

MINIMUM SPECIFICATION FOR CATTLE CRUSH, RACE AND ENCLOSURE

The receiving of this specification does not imply approval of a grant application. However, if written approval is issued, then this specification becomes part of the contract between the applicant and the Department of Agriculture, Fisheries and Food.

This is a minimum specification. Where the word “SHALL” is used, then that standard (at least) must be followed in grant-aided buildings. Where a procedure is “RECOMMENDED”, this is advice only on good practice.

Note that all references to other Department Specifications are to the current edition of that specification [available on the Department of Agriculture, Fisheries and Food Website (www.agriculture.gov.ie) under Farm buildings]. Similarly, references to Standards are to the current edition of the Irish, British or European Standard, as appropriate.

1. Safety

APPLICANT'S RESPONSIBILITY FOR SAFETY

Applicants are reminded that they have a duty under the Safety, Health, and Welfare at Work Act 2005 to provide a safe working environment on the farm, including farm buildings, for all people who may work on that farm. There is a further duty to ensure that any contractor, or person hired to do building work, provides and/or works in a safe environment during construction. It is the farmer's responsibility to provide a construction stage project supervisor.

SAFETY DURING CONSTRUCTION

Farmer/Applicant Responsibility: Certain construction dangers may be encountered in the course of building or conversion work. Neither the Minister or any official of the Department will be in any way liable for any damage, loss or injury to persons, animals or property in the event of any occurrence related to the development and the applicant shall fully indemnify the Minister or any official of the Minister in relation to any such damage, loss or injury howsoever occurring during the development works.

Dangers: If any or all of the work is undertaken by the applicant/farmer he/she should seek competent advice and undertake all temporary work required to ensure the stability of excavations, superstructure, stanchion foundations and wall foundations, also to divert any drains, springs or surface water away from the works, and to guard against possible wind damage, or any other foreseeable risk.

Power lines: Farm buildings shall not be constructed under or nearer than 10m to an overhead power supply. If advice is required, or if power lines need to be diverted, it is the applicant's responsibility to contact, in writing, the local ESB supervisor before construction commences, and then to follow the ESB conditions.

Danger to children: It is the applicant's responsibility to prevent children from playing or spending time in the vicinity of any building work.

2. Concrete Specification

Concrete shall be to the standard set out in the Department's specification S101 and shall be certified in the same manner.

3. Siting

The crush and race may be free standing, located alongside a mass concrete wall, at the side of a suitable building, in an animal house or in a feed passage. Consideration shall be given for use of animal penning divisions when located in houses and feed passages. Cattle crushes shall not be located alongside walls constructed of concrete block. The walls shall be reasonably smooth and adjacent roofs must have functional gutters. For crushes that run alongside mass concrete walls it is strongly recommended that it runs from right to left for veterinary access to animals. This is of particular importance for calving or caesarean sections on cows.

4. Dimensions

Crush length 1.4m with a skulling gate

Crush length 1.8m with a plain gate

Race length 3.6m minimum

Recommended >5.4m

Note:

- 9m will hold 5/6 animals
- Long races holding 12 or more adult cattle are not recommended.

Width 650mm – 700mm standard

Variations are permitted to suit type of animal:

- Calf 500mm
- Dairy 650mm – 700mm
- Beef 750mm

Height 1.4m above floor level

5. Structure

5.1 Posts and Rails

All uprights shall be tubular steel at least 76.1mm OD x 5mm thick or hollow section steel 80 x 80 x 4mm thick. They shall be fitted in a 300mm x 300mm x 450mm concrete base at 1.8m centres except skulling gate section, which shall be 1.4m.

All side rails, retaining bars and steel sections used in gates shall be tubular steel 48.3mm OD x 3mm thick, or hollow section steel 50mm square x 3mm thick. A minimum of three rails shall be provided equally spaced with the bottom rail 440mm off the ground. *See Figure 1 below.*

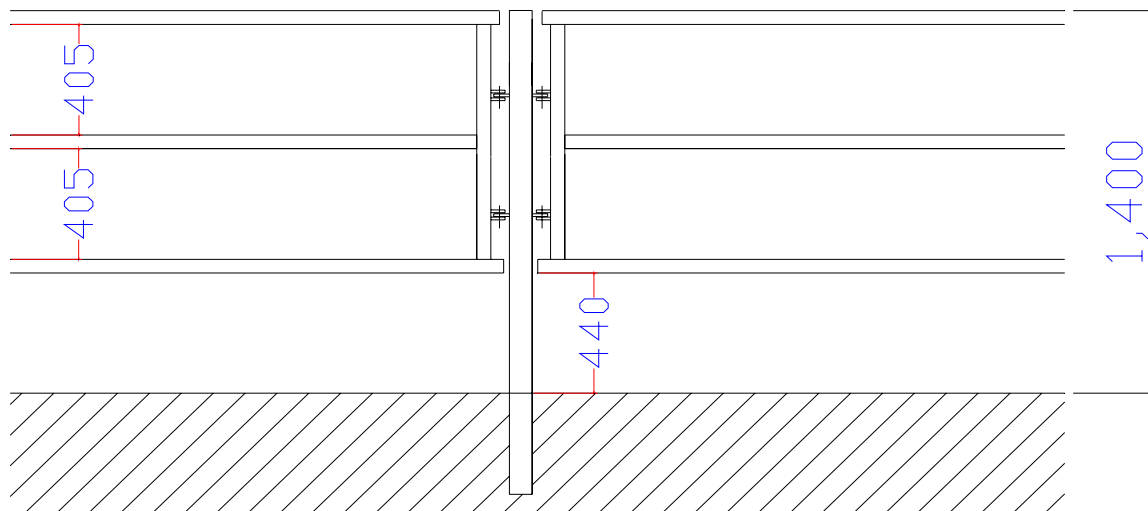


Figure 1 Rail spacing and height for a three-rail crush and race

5.2 Crush

Exit gate may be a skulling gate not less than 1.6m high of suitable design and construction or of proprietary make and incorporating a quick release mechanism. Where operational requirements do not demand a skulling gate a plain gate at least 1.4m high constructed from tubular steel not less than 42.4mm OD x 3mm thick securely hinged and fitted with a quick release mechanism may be used.

It is recommended that a sliding or hinged backing gate may be installed at the rear of the crush, *see Figure 5*. This can be used in conjunction with the gate at the front of the race to access the animal, *see 5.3* below.

A tailbar or rump bar of proprietary or non-proprietary nature shall be fitted at the rear of the crush. The sliding or hinged gate may also be installed as an alternative.

For safety purposes, removable panels / rails can be installed at the side of the crush to release any animal that may have fallen or for veterinary access to the animal.

5.3 Race

A hinged or sliding gate may be installed at the front of the race, *see Figure 5*. The hinged gate will swing back and lock securely in place allowing access to the user and preventing the other animals moving up the race.

The middle rails of the race shall have suitable notches to hold the retaining bar or if a wall forms one side it shall have suitable sockets.

All rails or sections in the race shall be fitted with a quick release mechanism so that they can be removed safely in the event of an animal becoming trapped.

It is recommended that races have a sliding or hinged gate at the back to prevent animals from reversing back into the forcing pen. A sliding gate is shown in *Figure 4* and a hinged gate in *Figure 6*.

5.4 Floor

The floor of the crush and race and an area outside it extending to a minimum of 600mm shall be a concrete slab 125mm thick over a 150mm hardcore base. The concrete shall be finished with a non-slip finish or diagonal grooves at 100mm intervals to prevent animals slipping. A slope of 1 in 60 shall be incorporated into the floor to prevent water build up. The slope shall be directed to suitable drainage channels (*see section 7.3 for details*)

5.4.1 Footbaths

Mass concrete footbaths may be installed in the race. Where they are installed they shall be sized at min 2500mm x (Race Width) x 150mm. The floor and walls of the footbath shall be 150mm thick concrete with a 150mm hardcore base. *See Figure 2*. There shall be a slope of 1 in 5 into and out of the footbath so as to avoid step-downs, which could distress the animal. The ramps shall also have a non-slip finish or horizontal grooves at 100mm intervals. The foundations for the steel uprights at the wall of the footbath shall be 150mm deeper than advised in section 5.1. Proprietary made footbaths are permitted subject to certification by the manufacturer that they are suitable for cattle and have a minimum working life of 20 years. Such footbaths may require prior Departmental acceptance.

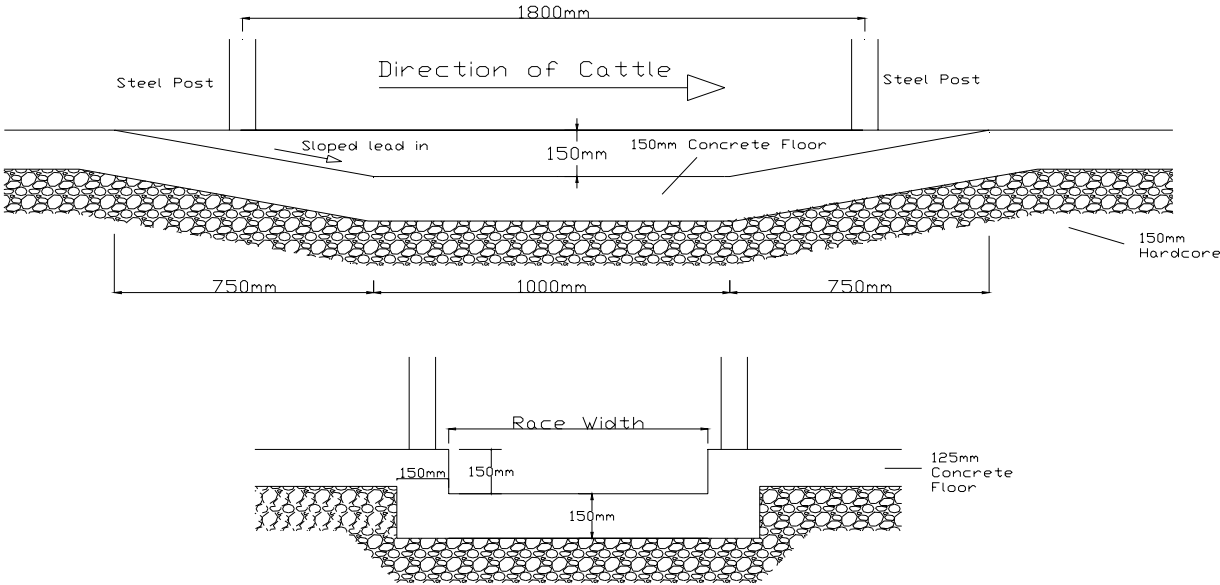


Figure 2 Footbath

5.4.2 Weighing Scales

Weighing scales may be installed in the race. They shall be of proprietary construction and must be installed according to the manufacturers instructions. Scales are not grant aidable items under any of the Department’s schemes.

5.5 Catwalk

Catwalks may be installed to run alongside the race. They shall be 300-400mm high and not less than 1.1m wide to facilitate a safe working area. The catwalk shall not run alongside the crush section, as it will restrict the operator's access to the animal.

5.6 Finish

All steel shall be either painted or galvanised to the Department's specification S101, section B3-Protection of Steel. Open ends of tubular steel shall be capped off and sealed.

Where mass concrete walls are present they shall have a smooth finish and be free of any blemishes, tie-bar holes, or honeycombing, walls shall be filled/repared with an accepted, non-shrink proprietary cement mortar.

5.7 Roof

A roof or an external overhang may be installed over the crush area to a maximum width of 2.5m. This shall conform to the Department's specification S101. The minimum eave height acceptable is 3m.

5.7.1 Lighting

Where a roof is constructed over a crush and race, lighting shall be installed as per specification S101. A minimum of 100 lux shall be provided over the crush area and a minimum of 50 lux over the race.

6. Proprietary Crushes

Crushes of proprietary nature are permitted subject to certification by the manufacturer that they are suitable for the specified animals it is designated for. The manufacturer must provide a guarantee for the crush to have a minimum working life of 20 years. Such crushes may require prior Departmental acceptance.

7. Enclosure

7.1 Forcing Pen

The forcing pen shall be funnel shaped with one side of the funnel being straight. The other side shall be at a 30° to the race to facilitate the ease of movement for the cattle (*See Figure 4 and Figure 6*).

7.2 Surrounds

Existing walls or fences may form any part of the enclosure as long as they are 1.4m high. All new surrounds shall be at least 1.4m high and shall be constructed of:-

- a) 150mm reinforced mass concrete wall with foundation 150mm deep.
- b) Steel posts shall be spaced at 2.3m centres, with at least three rows of rails, see section 5.1 above

- c) Other equivalent structures and materials if approved (solid or hollow core blocks are not acceptable).

7.3 Drainage Channels

Drainage channels shall be positioned in suitable locations throughout the enclosure. The entire area shall have a concrete base as per section 5.4. A slope of 1 in 60 shall be directed to the drainage channels and on to a soiled water / effluent tank. For tank specifications refer to S123 Minimum Specification for Bovine Livestock Units and Reinforced Tanks

The channels shall be 75mm wide and 75mm deep with the edges of the channel tapering inwards slightly. Care shall be taken when forming the channel to ensure that adequate depth and fall is maintained during construction and that sufficient concrete is provided at the sides and under the invert of channel as shown. The foundation for the channel shall be 150mm (from the base of the channel) concrete on top of a 150mm hardcore base.

A clean water diversion system shall be installed for runoff after the enclosure has been cleaned and not in use. A diversion plug of a short length of pipe shall be used to block the flow to the effluent tank. Pipe joints shall be carefully constructed and shall be watertight. All effluent or soiled water shall be collected in an approved effluent tank or other approved storage facility and only clean water runoff shall be diverted from the storage facility. The flow directions shall be designed so that if diversion plugs (which shall extend at least 500mm up from the finished base level when in place) are missing or damaged, the effluent/soiled water shall flow to the storage facility.

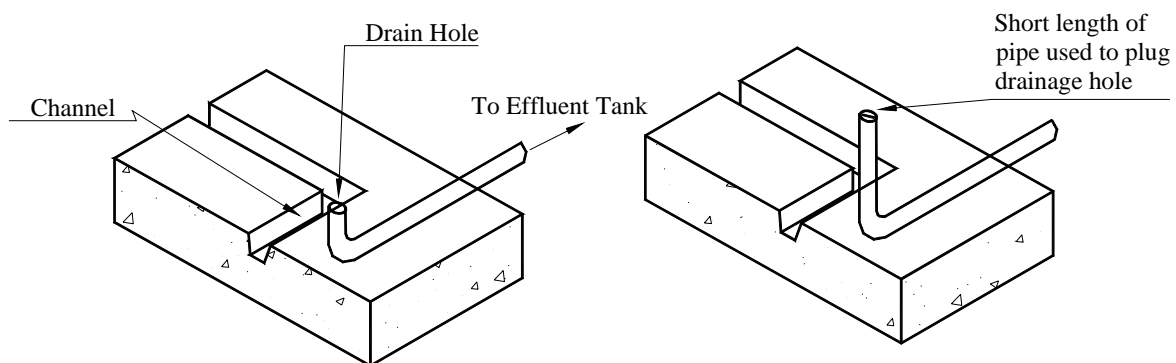


Figure 3 Diversion Trap for Cleanwater Run-off

7.4 Side Panels

These may be installed in the race and/or forcing pen. This is to prevent the animals from distractions outside the pen and facilitate ease of movement through the race and crush. The sheeting can be made of black plastic PVC or other proprietary material. It is only necessary to install the sheeting between the top and bottom rail of the pens.

7.5 Slip Through

It is highly recommended that all holding pens shall have at least one slip through. This can improve labour efficiency (i.e. not having to open and close gates) and improve safety conditions by avoiding falls when climbing over side rails. It can also be considered, as an emergency exit should the handler need to exit the pen quickly.

8. Certificates

The following certificates shall be given to the Department before grant-aid will be paid:

1. "Concrete" Certificate
2. Certificate of Protection of Structural Steel. (only applicable if roofed).
3. "Electrical" Certificate (only applicable if roofed).

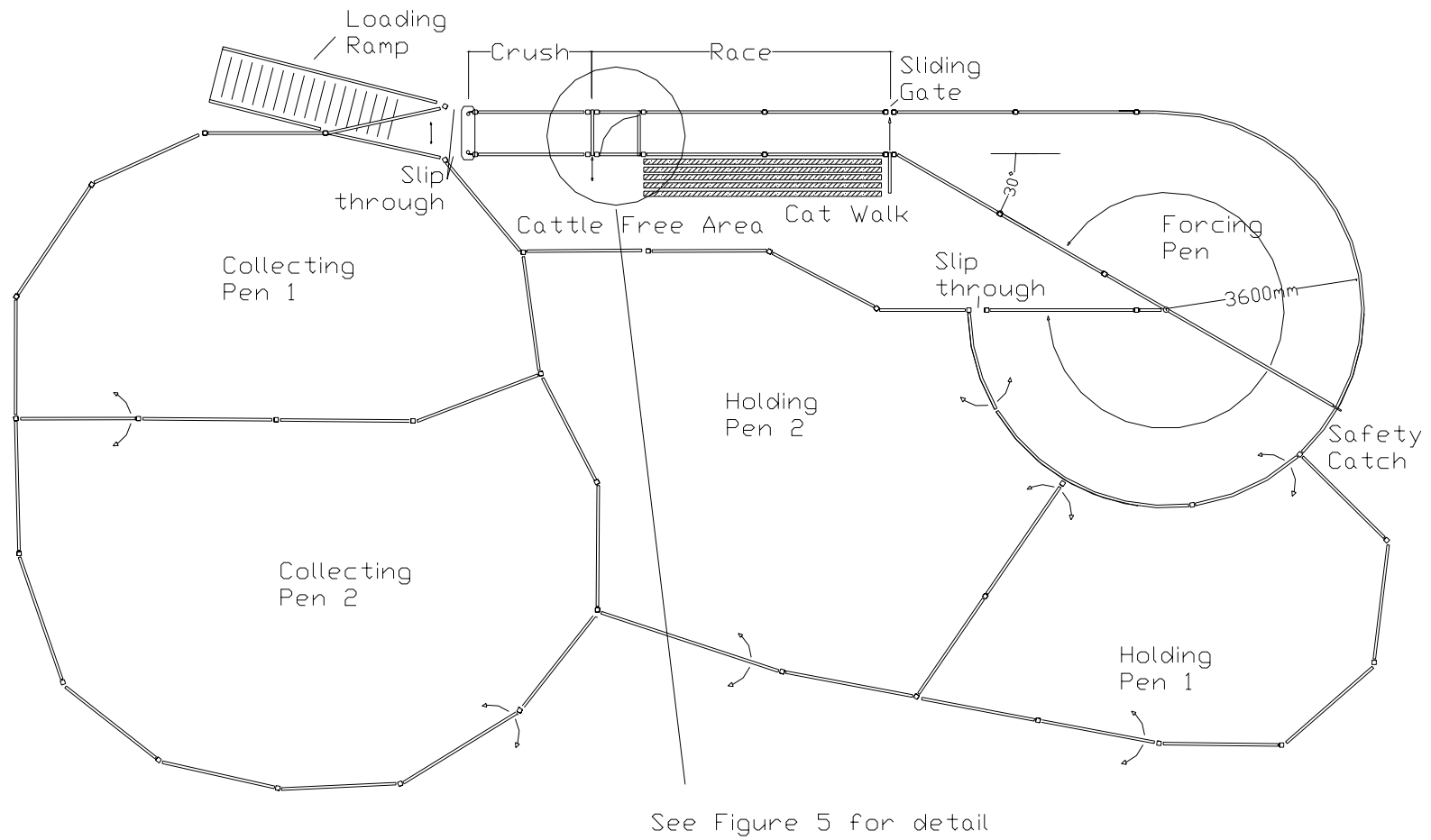


Figure 4 Modern Cattle Handling Unit

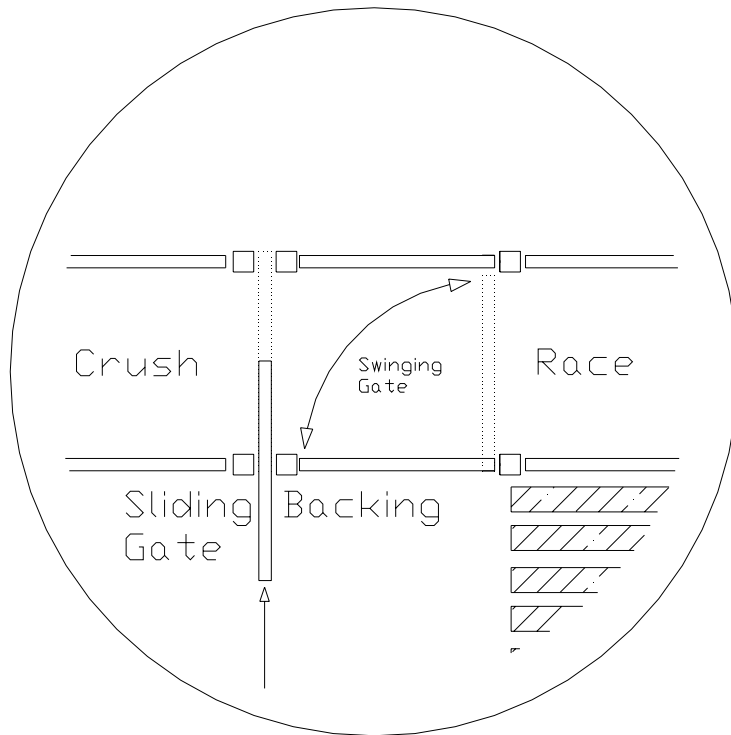


Figure 5 Sliding Gate at Rear of Crush & Swinging Gate at front of Race

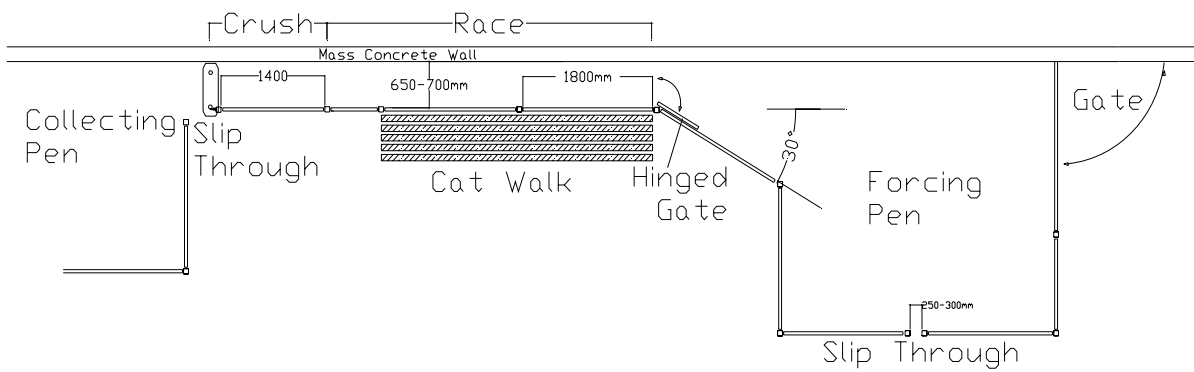


Figure 6 Typical Crush & Race