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

MINIMUM SPECIFICATION FOR WINTERING FACILITIES FOR SHEEP

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 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.

This specification covers the design and internal layout of wintering facilities for sheep. **For the design and construction of a building's superstructure, Department Specification 'S101: Minimum Specification for the Structure of Agricultural Buildings' shall be read and followed alongside this specification. For the design and construction of reinforced concrete tanks and slurry channels, Department Specification 'S123: Minimum Specification for Bovine Livestock Units and Reinforced tanks' shall be read and followed alongside this specification.**

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. Applicants are advised of the need to acquaint themselves with the provisions of the Safety, Health and Welfare at Work Act 2005 and the regulations made hereunder, in particular the Safety Health and Welfare at Work (Construction) Regulations 2013. General guides to this Act and regulations, prepared by the Health and Safety Authority, are available at www.hsa.ie.

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. Famer/Applicant's are reminded that under the Safety Health

and Welfare at Work (Construction) Regulations 2013 and under Section 17 of the Safety, Health and Welfare at Work Act 2005 that they have significant responsibilities in relation to any construction works that they are planning or undertaking. It is the farmer/applicant's responsibility to appoint, in writing, a competent Project Supervisor for the Design Process (PSDP) before design work starts, and to appoint, in writing, a competent Project Supervisor for the Construction Stage (PSCS) before construction begins.

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

Roof work: When working on any roof, it is essential to assume that the roof is fragile, unless confirmed otherwise by a competent person.

The HSA Code of Practice for Safety in Roofwork shall be consulted prior to any work being undertaken on a roof. All advice in the code of practice shall be followed.

The HSA code of practice gives recommendations and practical guidance on how to work safely on roofs, including the safe maintenance of roof mounted plant and services, and how to design and plan for safe working. It offers guidance on the design and construction of roofs on new buildings and the maintenance, cleaning and demolition of existing roofs. All work at height poses a risk and a risk assessment should be carried out to assess those risks and put appropriate controls in place.

It is strongly recommended that all agricultural roofs have a safety sign warning that the roof is fragile. While roofs are non-fragile when installed, they may become fragile over the lifetime of the roof. Figure 1 shows an example of a typical fragile roof warning sign.

Figure 1: Typical fragile roof warning sign.

1.3 Safety Notices

A safety notice shall be securely fixed beside every new agitation point in partially or fully slatted sheep houses. The notice should be as close to the agitation point as possible. A typical agitation point safety notice is shown in Figure 2 below. The sign shall be not less than 490mm wide by 410mm high, and shall be printed on an aluminium alloy board.

1.4 Toxic Gases and Agitation

Harmful gases are generated in slurry stores and these have been responsible for both human and animal deaths. Good ventilation in slatted buildings is always important, and is vital during agitation or emptying of the tanks. Where silage effluent has been added to the slurry there can be a danger of more concentrated gases. Therefore:

1. Tanks shall always be agitated and/or emptied from the external agitation points, and never from openings within the house.
2. Agitation shall take place on windy days.

3. All animals shall be removed from the house before agitation commences. It is recommended that animal holding pens are installed close to the house to facilitate this removal.
4. All doors, and any feed-flaps, shall be fully opened before agitation/emptying begins and kept open until completion of tank emptying.
5. No person shall enter the house during agitation or emptying.
6. When agitating slurry always work upwind of the tank.
7. Some poisonous slurry gases are heavier than air. No person should climb down into an emptied or part-emptied tank without breathing apparatus. Such apparatus requires full training before it can be used.
8. Always keep the tank openings secure.
9. If possible avoid agitating alone. Always ensure that someone knows that agitation is being undertaken and the expected completion time.

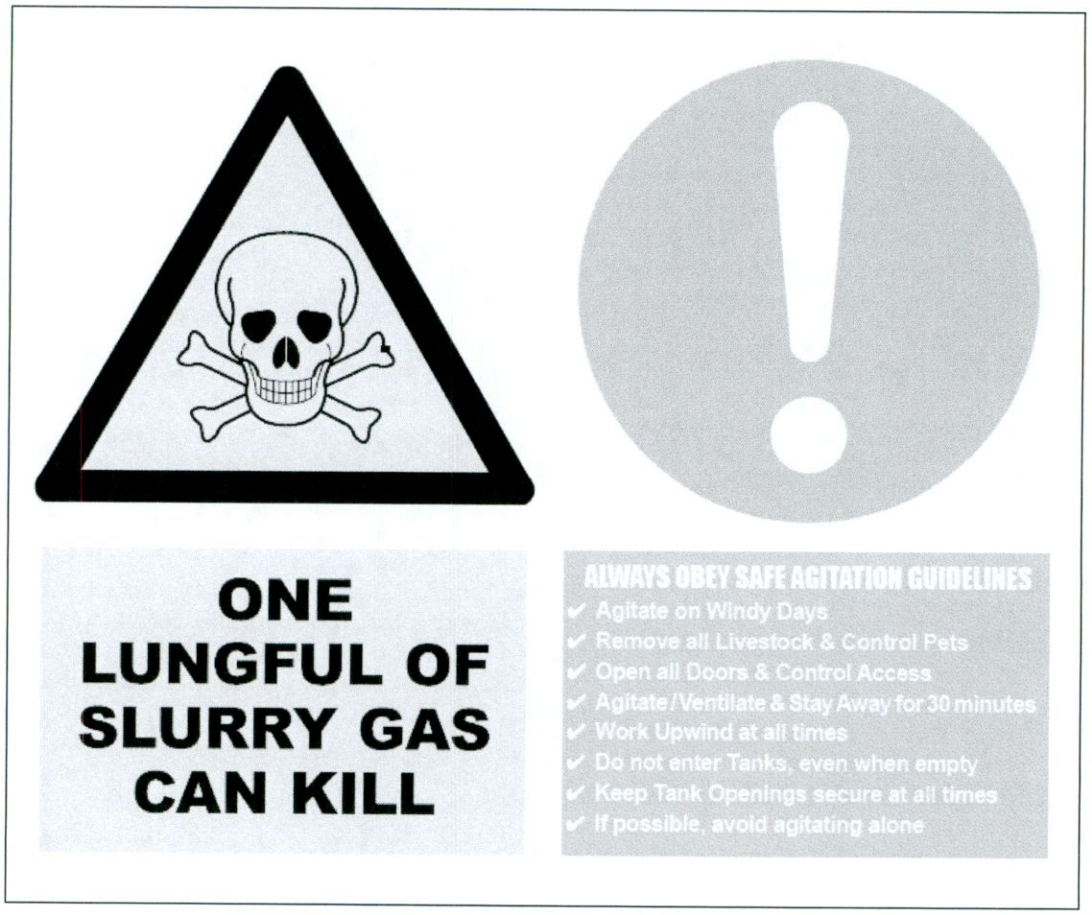


Figure 2: Typical agitation point safety notice.

1.5 Maintenance

All farm buildings require regular maintenance to ensure the health and safety of personnel and animals. After each winter-season buildings should be thoroughly washed and cleaned out. Fittings such as slats, electrical fittings, drinking arrangements, etc., should be periodically checked, and all defective items replaced.

2. CONCRETE SPECIFICATION

2.1 Certificates

Concrete shall be produced in a plant audited to I.S. EN 206-1 by a certified body accepted by The Department of Agriculture, Food and the Marine (e.g. N.S.A.I., B.S.I., Q.S.R.M.C). It shall not be produced on site.

A numbered certificate, signed and stamped, shall be required for all concrete delivered to site. The certificate, the "Concrete Manufacturers' Specification Certificate", is produced in triplicate. **The top certificate, printed on light blue paper, shall be retained by the applicant** and given to and retained by the local AES Office of the Department of Agriculture for inspection upon completion of the works. A signed and dated copy of the concrete manufacturer's EN206 Factory Production Control Certificate shall be supplied to the Department along with the Concrete Manufacturers' Specification Certificate.

2.2 Curing of Concrete

Concrete produced and supplied is fit for purpose ONLY IF proper curing procedures are adhered to and the structure is not put into service until an adequate curing time (usually a minimum of 28 days) has elapsed. The curing regime shall take account of best practice appropriate to the concrete binder composition and prevailing climatic conditions at time of placing.

All concrete shall be cured by keeping it thoroughly moist for at least seven days. Wetted floor slabs and tank walls shall be protected by polythene sheeting, kept securely in place. Alternatively proprietary curing agents may be used in accordance with manufacturer's instructions. When frost is a danger, straw bales shall be placed over the polythene on slabs. Concrete shall be at least 28 days old before being subjected to full load, or to silage or silage effluent.

For further information on curing, see the website of the Irish Concrete Society.

2.3 Concrete

All concrete for sheep houses shall be purchased on the basis of a characteristic 28 day cube crushing strength of 37N/mm^2 (strength class C30/37). Minimum cement content shall be 310 kg/m^3. The maximum water to cement ratio will be 0.55. The specified slump class shall be S2 or S3. The maximum aggregate size shall be 20mm.

The concrete shall be ordered using the appended form for 'S.100 Mix B' or by requesting '37N concrete with 310kg cement minimum, 0.55 water cement ratio maximum, and slump class S2 **or** S3, certified to IS EN 206, for use to Specification S.100'.

In the case of exposed yard slabs where freeze/thaw action is a concern, 'S.100 Mix B' shall be used with 3.5% minimum air entrainment. Alternatively 'S.100 Mix A' may be used.

Note: Where silage effluent is allowed into a slurry tank the effluent shall discharge via a pipe at least 300mm from the inner face of the tank wall.

2.4 Fibres

Polypropylene fibres may be incorporated into the concrete mix to improve the properties of concrete. Only fibres which have been tested and approved by National or European approval authorities may be used. The use of fibres helps to reduce plastic cracking and improve surface durability but they are not a substitute for structural reinforcement. Fibres shall be used in strict compliance with manufacturer's instructions and shall only be added at the concrete manufacturing plant. The concrete certificate (clause 2.1) shall clearly show the amount and type of fibre added. The mix design, compacting, and curing of fibre concrete is the same as concrete without fibre.

2.5 Self-Compacting Concrete

Self-compacting concrete (SCC) may be used in vertical elements only. SCC must comply with all requirements of this specification, except for the slump class which must meet slump flow class SF2. SCC shall be produced by a manufacturer with experience in producing SCC and should be placed by a contractor with experience using SCC.

If it is proposed to use SCC, additional guidance shall be sought by the contractor undertaking the works. Particular care must be taken in the use of fully sealed formwork, designed to withstand the higher hydrostatic pressure exerted by SCC. Guidance can be obtained from the Irish Concrete Society website (www.concrete.ie).

2.6 Materials

Cement and other materials used in the production of concrete shall be in accordance with Department of Agriculture, Food and the Marine specification S.100.

Plasticisers and other admixtures shall be to EN 934. All admixtures shall be used in strict accordance with manufacturer's instructions, and shall be added only by the concrete-mix manufacturer.

2.7 Tests

The Department reserves the right to require that concrete should be tested in accordance with EN 12390 and EN 12504.

2.8 Concrete Workmanship

It is strongly recommended that contractors employed to undertake concrete works on farm structures have completed and passed the "Concrete Ticket" or similar course. This course provides guidance on the correct handling, finishing and curing of concrete on site. It also provides essential information on the properties of concrete and the requirements for ordering and delivery of readymixed concrete.

3. ELECTRICAL INSTALLATIONS

Wiring and fittings shall be installed, and all work shall be carried out in accordance with the National Rules for Electrical Installations, I.S. 10101 (formerly ET 101), and specifically Chapter 7, Section 705 - Electrical Installations for Agricultural and Horticultural premises. An ETCI completion certificate shall be required, signed by

the Electrical Contractor(s) or a person duly authorised to act on his/her behalf to certify that the electrical installation has been constructed and/or has been tested according to the National rules of Electrical Installations and has been found to be satisfactory. An associate certificate, specifically for agricultural work, the "Supplementary Agricultural Certification Form" shall also be signed by the Electrical Contractors or authorised persons and the number of the main ETCI completion Certificate clearly marked on it. If no valid numbered ETCI Certificate is available for the completed installation, then the Electrical Contractor shall complete a new numbered ETCI Certificate indicating that the new installation has been tested for safety and compliance, and note that number on the Supplementary Form. The signed printed "Supplementary Agricultural Certification Form" together with a copy of the ETCI Completion Certificate shall be given to the Department before grant-aid can be finally certified.

4. SITE

Particular attention shall be paid to the siting of a sheep house in relation to access, other existing and proposed livestock housing, feed stores, and possible extension of the house. In all cases, care shall be taken to avoid endangering rivers, streams or wells by pollution. All surface water draining on to the site from higher ground, or any under-drainage passing through the site shall be intercepted and diverted.

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, a storage facility for silage effluent/slurry/soiled water shall 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 a storage facility and a public/private water supply source, either surface or ground, shall be 60m for new farmyards and not less than 30m for existing farmyards, subject to a hydro-geological survey. In vulnerable situations this distance shall be increased up to 300m.

5. GENERAL

Sheep may be housed in purpose built sheds or in existing farm buildings provided:-

- These buildings are structurally sound and suitably located.
- Can be re-developed to meet requirements for ventilation, floor space, trough length, and feeding passages.
- Facilities for the collection, storage and subsequent removal of animal wastes and effluents can be installed.

As sheep are normally housed for a relatively short period, consideration should be given to the possible other uses to which housing may be put. For example, temporary use for grain, straw or hay storage may require additional eave and door heights.

Where a concrete floored house is also used to house calves, a covered floor channel shall be provided. Provision shall be made for storing effluent run-off in all concrete floored sheep houses.

Cattle and sheep should not be housed in the same building due to the possible transfer of common diseases. However, an exception to the rule applies where a wall to full height of building exists, separating both herd accommodation areas such that they have separate inlet and outlet ventilation facilities as well as separate access points.

6. DESIGN CRITERIA

6.1 Floor Space

The recommended pen floor space for housed in-lamb ewes, unshorn is as follows:

Type of ewe	Slats m^2	Bedded m^2
Large (body weight 90kg)	1.2	1.4
Medium (body weight 70kg)	1.1	1.2
Small (body weight 50kg)	1.0	1.1

Where sheep are shorn up to 20% less floor area is required. A ewe with one lamb requires 30% additional floor space, 60% extra for 2 lambs.

6.2 Feeding Space

The recommended feeding space is as follows;

Type of Ewe	*Meal Feeding mm	Roughage (hay rack)	Easy Feed Silage
Large (90kg)	600	200	200
Medium (70kg)	500	200	200
Small (50kg)	400	175	175

Lambs up to 45kgs on ad-lib concentrates require 100mm feeding space and on restricted feeding require 300mm.

*It is essential for all sheep in a pen to be able to eat meal together.

6.3 Depth of Pens

Pen depth is limited by the trough space. Ideally the pen depth should be such that all sheep can be fed from feeding passages. In practice, particularly where existing buildings are adapted, trough space may be required on two sides of the pen.

The ideal pen depth = $\frac{\text{Floor space per Ewe}}{\text{Trough Space Available per Ewe}}$

Example: Floor space per ewe - $1.2m^2$

Meal feeding space 450 mm per ewe

Pen depth 1.2 / 0.45 = 2.6m

6.4 Passages

Feeding passages shall be at least 2.5m wide. Recommended minimum widths are:-

Feed wagons excluding troughs - 4.0m

Tractor/trailer or block cutters - 3.0m

Tractor and front loaders - 2.5m

In conversions of existing buildings for small flocks the minimum width of passage shall be 1.2m

6.5 Group Size

Group size of 25 ewes per pen is recommended for small flocks, and 40 to 50 ewes per pen for large flocks. No pen should be designed for more than 60 ewes.

6.6 Floor Type

The choice of floor, either concrete or slatted, depends on management and straw availability. Unless straw is readily available, it is strongly recommended that slats be installed. A seepage tank shall be provided for a concrete floored sheep house, or the effluent may be directed to an existing slatted tank if there is sufficient capacity. All seepage tanks shall be in accordance with S.123. As a guide, seepage tanks should be designed for between 5 and 10 litres per ewe per week.

The dry straw requirement to absorb urine produced is as follows:

Type	Feed	Dry Straw Requirement
Average Ewe	Silage	72kg (4 Std. Square Bales) /100 days
	Hay	45kg (2.5 Std. Square Bales) /100 days
Store Lamb	Concentrates	24 kg (1.5 Std. Square Bales) /70 days

The location of the seepage tank shall be shown on any drawings of buildings being submitted to the Department of Agriculture, Food and the Marine in support of an application for grant-aid.

7. BUILDING SUPERSTRUCTURE

The general superstructure of the building shall be constructed to the current edition of **Specification S101: Minimum Specification for the Structure of Agricultural Buildings.** All external walls shall meet the requirements of S.101.

The use of a **Simple Steel Frame Structure** as specified in S.101, is the strongly recommended option for sheep housing. Houses may also be built to the other designs given in S101. If trusses are being installed, they require a high standard of protection and ongoing maintenance in the aggressive livestock environment. If other structural designs not specified in S101 are used, then a full set of design drawings and full structural calculations shall be prepared by a chartered engineer, and given to this Department for prior approval before the start of construction.

Where it is proposed to use polytunnels for sheep, all requirements of this specification shall be met, in particular in relation to ventilation and lighting.

7.1 Tank Gases

To maximise ventilation during agitation of slurry, and to reduce gas build-up in the house, sliding doors, unsheeted gates, or unobstructed openings shall be provided to both ends of the passageway in houses which exceed 15m in length. The minimum opening size at each end shall be 3 metres wide by 3 metres high. See also clauses 1.3 and 1.4.

7.2 Ventilation of Structure

Permanent open ventilation shall be provided, as **specified in Specification S.101**, as a strict condition of grant-aid, in order to protect animal health and the working life of the structure. Full ventilation shall also be provided in any conversion or extension of existing buildings.

Spaced sheeting for the roof is strongly recommended, and shall be installed as per S101.

8. FLOORS

8.1 Slatted Flooring

8.1.1 Timber Slatted

Timber slatted floors shall be made up in sections to size that can be readily handled, generally not more than $5m^2$ to $6m^2$.

The timber slats shall be at least 50mm deep x 22mm wide fixed at 20mm spacings with the framing and infill timbers at 600mm centres. Suitable sizes for framing and infill timbers are as follows:-

Up to 1.6m span - 44 x 100mm.

Up to 2.0m span 44 x 125mm.

Up to 3.0m span 44 x 150mm.

Sections shall have minimum 100mm bearing on support walls and shall be laid parallel to the entry openings to pens.

If it is desired to have the timber slat overhanging the edge of the supporting timber frame, then the slats shall be at least 35mm thick and shall overhang the side of the timber frame by not more than 75mm.

8.1.2 Expanded Metal

Hot dipped galvanised expanded metal mesh shall be fixed with 50mm galvanised staples to timber framing as for timber slats but with infill timbers at 450mm centres. Suitable sizes for framing and infill timbers are as follows:-

Up to 2m span - 44 x 100mm.

Up to 3m span - 35 x 150mm.

Note: The standard dimensions of expanded metal "Empamet" 2088 is 2440 x 1220mm.

8.1.3 Solid Plastic Slats

Solid plastic sheep slats shall require prior Departmental acceptance, and shall be listed on the Accepted Slat List of the Department of Agriculture, Food and the Marine. All plastic sheep slats shall be supported as per manufacturer's instructions. Where pillar and beam supports for plastic slats are desired to be used, these shall be completed in accordance with clause 8.3 of S.123.

For tanks up to 1.2m deep, mass concrete spine walls supporting plastic sheep slats may be reduced to 200mm wide.

8.1.4 Concrete Slats

Concrete slats shall be produced in accordance with IS EN 12737, and all slats shall be CE marked and produced in a plant certified by a Notified body (e.g. NSAI or equivalent), to produce slats to IS EN 12737. In addition all concrete slats shall be load tested and be on the Accepted Slat List of the Department of Agriculture, Food and the Marine.

A **"Certificate of slat manufacture"** from a supplier approved by the Department shall be submitted. When laid, slats shall comply with the following requirements:-

1) Be free from any cracks, honeycombing, and chipping of the top corner arises.
2) **Have a full bearing of at least 150mm at points of support** (as per Figure 3).
3) Finished slat floor shall be level and free from any rocking movement.
4) **Be capable of being replaced with minimum disturbance.** [Slats are components with a limited working life, and are unlikely to last as long as the building.]

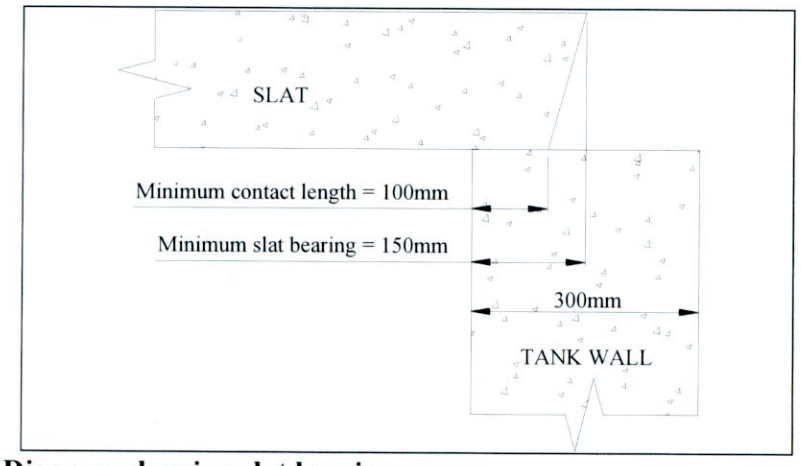


Figure 3: Diagram showing slat bearing.

Where it is possible that machinery may have to travel over slats, then the slats installed shall be designed as heavy duty slats. Where possible, slats should not be located along the travelling routes of machinery.

Slats shall not be cut on site for any reason. If shorter or narrower slats are required, they shall be purchased at the required dimensions from the manufacturer and shall be listed on the "Accepted Slat List".

8.2 Solid Flooring

Solid Floors shall be a minimum 125mm concrete laid smooth with a non-slip finish. Concrete shall comply with Section 2. A minimum 150mm hard-core base shall be laid, compacted with vibrating or heavy roller, and topped with fine sand. All floors shall incorporate 1000 gauge polythene DPC membrane with 600mm overlaps laid on the sand under concrete. The polythene membrane shall be taken up along walls to meet DPC where this has been installed.

Solid floor sheep houses with full bedding shall be designed with floors sloped at least 1 in 40 (it is recommended that the floor be sloped at 1 in 30) so that all liquid seepage is drained at source to an appropriate store. A channel 75mm x 75mm shall be provided across every opening and the effluent collected and diverted to a suitable holding tank. The channel shall be constructed as specified in clause 2.11 of S.123.

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.

8.3 Feed Passages

Feed passages shall be solid or suspended as the design dictates.

A solid passage shall consist of a minimum 125mm concrete laid smooth with a non-slip finish. Concrete shall comply with Section 2 above. A minimum 150mm hard-core base shall be laid, compacted with vibrating or heavy roller, and topped with fine sand. All floors shall incorporate 1000 gauge polythene DPC membrane with 600mm overlaps laid on the sand under concrete. The polythene membrane shall be taken up along walls to meet DPC where this has been installed.

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.

A suspended passage shall be designed and built as per S. 123.

9. TANKS UNDER SLATTED FLOORS

All tanks under slatted floors shall be constructed in accordance with S123.

Where it is proposed to remove manure in slurry form, tanks shall always be extended outside the sheep house. As tanks are normally shallow, not more than 1.2m deep, a sump about 1.2m x 1.2m and 1.8m to 2.0m deep shall be provided in the tank extension, to facilitate agitation of slurry with added water. Where the length of the tank exceeds 16.0m, sumps shall be provided at both ends.

Where it is proposed to remove manure in solid form, tank depth shall not be less than 450mm. Provision shall be made to facilitate entry for machinery to empty the tank. The tank may be constructed overground with a ramp access to raised feeding passage.

In cases where it is planned to use a ramp to access into the tank, then a full set of design drawings (including details of reinforcing) and full structural calculations for the ramp and first 3 linear metres of the tank shall be prepared by a Chartered Engineer, and given to this Department for prior approval before the start of construction. The design of the tank shall be in accordance with IS EN 1992:

Eurocode 2: Design of concrete structures. The concrete used in the construction of such tanks shall meet the requirements of S.123.

10. FIXTURES AND FITTINGS

10.1 Pen Divisions

Pen divisions, normally 0.9m to 1.2m high, shall be made of timber, tubular or box section steel, or a combination. It is recommended that neck-rail feeding barriers are rounded and that these rails are adjustable to suit large and small breeds. Provision shall be made for the movement of sheep in and out of pens by making sections of feed fence removable along passages or by using gates.

Feed troughs shall be of metal or timber or a combination. Where silage is easy fed along passages troughs may be omitted. If using a trough for silage and meals, it shall be 300mm high and up to 500mm wide, fixed at floor level.

Where the feeding face is limited along passages 'walk through' troughs between pens shall be provided.

10.2 Water Supply

At least one drinker shall be provided to each pen. Drinkers shall be raised above floor level, preferably at a height (about 600mm) so that the animal must stand on a raised platform 150mm - 200mm in order to drink. It is recommended that open drinkers are fitted with a safety guard frame to protect young lambs. All supply pipes shall be insulated and so placed to avoid mechanical damage.

All water pipes shall be manufactured in compliance with IS EN 12201 and be a minimum of PE40. These will either be fully blue or have a blue longitudinal strip.

10.3 Lighting

Lighting shall be at least 70 lux. Additional lighting shall be provided to enable the close inspection of ewes at any time.

All artificial lighting shall be provided by energy efficient lighting systems (i.e.: LED lights). Lighting shall be provided so as to minimize the potential for casting of shadows. Lights shall be dispersed over the animal areas to give an even light level across the house. The use of spot lights is not permitted. Lights shall be installed in each bay and at no greater than 6 m spacing within a bay. As the output of LED lights varies between manufacturers, the lighting installer shall certify that the 70 lux requirement is achieved.

Adequate power points to facilitate power washing shall be provided. A minimum one new socket shall be provided per house in all new single-sided sheep houses and a minimum of two sockets shall be provided in double-sided sheep houses (one per side).

11. TIMBER QUALITY AND TREATMENT

All timber shall be at least C16 strength grade and is recommended to be pressure treated with an approved preservative.

It is strongly recommend that all timber used for slatted flooring is vacuum/pressure treated with an approved preservative. Such treatment shall ensure a preservative loading and concentration to provide a minimum service life of twenty years to satisfy Use Class 3 requirements, as defined in IS EN 335.

12. DRAWINGS

The outline drawings, on the following pages show different layouts to combine adequate feed space with floor area.

13. REFERENCE TO OTHER DAFM SPECIFICATIONS

The current edition of the specifications listed below shall also be followed as required:-

1) 'S101: Minimum Specification for the Structure of Farm Structures' for all superstructures.
2) 'S102: Cladding Materials' for all roof and side cladding.
3) 'S123: Minimum Specification for Bovine Livestock Units and Reinforced Tanks', for all slurry storage tanks.
4) 'S129: Farmyard Drainage'

Copies of these and other relevant Department specifications are available on the department website at: www.agriculture.gov.ie under farm buildings or by contacting one of the local offices of the Department of Agriculture, Food and the Marine.

Appendix I: Date of clause revisions and additions

All changes from the previous version are highlighted in red.

Version: May 2020 (published 14th May 2020)

New clauses: 2.8

New figures: 1

Clauses modified: 1.1, 1.2, 1.3, 2.1, 3, 6.2, 6.6, 8.1.1, 8.1.3, 8.2, 8.3, 10.3, 11.

Figures modified: Figure 1 renumbered to Figure 2; Figure 2 renumbered to Figure 3.

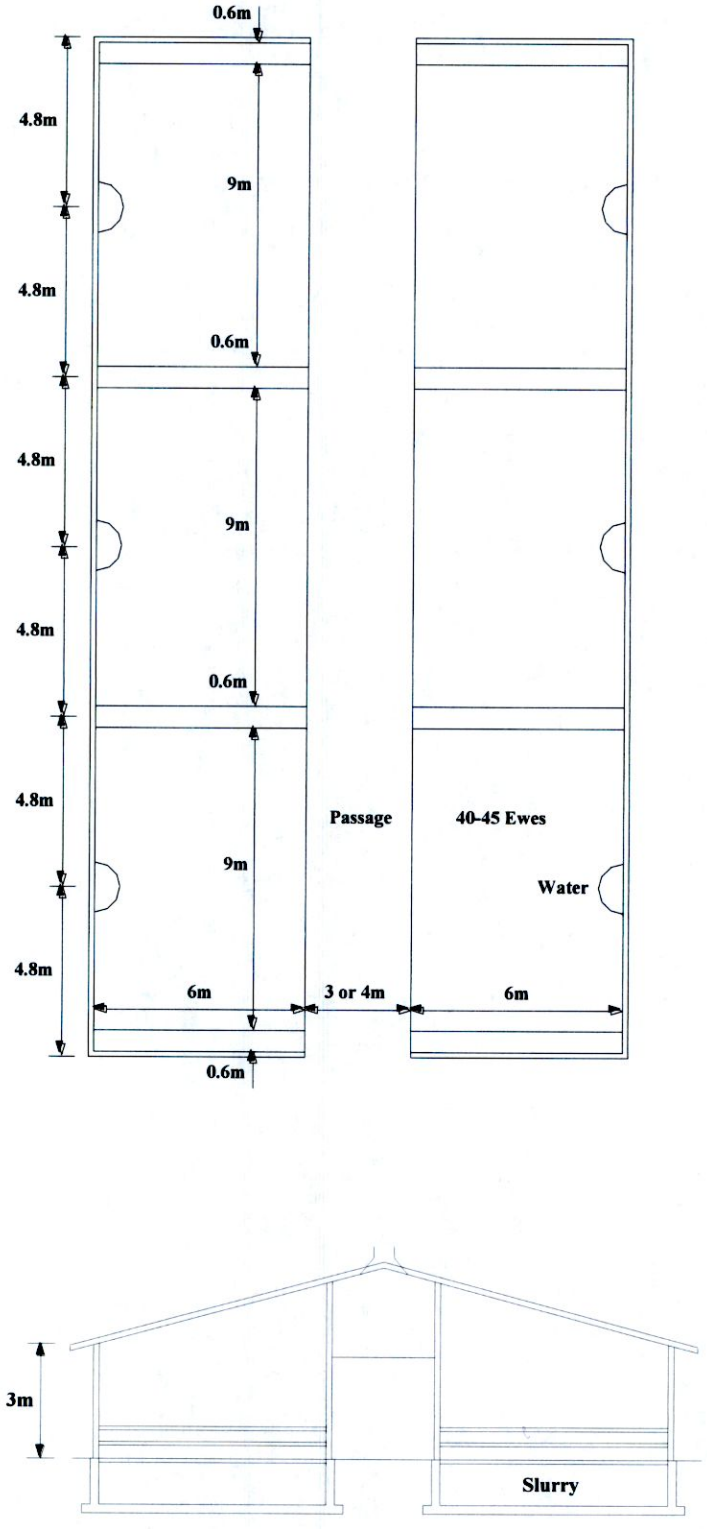
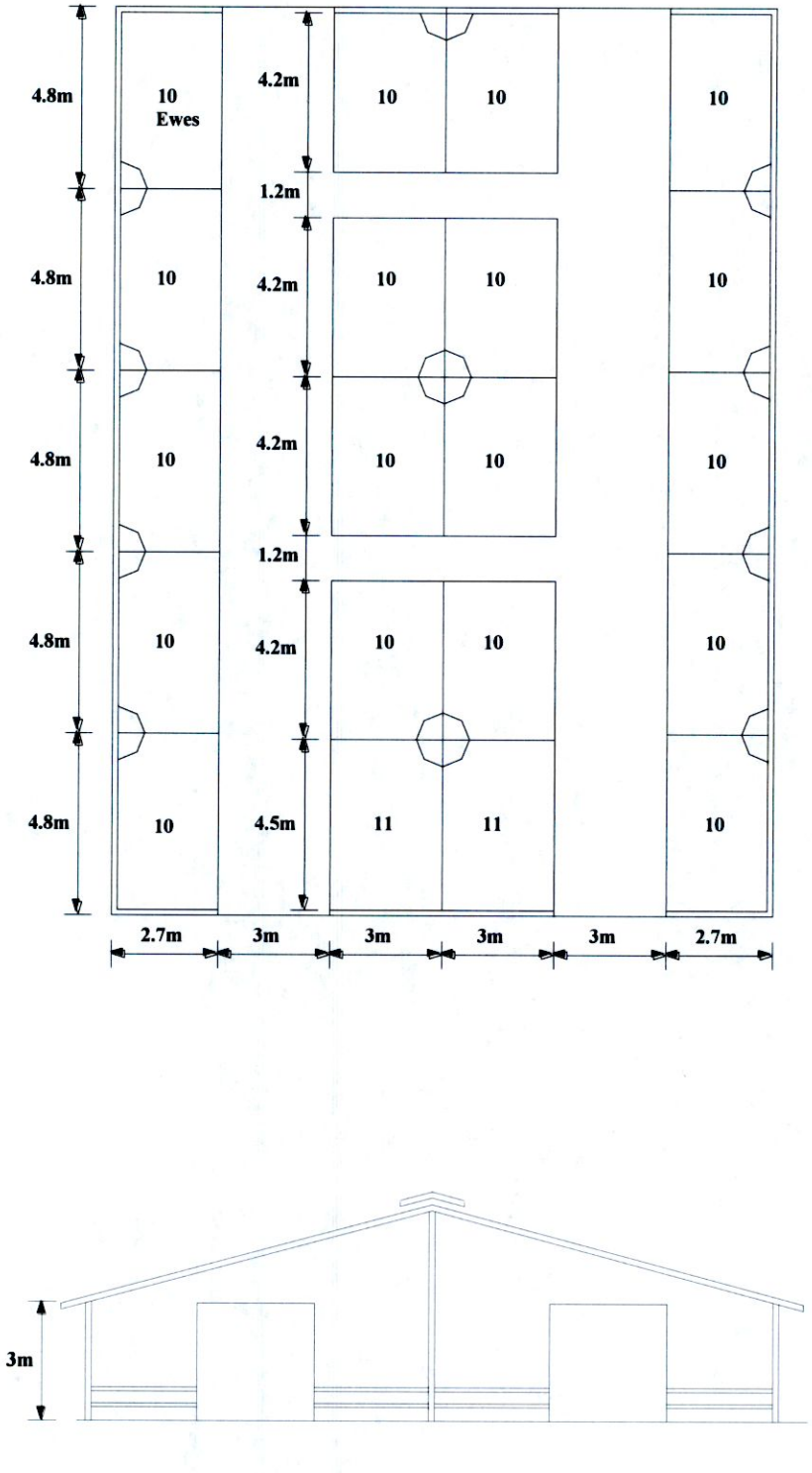


Figure 4 45 Ewes per Pen, 200mm Silage Feed Face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3m

Figure 5

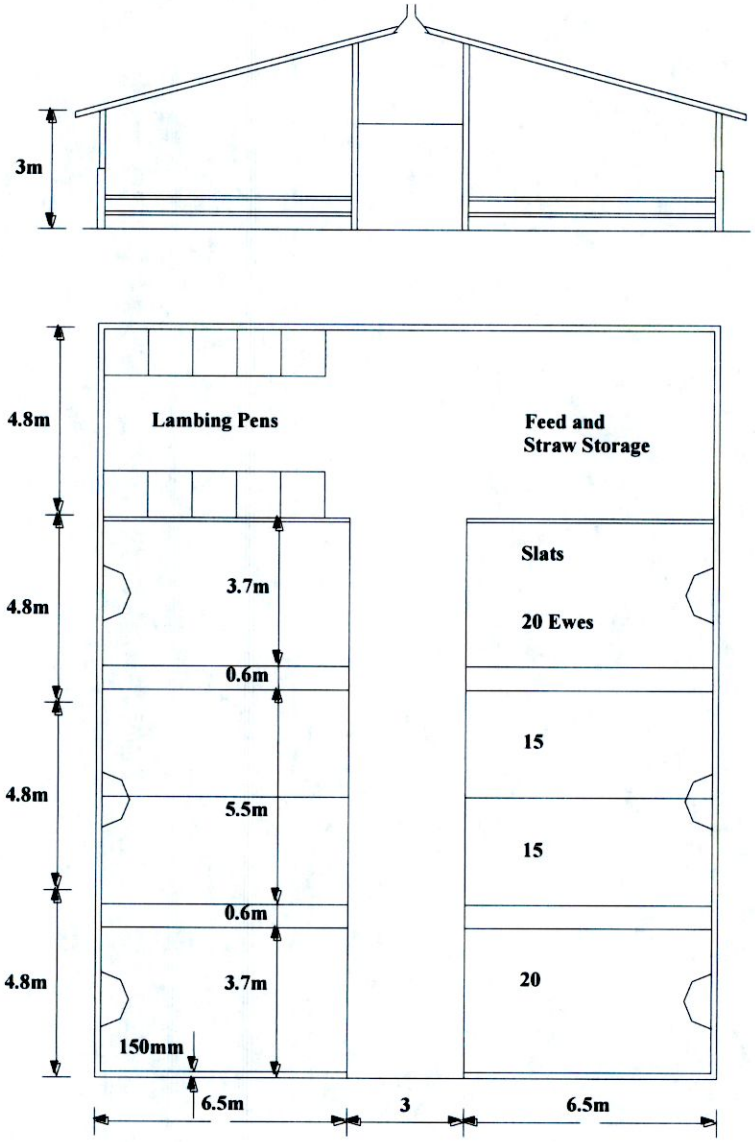
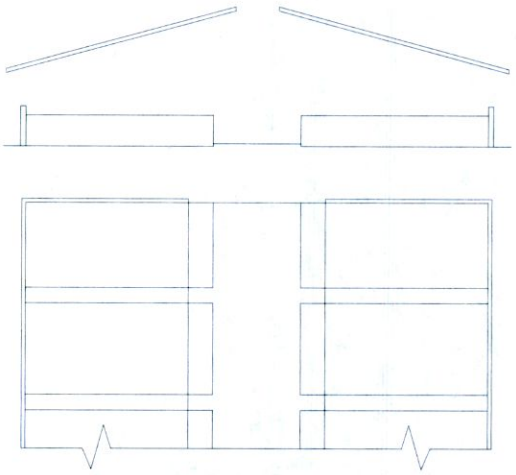
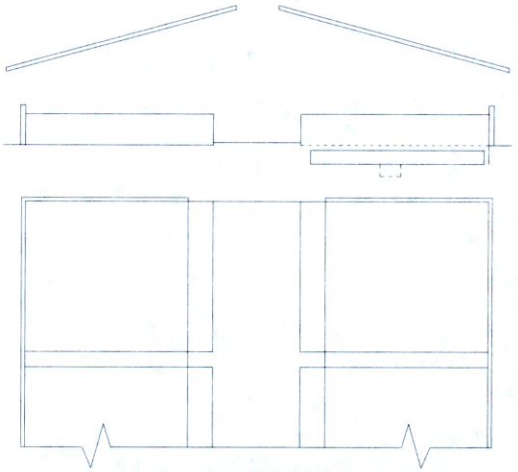

3m
4.8m
Lambing Pens
Feed and
Straw Storage
Slats
4.8m
3.7m
20 Ewes
0.6m
15
4.8m
5.5m
15
0.6m
4.8m
3.7m
20
150mm
6.5m
3
6.5m

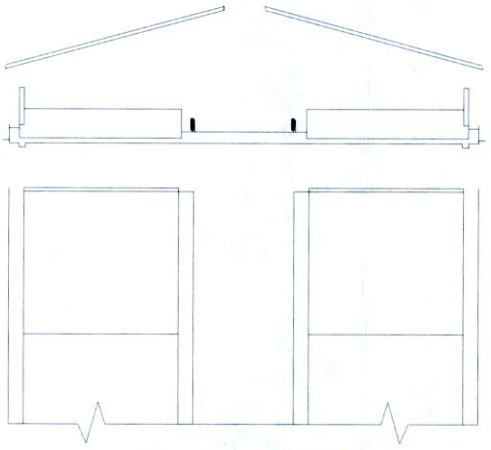
Figure 6



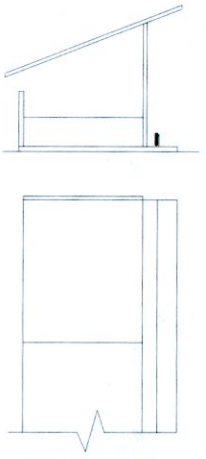
Silage or hay fed ad-lib. Concentrates fed in walk through troughs and along central passage



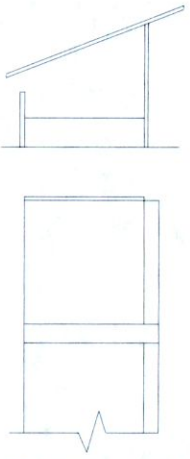
Silage or hay fed ad-lib along central passage. Concentrates fed on top of silage / hay



Silage or hay fed ad-lib along central passage. Concentrates fed in internal and external troughs



Narrow span open fronted shed for small flock. All sheep fed along front



Wide span open fronted shed. Silage or hay fed along front. Concentrates fed in walk-through troughs and along front

Figure 7

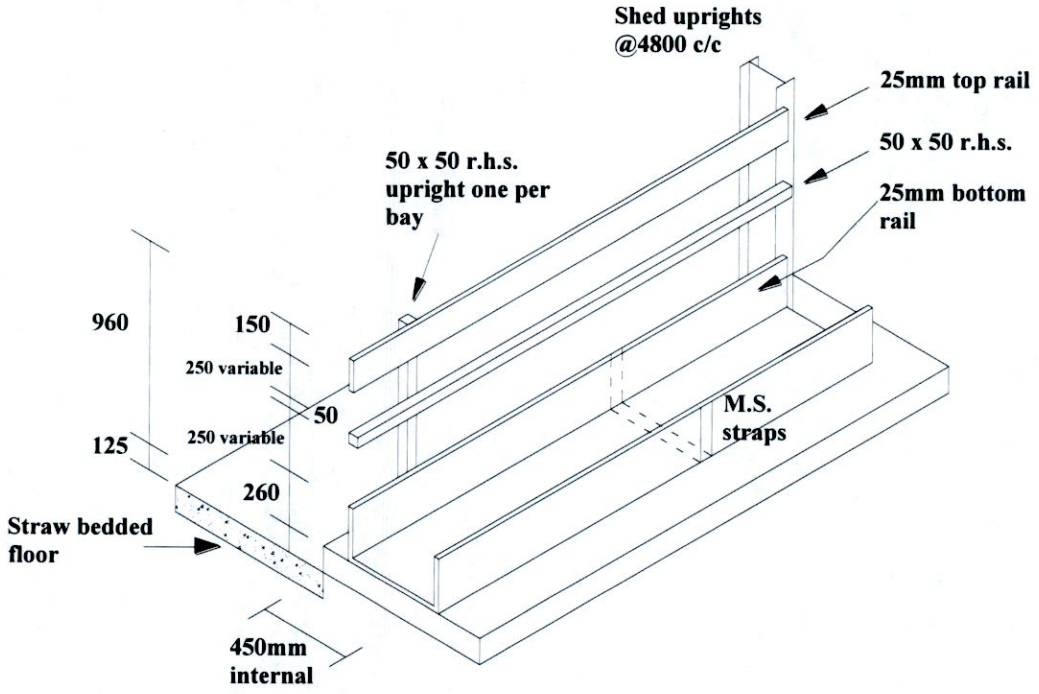


Figure 8 **Single Sided Silage Trough - fixed to shed uprights**

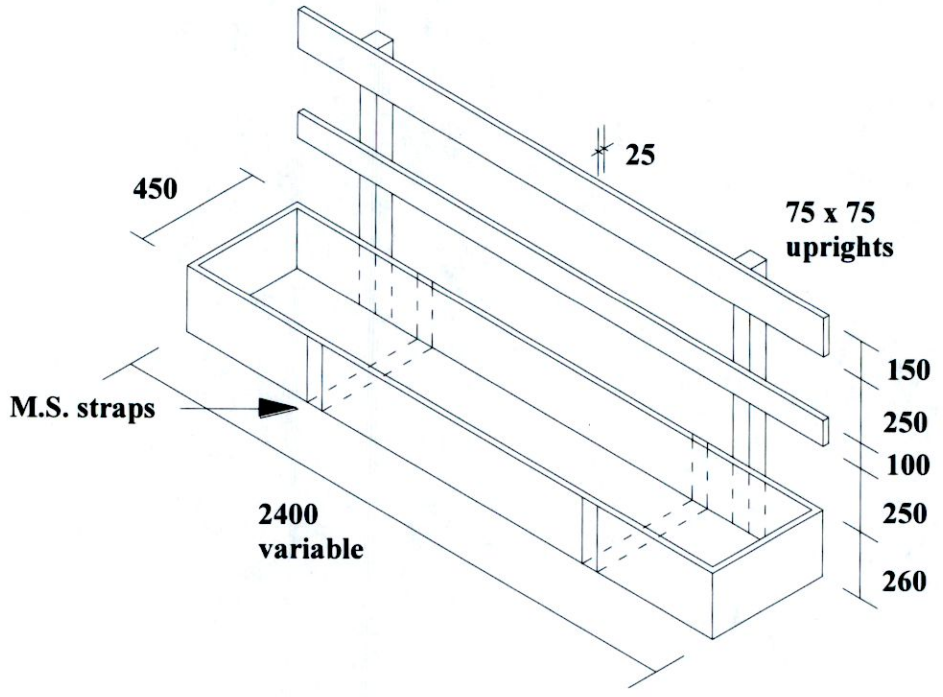


Figure 9 **Single Sided Silage Trough - moveable**

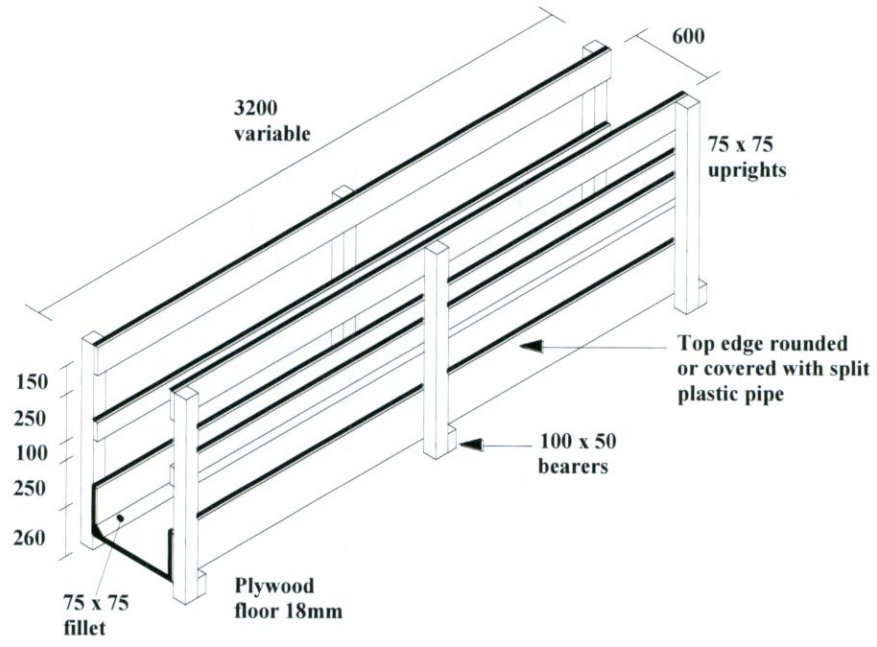


Figure 10 Walk-through Feed Trough - timber

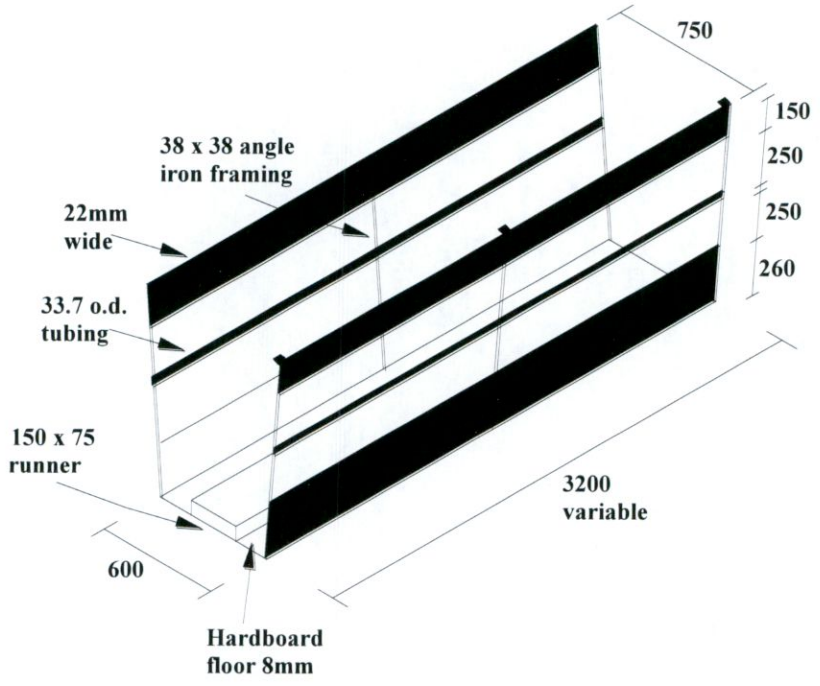


Figure 11 Walk-through Feed Trough - angle iron