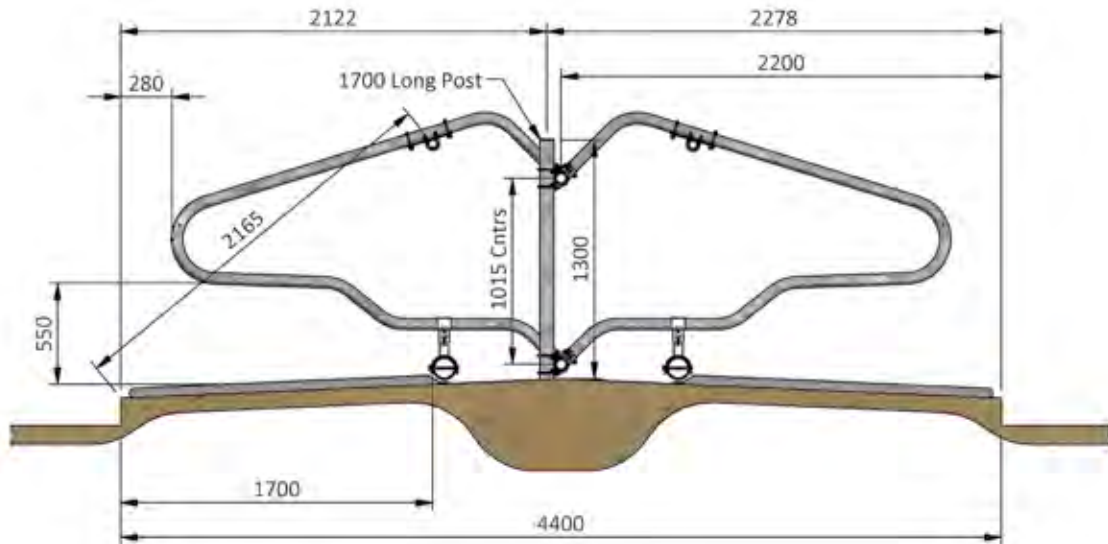
2100mm - HEAD TO HEAD



2000mm - HEAD TO HEAD



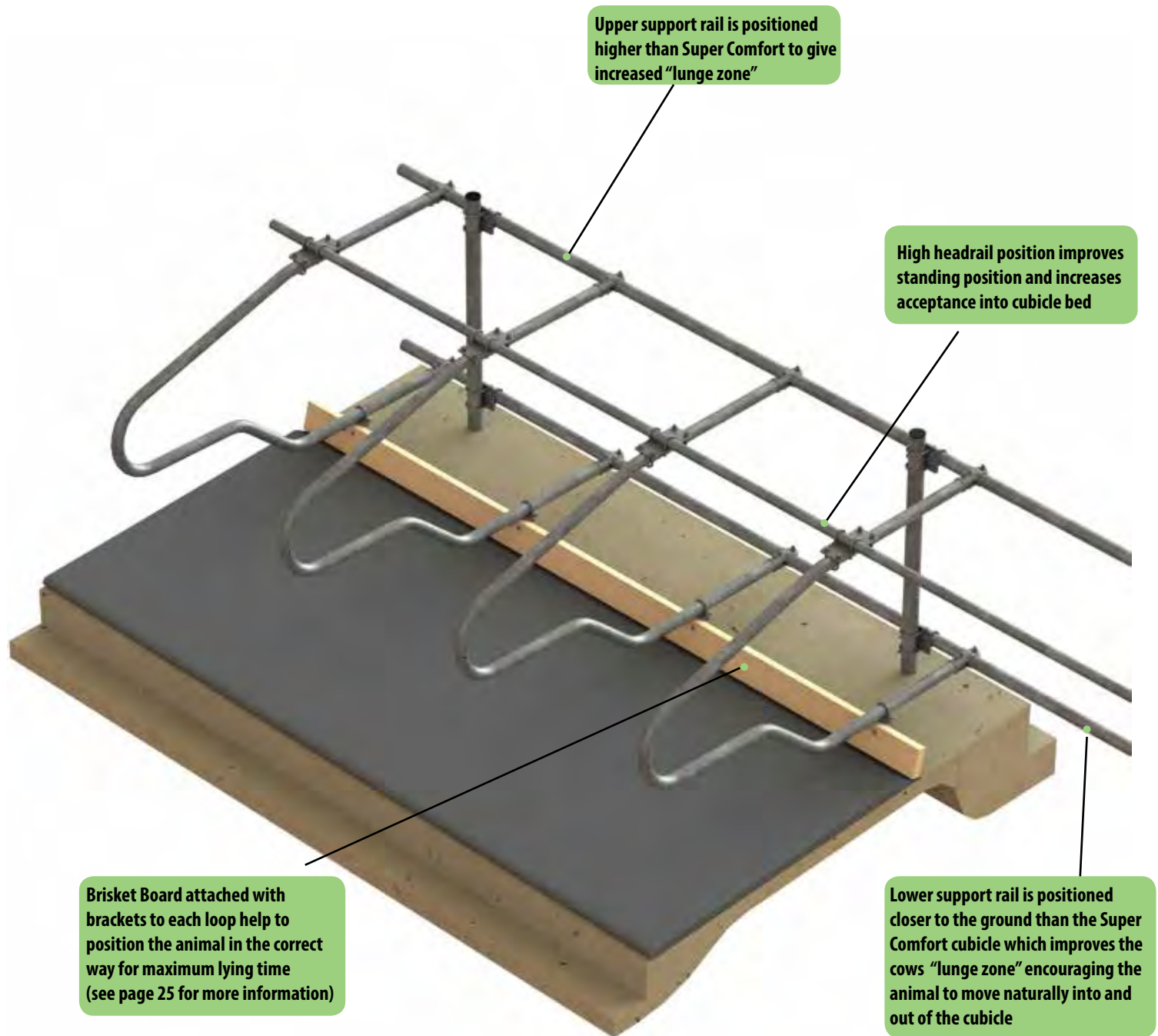
1900mm - HEAD TO HEAD



SUPREME CUBICLE



KEY POINTS TO UNDERSTANDING THE SUPREME CUBICLE



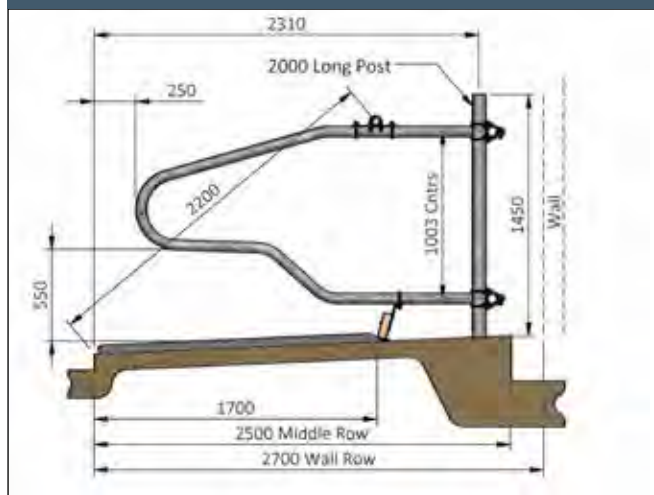
The Supreme is a great choice suitable for a variety of situations, for example if group separation is not important. Supremes can be easily upgraded to Ultima® at a later date if required.

- **Improved initial standing position** prior to lying down
- **Reduced pressure** on back legs due to correct preliminary position (no perching)
- **Lying in correct position** with large "lunge zone"
- **Superb acceptance rates** from improved comfort

SUPREME CUBICLE - Single Run (suitable for stock over 22 months)

Supreme cubicles are quick and easy to install. Once the posts are in position, other components are simply attached using high quality clamps and fastenings. The Supreme cubicle offers superior body space, head space and lunge zone. Combine your Supreme cubicle with Brisket board to encourage the correct lying position.

2100mm - SINGLE RUN



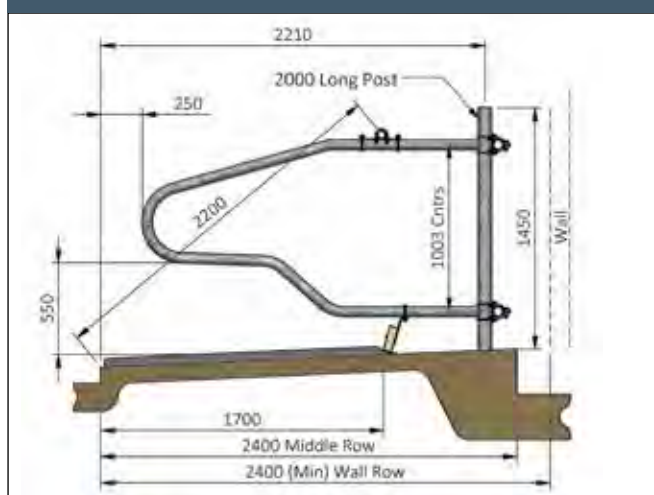
Whilst IAE offers a selection of cubicle loop lengths to accommodate individual requirements, not all offer the complete solution.

This table highlights our recommended solutions, those not highlighted are suitable compromises for refurbishments, existing buildings or when cost is an obstacle. Cross reference the information on this page with the information provided on page 16.

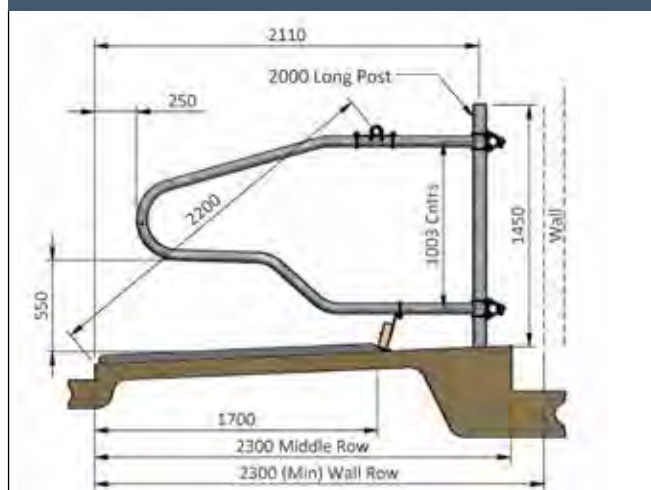
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2000	4600	2400 (Min)	2400	1100-1150
1900	4400	2300 (Min)	2300	1100-1150

Note: IAE recommendations are typically based on an 800kg dairy cow (Source: DairyCo "Dairy Housing A Best Practise Guide")

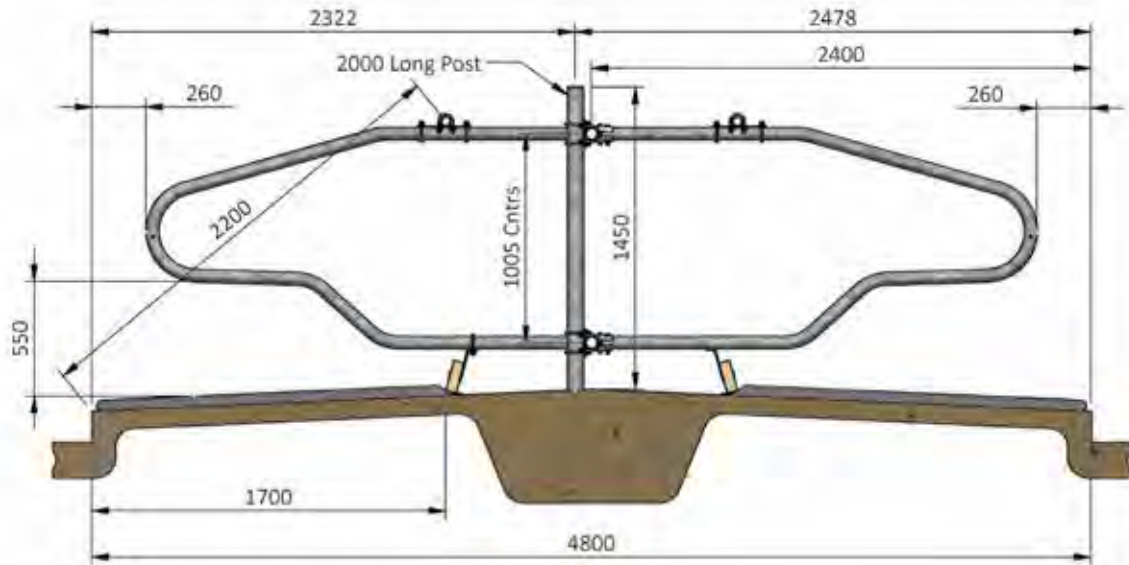
2000mm - SINGLE RUN



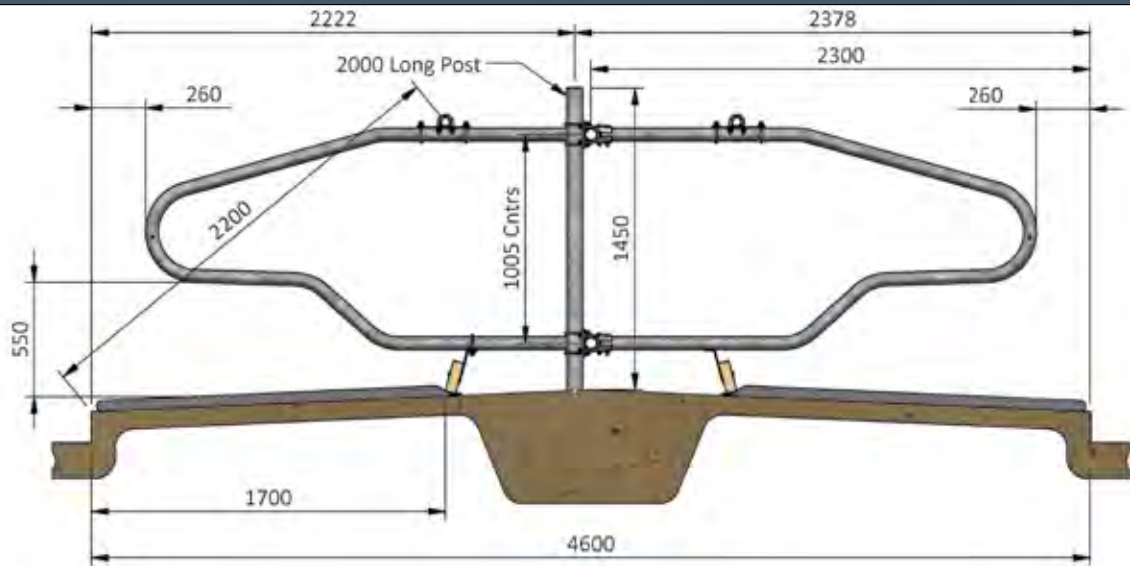
1900mm - SINGLE RUN



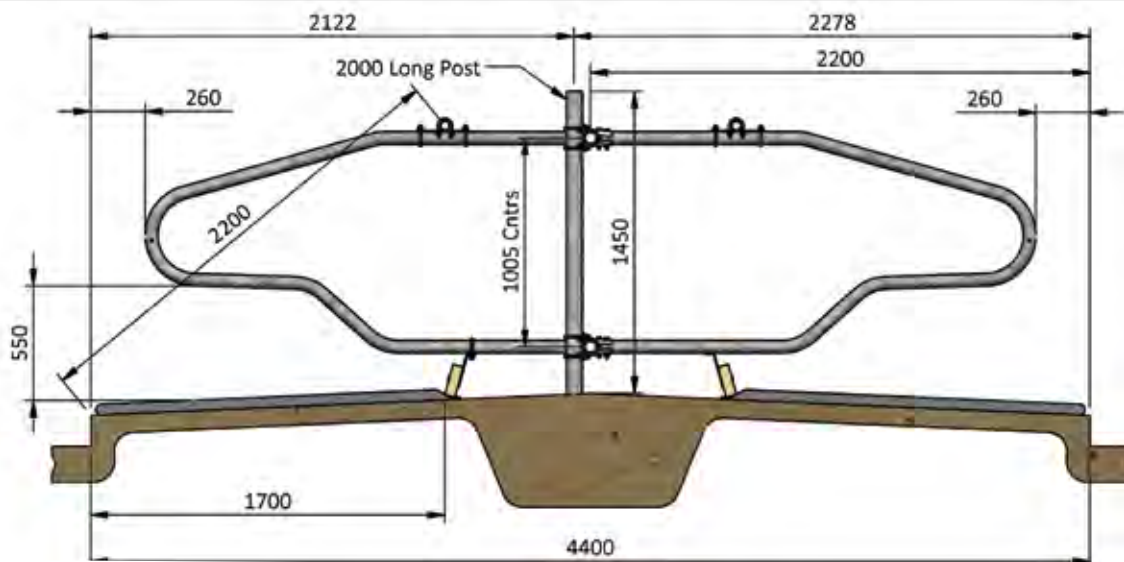
2100mm - HEAD TO HEAD



2000mm - HEAD TO HEAD



1900mm - HEAD TO HEAD

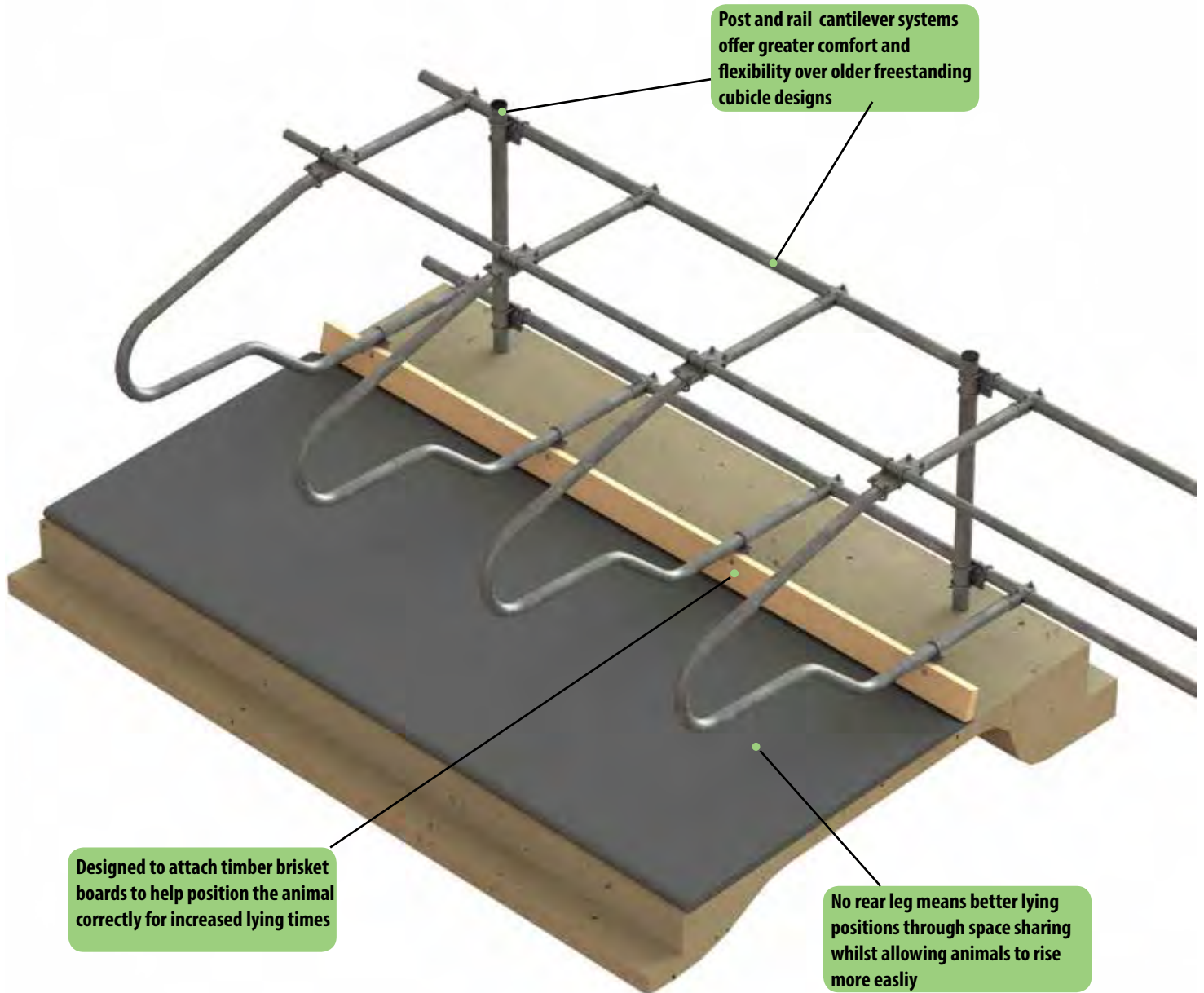


SUPER COMFORT CUBICLE



KEY POINTS TO UNDERSTANDING THE SUPER COMFORT CUBICLE

- Can be used with P.I.P.E. if required
- Available in shorter length loops allowing flexibility with older building refurbishments
- Easily upgraded to Ultima® at a later date if required



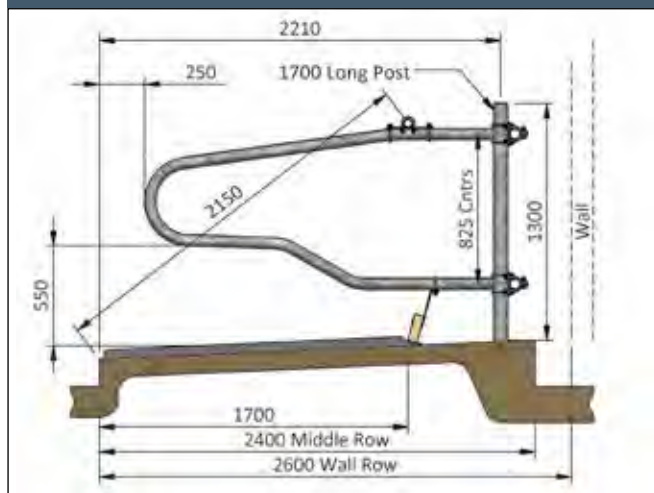
The Super Comfort cubicle provided the basis for our current cubicle range. Our introduction of this type of system gave many benefits over the older style cubicles, many of which required extensive groundwork to install correctly. Super Comfort cubicles create a greater lunge zone, a better lying position, better space sharing and no rear legs to interfere with the animal when rising. They can also be set up in single or head to head configurations.

- **No restriction in bed** from cubicle legs
- **Easy installation** compared to concreted in cubicle divisions
- **Cleaner beds** when cubicles are set up correctly as animal will soil directly into scrape passage
- **Less Injury** to animals compared to older cubicle designs
- **Great acceptance rates** from animals due to ease of use and comfort

SUPER COMFORT CUBICLE - (suitable for stock over 22 months)

Super Comfort cubicles are quick and easy to install. Once the posts are in position, other components are simply attached using high quality clamps and fastenings. The Super Comfort whilst not offering the same level of comfort and welfare as the Ultima® and Supreme systems remains a vast improvement over the older freestanding cubicle designs. Combine your Super Comfort cubicle with Brisket Board or P.I.P.E. to encourage the correct lying position.

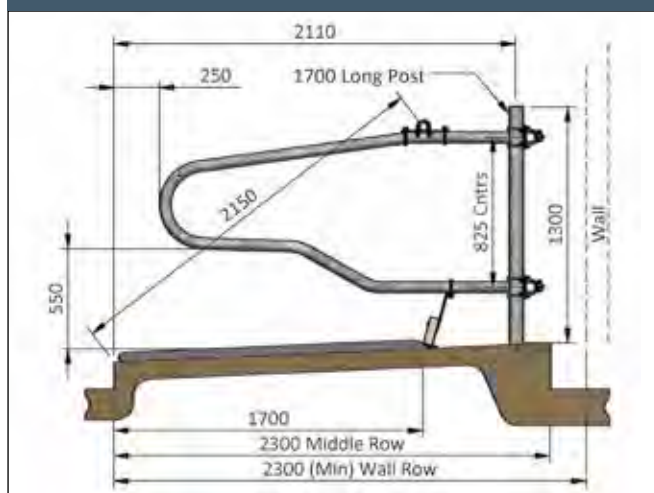
2000mm - SINGLE RUN



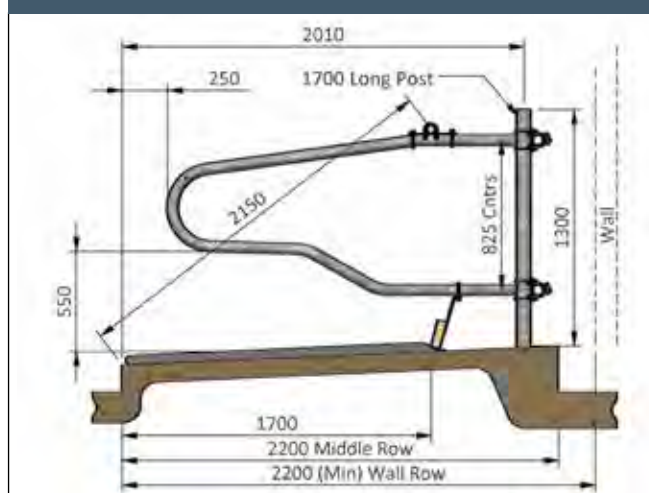
IAE offers a selection of cubicle loop lengths to accommodate individual requirements. Whilst the Super Comfort no longer meets the latest dairy housing recommendations, it remains a popular choice for refurbishments and existing buildings. Cross reference the information on this page with the information provided on page 16

Cubicle Length	Head To Head Bed Length	Wall Row Bed Length	Middle Row Bed Length	Cubicle Centres
2000	4600	2600	2400	1100-1150
1900	4400	2300 (Min)	2300	1100-1150
1800	4200	2200 (Min)	2200	1100-1150

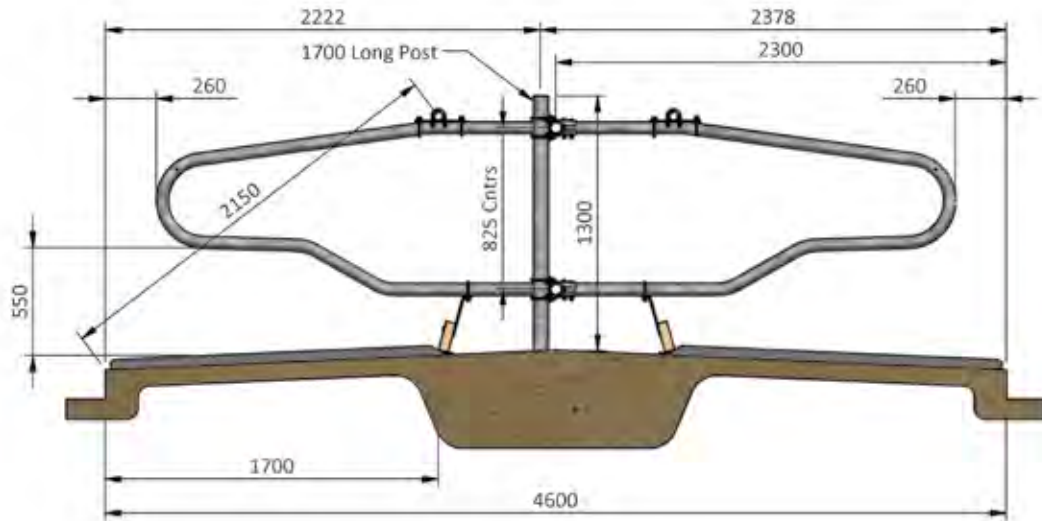
1900mm - SINGLE RUN



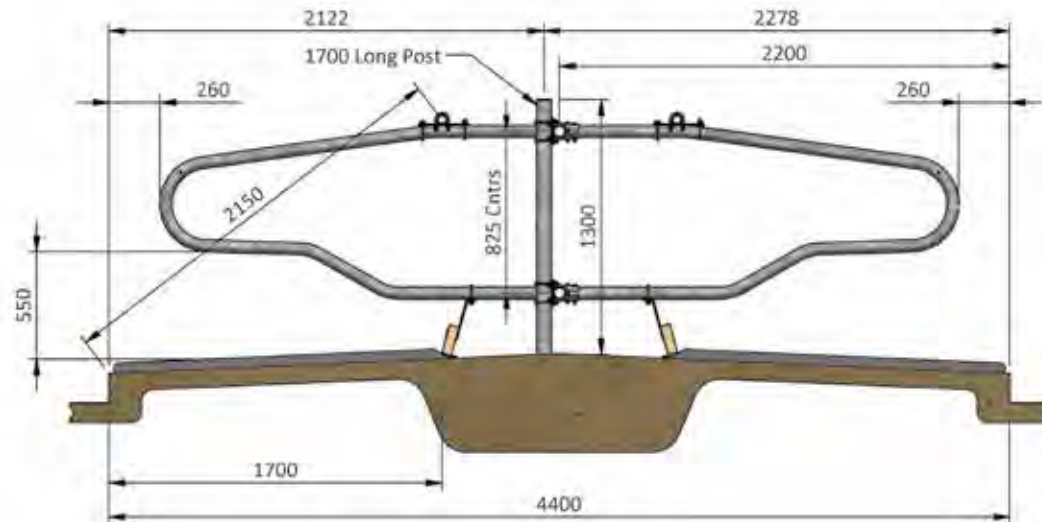
1800mm - SINGLE RUN



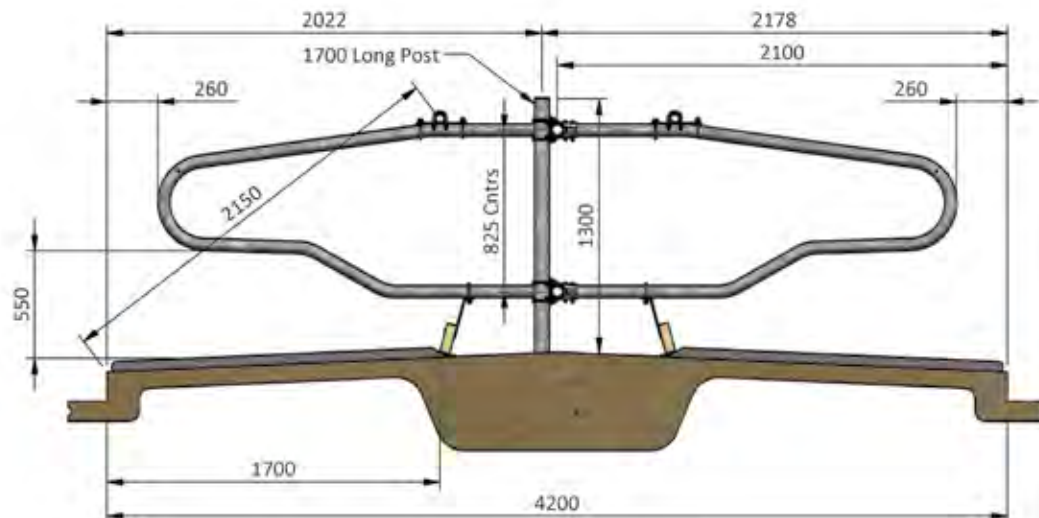
2000mm - HEAD TO HEAD



1900mm - HEAD TO HEAD



1800mm - HEAD TO HEAD



CUBICLE INSTALLATION NOTES

Recommended Set-up for each individual Cubicles.

To give suitable stability, posts should be concreted approximately 400mm into ground. Refer to individual cubicle installation drawings for further dimensions.

Set measurement (A) and (B) for the specified cubicle length from the heelstone end of the cubicle bed. These are the two main points for the cubicle set-up.

Once measurements (A) and (B) have been set-up correctly this will determine the two measurements (C) and (D).

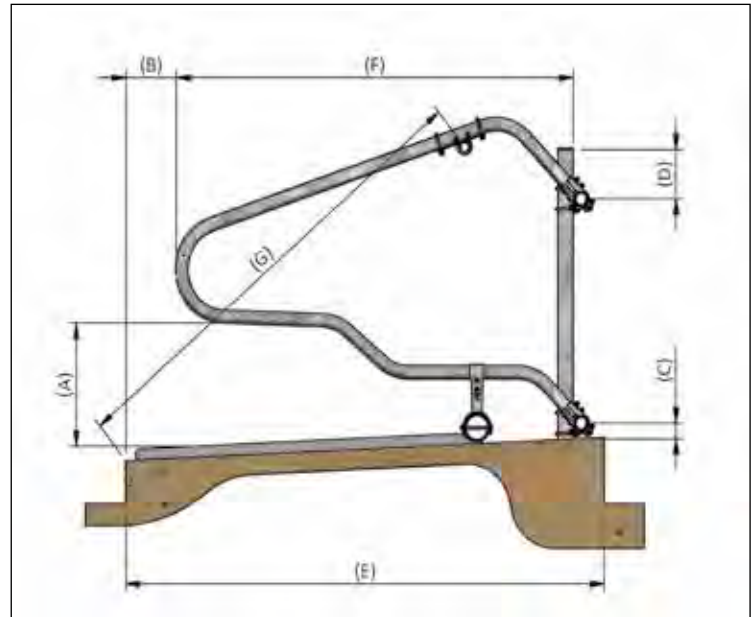
Bed length (E), Cubicle length (F) and headrail measurements (G) will vary depending on which cubicle set-up is used.

Post Centre Formula.

Post Centres (H) = Cubicle Centres (K) multiplied by 2.5.

Post Offset (J) = Post Centres (H) divided by 10.

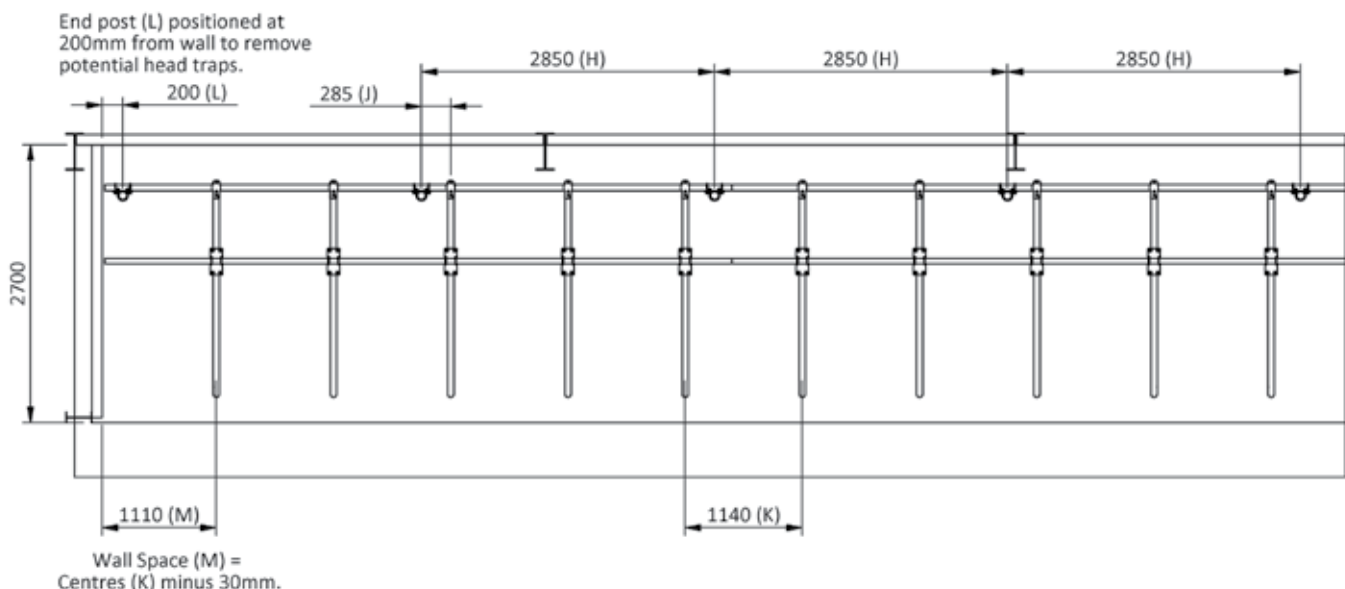
To calculate the cubicle centres (K), divide the length of the longest continual cubicle row (usually the wall row) equally, ensuring that clear gap for the end and intermediate spaces match. Cubicle centres should typically range from 1100 to 1150.



Points to think about!

- The ideal distance from the rear of the cubicle to the heelstone (B) is 250mm (150 to 350).
- The bed pitch (excluding sand beds) should be 2.5° (2° to 3° range). This equates to approximately 45mm per 1000mm (or 1/2 inch per foot).
- The height of the heelstone should be between 150 and 200mm. The final height will be dictated by method of slurry removal.
- When using Ultima cubicles with mattresses, consider positioning the headrail on top of the cubicles for larger animals. As a result, dimension (G) will need to increase to compensate for this additional height.
- For larger pedigree Holstein & dry cows, 1150 to 1200 cubicle centres may be better suited.

Typical example below shown using cubicles at 1140 centres. (NOTE! Dimensions (H) & (J) will change with dimension (K))





Cubicle End Concrete Panel Support Posts

Concrete panels are a low maintenance, hygienic and substantial method to finish the cubicle runs at crossover passageways. IAE can supply from stock 100x100 2135mm long concrete panel support posts, suitable for single or head to head runs. Simply attach a 1500mm high concrete panel using panel clips (supplied by others) Posts to support timber ends and sheeted panel ends with posts are also available upon request.

TESTIMONIALS

We were working with all of our cows in a straight leg mushroom cubicle set up for a good few years. We changed the whole building to a Supreme set up with brisket board after a visit from the IAE area sales manager. We discussed the current layout and the best way of effectively managing the needs of the herd with a more modern cubicle design and decided that Supreme cubicles would be the best solution.

As a result I've seen lots of benefits from the change. Cow lying times have increased, general environmental cleanliness is improved as they lie in the correct position, the animals seem to be comfortable when in the cubicle bed and importantly acceptance rates are much better. Instances of hock damage and lameness have also decreased which I would say is down to the improved cubicles that we've had from IAE.

Mr Hargreaves - Derbyshire

We had several runs of Super Comfort cubicles from IAE that we installed a few years ago. We wanted to convert a loose bedded yard on the other side of the shed, so after a discussion with the IAE rep we designed a new system incorporating Ultima[®] cubicles and P.I.P.E. for that side, and upgraded the old Supers as well. The new cubicle shed is working brilliantly, I'm very pleased with them.

K. Pattinson - Cumbria

I have been buying cubicles from IAE for over 15 years. I started with Super Comforts and I think I was one of the first to have them installed. Since then I've purchased over 1500 cubicles in total from IAE including Supremes and Ultimas[®] as the upgrades have become available. IAE have always offered excellent technical advice and support and have been a pleasure to deal with. Well done IAE!

P. Joules - Kent

I was looking at all of the cubicles available on the market for a new dairy building. I wanted to support British manufacturing without compromising quality, service or value for money. I found I could do this by using IAE who manufacture all of their cubicles in their own factory in Stoke on Trent, which included being dipped in their own in house galvanising facility, yet they still offered a great service and value for money as well as the latest thinking in dairy house design.

M. J. Tidmarsh – Derbyshire

DAIRY HOUSE DESIGN - 2 ROW

Dim A: Wall Row Bed Length

This dimension should be a minimum of 2700. Using Large Stock 2100 Cubicles (Supreme, Ultima), this allows sufficient lunging space for the cow.

Dim B: Cubicle Passage Width.

This dimension should be a minimum of 3000. The ideal measurement would be 3600; this allows the cow unrestricted access on and off cubicle beds either sides of the passageway.

Dim C: Middle Row Bed Width.

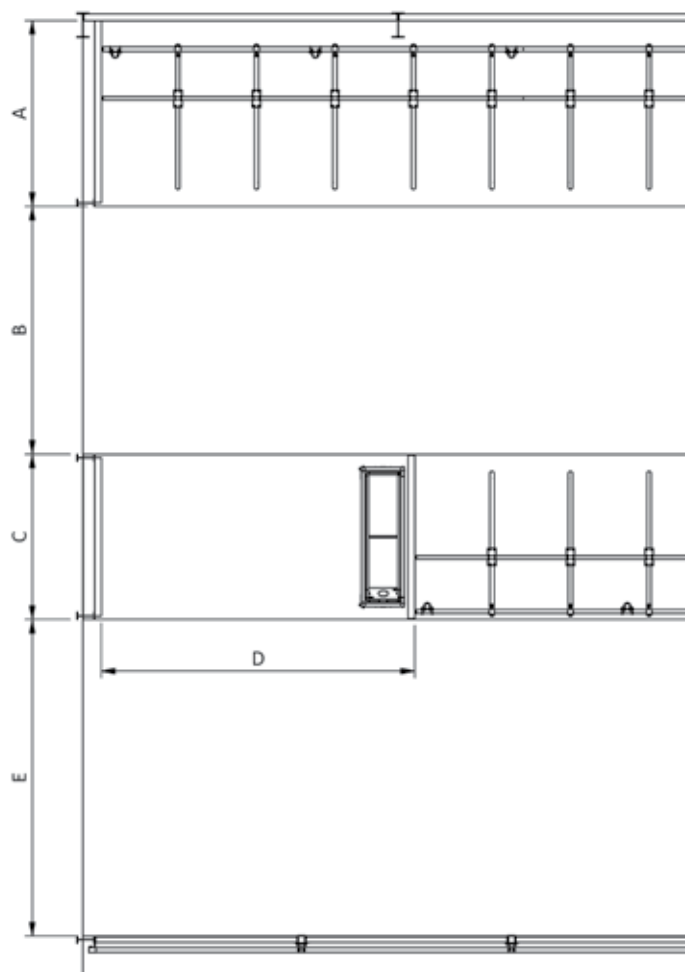
Using IAE's large stock 2100 cubicle this dimension will need to be 2500. However, the minimum recommendation is 2400. If this is the case use a 2000 cubicle.

Dim D: Cross Over Pass.

This measurement should be equal to 4 cubicle spaces. This typically allows enough space for water, cow brush and sufficient passing space whilst a cow is drinking. Where there is water only (no cow brush) the minimum accepted is 3 cow spaces.

Dim E: Feed Stance / Loafing Area.

This dimension should be a minimum of 4600mm. This typically allows for two way traffic behind the feeding cattle.



Points to think about!

- Allow 5% more spaces than cows, overstocking can have a negative impact on cow welfare and milk yield.
- Allow for cross over passages every 20 cow spaces, recommendations suggest no more than 25 spaces.
- Wall rows (Dim A) could be 3000mm to give cows un-obstructed visual lunge space.
- One cubicle size does not fit all cows. These design guidelines are typically based on an 800kg dairy cow.



Dim A: Wall Row Bed Length.

This dimension should be a minimum of 2700. Using Large Stock 2100 Cubicles (Supreme, Ultima), this allows sufficient lunging space for the cow.

Dim B: Cubicle Passage Width.

This dimension should be a minimum of 3000. The ideal measurement would be 3600; this allows the cow unrestricted access on and off cubicle beds either sides of the passageway.

Dim C: Middle Row Bed Width.

The accepted head to head bed length is 4800. Using Large Stock 2100 Cubicles (Supreme, Ultima), this allows sufficient lunging space for the cow.

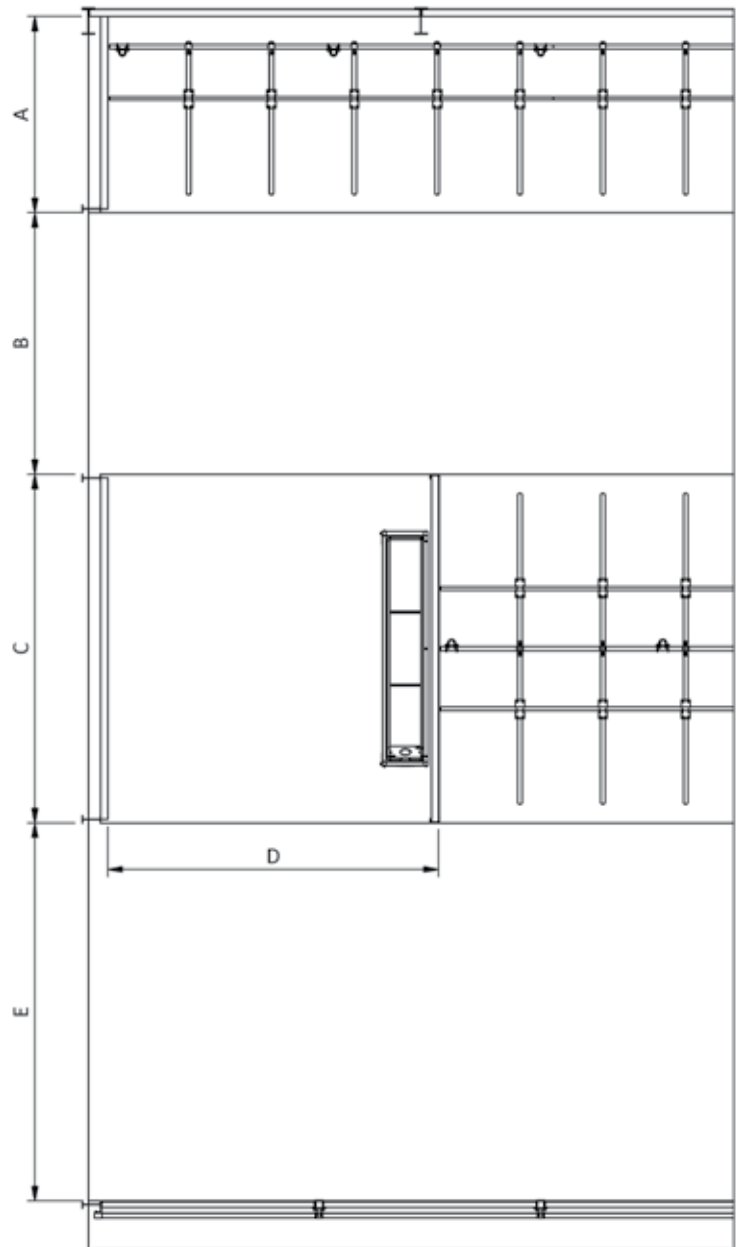
Larger head to head beds are frequently discussed in cubicle house design and consideration should be given to increasing lunging space. For more information on the design solutions for larger beds please contact IAE.

Dim D: Cross Over Pass.

This measurement should be equal to 4 cubicle spaces. This typically allows enough space for water, cow brush and sufficient passing space whilst a cow is drinking. The minimum accepted is 3 spaces (trough one side, no cow brush).

Dim E: Feed Stance / Loafing Area.

This dimension should be a minimum of 5200mm. This typically allows for two way traffic behind the feeding cattle, or unrestricted access on and off cubicle bed behind feeding cattle.



Points to think about!

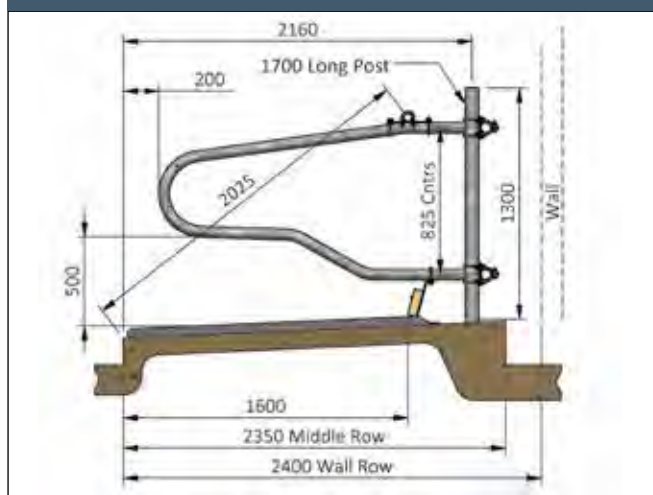
- Consideration needs to be given to keeping cows from lying in cubicles for the first 30 minutes after milking to help manage environmental mastitis. This can easily be achieved in a two row system by positioning an IAE up and over gate at the cross over points and thereby only allowing access to the Feed Stance/Loafing area and water. In a three row system this is not easily achieved whilst still allowing access to food and water.
- In a two row system there is a direct correlation between the number of cubicle spaces and the feed space allowance per cow. However in a three row system this is not the case and up to 30% of the cows will not have free access to food, especially when fresh food is initially available.



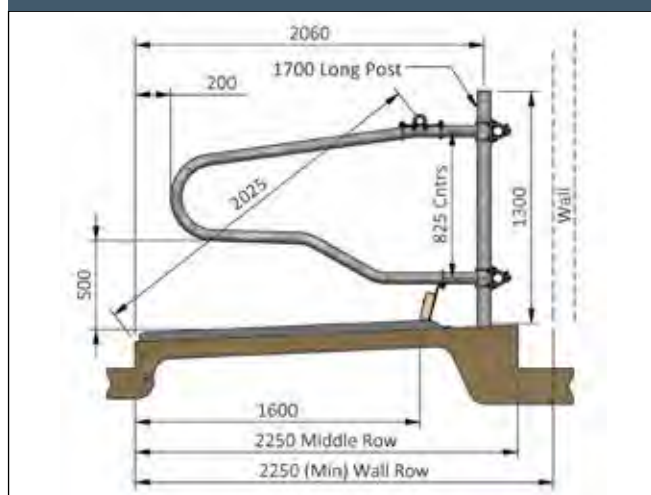
HEIFER - SUPER COMFORT CUBICLES (suitable for stock 18-22 months)

Using the successful Super Comfort cow cubicle, IAE offers cubicle bed solutions for housing heifers. Typically aimed at stock aged 18-22 months, the cubicle loop length, bed length, headrail and brisket board position are simply re-configured for heifers.

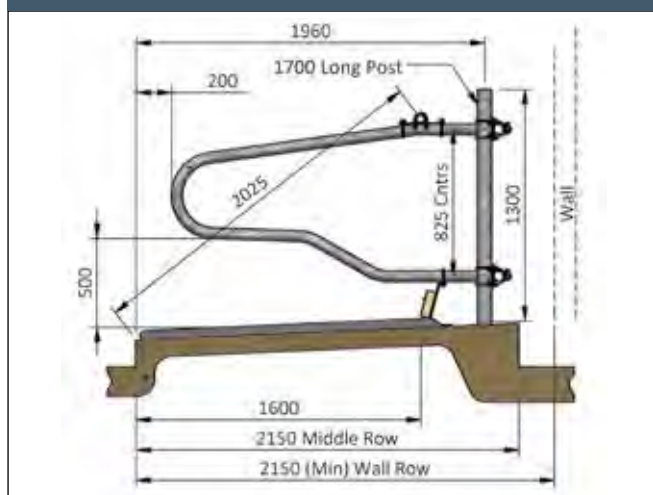
2000mm - SINGLE RUN



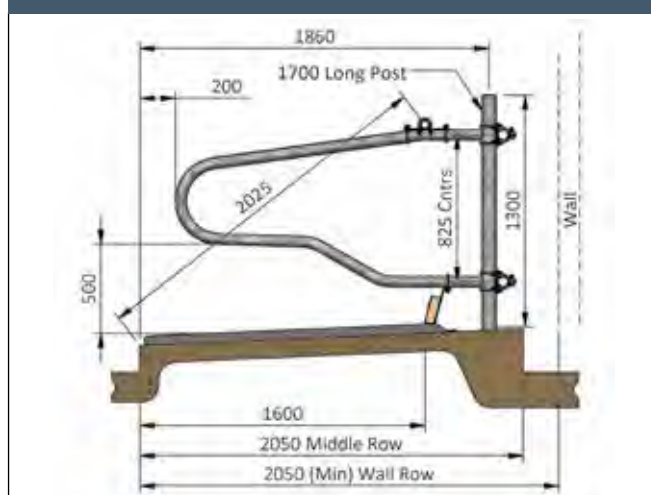
1900mm - SINGLE RUN



1800mm - SINGLE RUN



1700mm - SINGLE RUN



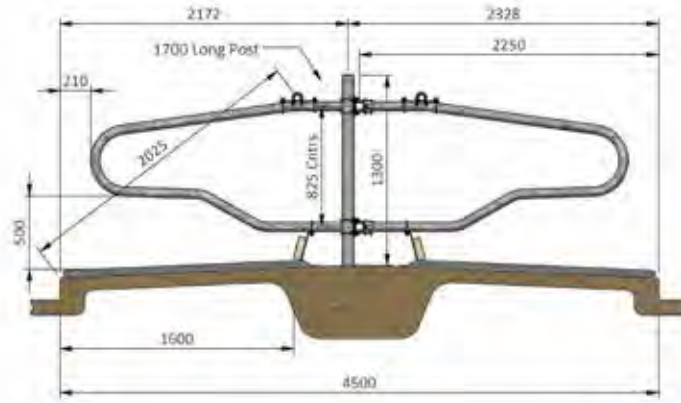
Cubicle Length	Head To Head Bed Length	Wall Row Bed Length	Middle Row Bed Length	Cubicle Centres
2000	4500	2400	2350	1000-1100
1900	4300	2250 (Min)	2250	1000-1100
1800	4100	2150 (Min)	2150	1000-1100
1700	3900	2050 (Min)	2050	1000-1100

Note: When refurbishing existing cubicle houses there is often a necessity to use the shorter heifer cubicles for adult cows. Where this is the case, the height of the headrail and brisket board should mirror those used for adult cows (see page 14)

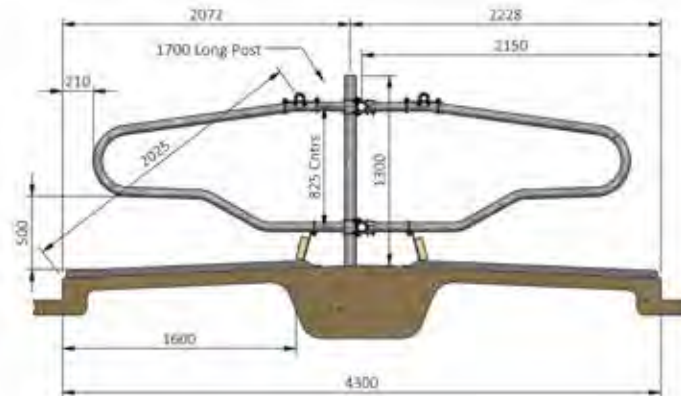
Points to think about!

- Targeted breeding age
- Age ranges in heifer groups

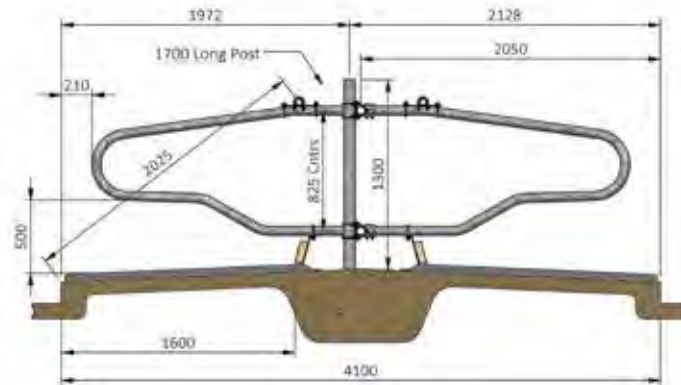
2000mm - HEAD TO HEAD



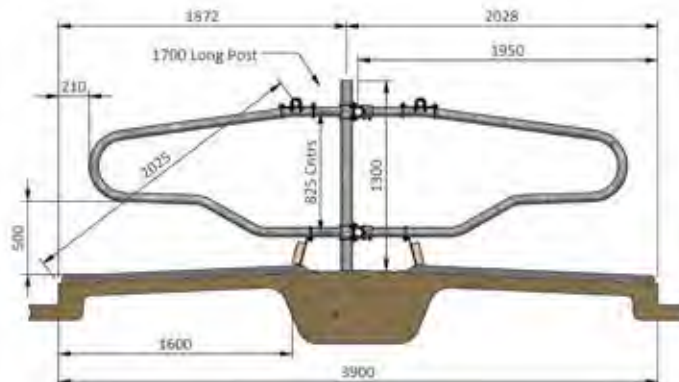
1900mm - HEAD TO HEAD



1800mm - HEAD TO HEAD



1700mm - HEAD TO HEAD

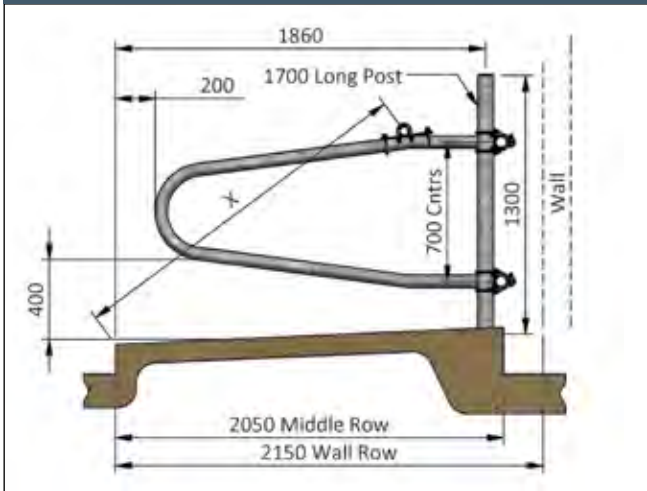


YOUNG STOCK CUBICLES

Based upon the successful features and benefits of our Super comfort cow cubicle, IAE have specific designs to accommodate various age ranges without comprising safety or comfort. These cubicles are ideal for those who wish to train younger animals to become accustomed to lying in a cubicle bed prior to their introduction into the main herd.

The largest of the Young Stock cow cubicle uses a 60.3 tubular division loop and utilises the same posts, rails and fastenings as used for Adult cubicles. The smaller Young Stock cubicle uses a 48.3 tubular division loop and its own unique posts, rails and fastenings whilst still retaining the durability required for stock of this age.

1700mm - SINGLE RUN (suitable for stock 10-18 months)



Points to think about!

- Targeted breeding age
- Age ranges in groups

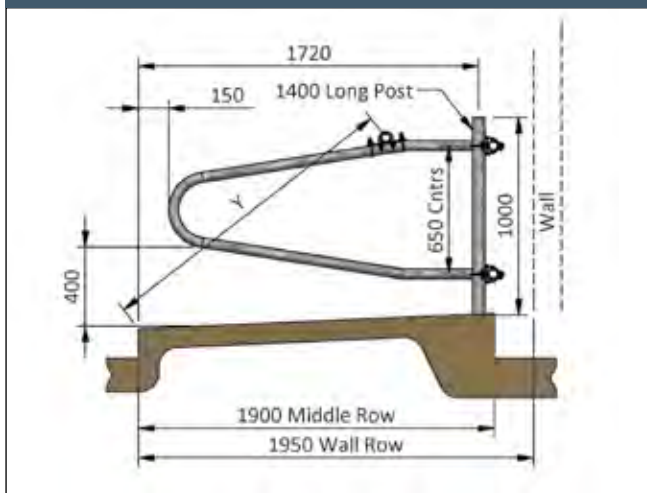
NOTE! For passage and crossover widths on young stock buildings contact IAE for further information.

Cubicle Length	Head To Head Bed Length	Wall Row Bed Length	Middle Row Bed Length	Cubicle Centres
1700	3900	2150	2050	900-1000
1600	3600	1950	1900	800-900
1350	3100	1650	1650	650-800

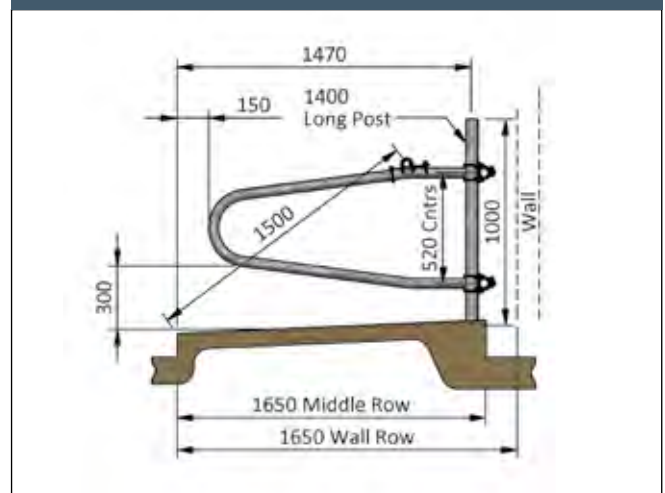
Due to ranges in animal age and size, headrail dimensions X and Y can only be specified as a range

- Headrail position X = 1780 - 1930
- Headrail position Y = 1580 - 1800

1600mm - SINGLE RUN (suitable for stock 6-12 months)



1350mm - SINGLE RUN (suitable for stock 2-6 months)



Young Stock Photo Courtesy of Grosvenor Farms



Calf Photo Courtesy of Grosvenor Farms

Providing the correct cubicle surface on which to bed your cows is often a difficult choice, the requirements of the farm's existing slurry systems may have a greater influence than that of the cow's requirements. DairyCo state that research has failed to prove a financial benefit of any one bed over another but also stress that studies have demonstrated that the selection of a comfortable surface coupled with the correct cubicle dimensions will improve comfort, lying times, occupancy rates and a reduction in physical damage to the cow.

To help with your choice of bed, IAE have listed some commonly used bedding options below, however it is important to note that no matter which lying surface is selected, a thorough maintenance schedule will be paramount to its success

Mattresses

Studies have shown that `soft filled` cubicle beds have significantly higher occupancy rates than other bedding procedures. Foam filled mattresses have a very high occupancy. Top covers should be continuous, waterproof, non-slip and easy to clean. Mattresses require a small amount of absorbent bedding material (such as very fine soft sawdust or products like Lydry) to keep cows clean, help prevent hock and knee hair loss and keep the beds dry. IAE now offer a foam and top cover solution of their own, [see page 36](#).

Sand Beds

Sand beds are becoming increasingly popular and whilst the initial set-up costs might be low, ongoing maintenance and filling of the sand beds will be costly, plus adverse effects on any waste handling systems should be seriously considered. There are many types of sand available for use as bedding, however a general rule is 'the softer the sand, the better it is for the cow'. Like most things though there is a problem with this rule, soft sand is much more difficult to separate from the manure for re-use. Occupancy rates can be up to 80% on deep sand beds, cow cleanliness does not appear improved over that of a good mattress system. Sand does have a lower bacteria count compared to sawdust and straw, and there is a decrease in lameness over a mat / mattress with little or no bedding.

Sand Saver Tiles

You can minimise sand waste and associated labour costs by using the Sand saver grid tiles. This solution in conjunction with good sand management, can keep the bed level and reduce hoof strain. IAE now offer sand saver tiles, [see page 38](#).

Mats

The preferred rubber mat should be soft enough to provide a high degree of comfort to the cow, yet firm enough to support the cow when she drops to her knees and resilient to excessive stretching and compression. There are many types of mats available, all of which are compatible with IAE's cubicles. IAE now offer a basic mat., [see page 38](#).

Other

There are many types of other bedding materials available, all with their own benefit and drawbacks, but all will work with IAE's cubicles. There are materials such as Straw, Sawdust, Ash, Shavings, Green Bedding, and more solutions are emerging each year!

Points to think about!

- Advice from DairyCo states that "Bare concrete or hard rubber mats without bedding are unacceptable cubicle surfaces. The softer the bedded surface, the more acceptable the cubicle will be to the cow"
- When setting the cubicle bed heelstone height, always allow for the thickness of the mattress when setting the cubicle division height

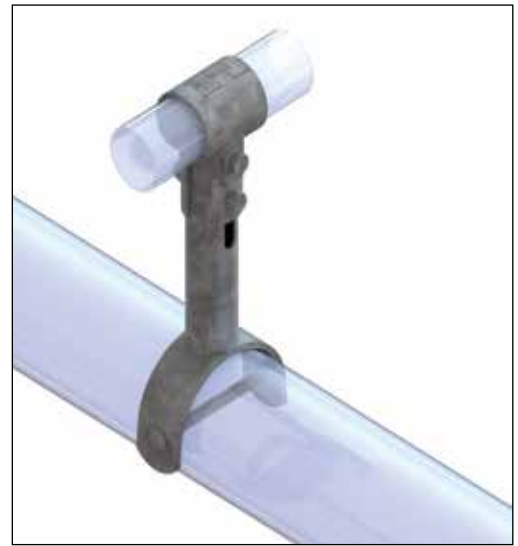


P.I.P.E - Polyethylene Ideal Position Enhancer

IAE's P.I.P.E bracket is designed to easily clamp to the lower section of our Ultima® and Super Comfort cubicles. The high quality plastic tubes are then positioned and fastened into place. This optional extra aids in correctly positioning the animal when lying on the cubicle bed, which is a vital feature of any successful cubicle installation:

- Correct positioning of the animal when lying prevents the animal from lying too far onto the bed, this reduces bed soiling which leads to improved comfort, cleanliness and health. Cleaner beds also equate to reduced bed maintenance and lower costs.
- Correct positioning of the animal when lying results in greater lying times which in turn lead to reduced stress on the animal and therefore a healthier cow overall, all of which have been linked to higher milk yields.
- Correct positioning of the animal when lying reduces the potential for injury as it rises or lies down.
- Some studies suggest that a cow's preferred lying position can be with one front leg extended forwards for nearly a third of their lying time, so using P.I.P.E. has benefits that match and exceed those of using timber brisket boards as animals find the ergonomic shape more comfortable.

P.I.P.E. should be positioned approximately equal to the animal's diagonal body length (as shown in Fig. 2 on page 25). For a guide this is approximately 1700mm for an 800kg dairy cow. General set ups should use the dimensions in each cubicle loop section to begin with, and then adjust if necessary to suit the needs of each individual herd.



The IAE Brisket board bracket is designed to easily clamp to the lower section of our cubicles, the timber boards are then cut to length and simply laid across the brackets and fastened into place. This optional extra aids in correctly positioning the animal when lying on the cubicle bed, correct positioning on the bed is a vital feature of any successful cubicle installation:

- Correct positioning of the animal when lying prevents the animal from lying too far onto the bed, this reduces bed soiling which leads to improved comfort, cleanliness and health. Cleaner beds also equates to reduced bed maintenance and lower costs.
- Correct positioning of the animal when lying results in greater lying times which in turn lead to reduced stress on the animal and therefore a healthier cow overall, all of which have been linked to higher milk yields.
- Correct positioning of the animal when lying reduces the potential for injury as it rises or lies down.

Timber brisket board should be positioned approximately equal to the animal's diagonal body length (as shown in Fig. 2). For a guide this is approximately 1700mm for an 800kg dairy cow. General set ups should use the dimensions in each cubicle loop section to begin with, and then adjust if necessary to suit the needs of each individual herd.

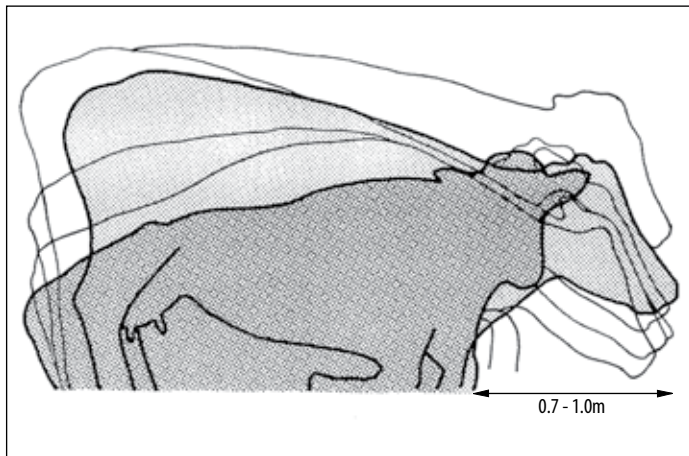


Fig. 1 Forward space demand for rising movement.

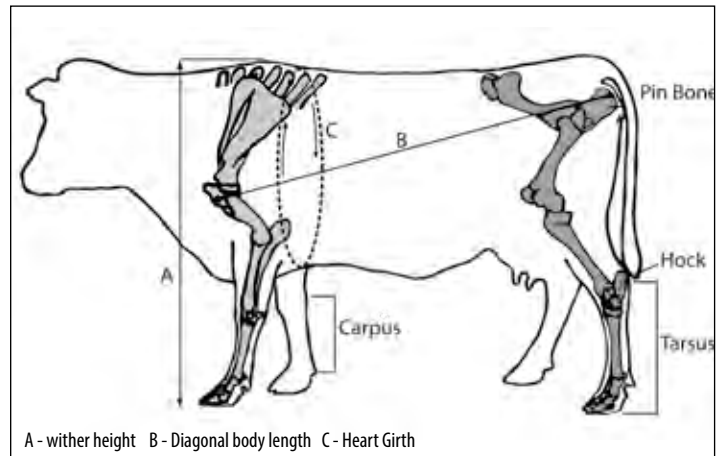


Fig. 2 Location of cow's body measurements.

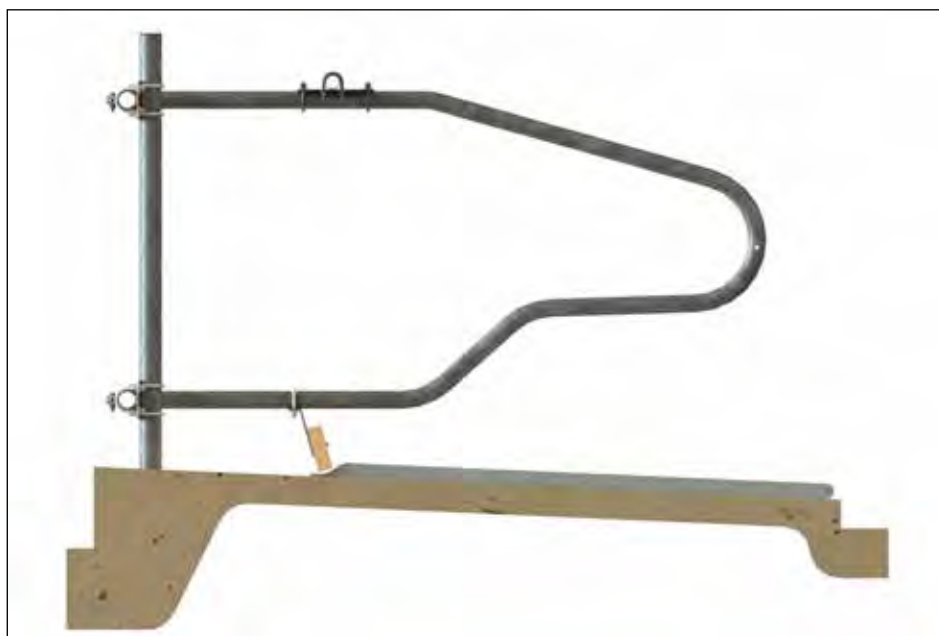


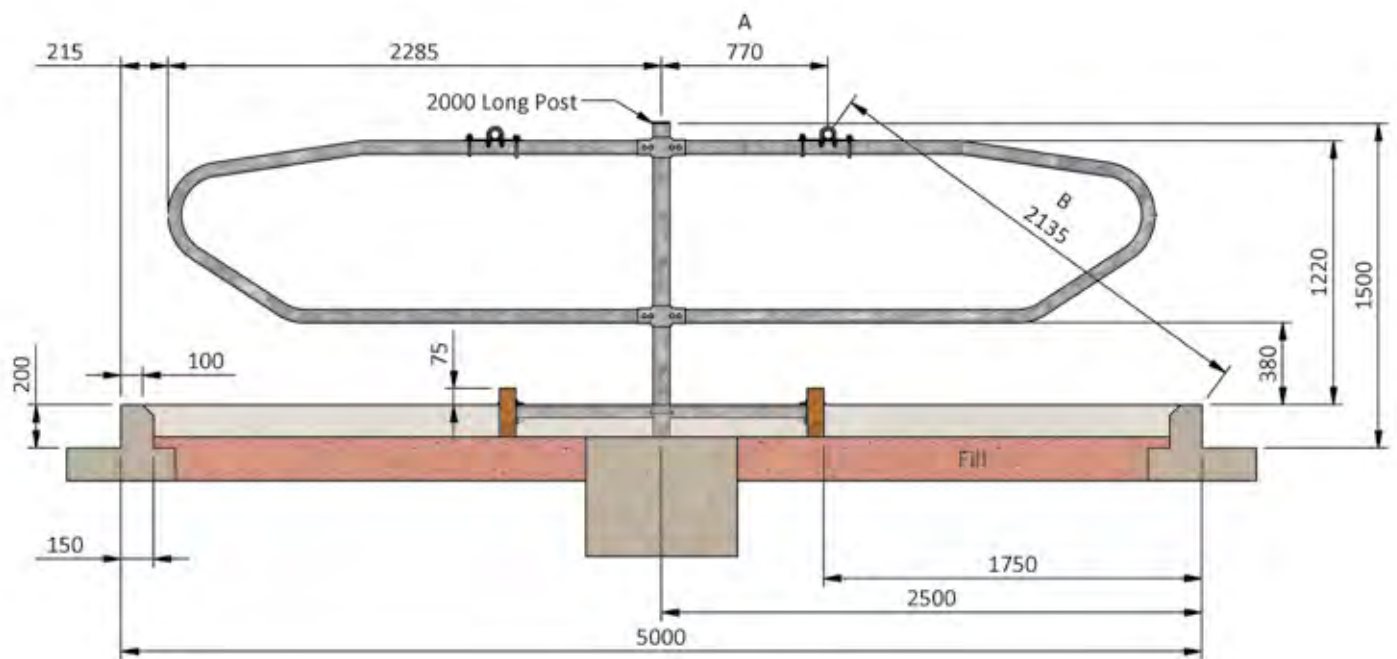
Fig. 3 Example of Brisket Board/rail set-up on Supreme

CBFG – Super Sand Stall (suitable for stock over 22 months)

CBFG Super Sand Stall has seen a dramatic increase in popularity across the UK, particularly on some of the largest and most prominent dairy units in the country. Influenced by practises adopted in North America, the Super Sand Stall is specifically for use with deep fill sand beds and has been designed and trialled by a group of eminent farmers, many of whom are RADBF Gold Cup winners. IAE has worked closely with this group to create a system to meet the requirements for comfort on a deep fill sand bed.

By supplying a post for every cubicle loop, the Super Sand Stall provides a fully unobstructed lunge zone. The shape of the Super Sand Stall cubicle loop has been designed with a slope at the rear to aid the cow when rising, and the lower rail has been positioned closer to the bed to offer maximum support for the cow even as sand compacts and disperses. The position of the lower rail creates a different indexing method to that of a space sharing cubicle and a necessity to set the cubicle loops at the wider centres of 1195mm.

HEAD TO HEAD



NB. When housing Heifers in Super Sand Stall, adjust the Dims A+B to 870 and 2055

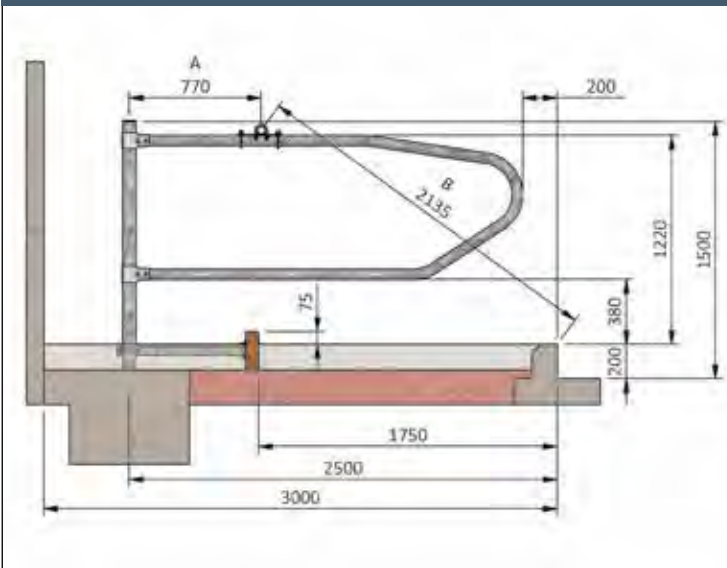
Points to think about!

- Sand should be filled to the heelstone height, replenished regularly and raked clean and level.
- For every 10mm the sand is below the heelstone, 10 minutes of lying time will be lost, e.g. 150mm reduction in sand depth equals 2 ½ hours per day of lost lying time.
- Sand decreases hock lesions and lameness.
- Sand has a low bacteria count, which aids in mastitis management.
- Sand over-spill from the bed into the scrape passages will increase traction and stability for the cow when loafing.



Photo courtesy of Grosvenor Farms

SINGLE RUN WALL ROW



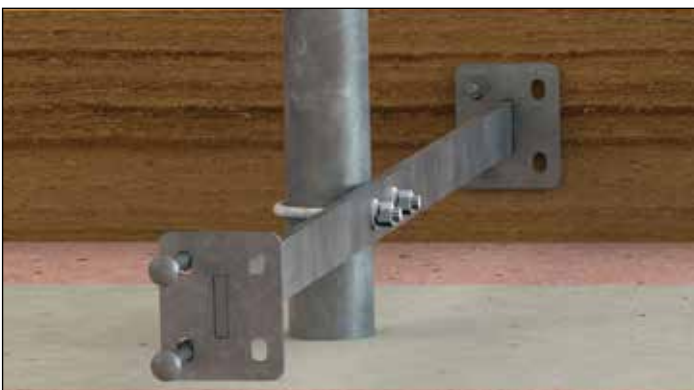
Points to think about!

- CBFG Super Sand Stalls were predominantly designed to be configured in a head to head set up. This creates the maximum lunge zone and allows the cow to lie with social interaction.
- If using open fronted runs (middle row beds) there is opportunity for cows to perch at the head end of the cubicle and provision should be taken, possibly in the form of strap or rail, to prevent access to the cubicle bed from the wrong direction.
- Designed for deep sand, ideally 150 to 200 (100 min.), to improve comfort and cleanliness.
- For optimum comfort, brisquet board to protrude 75mm above sand.

Headrail and Post Clamps



Brisquet Board Bracket



Super Sand Stall General Set Up



Photo courtesy of Grosvenor Farms



A clean, fresh water supply is essential in any dairy housing unit as a restriction in water supply will have an immediate adverse effect on milk yield.

The IAE tipping water trough range offers the ideal solution to meeting the water requirements of any dairy house design. The easy to operate tipping mechanism allows the trough to be emptied and secured back into position within seconds, removing the need to wait for the trough to drain or the need to return to replace a cap or bung.

Unlike many other trough types, our tipping trough has a protection frame around all sides to reduce the likelihood of damage to the trough.

Whilst the IAE tipping trough comes ready fitted with a ball valve, our optional JOBE TOPAZ BALL VALVE will complete your trough by delivering up to 200 litres of water a minute, a recommended solution when considering that one cow can consume 90 – 120 litres of water per day and a high yielding cow may drink in excess of 200 litres per day.

IAE tipping water troughs can also be supplied with the trough section in stainless steel. Whilst initial costs will prove more expensive than the galvanised option, stainless steel offers a longer life span with a smoother surface, making it easier to clean.

Free Standing



Optional lid shown on Free Standing - also available for Wall Fitting



Service Box: Fitted to either end

Points to think about!

- IAE's tipping trough conforms to the Water Supply (Water Fittings) Regulations 1999.
- High Yielding Cows can require up to 5 litres of water for every litre of milk produced.
- Trough surface area should be at least 1m² for every 60 cows in a group.
- At peak periods (typically after milking) cows can drink at 15 – 20 litres/min, 4 cows around a trough means up to 80 litres/min, ensure you have adequate trough capacity and sufficient flow rates.
- There should be provision for at least 10% of the herd to drink at once
- Troughs should be located at a height to minimise fouling but also to allow unrestricted access (typically 900mm from standing to the lip of the trough)

NOTE: Lids and surrounds are supplied separately and can be fitted as either hand

NOTE: Service box can be fitted to either end

Wall Fitting



Free Standing with optional lid and surround



Handle to facilitate emptying

(Optional) Water Pipe Fitting





- Designed for use in cubicle buildings where traditional hinged gates are not suitable
- Helps control cattle movement
- Can be used for group separation
- Counter balanced weight makes for easy operation
- Optional cow or tractor height clearances available
- Available clearances 2175, 3000, 3500mm



- Designed for use in cubicle buildings where space is very restricted
- Benefits as described for the up and over gate
- Available to suit various clearances

2 Rail Splitter Panel



- Designed to split animals in cubicle buildings into groups
- Automatic scrapers pass under the bottom rail
- Available as a panel or gated unit
- Gated units allow for tractor access

2 Rail Splitter Gate



SHEETED DOORS



We can manufacture sheeted doors to suit almost any opening. Clad with pre-galvanised sheet attached to a box section frame we can cater for most configurations that you would need. Top stable type doors to close off a large opening, pairs, and doors set on offset hinges to narrow the gap. Sheeted doors should be clad on the inside of the building to prevent muck build up on rails and to prevent animals from pushing the cladding off. Where aesthetics dictate that sheet is required on the outside, then IAE still recommend sheeting the inside of the door to approx 1270mm high. (610mm minimum). Talk to our sales teams or area sales manager to discuss your options and we can guide you through the choices available.

SHEETED DOOR STANDARD HEIGHTS

BOTTOM DOORS						TOP DOORS			
4 RAIL	BISB	5RAIL	BISB	6RAIL	BISB	2 RAIL	BISB	3 RAIL	BISB
1280	1	2185	1	2920	2	770	1	1280	1
1365	1	2310	1			1030	1	1535	1
1535	1	2520	2					1910	1
1700	1	2600	2						
1910	1	2755	2						
1990	1								

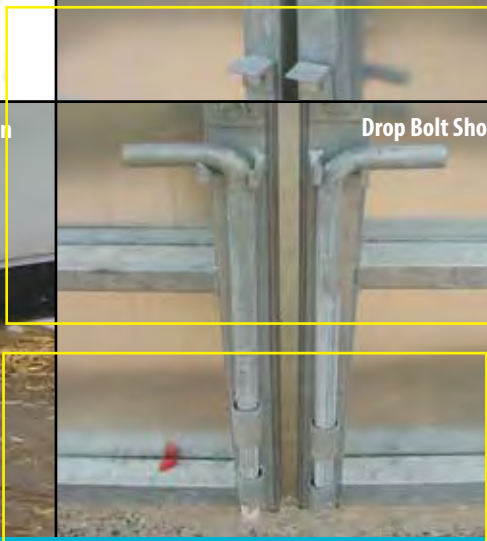
All measurements shown in mm



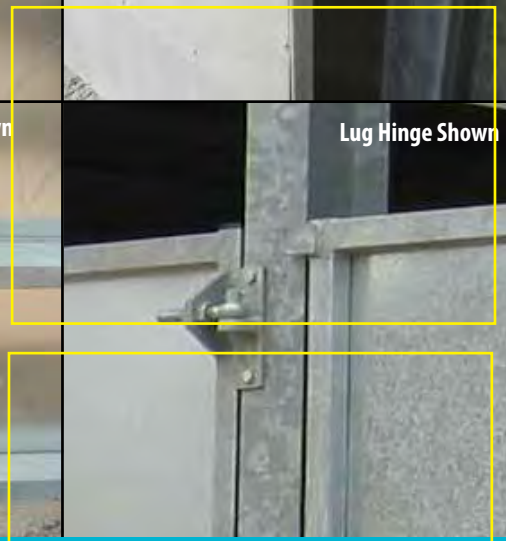
Bar Type Sliding Bolt



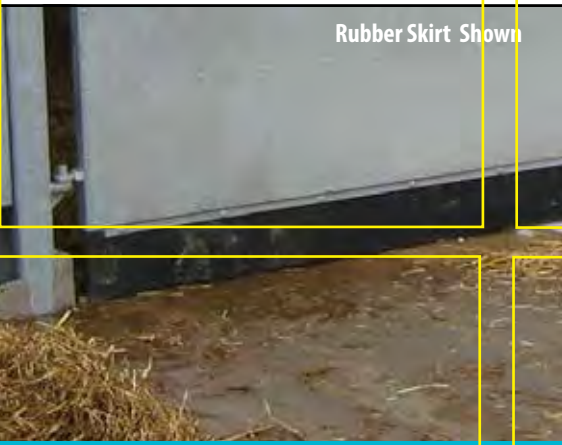
Holding Back Chain



Drop Bolt Shown



Lug Hinge Shown



Rubber Skirt Shown

SLIDING DOORS



We can manufacture sheeted doors to run on your existing track or supply new track to suit most situations. Track and wall fastenings are from the quality King No.2 sliding door gear range. Weather hooding, floor guides and other fittings are all available. Clad with pre-galvanised sheet attached to a box section frame we can cater for most configurations that you would need. Talk to our sales teams or area sales manager with your requirements.

3 Bolt Tee Clamp (Single Run Clamp)



B119 1541 83

Heavy Duty Headrail Bracket



F025 2005 45

4 Bolt Tee Clamp (Head to Head Clamp)



B119 4486 00

Brisket Board Bracket (Super Comfort)



F025 2005 41

Ultima® (Head to Head Clamp)



B119 4550 52

P.I.P.E Bracket



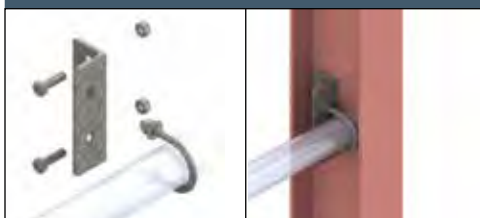
F025 2005 48

76mm Post Fixing Brackets



F025 2003 31

60mm Angle Bracket U- Bolt

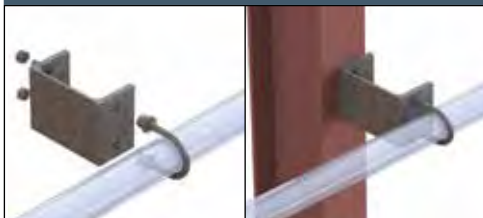


Z- Bracket (from two 60mm angles)



F025 2005 73

Channel Bracket Assembly



3 sizes available

U - bolt



3 sizes available

Brisket Board Bracket (Supreme)



F025 2005 44





The revolutionary new IAE YokeMaster®, self-locking yoke panel has been developed and tested over many years to become probably the best yoking system available today.

Designed for dairy cattle, the IAE YokeMaster® self-locking yoke panel is intended to allow cows to feed freely, but also allow the animals to be locked into the panel to permit treatment (A.I. for example) to take place within their housing environment, with consequentially better welfare, conception rates and milk yield benefits associated with not removing the animal from its familiar habitat and reducing animal stress.

Key Features Include:

Unique PATENTED locking arrangement

- Features quiet, self lubricating polymer locking latches. This gives quieter operation and locking and also includes steel core, polymer coated drop latch for strength and quiet operation.

Operate 50+ headspaces with 1 handle

- This easily exceeds what is realistic with competitor panels

Reliable locking - will not skip over lock.

- Once locked, the YokeMaster® will not jump or slip out of its locked state.

Offset yoke arm pivot.

- The offset pivot of the YokeMaster® completely eliminates pivot point neck rub.

1000mm high panel.

- Increased from 915mm high. This reduces rubbing and abrasions on the neck. Panels are available upto 10 spaces.
- You can use a single panel in a 6000mm bay

Yoke arm rubber bumpers.

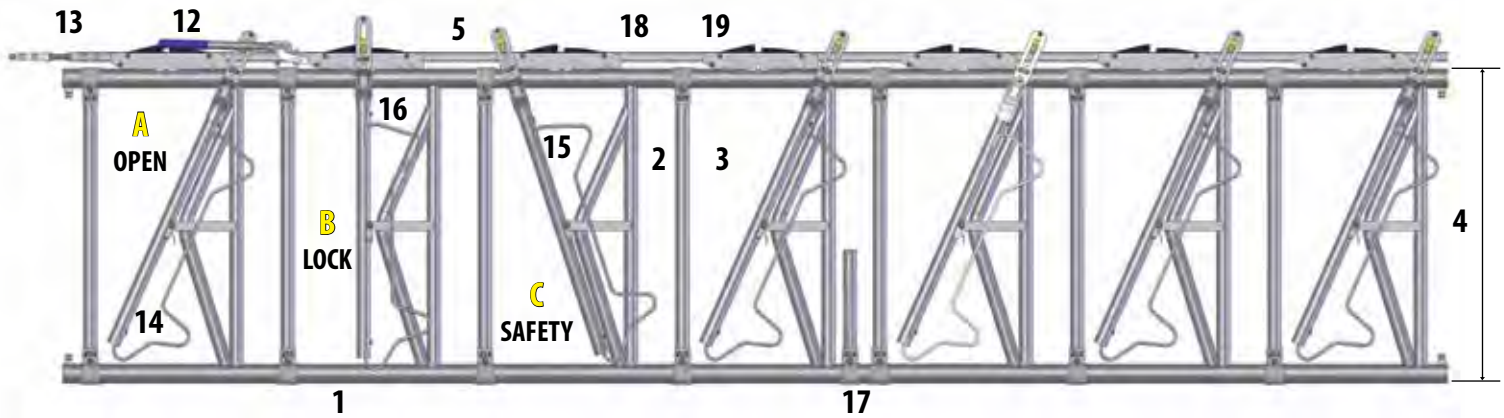
- Minimises panel noise

Operating Rod.

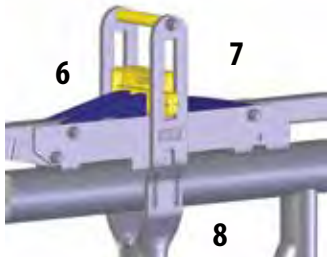
- Unique threaded adjustment/link system to enable multi-panel set-up

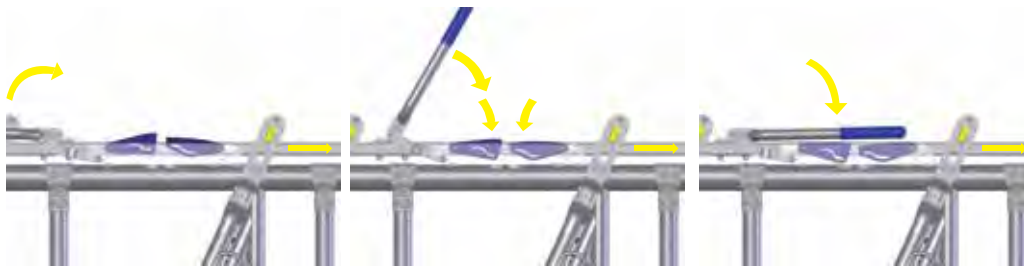


YokeMaster® Detail

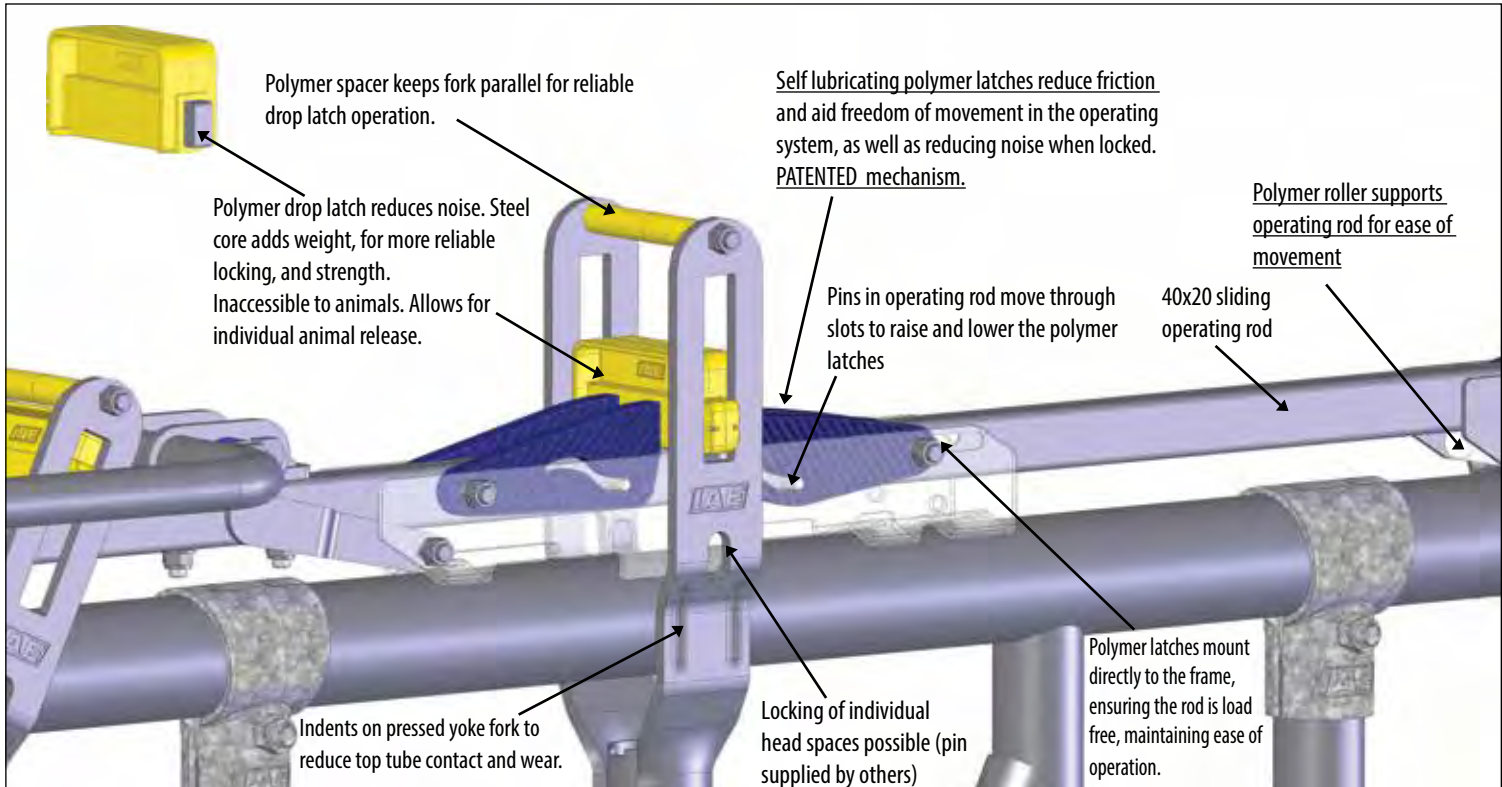


1. 60.3 Horizontal Rails.
2. 42.4 vertical rails & yoke arm.
3. 42.4 adjustable head-gap rail 230-140mm (200 standard).
4. 1000mm o/all panel height (940 rail ctrs) excl. op. rod.
5. Unique sliding 40x20 operating rod.
6. PATENTED LOCKING MECHANISM featuring polymer latches for self lubrication, reduced friction in operation and reduced noise.
7. Quiet and smooth operating polymer drop latch features steel core for strength and weight to aid locking.
8. Pressed steel yoke arm fork.
9. Axially mounted torsion spring for long life. Automatically returns yoke arm to open position.
10. UNIQUE OFFSET YOKE ARM PIVOT point for greater animal welfare - no neck rub on pivot bolt!
11. Dual pivot mounting plates.
12. Operating handle lies horizontally. Moving through 180 degrees, it offers EXCEPTIONAL LEVERAGE allowing 50 animal headspaces to be operated (linked panels).
13. Threaded operating rod linkage allows highly accurate alignment of adjacent yoke panel operating rods.
14. Excellent calf head-trap prevention.
15. Heifer head trap prevention.
16. Rubber bump stops on yoke arm (top and bottom) for reduced noise.
17. 4420 & 5850L panels supplied with fixing post to be cast into stub wall. It is imperative this is used to support the centre of the panel. If alternative wall used (pre-cast concrete panel or similar), an alternative fixing MUST be made. Support directly from timber boards is insufficient.
18. Clean/obstruction free top rail design minimises ear tag loss.
19. Easy access to op.mechanism for cleaning & maintenance.





- Operation handle (F030 2250 08) moves through 180 degrees and lies parallel to top tube when at rest - inaccessible to animals, thus no lock required - allows for "Twin" handles.
- Long handle gives excellent leverage - 50+* headspaces (on linked panels) can be operated with a single handle.
- Handle not supplied with panel and is purchased separately.
- 1 space panel requires different handle (90 degree movement to avoid clash with stanchion) - F030 2250 17.





Points to think about!

It is recommended that panels be inclined when installed as photos above.

By inclining the panels it has the following benefits:

- **Reduced loads on the panels** from animals as reach for fodder is increased.
- **Reduction in wear** on animals shoulders/withers/neck.
- **No need to drill.** Operating rod passes directly in front of stanchion, negating the need to drill stanchion to link panels.



COW MATS

IAE are pleased to introduce quality cow comfort solutions to their range. Following considerable market research across Europe and North America, IAE chose Huber Technik, based in Erding, near Munich in Germany to provide their cow comfort mat and mattress systems. Huber Technik are unique in their manufacturing technique as they are the only manufacturer to **use only new tyre compound** to produce their goods. Huber Technik were formed as a company over 80 years ago, and like IAE, are still a family owned company. Due to the superior quality of their raw materials and manufacturing processes, the factory can provide a regressive 10 year warranty on all products.

Over the past 25 years, the company has now installed over 2.5million cow spaces with comfort systems with virtually **zero warranty claims**. Huber Technik are rated very highly by Germany's Agricultural society (DLG.org) through a series of laboratory tests for comfort and durability. These are the most robust tests on the market and clearly prove that Huber Technik's top cover and continuous rubber roll is **six times stronger** than similar products made in China.

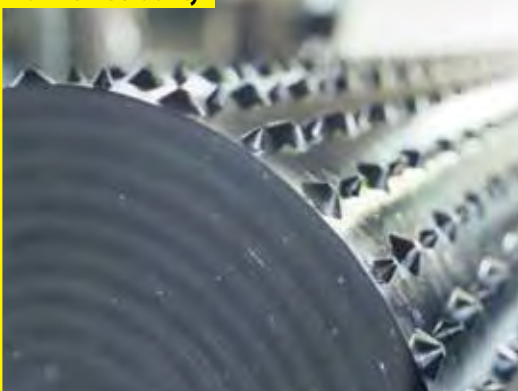
Huber Technik have carefully chosen their distributors over the years, teaming with only those that share their passion for quality. IAE are proud to partner with Huber Technik whose company values closely mirror their own, to be able to offer another quality solution to their customers.

N20 - Comfort Studded Roll

N20 comfort roll is a very popular Huber Technik product. Made from 100% rubber compound, N20 is supplied complete on a full roll to fit on site. The roll is made from 15mm rubber "bungs" and a 5mm solid rubber top. This allows for great compression when the cow kneels down, offering better comfort than a solid rubber mat. The 100% rubber compound has never been vulcanised before meaning super longevity.



Maximum Durability



Superior Comfort



Features include

- Bung system – shock absorbing design provides comfort for cow when lying down
- Liquid can freely run underneath and away from the bed
- Unique soft feel of profiled top with honeycomb finish on bed of rubber studs gives stability and comfort
- Fabric interlining for strength
- Regressive 10 year warranty
- Cut to length for your runs, no joins, greater cleanliness and **simple DIY installation**
- Supplied with 1(No) M8 x 80mm stainless steel coach screw per cow space
- Available in 1.7m and 1.85m bed widths up to 50m rolls



Rubber mats combined with a brisket board or rail promote the optimum lying position of the cow, reducing bed soiling and increasing hygiene



NEW For 2016**4GS Complete Mattress Solution****The first Mattress solution provided as part of your whole cubicle package by IAE****NEW**

The 4GS system combines a superb Huber Technik top cover which is 4mm thick and backed with a special strong inlay mesh exclusive to Huber Technik products. This interaction point with your animal is gently textured to provide **stability** and is manufactured from 100% pure rubber compound which has not previously been vulcanised. This top cover is proven in test to be **6 times stronger** than Chinese competitors. The foam pads that form the inner part of the mattress are 30mm thick special compound foam made from 50% latex and 50% polyurethane. This mix leads to exceptional **shape retention** and comfort. This combination creates the perfect balance of **comfort and durability** in a simple yet proven installation system.



30mm Foam Pad

Top Cover

Stainless Steel Fixings

More than 500,000 cows are lying on the 4GS mattress system across Europe, Ireland and North America 365 day housing systems, so the proven acceptance and performance of the product can be continued into the UK marketplace.

Features of this 4GS soft bed system include:

- New Tyre Compound – 100% rubber with no recycled material or cheap fillers
- Available with optional 40mm thick foam pads
- Plastic wrap to contain foam pads supplied with every job
- Fixings supplied
- Gentle honeycomb texture on top cover provides safe grip for stability and low abrasion
- Made in Germany
- Regressive 10 year warranty

DLG Testing and Certification

The 4GS system is DLG tested and has been awarded a certificate and the right to display the DLG "Fokus test" label

Deformability and Elasticity - Evaluates softness, comfort, and elasticity of a rubber mat before and after use, simulating 10 years of normal use.

Lying time comfort test - In independent tests the 4GS Mattress Solution had 16 hours lying time versus 13 hours in an EVA mat and 6 hours of that of a basic solid rubber(no bungs) mat.

Abrasion Test - Evaluates top-surface wear. After 10,000 rotations mat is measured to evaluate top-surface wear resistance.

Slip Resistance Test - Evaluates top-surface grip of a rubber mat. Surface grip prevents a cow from slipping. Relevant resistance measurements of a wet and dry mat are recorded to evaluate the overall slip resistance.

Tensile Test - The N/mm² is 24.7 for Huber, scoring a ++(DLG6014F) and 4.72N/mm² for the Chinese product a 0, (DLG5809F)

DB 1.1 Economic Mat



Features include

- Dimensions: 1.7m x 1.15m x 18mm.
- 3 x counter-sunk anchor points with fixings provided.
- Manufactured in Europe, an excellent alternative to Indian and Chinese products.
- Slanted rear edge for added hygiene, greater comfort than bare concrete and ease of animal access.
- Quality product for lower budgets.
- 3 Year guarantee.
- Textured grip, reducing the risk of the animal slipping off the mat.

Dobro is part of the Geyer & Hosaja group who have been producing rubber products for the past 25 years. Awarded with ISO-TS 9001 and 14001 Quality system, Dobro meet the very highest standards in their manufacturing process which is strictly controlled in their own on-site laboratory.

The Dobro 1.1 individual cow mat provides excellent thermal insulation over cold concrete. It also provides good heat dissipation during hot weather. Dobro rubber mats imitate the natural ground and increase the resting comfort of cows. Thanks to the application of top-quality materials they serve as a good insulation base and reduce the costs of breeding.

Special construction of an anti-slip structure of the mat reduces the risk of joint and hoof injuries. Using rubber mats makes it easier to keep the cowshed clean, which is directly reflected in the well-being of cattle and the quality of milk produced. This individual cow mat is easy to install and only requires 2-3 anchors.

DOBR

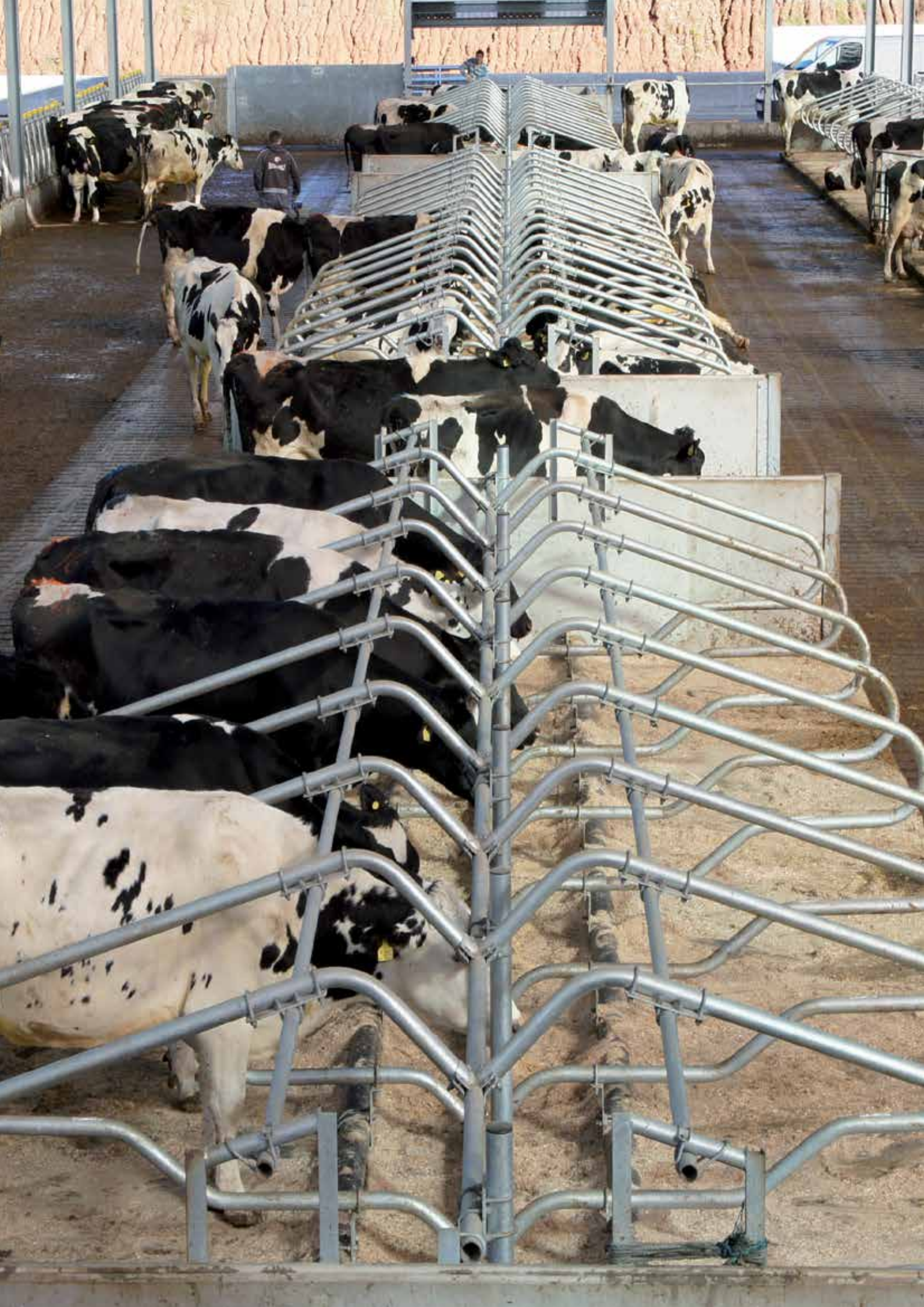


Other Solutions

Sand Saver Mat



Other cow comfort solutions available on request including alley & parlour rolls, alley mats, higher comfort cubicle mats, slat rubber and sand saver mats..





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Proprietors: F.Klucznik & Son Ltd, Mossfield Road, Adderley Green, Longton, Stoke-on-Trent, ST3 5BW

IAE reserve the right to alter design and specification without prior notice