

AN ROINN TALMHAÍOCHTA, BIA AGUS MARA
DEPARTMENT OF AGRICULTURE, FOOD AND THE MARINE

Minimum Specification for Calving Pens, Separation Pens, and Isolation Boxes

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, Food and the Marine.

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, Food and the Marine’s 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

1.1 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.

1.2 Safety during Construction

Farmer/Applicant Responsibility: Please note that neither the Minister nor any official of the Department shall 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. It is the applicant’s responsibility to provide a construction stage project supervisor.

Dangers: Where the applicant/farmer is undertaking any part of the above work, it is his/her responsibility to seek competent advice and to undertake all temporary work required to ensure the stability of excavations, superstructure, stanchion foundations, wall foundations, to guard against possible wind damage and to avoid any other foreseeable risk. It is also his/her responsibility to ensure that any drains, springs or surface water are diverted away from the works.

Power lines: Due to the complex criteria involved, where buildings are proposed within 35 metres of the centre of any overhead power line, the landowner shall contact ESB Networks in advance to ascertain the specific minimum building clearance requirement. It is a requirement on landowners under The Electricity Supply Acts to

notify ESB Networks, at least, two months before commencement of any construction works near overhead lines. As a guide, table 1 below sets out the usual minimum clearance distances required, however, ESB Networks shall be contacted and their advice followed for any structure within 35m of the centre line of an overhead power line. ESB will provide landowners with written confirmation of the required clearances. Landowners can contact ESB through phone numbers provided on their electricity bills.

Where building work is undertaken near power lines there is also a safety issue regarding Machinery, Tipper Trucks and Elevators operating without proper safety measures in place. When landowners contact ESB they will be provided with relevant safety literature.

Table 1: In general the following clearances apply to various voltage levels.

Voltage	Clearance
Low Voltage	0.5 to 3 Metres
Medium Voltage	3 to 6 Metres
38KV Lines	10 to 17 Metres
110kv Lines	23 Metres
220KV Lines	30 Metres
400KV Lines	35 Metres

Note:

- ESB overhead lines consist of lines at various voltage levels and require specific safety clearances from buildings depending on voltage level and construction type.
- Clearances are specific to the line voltage, building height, location in line span and ground levels.

Danger to children: It is the applicants responsibility to prevent children from playing or spending time in the vicinity of any construction 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 General

3.1 Isolation boxes

Isolation boxes are required to isolate animals with certain contagious health problems. Ideally where possible they shall be located away from animal housing and shall not under any circumstances share common air space with any other isolation box or holding pen. Common walls between an **isolation box** and any other animal pen, building or animal compound shall be built tight to roof level. See table 2 below for number of boxes required.

3.2 Separation pens

These are required for animals with certain less contagious health problems. Separation pens can also be used as normal calving pens. Separation pens may share

common air space but must be divided by either a 2m minimum high wall or a 2m wide passageway between the pens and between any other animal enclosures. Gates or barriers may be used in separation pens where there is a passageway. See table 2 below for number of pens required.

3.3 Calving Pens

Calving pens may be divided by barriers or gates. It is recommended that at least one calving pen should be provided for ever 15-20 cows.

Every calving pen shall have access to a calving gate within the pen. It is strongly recommended that separate a calving gate be installed in every calving pen, however, there shall be at least one calving gate between every two calving pens. In cases where a calving gate is shared between pens, a system shall be provide to restrain the cow and calf in the other pen while the calving gate is in use. The calving gate shall be in accordance with Department of Agriculture, Food and the Marine Specification S.138.

The minimum dimension of a calving pen shall be not less than 3.5m by 4.8m and the maximum dimension shall not exceed 6.0m.

Herd Size	No. of Isolation Boxes	No. of Separation Pens
Up to 15	1	-
16 - 35	1	1
36 - 50	1	2
51 - 75	2	2
76 - 100	2	3

Table 2. The table shows the minimum number of isolation boxes and separation pens to be provided.

Note: Extra isolation boxes and separation pens for herds over 100 shall be added at one of each per 50 cows.

3.4 Access to Isolation boxes, separation pens and calving pens.

Access to pens shall be either from directly outside the building or from a suitable passage within the building. In no case shall the only access to isolation boxes, separation pens or calving pens be through another animal pen.

4 Site

The site shall be carefully chosen with a view to minimising operational and constructional problems. It shall be well separated from potential fire hazards and sheltered if possible. As a general guide, Calving Pens, Separation Pens, and Isolation Boxes should be located not less than 50m from any waterbody **in the case of new farmyards, and not less than 10m in the case of extensions/modifications to an existing facility.** The minimum distance between Calving Pens, Separation Pens, or Isolation Boxes and a public/private water supply source, either surface or ground, shall be 60m **for new farmyards and this may be reduced to not less than 30m for existing farmyards subject to a hydro-geological survey.** In vulnerable situations this distance shall be increased up to 300m.

Note: Any land drains shall be stopped at least 10m on the upstream side of a site and diverted around to re-connect with the drainage system at least 10m on the downstream side of the storage area.

5 Building

The building shall be constructed as per S101 Minimum Specifications for the Structure of Agricultural Buildings. All pen types shall be at least 3.6m x 4.0m with individual access. It is recommended that separation and calving pens shall be fitted with a suitable lifting arrangement.

5.1 Roof Structure / Cladding Materials

Roof and Side cladding materials and their installation shall conform to the current edition of S102.

5.2 Floor

Floor incorporating 1000 gauge polythene DPC shall be 125mm concrete, on 150mm well compacted hard-core blinded with sand, laid to falls of 1 in 50 to gully trap within each pen. The gully traps with water seal shall have a metal grid cover.

A raised lip shall be formed under any door, gate or barrier used in isolation pens, separation pens or calving pens to contain the effluent.

5.3 Walls / Barriers

5.3.1 Mass Concrete Walls

All external mass concrete walls shall be constructed as per the Department's specification S101.

Mass concrete walls shall have a smooth, blemish free finish and any honeycombing and tie-bar holes shall be filled with an accepted non-shrink proprietary cement mortar.

5.3.2 Block Walls

External solid block walls shall be a min. 200mm, and shall be constructed as per the Department's specification S101. All internal non-load bearing walls shall be 150mm solid concrete block or reinforced mass concrete. A layer of damp proof course shall be laid at floor level for all solid concrete block walls.

Solid concrete block walls shall be rendered internally with two coats, 12mm and 6mm respectively, with 3:1 sand cement rendering with plasticiser or ¼ part lime, to a smooth steel trowel finish. Block walls shall be rendered externally with one coat 12mm thick to a nap or smooth finish.

All block walls shall be of solid blocks that are certified to a minimum strength of 7.5N/mm², though it is strongly recommend that they be constructed of mass concrete. All blocks used shall be Category 1 and produced in a plant certified to EN 771-3 and shall be CE marked. The use of hollowcore blocks is not permitted.

In undisturbed ground, foundations shall be excavated down to solid strata for a minimum width of 600mm and a depth of 300mm.

Where backfill material is used under walls, the backfill material shall be thoroughly compacted in layers not exceeding 150mm before foundations are laid. Foundations shall be formed in concrete at least 300mm deep and 600mm wide. It is recommended that steel reinforcement bars (a minimum of 4 No. 12mm bars, fixed 50mm from bottom of concrete) should be incorporated into concrete foundations on compacted backfill.

In cases where fill is purchased it shall be certified to EN 13242 and meet the requirements of Annex E of S.R. 21. It is important when ordering aggregate (fill) that this specification is clearly communicated to the supplier.

5.3.3 Barriers / Gates

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 2.3m centers with at least 4 rows of rails. All posts shall extend to a minimum of 1.4m above the ground.

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 four rails shall be provided equally spaced with the bottom rail 250mm off the ground.

5.4 Doors

Doors shall be at least 1.5m wide and 2m high of timber (50mm thick framed, braced and sheeted) or steel framed, box or angle iron, clad with cladding listed in the Department's specification S102. All doors shall be sliding. Steel framed and clad doors are recommended for Isolation Boxes to facilitate disinfection.

6 Ventilation

Permanent open ventilation shall be provided as a strict condition of grant aid. Opening/closing windows, or opening/closing half-doors, **shall not be included** in the required inlet/outlet areas given below.

6.1 Isolation Boxes

Air inlets shall be at least 2m above floor level and air outlets at least 1m above the inlet. Isolation boxes shall have the following ventilation requirements:

Inlet(s) 0.3m²/animal

Outlet(s) 0.3m²/animal.

Inlet area is defined as the aggregate area of all unobstructed air inlets. (i.e. if Yorkshire boarding, or other systems, are used to reduce wind speed, the area of the timber/plastic is not part of the inlet area). Permanently open half doors are a useful method of achieving inlet ventilation. Vented sheeting may be used for inlet ventilation only, in such cases a minimum of 0.3m² of vented areas of sheet shall be provided per adult animal.

6.2 Separation Pens & Calving Pens

For ventilation requirements for Separation Pens and Calving pens shall be as per the Department's specification S101.

7 Water/Food

Suitable drinking and feeding arrangements shall be provided in each pen or box. A hose point for cleaning shall also be provided.

8 Cow Tying

A tying arrangement shall be provided in each pen or box, see Figure 1.

It is recommended that a crush unit be installed in one of the separation pens. *The crush unit shall be as per the Department's specification S137.* This can assist in the treatment of animals such as administering injections or performing caesarean sections on in-calf cows and heifers. This unit shall be situated along the dividing or external wall and shall run from right to left to enable veterinary access to animals. The unit shall have removable panels or side rails.

9 Lighting and Electrical Installations

A lighting level of 100-lux shall be provided. All lighting and electrical works shall be carried out in accordance with the Department's specification S101.

10 Waste Disposal

All effluent / solid farmyard manure and soiled water shall be stored in compliance with the requirements of S.I. 605 of 2017 European Communities (Good Agricultural Practice for Protection of Waters) Regulations and any subsequent amendments to the regulations. All solid farmyard manure storage facilities shall be constructed in accordance with Department of Agriculture, Food and the Marine specification S108. All effluent tanks shall be in accordance with the Department's specifications S123 and S123Y.

10.1 Isolation Box and Separation Boxes

Effluent from isolation boxes and separation pens shall be collected separately from that of the main herd and disposed of separately onto non-grazed land. Effluent shall be stored underground either within an isolation box or separation pen, or outside of it. The storage capacity shall be 140 litre (30 gallon) per box. However, the effluent from these pens and boxes may be collected in a single tank. Tanks shall be fitted with a 450mm x 450mm medium weight galvanised steel manhole cover in accordance with the Department's specification S123.

10.2 Calving Pens

Calving pens do not require a separate effluent collection or disposal system from that of the main herd and effluent shall be directed to a suitable storage tank.

11 Disease Control

In order to prevent the possible spread of disease around the farm a permanent footbath shall be constructed outside all Isolation boxes to enable the user to disinfect their boots upon entry and exit of the box. A semi-permanent or permanent footbath of proprietary construction shall be installed outside Separation pens. It is recommended that footbaths be installed outside calving pens.

12 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.
3. "Electrical" Certificate

Appendix I: Date of clause revisions and additions

All changes from the previous version are highlighted in red.

Version: May 2018 (published 21st May 2018)

New Clauses: 3.4, 5.3.2,

Clauses modified: Introduction, 1, 1.1, 1.2, 3.3, 4, 10

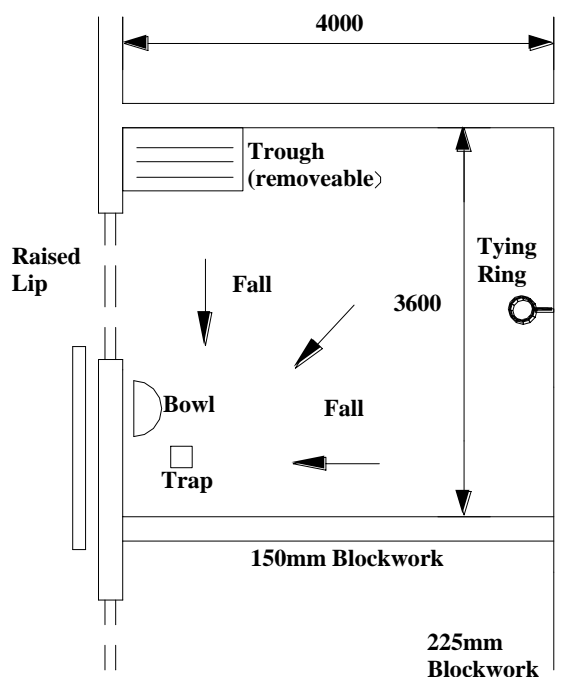


Figure 1 Typical layout of a Separation pen / Isolation box / Calving pen

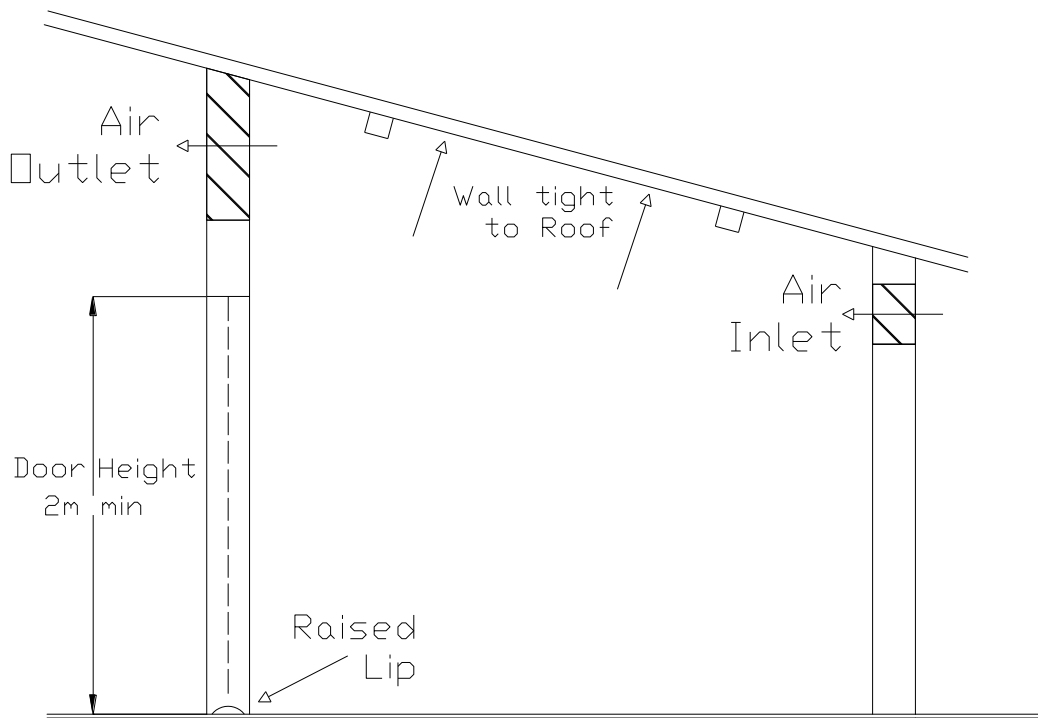


Figure 2 Typical Isolation Box: Section

Note: Other conventional types of construction are acceptable.