

# Masterclass- Coping (I)

Shock horror, I've had a request, "I have always had a problem with the laying of coping with respect to the pinning required and have never really got to grips with what is required and the reasons for it. Could you please do such a Masterclass explaining all the aspects of coping?"

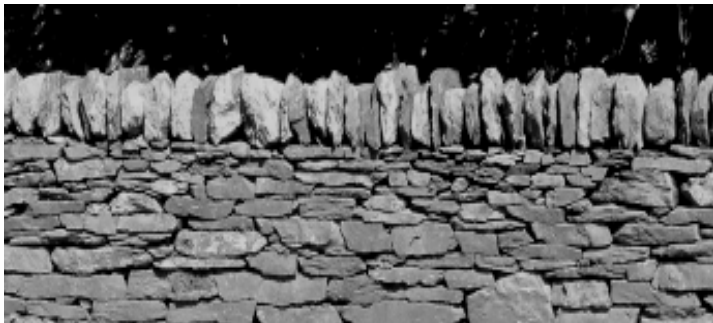
Could be here for several years if I try to explain everything as there are so many subtle variations. I'll try to cover the main aspects of "standard" coping (whatever that is). Hopefully I'll follow it up with something on rubble coping and slab coping, perhaps the most prevalent styles found in North Wales, plus a few more obscure patterns. You never know your luck it might even run into regional styles across Britain if we all live long enough..

Bear in mind that the following are basic principles only that will need subtle adaptation to the specific style involved....

Coping serves a number of purposes. Primarily it serves to hold the smaller wall top levelling in place usually helping tie the top courses together. Technically it places a weight on the top of a wall helping to shift the lines of force within the wall (a bit like pinnacles on buildings) <<DIAG>>. Sometimes (rubble coping) it is an expedient use of whatever's left over after building.

Good coping starts with wall top levelling. Most (but by no means all) types are set on a level wall, and the flatter you can get the levelling the better. Not only flat but stable, each levelling stone should be firmly wedged and shouldn't rock at all. It has always amazed me that over the years so many trainees wonder why they have difficulty getting the cope stones to sit when you can make a reasonable impersonation of a piano player with their levelling. So create a solid base (but not too much hearding you want the copes to sit on the building stones not rock on an over-filled centre).

Most coping in North Wales is "random". That is the stones are not all the same height, it does not necessarily mean that it's a higgledy-piggledy mess.



Generally the overall effect should be smooth and flowing, you do not want to have groups of large stones interspersed with groups of low stones, it should be mixed in some form of pattern, often tall/shorter/tall shorter; or tall/shorter/shortest/tall/shorter shortest. Group

all your small stones and you will have necessarily created a low point. This creates a dip in the skyline as far as sheep are concerned which they are likely to make a bee-line for if planning a massed breakout. Without delving too deeply into sheep psychology I once saw a group go over a wall that had a dip in the coping even though only 30 metres or so further along the whole wall was actually lower than the "dip". Whilst we're on sheep psychology some people argue that you want a really random cope to give a jagged outline (but still no low points) to discourage the sheep. I leave you take make your own mind up on that, I tend to think that amongst other things it just excuses laziness.

At this point it is worth noting that a tall/shorter pattern is not necessarily "buck and doe" where the



shorter copes or does are usually much smaller than the bucks and usually of a fairly uniform size. It relates more closely to "castellated" copes but again tends to be less formal.

Having created a nice firm base for my cope I almost invariably stretch a line across the length I am going to cope

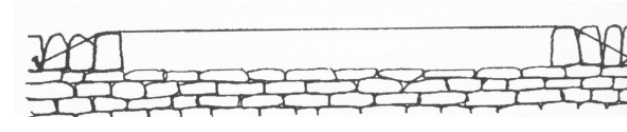


Diagram from BTCV "Dry Stone Walling" p.56

This is simple enough on a gap, on a longer stretch I select a stone that is as high as I want the copings to be and place it 3 or 4m along the wall and prop it in place. As to choosing the right stone... it needs to be an averagely large stone (ie

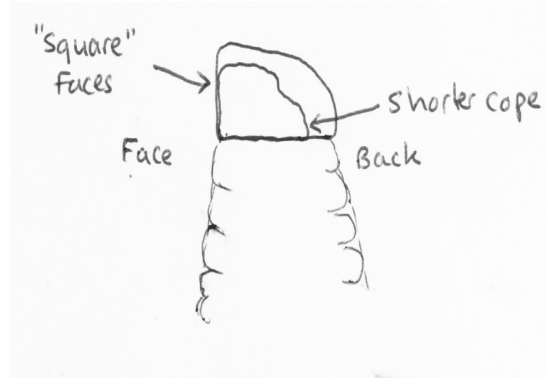
discounting all undersized and oversized - experience definitely helps) erring slightly on the side of taller rather than shorter.

This line only acts as a guide, (hence it's not essential) helping to maintain a pattern as you can easily see how each stone is relating to previous stones vis the gap between it and the line. It also serves as a benchmark for the trimming of taller stones. I really cannot see the point of the odd tall cope, if it's trimmable, trim it, have you ever had too much hearding around here? The line helps to keep the flow of the cope and avoid camel backs and dips. If trimming/dressing think... Just because it's too tall it doesn't have to come off the top, It might look better (lichen etc) if you dress the base, maybe you are creating a better base for it to sit on. Again I can see nothing wrong with dressing the base of any



cope stone in order to make it level so that it sits more securely. As a point of reference the photo above shows a truly level cope with every stone trimmed for height, and also slightly shaped as is the local style (Eden Valley, Cumbria). I would argue that any major rebuild/new wall should tend towards this. Not necessarily completely regimented but judicious trimming can produce a more stable and I think aesthetically pleasing result. If it is more secure and arguably more imposing, (although perhaps we should leave sheep psychology aside) then does the loss of an inch or two in height really make a difference? To sheep with tape measures maybe.

Each stone should be set vertically, with its thickest edge downward. Theoretically each individual stone should stand unaided if those on either side of it magically disappeared, not always possible with thinner or rounded stone. Ensure a good fit with its predecessor. Try to achieve as much surface contact as possible, one point of contact between adjacent stones does not result in a very secure cope. In an ideal world the copes reach across the wall, shorter copes are set centrally and longer copes protrude evenly on both sides, with excessive amounts (more than 3cm or so) trimmed off. As a theory this works in most of the country where walls are frequently little more than 35cm wide at their top, in North Wales where it's possible to go months without seeing one less than 50cm wide it doesn't always apply.



This gives rise to one of the most distinctive features of North Welsh walls with a single non-rubble cope. The coping tend to be set to one side of the wall.

The ground level is rarely the same on both sides of a wall in this part of the world, the face side is normally chosen to be the lower side. Setting the stone on one side effectively means the coping is higher on this side, so it makes sense to set it on the lower side. The squarest face of each stone is set to this face side for much the same reason. Sometimes the

face side will be set on higher side normally as a result of ownership. If a farmer is responsible for the maintenance of a boundary between farms for some reason the coping tends to be set to keep their neighbours stock out rather than their own stock in. Technically the idea of setting the stone on one side is not a good one because it places more of a load on one side, although there's not much point in having as more stable wall if its stock-proof from one side only. There is also something to be said for maintaining local traditions. These aspects are of course beyond the scope of this article, as usual!

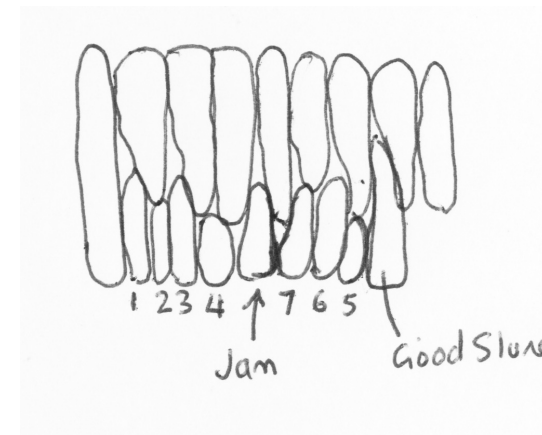
The fact that not all the stones are going to reach across the wall has a number of implications on the actual construction method. Firstly, going back to levelling off. It is very important that none of the levelling stones on the back (as opposed to face side) is traced. Whilst you can more or less guarantee that a traced stone on the face side will be securely held by the coping it is quite conceivable that one traced on the back will not have any coping sitting on it. Secondly you need to consider the lengths of adjacent stones. There is little point putting all the long stones next to each other, a more secure cope can be achieved through judicious mixing of the stones. The back will need additional wedging (later) this is easier to achieve if you avoid grouping stones that go nearly all the way across and by interspersing the whole structure with long stones to give good keying points.

This brings us to pinning and wedging. Gaps between the stones are filled by hammering suitably shaped and size pins into them. Front and back, taking care not to force the stones apart. This can be quite tricky and careful choice/selection is required at a time when there might be little to choose from (especially if you haven't dressed any over-sized copes!). This pinning helps to secure the stones, reducing their potential for movement during settling. Finally wedges are jammed into any gaps in the top of the cope to tighten them. In BTCV's "Dry Stone Walling" I refer to this as lock[ing] the top, and I think Rainsford-Hannay refers to a regional style known as 'locked top' which is this method taken to extremes, unfortunately the ongoing building works means the book's buried somewhere. Again take care not to use wedges which are large enough to force the copes apart, although at this stage if they move that much you should probably consider re-setting them in a different order anyway!

When the coping is set to one face of the wall the coping requires a slightly different approach in that you start with the back. These wedges are very important not only do they help prevent the copes moving they are often all that prevents some of the levelling stones from being easily displaced. Where the coping stones come most of the way across the wall there isn't enough space to fit a wedge Hence the need to ensure all the levelling stones run into the wall and to be careful in how you mix the lengths of cope. )

It is probably best to try and group these not quite long enough stones, or at least not alternate them with the much shorter ones. Groups of shorter stone do make wedging easier, but the copes themselves might be less secure. It can be a delicate balance. Whatever do not waste longer stones alongside each other, always try to put them alongside shorter stones to facilitate wedging. Beyond these constraints the actual wedging itself can be problematic, as the best stones to use tend to be flat, and you've probably just used them to level the wall off. Anyway it is important to remember that these wedges are an integral part of the coping and should not just be an afterthought "banged on" (at the end of a competition!!). Having no suitable stone left for this is not really an excuse for shoddy work. These wedges are an integral part of the cope and you shouldn't have used them all up in the first place if this is the style of cope you are going to create or re-create.

Each wedge should run length into the wall, and fit tightly with their neighbours, sat vertically as with the cope. Work in sections between longer copes or where you have managed to get a particularly good long wedge in-between two of the backs of two smaller copes.



Work from the anchor point towards the centre of the gap, before jamming the last wedge in to tighten them all up. Smaller gaps should be filled as for pinning outlined above. If you run out of suitable stone then sit rubble as soundly as you can it will hopefully help hold the levelling stones to some degree. You then pin the front and subsequently the top as described earlier.

Most of the problems wallers encounter with wedging the back of the cope comes about as a result of poor planning. Had the wall been narrower at the top then it might not have been necessary, maybe if it had been a

fraction wider more substantial wedge stones could have been used. More thought could have been placed in ordering the stones to facilitate wedging, wedges could have been saved. It is something of a truism with walling that the answer to the question 'How do I solve this problem' is not to create it in the first place!

Hopefully that's the basics dealt with, more next time, unless I have a more interesting offer.

Sean Adcock