

Contemporary
Metal Clay
Rings



Hattie Sanderson



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To my children, Trent and Rosie, thank you for making sure I don't take myself too seriously.

To my editor, Tim, thank you for your wisdom and guidance.

Introduction

Rings are a wonderful way to express individuality. Metal clay allows us to create fabulous rings that might be difficult to achieve using traditional metal fabrication or casting techniques.

I fell in love with ring making while taking traditional metalsmithing classes. I took my first metals class because I wanted to work three-dimensionally after working “flat” in print media for several years as an art director in the graphic design field. I heard about metal clay by chance in the mid-1990s during a lost wax casting class. I was intrigued at the possibility of silver in the form of a malleable clay—so much so that I bought 50 grams of clay and a kiln. At the time there was not much information available on how to work with the medium. It was frustrating to work with at first because the clay seemed to dry out quickly and I felt clumsy trying to form it.

I now see the lack of information as a blessing because it forced me to develop my own working methods. Fortunately, it didn’t take long for silver metal clay enthusiasts to start sharing techniques, techniques that have now become standard practice. Over time, classes were being offered and guilds formed. All sorts of people, from accountants to artists, started working with this amazing medium and came together to share information. Over the years, other types of metal clay have been developed including gold, bronze, copper, steel and silver alloy. Today there are many books, videos, workshops, websites, online chat groups and guilds dedicated to metal clay.

I share my love of metal clay by teaching workshops internationally, through my DVD instructional series and now in this book. Rings are a particular love of mine. My focus over the last several years has been to develop a working methodology specific to making rings out of silver metal clay. I am proud to be a part of the continuing evolution of such an expressive art form.



Hattie Sanderson, *Nested Pearl*, fine silver, 22k gold metal clays, pearl.



Hattie Sanderson, *Green Trillion Ring*, sterling silver metal clay, lab-created gemstone.

About Metal Clays

Metal clay is a malleable clay-like material that is available in various metals and alloys. All metal clays are made up of microscopic particles of metal, water, and a non-toxic organic binder. The clay can be easily shaped by hand, textured and formed into various shapes. Once formed, the water in the metal clay is allowed to evaporate, drying the clay into a solid but somewhat fragile state. The metal clay is then heated to sintering temperatures in a kiln or other firing apparatus. As the binder burns off, the piece shrinks and the metal particles fuse to form solid metal. Once cooled to room temperature, the metal is polished as a final step to complete the piece.



Metal clay is currently available in silver, silver alloys, gold, copper, bronze and steel. Metal clay also comes in different formulas with varying particle sizes and shrinkage rates. Silver clay is available in a variety of forms including lump clay, slip, syringe, and sheet.

For this book, I will be using fine silver and sterling silver metal clays and because the tools and working methods are generally the same, you can use this book to create rings using other clays. Refer to the specific manufacturer's information for shrinkage rates and firing schedules.

While metal clays can be soldered after firing, I have chosen to forego any projects that require soldering so people with no prior metalsmithing skills can create awesome metal clay rings. Of course each reader will bring his or her own expertise to the process. Alternate techniques such as soldering and riveting will be mentioned in some situations for readers with metalsmithing skills.

About this Book

The first chapters introduce tools and techniques for forming silver metal clay in general and then move on to forming tools and techniques that are particular to ring making. I have divided the ring techniques into six distinct ring styles. You will learn how to add inclusions and embellishments such as fused glass, gemstones, pearls, gold, resin, and commercial silver components. The chapters then move through the tools and techniques for drying, refining, firing, and finishing. An Appendix covers resizing, repairing, reconstituting dry clay and storage. Next you will find several step-by-step projects and an inspiration gallery.

For those new to metal clay I have included a starter project series made up of simple pendant designs that are easy to create. These allow a beginner to get a feel for the working properties of metal clay before moving on to the ring projects which can be a bit more challenging.

The skills learned there can be used to create rings through several step-by-step projects that range from easy to intermediate and advanced levels. Mix and match the techniques to create unique rings that express your individuality. Most importantly, have fun and enjoy the process!

Design Considerations

It is helpful to think of rings as three-dimensional sculptures. They should be aesthetically pleasing from all angles and each part should contribute to the whole. I sometimes use polymer clay to work out ideas three dimensionally before committing the design to metal clay. This allows me to foresee design or construction problems and make alterations as needed.

Safety

Use common sense when working with metal clay and related tools. Metal clay is made up of metal particles, non-toxic organic binders, and water. None of these items are dangerous to handle, but avoid ingesting or breathing them in (just as you would not want to ingest or breathe in any type of foreign particles). Each person is responsible for his or her own well-being. Use the following safety tips when working with metal clay and related tools.

- Wash your hands before eating.
- Wear a particulate respirator when filing metal clay.
- Do not wear loose fitting clothing and tie hair back when working with any type of power tools.
- Fire metal clay in a well-ventilated area.
- Read the metal clay Materials Safety Data Sheet (MSDS) that is available wherever metal clays are sold.



Hattie Sanderson, fine silver metal clay.

HattieS® Products

As I taught myself about using metal clay I created a line of products under the HattieS® brand name, all developed to make metal clay work easier and more predictable. They were born out of my own needs as an artist when attempting to perform various tasks with metal clay. I came up with some tools for my own use then decided to have them commercially manufactured so others could take advantage of what I'd learned. I could not write this book without the use of some of these products so they will be mentioned in the following pages. Wherever I can I will also offer alternative tools or methods.





Hattie Sanderson, *fine silver, 22k gold,
blue topaz, white sapphire.*

Chapter 1

Tools & Materials

TOOLS & MATERIALS

Rings can be created out of any type of metal clay. This book focuses on silver clays that are available in various formulas from several manufacturers. I use two types of clay for ring making: the latest generation of fine silver clay (PMC3® or Art Clay 650®) and sterling clay such as PMC Sterling.

Fine Silver Metal Clay

Fine silver metal clay, introduced in the United States in 1996, is 99.9% pure silver when fired. Over the years, various generations of fine silver metal clay have been introduced, each generation being denser, stronger, and having a lower shrinkage rate than its predecessor. The newest generation of fine silver metal clays make the best choice for rings because they are the strongest.

Gram for gram, fine silver is more valuable than sterling silver (an alloy that contains 7.5% copper), but it is also a softer metal. Considerations in design and construction can be made to compensate for the softer metal such as making the walls a bit thicker and wider. I have had good results using this approach—for several years I've worn a fine silver wedding band every day and it has held up well.

Fine silver metal clay is fired in an atmosphere environment, which simply means the same air that we breathe and that is all around us. Because of this it can be fired in a variety of ways such as with a torch, a camp stove device, or kiln. Depending on the manufacturer, this type of metal clay shrinks between 8-15% during firing. Fine silver tarnishes at a slower rate than sterling silver.

Sterling Silver Metal Clay

Sterling silver metal clay, introduced into the United States in 2011, is 92.5% silver and 7.5% copper after firing. It is approximately three times stronger than fine silver metal clay which makes it ideal for rings.

Because of the great strength of this metal clay, ring designs can have thinner and narrower walls than fine silver rings.

Sterling silver metal clay requires a two-step firing process. Objects are fired in air (atmosphere firing) to burn off the binders and then in an enclosed container with activated carbon to fuse the metal particles (reduction firing). Details are given in Chapter 4, Firing.

This type of metal clay shrinks in the range of 15-20%. Sterling metal clay will tarnish at about the same rate as conventional sterling silver.

Silver Metal Clay Forms



Lump Clay



Syringe Clay



Slip



Oil Slip



Sheet

Lump Clay

Silver metal clays, regardless of manufacturer, are all available as a ball of clay, and this is by far the most commonly used form. It can be rolled, textured, shaped, and draped into almost any design you can dream up. Use bits of lump clay along with water and slip to fill in gaps or cracks.

Syringe Clay

Syringe clay is a thinner version of lump clay and comes pre-loaded in a plastic syringe. Use it with or without tips to create lines, embellishments, or patterns. It can also be used to fill gaps and cracks. Another approach uses syringe clay to build up several layers on a piece of plastic to create a filigree effect. Let this dry then remove it from the plastic before firing. Another creative way to use the syringe clay is to build up several layers over a burnable core to create a hollow form.

You can load your own syringe with the metal clay of your choice by pushing the end of a paper clip into the extrusion end of an empty syringe. Next push a lump of metal clay into the syringe that has had some additional water kneaded into it to make it a softer, wetter consistency. Place the syringe plunger into the end of the syringe and press down on the clay to compress it and to remove any air pockets (removal of air pockets is aided by the presence of the paper clip). Remove the paper clip when the clay begins to extrude.

Slip

Slip, also referred to as paste, is the consistency of a thick milkshake. It is used most often to join parts, but can also be used to add texture, cover an armature, and to make repairs. It can be watered down to a thinner consistency for certain applications. Many metal clay brands offer a commercial slip.

To make your own slip, spread fresh clay on a work surface with a palette knife and work in distilled water until it forms a thick slip. Scoop the slip into a



Hadar Jacobson, *Tower of Rings*, steel, bronze, and silver clay. Photo by the artist.

small container that has an airtight lid. Alternatively, you can grind up small bits of dried out scrap clay and add distilled water to make slip. See the Appendix for more information.

Oil Slip

Oil slip, also referred to as oil paste, is a stickier version of regular slip. Originally, the purpose of this mixture was to join already fired pieces and to make repairs. I choose to use homemade oil slip all the time, whether I am joining fired or unfired pieces. It also works well for joining fired fine silver metal

clay components to fired sterling clay components. Oil slip has a stickier consistency and takes a little longer to dry.

Make oil slip by adding essential oil to regular slip, either commercial or homemade. I typically add 25 to 35 drops of essential oil to 15 grams of slip; modify depending on how much slip you have. Stir the mixture well, cover, and let it sit for 24 hours. Add more oil or distilled water to achieve a thick sticky slip. Essential oils can be found in health food stores or places that supply candlemaking and aromatherapy. They are available in pure or tinctured versions. If using pure, add a few drops of rubbing alcohol and distilled water to the mix. While lavender oil is most commonly referred to among metal clay artists, lemon, grapefruit, orange, almond, and peppermint oil will achieve similar results.

I want to mention a commercially available fine silver oil slip called Art Clay Oil Paste. The specific purpose of this product is to join fired fine silver clay components and make repairs to fine silver metal clay. I use this product to create a super strong bond between fine silver bezel wire and fired metal clay

for cabochon stone setting (see Chapter 6, *Additions & Inclusions*). Note that this product cannot be used to join unfired metal clays. Also, it requires temperatures above the melting point of some alloy clays. As always, be aware of the melting point of the metal you are using, and match materials that sinter below that temperature.

Some manufacturer's offer specialty slips for specific applications such as bonding metal clays to ceramics and glass. An example is Art Clay Overlay Paste. I like to use this when adding gold accents to silver metal clay.

Sheet Clay

Sheet clay is literally a thin sheet of unfired metal clay that looks like a sheet of paper. It is flexible and can be folded, laminated, or cut out with paper punches. It does not dry out like the other forms of metal clay because it has a different binder and contains no water. Use only a tiny bit of water when joining sheet clay either to itself or other types of metal clay or it will quickly dissolve into slip. Sheet clay does not stiffen like other forms of metal clay.



^ **Patrik Kusek**, fine silver, 22k gold paste. Photo by Abby Johnston.

< **Deb Munroe**, *Spinning Pearl Bijou*, fine silver, bronze & copper clays, pearl, bronze wire shank. Photo by the artist.

QUESTIONS AND ANSWERS ABOUT DIFFERENT TYPES OF CLAY

Q: Should I use fine silver or sterling clay for my project?

A: The differences between sterling clay and fine silver metal clay can be confusing when you are first working with them. The projects in this book are designed to take you through several different scenarios, some that use just one type of silver clay, and others that use a combination. Each project specifies which type of silver clay can be used. There are times when you can use the silver clay type of your choice and there are instances where you need to use a specific silver clay type to achieve certain results. In these cases, the reason you need to use a specific type of silver clay will be explained. As you work through the projects, you will gain an understanding of the working properties and firing requirements to achieve various designs.

If you are new to the medium, I suggest that you work with fine silver metal clay at first because the firing is less involved than the reduction firing needed for alloys. Also, you have the option of using firing devices that are less expensive than a kiln. Once you are comfortable with the working properties of fine silver metal clay, you can add working with sterling clay.

Q: Why would I use both fine silver and sterling clay in the same piece?

A: Imagine a ring with a glass inclusion. You can create the ring shank from sterling clay for its strength. The ring top that houses the glass inclusion must be made from fine silver metal clay because it must be fired at temperatures lower than needed for sterling clay. The shank and top would be fired separately. Then the fired components are joined with oil slip and fired again.

Q: Can I knead silver alloy & fine silver metal clays together?

A: Yes, for instance when changing the alloy. It is important to mix well to achieve thorough homogeneity. Note that firing temperatures will change depending on the proportions, so experimentation will be necessary.



Hattie Sanderson, wedding bands, fine silver, 22k gold.

TOOLS

Workspace

One of the great things about working with metal clay is that only a minimum amount of space is required for a work area. It can be as simple as a card table in the corner of a family room or as sophisticated as an artist's studio. The set-up can be permanent or it can all be packed away into a storage container between projects. Avoid areas with drafts from heaters, fans, or air conditioning because these will dry out clay. If you live in a dry climate, consider running a humidifier near your work area. You will also need good lighting and a well-ventilated area for firing the clay.

Forming Tools

Many tools for forming metal clay are items you might already have and the rest are available from metal clay suppliers or local craft and hardware stores. When choosing tools, note that aluminum should not come in direct contact with unfired silver metal clay because it will cause a reaction that degrades the clay. Short term contact with aluminum such as using a cookie cutter is fine, but do not drape a slab of metal clay over a piece of aluminum foil to dry. There are no adverse affects once the silver metal clay has been fired.

If you work with more than one type of metal clay (fine silver, sterling clay, bronze, etc.) it is important to wash your tools when switching metal clay types to avoid cross-contamination.

Work Surface

Use a clean, smooth, non-porous work surface that is dedicated to metal clay. This will prevent the clay from being contaminated with surface dirt or other foreign materials. Commercial work surfaces are available from suppliers with various grids and helpful tips, or use a sheet protector, piece of transparency film, non-stick baking sheet, ceramic tile, or sheet of glass. Clean the work surface well when switching metal clays.



Humidifier & Plastic

Metal clay will begin to dry as soon as it is exposed to air so to keep the clay moist, steps need to be taken as you work. Best clay forming results are achieved by keeping it as moist as when you first opened the package.

During a work session, store the clay in a humid environment. Various metal clay humidifiers are available from suppliers or you can make your own. I use a plastic sheet as the base then cover the clay with an inverted plastic container into which I have glued a small piece of sponge. The sponge is saturated (but not dripping) with water. This creates a humid environment for clay storage during a work session. This humidifier keeps my clay in fresh-from-the-package condition all day. I also use this humidifier as a metal clay storage container. See the Appendix for details.

Keep several 4" x 4" (100 mm x 100 mm) squares of good quality plastic food wrap on hand to wrap clay for storage or to cover clay components on your work surface so they stay moist while you are working on another component.

Plastic food wrap can be tricky to work with. It is well worth purchasing the highest quality, thickest type available. To make nine 4" by 4" (100 mm x 100



mm) squares, tear off a 12" (310 mm) length of the wrap from a 12" roll. The easiest way I have found to cut the plastic into section is to scrunch together a 4" section and cut it with scissors. Repeat scrunching and cutting until you have nine pieces. Crumple these into loose balls and store them in a bag or container until you are ready to use them. Scrunching up the pieces keeps them from sticking to each other and makes them easier to handle.

Non-Stick Product

Use a non-stick product on your hands to prevent clay from sticking to them and as a way to deposit a thin film of oil on the clay that will retard drying. It is also used as a release for textures, stamps, or molds. You may find that some tools work better with a non-stick coating as well. Non-stick products are available from suppliers or you can use an olive oil saturated sponge, Badger Balm, or other olive oil-based lip or hand balm.

Each artist needs varying amounts of non-stick product on their hands and more or less frequent application. It is best to use as little non-stick product as possible so use it sparingly. I find that I need very little non-stick product on my hands for fine silver metal clay and none at all on my hands for sterling clay.



Water & Brushes

A container with a lid is ideal for water so that you can store the unused portion and collect bits of silver that accumulate in the bottom of the cup over time. Place a sponge on one side of the water container for cleaning excess slip off your brush or to moisten the brush just a bit for dry brushing techniques. I use polymer clay to make a brush rest on the edge of my water container. Over time, silver particles will settle in the bottom of the container in the form of a silver sludge that can be scooped out and added to the slip



Jennifer Smith-Righter, *Castle Ring*, fine silver, gold, chalcedony, garnets, CZs. Photo by the artist.

jar. Use a dedicated water container for each type of metal clay. A fine mist sprayer is handy for adding water to clay as needed.

Use a #1 or #2 round paint brush for adding water or slip to specific areas. This brush is also used to clean up excess slip from a joint. Most often I use just one brush for both water and slip, but keep several different sizes and shapes on hand for occasional use. Purchase brushes that are in the medium price range. While there is no need for expensive brushes, the really cheap brushes lose hairs constantly.

I like to use distilled water to keep the clay as free from contaminants as possible, but it is okay to use tap water in a most regions. If your water contains a lot of minerals, use bottled water.

Palette Knife

A metal or plastic palette knife is the ideal tool to stir metal clay slip before a work session or when adding essential oil, water, or crumbs of clay. It also works great for scooping up the metal clay sludge that accumulates in the bottom of the water container.



Ruler, Pencils, Markers

A ruler with both inches and millimeters will come in handy. Use pencils, permanent markers and washable markers to make marks on both the clay and the work surface for identification and registration marks. Washable markers are available where kid's school supplies are sold.



Thickness Guides & Roller

To create slabs of clay with an even thickness, a roller is used over the clay with a thickness guide on either side. A roller can either be a length of PVC pipe or a commercial acrylic clay roller. Thickness guides can be either homemade from stacks of playing cards or purchased commercial millimeter slats. Over the years, playing cards have become a standard thickness measurement for this medium, which is why commercial thickness slats often come with a playing card conversion chart. Thicknesses vary slightly from manufacturer to manufacturer for both playing cards and commercial metal clay thickness guides and the amount of pressure used when rolling will vary from artist to artist, affecting actual clay thickness. In other words, use recommended thicknesses as a guide only. With experience you will come to know your guides and the pressure you use to determine what works best for you.

To make your own set of thickness guides, use glue stick or tape to join playing cards in sets of 2, 3, 4 and 5 cards. Stack the cards so that the suit number corresponds with the stack of cards (e.g., show the 5 of hearts on the exposed side of the 5 card stack). On the back side, use a permanent marker to mark the card thickness as well as the millimeter conversion.



Plastic Roller Sheet

To help keep clay moist while working, use a sheet of plastic to cover a slab of clay when rolling. A page protector, report cover or sandwich bag are all convenient and work well. I like to use colored plastic sheets that have been cut out from file dividers found at an office supply store because they are sturdy and last a long time.

Cutters & Tweezers

A tissue blade or a flexible metal rib make great tools for trimming slabs of metal clay. They are used to cut straight edges or can be flexed to cut curved slabs.

Tip: Paint nail polish on the dull edge of the tissue blade so you can easily identify the sharp edge when picking it up. Handle the blade carefully—it is very sharp.

The tissue blade and ceramic rib work well for trimming clay slabs that are less than about 2" (50 mm) long but I find that these metal blades can stick to the clay when trimming longer slabs such as ring shanks. I prefer to use the homemade cutters when trimming longer slabs because they will not stick to the clay.

A homemade cutter can be made from a playing card trimmed to 1" wide. A longer homemade cutter can be made from heavy, coated card stock (such as an





Julie Beucherie, *Blue Moon*, fine silver, moonstones, lab-grown sapphires. Photo by the artist.



Hattie Sanderson, *Nesting Rings*, fine silver, lab-grown gem.

old greeting card or brochure) trimmed to 1" x 5" (25 mm x 125 mm).

A craft knife is an indispensable tool for all types of cutting and trimming.

A needle tool is used for picking up small pieces of clay, cutting clay slabs from templates, joining seams and making holes. To create your own needle tool, make a polymer clay handle around a large needle and bake the clay according to package directions, or glue a needle into a length of dowel or a chopstick.

Tweezers are used to handle small parts such as findings and gemstones.

Rod Roller

A piece of clear acrylic, glass, or a CD cover all work well to roll out wires and rods. Rolling tools (sometimes called snake rollers) are also available from suppliers. Clear rollers have the advantage of allowing you to see the rod as it is formed.

Straws

Various sizes and lengths of drinking straws are great for making holes in clay. They are also used as armatures for forming round and oval bails. The

most commonly found are drinking straws and those served with cocktails, but other sizes can be found. Collect as many different sizes as you can because you will find uses for them.

Clay Shapers

Clay shapers come in a variety of shapes and sizes. Use them to smooth clay surface, edges and seams.



Drying Mats

HattieS® Drying Mats are miniature work surfaces used to measure, create, align, trim, and dry clay. They are an integral part of my working process. You can make a homemade version using a 2" x 3" (50 mm x 75 mm) piece of quarter-inch graph paper covered with clear packing tape. Alternatively, you can use a single playing card, a piece of foam rubber, or a piece of non-stick baking sheet as a drying mat.



Polymer Clay

I find that polymer clay is an indispensable tool. It can be used to work out a design three dimensionally before committing to metal clay. I also use polymer clay as armatures, to create texture plates, and to make tool handles for drill bits, needles, and small files. For consistency in this book, all the polymer clay you see will be this bright purple color.



Small Lidded Containers

In my opinion, you can't have enough small plastic containers in a metal clay studio. I use these containers to store dry scraps of clay until I have time to grind them up for reconstitution. They're great to hold various consistencies of paste, small components made in advance, beads, stones, and any number of other things.

Towels

Keep a hand towel and paper towels nearby to wipe your hands as you are working.

Tool Caddy

Keep all of your tools organized in a caddy of some sort. I use a desktop organizer from an office supply store. Look for different types of organizers from craft stores as well.



TEXTURE & SHAPING TOOLS

Metal clay is such an exciting medium because it can be textured and formed in almost any way imaginable. You have total control over how the clay takes form as you interpret the designs dancing around in your head. The sky is the limit in creating the look and feel of your finished piece from organic to funky to elegant.

Textures

Metal clay suppliers carry a wide variety of commercial texture sheets including rubber, plastic, stamped or etched brass and copper. They range from shallow to deep, subtle to bold. There are also many household textures you can use such as lace, sandpaper, wallpaper samples, and much more.

You can make your own textures in a variety of ways. Suppliers carry materials and tutorials for making textures from your own designs in photopolymer plates, laser cut paper or etched copper. Another option is to send your artwork to a rubber stamp manufacturer such as Ready Stamps (www.readystamps.com).



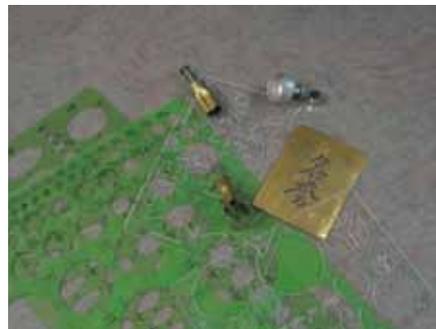
Impress metal clay with leather working metal stamps, letter stamps, nuts, bolts, knitting needles, leaves, seeds, or bark. Look around you—texture is everywhere.

Templates & Pattern Cutters

Templates and pattern cutters are an easy way to cut out geometric shapes and other forms in metal clay. You can purchase templates or create your own by cutting out index cards or piercing sheet metal with a jeweler's saw. Pattern cutters are available from metal clay suppliers. You can also find tiny cookie cutters at food supply stores or create your own by shaping a thin metal sheet.



Vickie Hallmark, *Swallow*, fine silver and wire.
Photo by the artist.



Carving Tools

Carving tools in different sizes and shapes can be used to carve directly into dry metal clay or to make textures by carving slabs of baked polymer clay, erasers or linoleum.



Molds

Molds make it possible to duplicate an existing object. Two-part silicone molding compound is used to create molds from objects such as buttons, pods, or shells. There are several brands to choose from. The mold material is flexible and usually does not need any type of release agent. Two or more molded metal clay components can be joined to create a hollow form.

To create a mold with silicone compound, knead together equal portions of the two parts (which are two different colors) until they become one color. Form the molding compound into a cone shape and press the point of the cone onto the center of the object you are molding. Carefully work the molding



compound around the piece, avoiding air pockets. Let the mold cure, a process that can range from a few minutes to almost an hour depending on the brand. To determine if the mold has set up, press a fingernail into the mold. If it does not leave an impression, the mold is ready to use.

Silicone molds replicate the details very well. Press a lump of metal clay into the mold and either let it dry there or carefully flex the mold to remove the wet molded clay.

Armatures

Armatures of all types can be used to create dimensional objects by draping metal clay and allowing it to dry. When the armature is removed, the dry metal clay retains the shape of the armature. Drape a slab of metal clay over found objects such as a bent paper clip, crumpled paper, straws, folded card stock, etc.

To form a dome, drape a sheet of metal clay over curved forms such as a plastic egg, light bulb, or commercial dome or cylinder shape. Wrap a slab of metal clay around a straw to form a tube. Almost any material will work as an armature. Some armatures will need to be covered with plastic wrap or non-stick product so they don't stick to the metal clay. Test armature with a small piece of metal clay first if you are not sure.



Burnable Cores

Burnable cores are used as an internal support during construction. As the name implies, the core burns up during firing. These materials must be non-toxic