

LKL Safety Note

Straw bales – Handle with care



Some bales of straw, hay or silage can literally weigh a ton and unfortunately crushing incidents from falling bales is not uncommon.

In 2014 the HSE reported at least 27 deaths related to baling and bale handling since 2000, including 18 caused by falling bales. Many more have been injured, but the total number is unknown. This work activity has accounted for 20% of fatalities in 2016/17. The baling season may soon be over but the need to be aware of the risks does not stop once the bales are collected from the field.

Incidents tend to occur during baling and transport, stacking and handling, but the simple presence of bales stacked in fields is not without its dangers: round bales can roll down slopes causing deaths to a passing motorist. They have been a number of incidents involving bales on roads in 2019. Children and adults have been known to climb on them, causing toppling, so bales must be stacked safely, in fields, farmyards or buildings.

Incidents also occur regularly during transportation, for example, contacting overhead power lines when being moved using telehandlers or falling from trailers during transportation or unloading, which is why training in transporting and securing loads is so important.



The HSE has produced a good guidance note on the safe handling of bales <http://www.hse.gov.uk/pubns/indg125.pdf>, which covers all aspects.

I have summarised some key points below: -

How to stack bales

Build stacks on firm, dry, level, freely draining ground, which should be open and well ventilated, away from over head power lines and underground services.

- The bottom of a stack should set up a sturdy foundation for all additional bales.
- Only use bales of sound construction, particularly for edges.
- Make sure that bales are 'tied in', i.e. stacked so that lower supporting bales are stabilised by overlapping and interlocking upper bales in alternating layers.
- Monitor the construction of the stack to ensure it remains stable during and after stacking.
- Make sure that there are no loose strings, which could cause a trip hazard.

Stacks of big square bales are more stable than those of small conventional bales but big bales can cause fatal and serious injuries if they fall on to a person due to their weight of up to 600Kg.

Stacks should be constructed with:

- A wide base that narrows slightly as it gets higher;
- Alternating layers of single or double bales that 'tie in' those below, i.e. there should be an overlap of half a bale width all round to add enough stability and strength to stop the stack from splitting. This is especially important if stacks are close to public roads, footpaths or in an area where people may be present.

Big square/high-density bale stacks should not be built higher than:

- One-and-a-half times the width of the base;
- The reach of the equipment available to de-stack it;
- Ten bales on hard-standing or concrete;
- Eight bales on sites where no hard standing is available.



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Pyramid stacking

The safest method of stacking round bales is on their sides in a pyramid but make sure:

- The bottom rows of outside bales are chocked or fitted with stakes or supports;
- Layers are overlapped by half a bale front to end.



End stacking

Stacking round bales on their ends can lead to unstable stacks because inconsistent bale density allows bales to settle and shift. Only consider stacking round bales on their ends if they are to be stored within a building. Fill any spaces between the columns with small bales.

De stacking: - Removing bales from a stack or load

Follow this advice whether removing bales by hand or by machine.

- De-stack the bales in the reverse order of stacking.
- Do not dislodge or remove bales from the bottom or middle of the stack, as this will cause the stack to become unstable.
- Never leave overhanging bales unsupported.
- Do not attempt to physically push big bales off a stack – always use mechanical handling equipment for big bales and de-stack from the top first.
- Be aware of the manual handling risks involved when manoeuvring small/conventional bales, which may not be suitable for lifting mechanically.
- Be aware of possible settling of the bales when de-stacking.

Moving bales by tractor

The centre of gravity is important when handling big bales, especially with a frontend loader.

- Keep the load as low as possible - a top-heavy load could lead to a backward or side overturn.
- Use controls smoothly, avoiding jerky movements.
- Do not travel too fast.
- Make sure there is adequate ballast on the front and rear to counterbalance the load. Insufficient ballast can make steering and braking difficult and could be dangerous in the field and on the road.

Rollover and falling object protection

Equipment used to move bales should have approved, well-maintained and enclosed cabs or safety frames, i.e. a rollover protection system (ROPS). This should be:

- A protective enclosed cab or a roll bar with a canopy; and designed to withstand the dynamic forces that would result as a consequence of a rollover.
- Seat restraints should be fitted (and worn) if the machine is used for work where there is a risk of overturning in which the driver could be crushed between the machine and the ground.

Arrangement of loads on vehicles

Build loads to suit the journey to the storage site:

- Don't overload the trailer;
- Be aware that high loads are more likely to overturn;
- Don't stack bales beyond the edge of the trailer.
- Secure loads with straps or ropes and double-strap bales at the rear, as these tend to sway the most. Check the loads regularly especially after heavy braking



Jack Fisher and his brother bravely took on the family business after his father's sudden death in February 2017, from crush injuries when de stacking a lorry of straw bales. He has become a Farm Safety campaigner. His advice:

- **"Take your time - slow down, and make sure stuff's done properly, because once you're gone you're gone and that's it, there's no second chance."**

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