LYTAG®
lightweight solutions

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CI/SfB 265	(-A) Eq7

Technical Manual – Section 14
Lytag for Animal Housing

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Introduction

Insulation in animal housing is a key factor in raising healthy and profitable animals. In consequence considerable improvements have been made to roofs and walls leading to the floors becoming a more significant source of heat loss. This is of particular importance when considering that an animal spends a significant part of its life lying down. Laying a Lytag “No Fines” Concrete Floor can substantially reduce this heat loss.
Costs per square metre compare favourably with normal weight concrete. Another important factor to consider is the ease with which Lytag No Fines Concrete can be laid. Because Lytag No Fines concrete is approximately half the weight of natural aggregate concrete, the labour required to place a cubic metre is substantially reduced.

Principal Advantages

- Excellent thermal insulation
- Rapid thermal response
- Rapid drying out
- Reduced cement content
- Easy mixing, handling and laying

This enhances animal profitability.

Mixing and laying Sub Base

The area to be concreted should be excavated to the required depth. A subbase of well compacted hard-core laid 100mm thick or as specified on contract drawings.

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Lytag Thermal Concrete Base

The mix should be an 8:1 by volume Lytag:Cement mix. The minimum thickness should be 100mm. Although adequate mixing can be achieved by hand our recommendations are that a motorised mixer is used, e.g. trough screed mixer or similar. Supplies may be obtained from a ready-mix concrete producer.

The aggregate only should be wetted in the mixer until all the pellets begin to shine. Cement should then be added and mixed until evenly distributed. Additional water should then be added until each pellet is coated with a grey shining cement grout - at this stage the pellets should be tacky and stick to each other.

If too much water is added, the grout will be washed off allowing the colour of the pellet to show; adding more cement can rectify this. Conversely, too little water will give a dull grey appearance, which will lead to unsatisfactory bonding of the pellets.

Lytag no-fines screeds may be transported by hand barrow, dumper or by pneumatic placer screed pump, using a minimum hose diameter of 65mm. After spreading, the material should be compacted and levelled off 20 mm below the required finished surface. Powered compaction should not be used.

Under no circumstances should screeding be carried out in inclement weather, thereby avoiding cement washing from the Lytag pellet. Any work already commenced should be protected until favourable conditions allow completion.

The basecoat should be protected from foot traffic until the topping is laid.

Sand:Cement Topping

The topping can be laid when the base coat is sufficiently firm to sustain body weight, normally after 18 to 24 hours, but never less than 12 hours. It is important that the base coat is not disturbed before the topping is applied, however if this is unavoidable, any loose material must be removed, remixed with fresh cement and water, re-laid and allowed to harden.

If the application of the topping is delayed beyond the recommended period, the exposed surface of the base coat should be grouted prior to laying the topping. Avoid excess grout flowing into the existing no-fines material.

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The base coat should be prevented from drying out and losing its “green” appearance prior to applying the topping. In extreme conditions the base coat should be covered for a period of up to 24 hours.

The topping mix should be 4:1 by weight, sharp sand:cement. Sufficient water to permit thorough compaction should be added. A simple guide is to squeeze a handful of the mix, which should ball together, but it should not be possible to squeeze water from it. The topping should be laid to a nominal thickness of 20mm to accommodate tolerances of +/- 3mm in the base coat. It should be laid in strips convenient for levelling with a straight edge. It should be tamped well into the surface of the base coat to ensure a good bond is achieved prior to ruling off and towelling up, using a wooden or steel float depending upon the floor finish to be applied. Where large areas of topping are laid in one operation, it is advisable to score through the topping as work proceeds to leave bays of approximately 20 square metres or every 5m in narrow areas.

The absence of sand fines in the Lytag base coat results in small air pockets within the screed. As a rod or hammer (the accepted method of testing the adhesion of a dense sand: cement screed), will produce a sound different to that associated with a dense sand:cement screed, additional factors other than tapping should be taken into account when judging the acceptability of a Lytag screed and the topping.

Curing

Curing should be employed in the usual manner for sand: cement screeds utilising good concreting practice e.g. covering by polythene or similar, usually for 7 days dependent on conditions. Forced drying out after period is not recommended.

Screeding

Existing floors in cattle houses and piggeries can be improved by this re-screeding with Lytag no-fines concrete to a minimum depth of 50mm topped with 20mm sand:cement. The thermal insulation thus gained with subsequent reductions in heating costs quickly recovers the capital outlay involved.

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