

(Various) Hand-building Techniques: **Instructor: Sam Morgan**

Each art assignment may focus on a specific hand-building technique to help you learn it. Once you have the major techniques down and you are taking additional terms of ceramics, you will have more freedom to choose which clay forming techniques you would like to use for your projects. Certain clay forming techniques are more conducive for making certain things. Also, each technique may give the surface a specific look so keep these things in mind as you advance in ceramics.

1) **Pinch pots:** The pinch pot method of forming clay was used extensively by the Native Americans and other cultures, ancient to present, to make pottery. Many of the pots were started with a pinch pot base that was cradled in a stand while the top of the pot was finished with coil-building.

Start by slowly rotating the ball of clay as you gently punch your thumb through the center of the clay just short of going all the way through the other side. Next, continue to rotate the ball of clay as you pinch rhythmically from the center, spiraling out to the rim. Pinch in such a way as to keep the developing semi-sphere from becoming too flat. You want the wall thickness to be appropriate for the size of the object you're making so adjust the pressure of the pinching accordingly.

If you want to make a hollow sphere, make sure you start out with two equally sized balls of clay before shaping the semispheres. After the clay is leather-hard, you can score and slip to joint the two halves, then refine the sphere's shape with your hands and/or tools. Make sure to make an air vent in the sphere or it will explode in the bisque-firing!

2) **Slab construction:** Slab construction can be done with fresh wet clay all the way to leather-hard clay. (To get your clay to leather-hard, read the leather-hard section of the "Clay and Engobe Information" handout.) Wet clay attaches well to wet clay and leather-hard clay attaches well to leather-hard clay. Only clays with plenty of grog, such as DWS, will allow you to attach wet clay to leather-hard clay without much trouble. Fine particle clays such as porcelain and Mac-10 won't be as forgiving. Scoring and slipping is the primary way of attaching clay to clay, no matter what building/clay forming technique you employ.

NOTE: Do not rely on the wet sticky pieces of clay staying together just by pressing them together without scoring and slipping. The stickiness is due to the extra water (water of plasticity) in the clay and once that water evaporates, the stickiness also goes away causing the attached pieces to separate. Once the attachments come apart, it will be much harder or sometimes impossible to rejoin them. This is why you must score well and slip your attachments.

3) **Coil Building (type 1):** It's recommended always to start with a wet slab floor or a pinch pot base when coil building. A coiled floor almost always cracks during drying. (If you

really don't want to keep the floor in your finished piece, it can be cut away when the project is built and at the leather-hard stage.) Score and slip the first coil and the floor where they will be joined. **Firmly** attach the coil to the floor and blend the base of the coil well into the floor from the inside only. Score and slip the top of the previous coil and the bottom of the next coil. Smear the coils on the inside of your piece to add strength to the joint. Continue to attach your layers of coils in this manner, making sure you strategically position each layer to achieve the desired form. This technique gives the outside of your piece a horizontal banding. Mind the shape of the project as you build and keep adding coils until the piece starts to get a little unsteady. At this point, cover the inside and outside top 1"-2" with plastic and let the rest of the piece firm up a little, then remove the plastic and continue attaching new coils as described above. If you have to leave the piece for a number of days, cover the inside and outside top 1"-2" with a strip of plastic and then take a big piece of plastic to cover the entire piece tightly. Follow these outlined steps until you are finished building your project.

Coil Building (type 2): If you are not interested in the banding look of the above technique, there is a variation to this coiling method. You still must start with a wet slab floor or a pinch pot base. Use fatter coils and still attach the very first coil to the slab floor or pinch pot by scoring and slipping. Firmly attach this coil to the floor and blend the base of the coil well into the floor from the inside and outside. Now, you may pinch the coil to create some height. Make sure you maintain an appropriate wall thickness for the size of your project. If you are planning on doing a lot of carving on the surface of your project, you must build the wall thicker so you'll have enough clay to carve away. Note: The process of pinching clay will cause the form to flare. As you pinch bring your hands toward each other if you want to reduce the flaring, or pinch and let your hands move apart to increase the flare. This will help you direct the form of your piece as it gets taller. Without scoring and slipping, add the next coil making sure that you maintain a ½ coil overlap from the previously added coil. Attach the new coil to the inside of your project to reduce the amount of flaring in the form or to the outside if you want a lot of flaring. Smear the inside and outside of the overlapped previous and new coils to insure a proper attachment. Next, pinch the new coil to develop height and to direct the form. Attach the next coil and pinch it in the same way as previous described. Mind the shape of the project as you build and keep adding coils until the piece starts to get a little unsteady. At this point, cover the inside and outside top 1"-2" with plastic and let the rest of the piece firm up a little, then remove the plastic, slip and score the next attachment because you are not attaching fresh wet clay to fresh wet clay on this course. If proceeding immediately to the next course, you won't need to score and slip. Follow these outlined steps until you are finished building your project. If you have to leave the piece for a number of days, cover the inside and outside top 1"-2" with a strip of plastic and then take a big piece of plastic to cover the entire piece tightly. This variation to coiling allows you to build faster because you have to make fewer individual coils and have fewer coils to attach.

Variation to Coil-building using slabs: You can use slabs instead of coils for building. The slabs must be scored and slipped and overlapped at the joint to insure a good bond.

Finishing all types of coiling: No matter which coiling technique you use, the following steps are the same. Once you are done coil building your project, I recommend keeping the whole thing covered tightly for at least a day to let the moisture even out, then slowly dry it to

leather-hard. At leather-hard, do any desired carving, engobing and surface finishing. Finally, let the project dry evenly.

4) **Building solid:** If your work needs to be built solid (thicker than 1” thick), you will want to hollow out the inside at some point (somewhere between wet and leather-hard) or the piece could take a long time to dry and still explode in the bisque-firing. To build solid without creating air pockets, I recommend you roughly shape your pre-wedged clay into the desired form. Let the clay get to leather-hard, then cut the piece in half and carve out the inside or leave whole and hollow it out through the base. Next, score and slip the two hollowed out halves, join them firmly and make sure to leave air vents where you have enclosed spaces with trapped air. The last step is to refine the shape and surface of your project. If using engobe, it should be applied at this point while the project is still leather-hard!

5) **Clay Cylinders (type of slab building):** This is a variation to slab building. Roll out a slab of clay to a thickness that is appropriate to the size of your intended project, make the slab thicker if you plan to do some carving later. Make sure you are rolling out enough clay to get the diameter and height you want for your clay cylinder.

Cut a straight edge along one length of the slab and remove the irregular edge. Lay a thin piece of newspaper on top of your clay slab. Make sure the paper is aligned with the straight edge of the clay. Take a paper tube that is close to the diameter you intend for your clay cylinder. The tube can be smaller or larger than what you need. It won't be a problem. The next step is to place the tube at one end of the slab with the end of the tube aligned with the straight edge of the slab. Gently roll the clay around the paper tube. With the “straight edge” end down, stand the clay and paper tube upright. Remove the paper tube and newspaper by opening the slab just enough to free the paper. Increase or decrease the diameter of the clay cylinder by gently adjusting the overlap of the clay ends. Make a vertical bevel cut through both layers of the slab at a place that has clay overlapped, remove the scrap ends and register the freshly cut edges so that they match up nicely. Now smear the clay at the attachments from both the inside and outside to bond the joint. You don't have to slip and score if you are working with fresh wet clay. If it has done some drying or if in doubt, score and slip to insure a strong joint.

Remember the rule regarding when you don't have to score & slip when attaching clay pieces. You must perform all three steps (below), or you need to score and slip your attachments:

1) The pieces of clay that are being attached to each other must be fresh wet clay.

2) You must have a lot of surface area at the joint by:

-the clay pieces being overlapped (Read coiling with fat coils, above.)

Or

-the ends that are being joined have been bevel cut.

3) Thorough smearing and compressing from both the outside and inside of the walls.

(Therefore do not use this technique when dealing with the floor of a piece.)

Once you have your clay cylinder, you may push the clay in or push it out to create form and movement in the piece. You can also make dart cuts to change the form more dramatically. The 4 different dart cuts (below) show how the profile of the cylinder can be changed: