

# Paper Clay For Sculpture

Ideas to use paper pulp as an additive to clay in hand-building ceramic sculptures or functional items.



Judy Nelson-Moore: "Anasazi House",  
60" tall, fired paper clay

## Why use Paper Clay?

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- 1. Very strong** when leather-hard to dry  
This means you can build shapes that you just can't structurally manage with regular clay
  - thinner
  - extensions that wouldn't hold weight in regular clay
  - larger
- 2. Less cracking**
  - Still cracks under some conditions, but not as much
  - Stress cracks during drying lessened significantly
  - Imbed stuff into clay, stuff that fires out or doesn't fire out, like straw, grass, fired clay pieces, metal.
- 3. Build wet on dry**
  - More flexibility in working methods
  - Expanded shape library
- 4. Lighter-weight** after fired: An advantage for larger sculptures (testing showed 12-15% lighter after fired)
- 5. Single-fire**
  - Saves on firing costs and effort
  - Unfired dry paper-clay absorbs glaze without breaking piece.
- 6. Build faster, more freely, and more spontaneously.**  
Many artists report expanded vision and creativity.
- 7. Break the rules and still have success**
  - Joining methods less critical
  - Break off pieces after dry and re-attach somewhere else
  - Mend pieces after dry or bisque, even fired to temperature
  - Thick and thin don't crack
  - Force-dry to facilitate building faster and bigger
- 8. More porous after firing**
  - Can file, carve, drill or saw more easily
  - Post-firing surfacing of all kinds can work better
  - Absorbs glazes well, even if bisqued to higher temperature
- 9. New methods and techniques**
  - Fired or unfired
  - Combinations of materials not possible with regular clay, fired or unfired
  - Different ways of working, use like wood, castable sculpture material, many other ideas possible.
- 10. Transportable**
  - More easily transport to kiln in remote location, stronger
  - More easily transport large, fired pieces (lighter)

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## Techniques for Working with Paper Clay

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For the most part, you can treat paper-clay just like regular clay, but it does handle a little differently. It is a little harder to “move” the clay. If you do a lot of carving, the paper pulp can interfere with clean, precise carving. It feels different and takes some getting used to. Most significantly: It molds after a period of time. The period of time varies from 1 week for paper-clay made with toilet paper to 2-4 months for commercially made paper clay.

Here are some techniques to handle these and other differences:

1. Use very sharp knives (Exacto-type) instead of usual dull fettling knife.
2. Wet and score the existing clay very well when adding wet to dry or repairing with paper-clay slip. This helps to “meld” the paper fibers from the new clay into the dry existing structure.
3. Firing: Remember that paper will burn out, and thin clay that is left is more subject to warping, cracking and breaking than thicker regular clay.
4. Paper clay still cracks and warps...just not as much as regular clay.
5. Fired qualities and most of working qualities depend on base clay body to which paper is added. Firing temperature is extended somewhat because of porosity up to a certain point. At lower temperatures (below cone 6) the clay is stronger when fired. At higher temperatures, the clay body will slump and/or crack and tend to be over fired. Thin pieces fired at or near vitrification will still crack, warp or break.
6. Paper clays dry more evenly...may appear to not be drying....then all of a sudden, it is dry!
7. If you like to carve clay, you may find it more difficult because of the paper fibers. One way around this is to fire to 1000 degrees Fahrenheit and then it carves easily (but is somewhat fragile at that temperature).
8. To avoid mold and rot of paper, use mixed up paper clay quickly or store as dry slabs and then re-wet with damp cloths when ready to use. If it does mold, just dry out and then re-mix into a slip. Add some cleaner, like 409, or mold guard used in humidifiers, to the slip when making or re-constituting paper clay. Avoid Clorox as it will tend to break down the paper. One source says making the clay with pure cotton linter (which you can buy from the art-supply store) will reduce the mold factor.
9. Mix some paper clay with magic water as supermending slip. Magic water is made with 3 tablespoons liquid sodium silicate and 1.5 teaspoons dry soda ash per gallon of water.

## New Clay Methods Using Paper Clay

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Here are some ideas for new ways to work with paper clay that are different from traditional clay working methods.

1. Dry Slab method. Work with dry slabs, joining them with paperclay slip and magic water. Take advantage of the strength of dry paper clay and preserve the texture applied to the slabs. Slabs can be pre-formed as flat, curved, or any shape. You can use tools and techniques similar to wood working or paper sculpture on the dry slabs.
2. Dry framework method. Make a sculptural “skeleton” shape and let it dry. Then, add paper-clay “skin” over the top and finish in whatever surface look you like. This method allows you to build a larger, more radical shape. Use pieces of metal as the framework...found or welded. Some cracking of clay around framework can be expected, especially around metal.
3. Add other inorganic materials, such as pieces of metals, rocks, dirt, dry glazes, fired clay pieces. These can be added as layers to slip, casting into forms, and then saw them up. Can build clay around metal “hardware cloth” or wire. Clay will crack and pull around metal, but not as much as regular clay. Variations in materials when firing will produce interesting “layers” or texture effects. The bond between clay and paper may be broken somewhat by these materials if they are well-mixed into the clay (like grog), so the green-strength may be reduced.

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## New Clay Methods Using Paper Clay (continued)

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4. Add inorganic materials, such as straw, wood, weeds, pet litter or food, corn cobs, etc. These will burn out in the firing, if you fire the pieces, and make an interesting texture.
5. Dip string, rope, fabric, or other objects into the paper clay slip and build with them. You may need to dip or brush 3 or more coats on the material to make a thick enough coat to hold up in firing.
6. Put paper-clay slip thin on flat plaster surface to make slab. When dry enough, roll, cut, etc. to make form.
7. Don't fire...build the piece in any kind of method, including solid, and let it dry. Finish with any number of "cold" surfacing techniques to seal.

## How to make Paper Clay

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**To Make or Buy:** First, let's discuss why you would make your own paperclay when you can buy it. Although some people don't have a local source, if you are near a metropolitan area with a large ceramic supplier, chances are they will carry paperclay. However, making paper clay allows you to control the proportion of clay versus paper, the kind of paper, and the clay body. Use clay scraps or old clay that other people give you to reduce the cost. Also, you get a nice slip that can be used for unconventional construction methods requiring slip. Personally, I do both (make my own and buy commercial paperclay). I also buy magic clay from New Mexico Clay, which has similar properties to Paper Clay, but is made with nylon fiber instead of cellulose so it doesn't rot.

### Materials to Make Your Own Paperclay:

Any clay body, dry to be made into slip, or slip. I prefer a body without grog or only a small amount of very fine grog.

Strong drill and paint mixer or plaster-mixer on the drill with blades.

Large metal or plastic container for paper mixing

Lots of buckets

Strainer (like food strainers)

Paper: Shredded office paper or shredded "brochure" stock is OK. Brochure stock that is very matt and tears easily is good. Cotton Blotter paper. Any paper that breaks down fast in water.

The easiest is toilet paper, but it molds quickly. Cellulose insulation has preservative that fluxes body a little, but is slightly slower to mold. Cotton Lintner (used by paper makers) seems to mold less.

### Method:

1. Work in an area where you can clean up paper and clay splatters.
2. Prepare clay slip: If wet, dry it out and break up into 1-2" chunks. Add hot water, let sit, mix with paint mixer until smooth. I mix slightly less than ½ bucket of slip. See measurement chart below.
3. Prepare paper pulp: Put very, very hot water into large container (50 gal?). Add paper and let sit to break down. Add anti-mold cleaner or 409 (1/4c or less per large container). Run paint mixer in container until paper is a "cloud"
4. Use strainers to strain water out of paper, but don't compress the paper pulp. Put the pulp in the slip bucket and mix it periodically with the paint mixer. Fill til bucket is about ¾ full. The clay will have a slightly lumpy appearance. Try to make it as smooth as possible. The secret is to make sure the paper is well broken down into a "cloud" so that no individual pieces of paper can be seen. Also, mix frequently and well when adding pulp to clay and do not let pulp get compressed or dried out.
5. Pour mix out on to large plaster bats.
6. Lift and wedge when just dry enough to hold together. Or, use slip for other construction methods.
7. This makes paper clay that is about 30-40% paper by volume. Change proportion of slip and clay for other purposes. Use a ruler sunk into the slip before/after adding pulp to measure volume of clay and pulp.

# Paper Clay For Sculpture

## Measuring Paper/Clay Proportions When You Are Making Paper Clay:

You can either make it by the wet volume measure or by the dry weight measure. The dry weight measure is more accurate, but takes more time. Below is a reference I have developed by doing it both ways and showing the level in a 5 gallon bucket.

1 ounce = 28.35 grams  
1 pound = 453.6 grams

### 20% pulp by volume = 2.5% dry weight

6" slip in bucket (20 pounds dry clay/9072 gms). Add to 7.5" wet paper pulp (8oz/226.8g dry paper)

### 32% pulp by volume = 3.7% dry weight

8" slip in bucket (25 pounds dry clay/11340 gms). Add to 11.5" wet paper pulp (14.8oz/420g dry paper)

## References

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Here are a few of the books and reference materials I have found helpful:

### Books:

Rosette Gault, *Paper Clay for Ceramic Sculptors*, A Studio Companion, Clear Light, Seattle, 1993 (Third Edition, 2003).

Rosette Gault, *Paper Clay, Ceramics Handbooks*, University of Pennsylvania Press, Philadelphia, 1998 (Second Edition, 2005).

Anne Lightwood, *Working With Paperclay And Other Additives*, Crowood Press, UK, 2000.

### Magazine Articles

See lots of magazine article references on Graham Hay's website...see URL below. Here are a few that I have seen.

Baker, W.Lowell, *Spraying Paper-Reinforced Clay*. *Ceramics Monthly*, November, 1998 p. 46.

Fowler, Lorri Acott, *Creative Process of Paperclay*, *Sculptural Pursuit*, Vol. 4 No. 5. Winter 2005, p 42.

Gault, Rosette, *Paper Clay – New Ways*, *Ceramics Technical*, Issue 18?.

Gault, Rosette, *Success with large Scale Paperclay Porcelain and Beyond*, *Ceramics Technical* 2004, reproduced on Graham Hay's website in the article links.

Gault, Rosette, *Rules, Rules, What Rules?*, *Sculptural Freedom with Paper Clay*, June/July/August 1996, p 77.

Gault, Rosette, *Amazing Paperclay*, *Ceramics Monthly*, June/July/August 1992, p 96.

Gault, Rosette, *The Potential of Paper Clay*, *Ceramics Technical*, Issue ?, 1994. reproduced on Graham Hay's website in the article links.

Michaud, Joyce, *Paperclay Sculpture with Ian Gregory*, *Clay Times*, Sept/Oct 1999, p 11-13.

Buy cotton linter in sheets from Daniel Smith ([www.danielsmith.com](http://www.danielsmith.com)) or bulk from Arnold Grummer's ([www.arnoldgrummer.com](http://www.arnoldgrummer.com)).

### Websites:

- Ceramics Today: <http://www.ceramicstoday.com/articles/040901a.htm>
- Rosette Gault's site (the original paper clay lady): <http://www.paperclayart.com/>
- Brian Gartside's site (New Zealand artist working in paper clay): <http://www.gartside.info/paperclayintro.htm>
- Graham Hay's Site (Australian artist working in paper clay): <http://www.grahamhay.com.au/paperclay.html>
- There is a yahoo group for paper clay. Link to it from Graham Hay's website links page.
- Vicki Hardin's Clay Art Web Guide: <http://www.vickihardin.com/links/paperclay.html>
- Jerry Bennett (a paper clay artist in Philadelphia): <http://www.jerrybennett.net/>
- Jerry Bennett's blog about paper clay: <http://paperclay.blogspot.com/>
- 2004 Symposium on Paper Clay - FIRING FIBRES at the International Ceramics Studio, Kecskemét, Hungary: <http://www.icshu.org/air/2004/pclay/paperclay.htm>
- Wikipedia article: <http://en.wikipedia.org/wiki/Paperclay>