S 145

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AN ROINN TALMHAÍOCHTA, BIA AGUS MARA

DEPARTMENT OF AGRICULTURE, FOOD AND THE MARINE

MINIMUM SPECIFICATION FOR THE UPGRADING OF PIG HOUSES

The receiving of this specification does <u>not</u> 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.

This specification covers upgrading of pig houses under the TAMS II Scheme. For the design and construction of a building's superstructure, Department of Agriculture, Food and the Marine specification 'S101: Minimum Specifications 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 of Agriculture, Food and the Marine specification 'S123: Minimum Specification for Bovine Livestock Units and Reinforced tanks' shall be read and followed alongside this specification. However, if other structural designs 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.

This specification incorporates all of the requirements in S.I. No. 311 of 2010, European Communities (Welfare of Farmed Animals) Regulations, and any subsequent amendment to the Regulations.

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.

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.

2 CONCRETE WORK

2.1 Certificates

Concrete shall be produced in a plant audited to I.S. EN 206-1: 2002 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). Concrete 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 Food and the Marine for inspection upon completion of the works.

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

For all poultry housing, and slurry tanks under poultry houses, concrete 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.

2.4 Compaction of Concrete

All concrete shall be compacted by either vibrating screed or poker vibrator depending upon the position of the concrete. Poor compaction leads to entrapped air, which will weaken the concrete and may cause premature failure. All concrete can be easily placed and compacted when using a vibrating screed or poker vibrator which helps ensure the concrete achieves its full strength.

2.5 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 (Clause 8). 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.

2.6 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).

2.7 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.

2.8 Tests

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

3 ELECTRICAL INSTALLATIONS

Wiring and fittings shall be installed, and all work shall be carried out in accordance with the Second Edition of the National Rules for Electrical Installations, ET 101/1991 and Amendment A1:197, and specifically 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.

3.1 Certificate of installation of mechanical/electrical equipment

The “Certificate of installation of mechanical/electrical equipment” (sample attached in appendix A) may be used during the installation of specialist equipment that is not purely electrical, and whereby it would be impractical to have a registered electrician check the details of all the electrical wiring performed on site. The person performing such installation work shall be trained in the installation of the equipment being installed and certified as such. Examples of the use of this form would be for the installation of new wet mix feeding system.

The power supply for the equipment shall be taken from an isolator that has been installed by a qualified electrician and is of a suitable size for the loading to be placed through it. The “ETCI completion certificate” and the “Supplementary Agricultural Certification Form” shall be completed and signed for the isolator as per clause 12.1 above.

Note that this means that the qualified electrician needs only to certify the electrical installation from the main farm supply, up to and including the isolator to which the installed equipment is connected.

The wording of the certificate shall be as given in the sample certificate attached below, and the certificate shall be on the manufacturer’s headed paper.

4 Design of Buildings

4.1 General Design

Each pig shall be able to lie down, rest and stand up without difficulty. Each pig shall have access to a clean lying area that is physically and thermally comfortable, adequately drained and that is of sufficient area to allow each pig to lie down at the same time.

The chosen feed system shall allow all sows and gilts to obtain sufficient food and water, even when competitors for food are present. All pigs shall be fed at least once a day.

The design of the house shall be such that every pig can be inspected daily, and that pigs shall not be exposed to continuous noise levels at or above 85dBA.

All pigs shall have permanent access to a sufficient quantity of suitable material (e.g. straw, hay, silage, wood, peat or mushroom compost) to enable proper investigation and manipulation activities.

Building materials used shall not be harmful to the pigs and shall be capable of being thoroughly cleaned and disinfected.

Insulation and ventilation control shall be provided to ensure that in slatted units the temperature is capable of being maintained between 15^{O}C and 30^{O}C at all times. In less densely stocked houses heating facilities may be required. Straw bedded houses shall be designed to be thermally comfortable at all times, and at no stage should the air temperature be allowed to exceed 30^{O}C.

Essential Management: All automated or mechanical equipment essential for the health and welfare of the pigs must be inspected daily (e.g: ventilation, water supply, feed supply, etc.). Where defects are discovered, these must be rectified immediately, or if this is impossible, appropriate steps must be taken to ensure the health and welfare of the pigs.

5 Adequacy of existing Structure

Buildings shall be considered suitable for upgrading **only** when the main structure [floors, walls, roof structure and cladding] are basically sound, or can be brought to specification with a reasonable degree of repair work. An upgraded building is expected to have a full working life of at least twenty years. Seriously inadequate structures should either be demolished or abandoned, and new facilities built instead.

5.1 Roof Structure

All roof structures shall comply with Department of Agriculture, Food and the Marine specification S. 101: Minimum specification for the Structure of Agricultural Buildings. Alternative proprietary construction systems (e.g. proprietary structural wall panels) may be used if such systems have received the prior acceptance of the Department. Gutters and downpipes shall be fitted to all roofs and arranged so as not to discharge onto soiled yards. All metal cladding fixed to timber rails or purlins shall be separated by a layer of DPC. The use of painted aluminium cladding and sandwich cladding are permitted in addition to those cladding sheets listed in S.102.

The internal ceiling height of the roof over the interior floor level shall not be less than 2.2m. Eaves height in a straw bedded house shall be not less than 3.5m. The internal ceiling height, above the floor level, in a mono-pitched slatted house shall not be less than 1.9m at any point. When an existing building is being converted these limits may be reduced, in exceptional circumstances, by up to 600mm.

6 Insulation

6.1 Roof Insulation

The roof insulation for finisher housing shall have a U-Value of not less than $0.3W/m^2/^oC$ and for farrowing houses and weaner accommodation the roof insulation shall have a U-Value of not less than $0.2W/m^2/^oC$. i.e. the lower the U-Value the better the insulating properties.

The level of roof insulation achieved shall be certified by the installer, providing supporting information for the insulation level achieved.

Insulating boards shall be tongue and grooved, or have tapered edges on all sides to prevent vapour transmission. Roofs shall be constructed to prevent rodent access to insulation material.

6.2 Wall Insulation

The wall insulation for finisher housing shall have a U-Value of less than 0.4W/m^2/ºC and for farrowing houses and weaner accommodation the wall insulation shall have a U-Value of less than 0.3W/m^2/ºC. i.e. the lower the U-Value the better the insulating properties.

The level of wall insulation achieved shall be certified by the installer, providing supporting information for the insulation level achieved.

All walls shall be finished internally so that the pigs, insect or rodents cannot damage the insulation. The materials used shall not be harmful to the pigs and shall be capable of being thoroughly cleaned and disinfected.

Proprietary internal and external wall panels with integral insulation may be used provided that they are designed for at least a 20 year working life. These wall panels shall have a stainless steel skin, or other suitable material that is both chemically resistant and strong enough not to be damaged by sows, for any area that may be in contact with pigs, and be so protected as to prevent rodent damage. The insulation shall at least meet the requirements as set out above.

6.3 Insulated Doors

Doors for finisher housing shall have a U-Value of less than 0.4W/m^2/ºC and for farrowing houses and weaner accommodation the door insulation shall have a U-Value of less than 0.3W/m^2/ºC. i.e. the lower the U-Value the better the insulating properties.

The level of door insulation shall be certified by the installer, providing supporting information for the insulation level achieved.

The minimum number of doors necessary for the satisfactory working of the house shall be fitted. Doors shall be ledged, braced, and sheeted, or of other suitable construction, and fitted in rebated frames. **All external doors wider than 1.2m shall be sliding.** Cladding materials for doors shall conform, at least, to the standards specified in S102. No point within the building shall be more than a 45m walking route from an external door.

All external woodwork shall be given at least two coats of lead-free paint.

7 Heat Pads

Electrical Heat Pads and Water Heat Pads for farrowing houses shall be installed as per manufacturers' instructions. The heat pads shall be sized for the greatest number of piglets expected per farrowing.

Electrical Heat Pads and Water Heat Pads for weaner houses shall be installed as per manufacturers' instructions. The heat pads shall be sized for the number of piglets in the pen.

Electrical heat pads shall be certified as per clause 3 (Electrical Installations).

8 Creep Covers

8.1 Insulated Creep Boxes

Insulated Creep boxes shall manufactured from materials that are not harmful to the pigs and shall be capable of being thoroughly cleaned and disinfected. Insulated creep boxes shall have a top opening to enable inspection of the piglets without the need to disturb the piglets. Creep boxes shall have only one entrance for piglets, so as to prevent draughts in the creep box.

Only proprietary creep boxes shall be grant-aided. Creep boxes shall be installed in accordance with manufacturers' instructions.

8.2 Creep covers for weaner houses.

Creep covers shall manufactured from materials that are not harmful to the pigs and shall be capable of being thoroughly cleaned and disinfected. Creep covers shall be installed in accordance with manufacturers' instructions and in such a manner as all piglets in the pen can be inspected easily without the need to move the creep cover.

Only proprietary creep covers shall be grant-aided.

9 Lighting

Natural lighting shall be the normal manner for providing lighting to all pig housing, using doubled glazed windows.

Lighting shall be provided at a minimum light intensity level of 40 lux for a minimum continuous period of eight hours per day. The lighting system shall have a dimmer control unit included for each room / house. The lighting shall be provided within the hours 06:00 hrs and 21:00hrs every day to coincide with natural day-light. It is recommended that a time switch, with a recording device to indicate the number of hours that the lights are on, is fitted to ensure that the lighting requirements are achieved. It is recommended that lights shall be located so that they do not interfere with the air-flow in the house. Lights should be positioned so as to prevent the formation of 'dark corners'.

Additional lighting shall be provided to enable the close inspection of sows and gilts at any time.

Lighting shall be provided by energy efficient lighting systems (e.g.: LED, etc). As the output of LED lights varies between manufacturers, a light survey shall be undertaken once the lights are installed to ensure that the minimum required lighting levels have been achieved. A copy of the results of the light survey shall be submitted with the claim for grant-aid. The survey shall be carried out by the light installer of the lighting system and all light measurement points shall be indicated.

10 Upgrade of Ventilation Systems

10.1 General

The ventilation system shall ensure that air circulation, dust level, temperature, relative humidity, and gas concentrations are kept within limits not harmful to the pigs.

Ventilation shall be mechanical; natural; or automatically-controlled natural ventilation (ACNV).

The ventilation rate shall be capable of being reduced to such a level so as not to chill the pigs at any time, while still maintaining sufficient air changes.

When designing the ventilation system, care shall be taken to ensure that there are no 'dead-air pockets' within the building.

When mechanical ventilation systems (including ACNV) are used, appropriate back-up systems shall be installed in case of failure. Mechanical ventilation systems shall also be alarmed in case of failure. The alarm shall have a power supply independent of mains electricity. The alarm system shall be tested once a month and maintained in proper working order. An electric generator may be installed when mechanically controlled ventilation is used in case of mains electricity failure. If an electric generator is not installed the ventilation openings shall open to their maximum during a power failure (i.e.: the vents shall be normally open).

Air-inlets shall be automatic or hand-regulated box-type that divert air towards the ceiling, and fitted with a control shutter. Inlets shall not be more than 1.5m from the corners or more than 4m apart; depth of inlet shall be between 75mm and 225mm; distance from ceilings shall be at least 225mm. Where natural ventilation only is used, the total area of inlets shall be twice the area of chimney or other type of outlet (Tables 2 and 3). With fan extraction, inlets shall be sized appropriate to fan capacity.

Note: If other air-inlet systems are to be used, full details of the system shall be supplied to the Department for approval prior to the start of construction.

Air-outlets shall be designed to one of the following:

1) By extractor fans, with speed and thermostatic control, and with overload safety device. Fan shall be of sufficient power to operate against strong winds and rated to give adequate air changes for the house when fully stocked. (Table 2). Fans may be fixed in a wall opening, or in a duct, or flue (chimney) leading out through the roof to finish 450mm above the ridge. The duct or flue may be constructed of timber, PVC, fibre-reinforced board or other suitable material.

Table 2: Fan size

Number of Dry sows, served gilts and boars	x 100 m^3/hr (Cubic metres per hour)
Number of Finishing Pigs	x 120 m^3/hr
Number of Weaners	x 45 m^3/hr
Number of Farrowing Pens	x 330 m^3/hr

Note: Inlet Area = 0.1m^2 per 1,000 m^3/hr fan output.

Table 3: Flue Size for natural ventilation

Number of Dry sows, served gilts and boars	x 0.012 m^2
Number of Finishing Pigs	x 0.006 m^2
Number of Weaners	
Number of Farrowing Pens	x 0.040 m^2

Note: Inlet Area = twice the chimney size.

2) By natural ventilation either by controlled openings at high level, or along the ridge, or by flue or duct constructed as outlined above and fitted with a butterfly valve manually operated to control the rate of airflow. For outlet size see Table 3. The top of the flue shall be at least 1.8m above the inlet and covered to prevent rain ingress. The flue may be constructed of timber, PVC, fibre-reinforced board or other suitable material, insulated with 50mm of

expanded polystyrene, or equivalent and protected by a vapour barrier. In a mono-pitch house, ventilation may be by a pivoted front vent, manually operated.

3) In the ACNV system, openings shall normally be continuous, or be evenly spaced, along both sides of the house, and flaps (Table 4) shall be close fitting, strongly constructed, and preferably insulated. Ridge outlets with flaps may also be used as part of a designed system, and in monopitch houses front vent flaps are used. Automatic control equipment shall be installed to monitor internal conditions at least once every fifteen minutes, and adjust the flaps as necessary.

Table 4: Inlet area for each side wall for ACNV.

Number of Dry sows, served gilts and boars	x 0.020 m^2
Number of Finishing Pigs	x 0.025 m^2
Number of Weaners	x 0.013 m^2

Note: Ridge outlet (if used) shall be half the total inlet flap area.

11 Feed mixing system to allow feed to ferment

11.1 New Wet-Feed mixing system to allow feed to ferment.

These shall be installed in accordance with the manufacturers' instructions. The system shall provide a full wet-feed mixing system, including all controllers, tanks and pumps, that enables the preparation and fermentation of feed for pigs.

11.2 Upgrade existing wet feed system to allow feed to ferment.

These shall be installed in accordance with the manufacturers' instructions. The system shall upgrade an existing wet-feed kitchen to provide a full wet-feed mixing system, including all controllers, tanks and pumps, that enables the preparation and fermentation of feed for pigs.

12 Frequency controller for feed pumps and feed mixer motors.

Only proprietary Frequency Controllers shall be installed. They shall be installed in accordance with manufacturers' instructions and be certified in accordance with clause 3. A separate frequency Controller shall be installed on each motor.

These Frequency Controllers may be installed on any existing feed pump or mixer motor for either wet-feed or dry-feed systems.

13 Medicine Dispenser Units

13.1 Individual pen Fixed in Water medicine dispenser for pig unit.

The pig housing and rooms shall be re-plumbed so that each pen can be treated individually. The medicine mixing unit shall be of proprietary design and shall be installed in accordance with the manufacturers' instructions. A single mixing unit may cover a number of individual pens in multiple rooms and houses. It is strongly recommended that a system for the flushing out of the drinking lines is put in place for use after medication of the water and between batches of pigs.

13.2 Individual pen Fixed in Feed medicine dispenser for pig unit.

The feeding system shall be re-worked so that the feed going to each pen can be treated individually. The medicine mixing unit shall be of proprietary design and shall be installed in accordance with the manufacturers' instructions. A single mixing unit may cover a number of individual pens in multiple rooms and houses. It is strongly recommended that a system for the flushing out of the feeding lines is put in place for use after medication of the water and between batches of pigs.

14 Water Meters

Water meters shall be installed as per manufacturers' instructions. They shall be installed on so that they are protected from both frost and accidental damage.

Water meters shall be installed so that they water usage in each house may be monitored.

15 In-direct Heating Systems

15.1 In-direct heating system

Only proprietary in-direct heating systems shall be used. They shall be installed in strict accordance with the manufacturers' instructions. The system shall be designed so that flue gasses from the boiler cannot enter the same air space as the pigs, regardless of level. The system shall normally use a system of radiators which are heated by hot water.

16 Alternative Energy Heating Systems

16.1 Solar panels

Only proprietary solar panels shall be used. They shall be installed in strict accordance with the manufacturers' instructions. The panels shall be permanently fixed to a pig house or be located alongside the pig house. The solar panels may be for either the production of hot water or electricity. The hot water or electricity shall only be used in the pig unit.

16.2 Air source heat pumps

Only proprietary air-source heat pumps shall be used. They shall be installed in strict accordance with the manufacturers' instructions. They shall only be used to heat pig houses.

16.3 Biomass boiler

Only proprietary bio-mass boilers shall be used. They shall be installed in strict accordance with the manufacturers' instructions. They shall only be used to heat pig houses.

Biomass is defined as the biodegradable fraction of products, waste and residues of biological origin from agriculture, forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste. As such a biomass boiler can be fuelled with wood chip, wood pellets, wood residue, straw, miscanthus, poultry litter, etc.

16.4 Heat recovery units within building

Only proprietary heat-recovery units shall be used. They shall be installed in strict accordance with the manufacturers' instructions. The recovered heat shall only be used to heat pig houses.

17 Certificates

The following certificates shall be collected, and given to the Department before grant-aid can be paid:

(1) "Concrete" Certificate (Clause 2.1) where relevant
(2) "Electrical" Certificate (Clause 3)
(3) Lighting Survey report (Clause 6)
(4) Insulation level calculations (Clause 9)

18 Related Department 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 Concrete Tanks' for all tanks.
4) 'S129: Farmyard Drainage'
5) 'S.144: Minimum specification for Dry Sow Housing'

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 the one of the local offices of the Department of Agriculture, Food and the Marine.

[Certificate to be typed on Manufacturers Headed Paper]

CERTIFICATE OF INSTALLATION OF MECHANICAL/ELECTRICAL EQUIPMENT

(This section to be completed by supplier company.)

We the above named company certify that *(name of person carrying out installation)* has been trained in the installation of *(equipment type)* and is hereby certified as competent to install the named equipment.

Models: _____

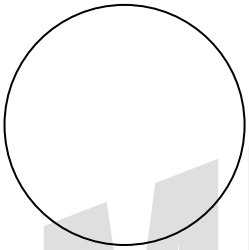
The training was carried out at *(location of training)* on the dates listed and the named person has been issued with a certificate of competency.

Dates of training	

Signed: _____ (Training Instructor)

Date: _____

Company stamp



(This section to be completed by person performing installation.)

Is there an "ETCI completion certificate" and a "Supplementary Agricultural Certification Form" completed for the electrical isolator to which the electrical connection was made during installation of the above equipment? ☐

I confirm that I installed *(Manufacturer's name, product name and model number)*

Name of Client: _____

Address: _____

_____

_____

_____

The installation took place on: _____

Signed: _____(Person performing installation, as named above.)

Date: _____