

## Customising and Dressing Bales

Whether you're building a true load-bearing structure, or using some sort of framework, you'll need to prepare your bales first – unless you're just building something quickly to see how it's done, or don't mind about the quality too much. Many bales will need dressing before use, some will need customising to make them fit different spaces in your walls, and all will need choosing for the spot you want to lay them, like stones in a dry-stone wall, as building with bales can be a bit like making a jigsaw.

### Dressing bales

By dressing, we mean flattening off the end of the bale so that as much surface area as possible from one bale makes contact with that of the next.

The earliest straw buildings in the UK and Ireland did not use dressed bales very much, but it has become more common now that houses need to meet more stringent standards for airtightness and insulation. If you're not too concerned about these things then it might not be quite so important to follow the guidelines below.

Basically, when you take a normal bale, it may have 'fat ends'. By this we mean that on the ends there's more straw in the centre, between the strings, just where it is most difficult to measure how long the bale is. If you place two of these bales together, obviously the fattest bits will hit each other, leaving a space around the rest of the end of the bale that could allow air to pass through and so reduce the insulation of the wall. First, you want to relocate the straw on the bale end underneath the strings from a high point to the low point using hands, if you feel strong enough, or the end of a claw hammer placed either side of the string. Sometimes a bale has one corner that's lower than the other three, and this method can be very effective in sorting that out. Because you're repositioning the straw, not taking it out of the bale, this will not reduce its compression. Then pull out any excess straw from the remaining high points, making sure not to catch bale frenzy and pull too much out, leaving the strings loose! Usually the bulging part of the straw is caused because the strings are very tight, so if you're careful, you can take out the excess without taking out any from underneath a string. Dressing a bale generally shortens its length slightly, so when you're working out what length your bales are don't forget to trim them first.

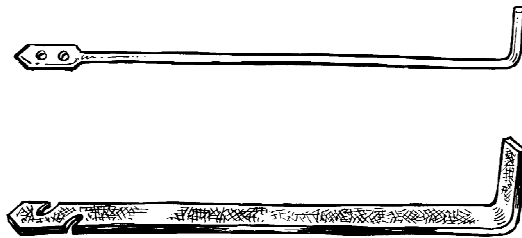
**Bale frenzy:** a sort of over-excitement caused by inspirational moments with straw. Becomes apparent in any group as soon as the speed with which walls go up is grasped!

### Customising bales

This is the method of altering the length or the shape of a bale. Half bales are always needed, because of the running bond from one course to the next used in bale building (as in brickwork). So if you start on the first course with a whole bale by a doorway, then on the second course you will need a half bale to begin again in the same place. Sometimes, if you're working to designs that didn't take the bale length into account, you'll need to make different lengths of bale rather than only halves. And at window openings you may want to angle the end of the

bale so that the splay throws light into the room. In more complicated work, particularly where you have to compensate for poor design, you may need to make all sorts of different shapes and sizes of bale parcels!

A handy tool for customising is the custom-made baling needle (see below). There are various different types, but one is a circular length of steel about 5mm in diameter and about 600mm (2') long, with a 100mm (4") handle bent on the end; the other end is flattened and sharpened with two holes drilled through it. It can be made relatively cheaply by a metal workshop.



If you want to cut a bale in half, don't just cut the strings or the whole bale will fall apart! Instead, you need to re-tie the bale into two separate halves first, and then cut the strings. To do this, it's easier and more fun to work with a partner. Take the bale you want to split in half, and lay it on edge on top of another bale you'll use as a table. Now measure out four lengths of baling twine, each one long enough to go completely around all four sides of the smaller half bale you will be making, and then add a bit extra for tying knots. (As the original bale has two strings, so your two new half bales will also have two strings each, making a total of four.) Take two of these strings and thread them through the holes in the end of your baling needle. It helps to thread them from opposite sides to each other so that a short end of twine sticks out in either direction from each hole.

Ask your partner to steady the bale from the opposite side of the bale from the one you are about to work on, making sure they are not too close so you don't unexpectedly perform body piercing! Measure halfway along the bale, place your threaded needle by the original string at this point and push it into the bale about 25mm (1") to steady it while you sort your strings out. Here comes the tricky part – you need to push the needle all the way through the bale, at right angles to the face, to come out on the opposite side where the string is and exactly halfway along the bale length *without twisting the strings together!* So keep your fingers between the strings as you push the needle through the bale and don't let go until your partner has carefully pulled the ends out of the needle the other side. Because you threaded the strings through in opposite directions, it should be easy to tell which string belongs to which side of the bale. Take the two ends of string that go round one of the halves, and tie a loop in the end of one of them (not a slip knot). Thread the other end of the twine through this and pull tight, but only to measure about a hand's width, (225mm or 9") back from where the twine passes through the loop. Make another loop at this point, in the twine that doesn't already have a loop in it. Now you can tie a sort of trucker's hitch by threading the end through the first loop and back through the loop in itself and pulling tight.

By pulling on the string between the two loops you can get the string even tighter. It needs to be

at least as tight as the original string, and if you can get it tighter than that then it means the original strings could have been put on tighter and the bale would have been more dense. Your partner will have been tying an identical knot on the other half of the bale. Now flip the bale over on to its other side and repeat the whole process where the second original string lies, ending up with two tied parcels and (hopefully) slacker original strings ready to be removed. Don't just cut the strings at random, but look for where the original knots are. These are always close to the corners, one above the other. Cut by the knot and pull off the original strings, then you have two more strings to reuse next time. All being well, you should be able to gently pull the half bales apart from each other, and trim the ends as necessary. If the worst happens and you do get the strings twisted, all is not lost as you can cut one of them and re-tie a new string, as long as you are careful how you handle the bale. Once you're familiar with this method it only takes a few minutes to make a half bale.

Always customise bales to be slightly smaller than you expect. This allows for the tendency, while suffering from bale frenzy, to want to force your new bale into the gap allowed for it, because you've just spent time making it. And, because of the flexibility of straw, this is possible. However, it will almost always result in a distortion of the wall somewhere else, usually at the nearest corner, or in the buckling of a framing post for a window. Do not give in to the temptation to go for speed rather than a snug fit. Watch out for your work partners and encourage them to adopt a calm and measured approach too!

### **Curving bales**

Making bales fit the shape of a curvaceous design is a highly technical and difficult part of the job. Care must be taken not to laugh too much. The procedure is to turn a bale on its side, lift one end up on to a log, and jump on it! The middle straws in the bale can be moved fairly easily in relation to the strings – just make sure you keep the end straws in the same place while you move the middle ones, and don't curve the bale so much that the string slips off. That's all!

In order to make very well-insulated walls, you may need to shorten the inside string of each curved bale and trim the ends to form a wedge shape instead of a right angle. This makes a curved bale that fits snugly next to its neighbour without lessening the density of straw at each joint.

### **Notching bales**

If you're using fixing posts at openings, or have a framework, you'll need to notch bales around these to make your building stronger – so that the straw can't slide against the post if there are strong winds pushing against the walls. It also ensures that you don't get a draught between the straw and frame; in other words, it makes your building airtight. The best size of post to use is 100mm x 100mm (4" x 4"), but made from two pieces nailed together, as this is stronger and cheaper. These are located centrally to the bale in the middle of the bale end because this fits nicely between the strings and a notch can be cut out without affecting the integrity of the bale.

Use a timber template of the same dimensions as your post, stand a bale on end after trimming, and place the template on the bale in the same location as the post will be once finished. Using a sharp saw, cut down beside the template each side to the depth of the timber, then carefully pull out the straw from the centre of the cuts. You'll find that the saw tends to slide off the

straw into the centre and you'll need to compensate for this by angling it away from the notch. Also, because of the orientation of the straw, just cutting down like this won't release all the straw; some of it will need to be pulled out from the centre as well. When it comes to fitting, the bale should be held in place horizontally above its final position, and the notch should be held open as it is fitted around the post so the straw from the sides doesn't get in the way of a snug fit.

Sometimes you have to tie the corners of a bale up like a parcel around the window and door openings to stop the strings from slipping into the notch. For this technique, use the baling needle with one length of twine and push through the side of the bale at 90° to the strings, close to the end that is notched, near the corner of the bale and about 150mm (6") away from the strings. Tie one end of the twine to the string and pull tight enough to bring the string back from the notch but not so tight as to pull it off the bale! Pull through the other end of the twine and fasten it to the other string, again pulling tight enough but not too tight. Now do the same with a length of twine near the other corner. You should now have a notch between two strings that are securely fastened back from the notch.

