

CREATE AND CAST SMALL PROSTHETIC PIECES AND BALD CAPS

INTRODUCTION

Prosthetic pieces and bald caps can be used for a range of applications, such as for realistic-looking baldness or for fantasy characters such as witches, clowns or sci-fi beings. This chapter discusses how to create a range of small prosthetic pieces and bald caps.

You will experiment with different products, tools and equipment to make your own prosthetic pieces, using materials such as latex, foam and silicone. You will learn to check that your prosthetic pieces are three-dimensional and well-proportioned. You will also apply prosthetic noses, ears, chins, brows, fingers, teeth and horns, and make full-face or half-face pieces and wounds.

This chapter will also show you how to follow health and safety protocols at all times and to communicate effectively with the performer.

In this chapter, you will learn:

- 1 how to cast, sculpt, mould and colour small prosthetic pieces and bald caps
- 2 how to create and enhance small prosthetic pieces and bald caps.

1 HOW TO CAST, SCULPT, MOULD AND COLOUR SMALL PROSTHETIC PIECES AND BALD CAPS

Products, tools and equipment

▼ **Table 17.1** Products used when casting, sculpting, moulding and colouring small prosthetic pieces and bald caps

Hair gel	This is applied to the performer's hair before fitting a bald cap. Soap and water can also be used – see Chapter 12, pages 274–275. GF-Qat gel is also a good hair flattener.
Latex	This can be used to make prosthetic pieces and bald caps.
Gelatin	This food product can be used to make prosthetic pieces and products for special effects. However, pieces made from gelatin cannot be stored so they can only be used once. It is very cheap so it is mainly used for low-budget productions.
Silicone	This is a newer product used to make prosthetic pieces. It is very malleable and light and it blends into the skin realistically. It is usually made up of separate components following the manufacturer's instructions. However, silicone is expensive, so it is mostly used on big-budget productions.



Cap plastic	This is used to make bald caps and when working with cold foam. It is also widely used to encapsulate silicone prosthetics as the edges can be dissolved away for a seamless application.
Clays for sculpting	Water-based clay is used for sculpting prosthetic pieces. Sulphur-free plasticine clay is also used for sculpting prosthetic pieces. This has an advantage over water-based clay because it will not dry out. It has a plasticine-like texture that is malleable and easy to sculpt, and it will not move or distort when it has been moulded.
Mould-release agent	This is used inside the negative mould to ensure that the prosthetic piece comes out easily and without getting damaged. It comes in a spray or liquid form.
Alginate	This is a powder mixed with cold water that is used for taking impressions when casting faces and other areas of the body. Dentists use a similar process when taking impressions of patients' teeth. Alginate sets very quickly once applied to the face or body – between 4 and 12 minutes – although there are slow-release, normal-release and fast-release versions that change how quickly the alginate goes off. The temperature of the water with which you mix it also has an impact on the time it takes to go off.
Barrier cream	This is used when creating a bald cap to prevent the latex or cap plastic from sticking to the head block.
Modroc	These plaster bandages are used on top of alginate to support the negative cast. They strengthen the alginate so that it stays in shape on the face or body before it is removed.
Spirit gum	This adhesive is used to apply small facial postiches and wigs and very small prosthetic pieces. Alternative contact adhesives might be recommended for prosthetic pieces, depending on the amount of time that it is required to stay in place for.
Resins, silicone pigments and flocking	These materials are included in the process of making prosthetic pieces to give them texture, colour and pigments to make them look more realistic (usually to more closely resemble flesh).
Softeners	These are used when making prosthetic pieces to dilute a substance or to make it appear softer and be more malleable to work with.
Artificial blood	This comes in many different forms – fresh runny blood, congealed blood, clotted blood and so on – to closely resemble real blood. For more on artificial blood see Chapter 13, pages 294–295.
PAX paint	This special effects make-up is used to add colour to prosthetic pieces. It is a mix of acrylic paint and adhesive. PAX paints are only suitable for use on latex/cap plastic pieces and cannot be used on silicone.
Petroleum jelly	This can be used as a releasing agent during the casting process. It can also be applied in a fine layer on the head block to act as a releasing agent when creating a bald cap.
Plaster of Paris	This is used to create positive and negative pieces when casting.
Adhesives	These are used to apply bald caps and prosthetic pieces. For example, Pros-Aide® is a commonly used water-based adhesive.
Translucent powder	This is used when removing prosthetic pieces from their moulds and bald caps from the head block. It is also used between layers when creating a bald cap with cap plastic, although latex should not be powdered between each layer.

You can find information about alcohol-activated, water-based and oil-based paints in Chapter 12.

▼ **Table 17.2** Tools and equipment used when casting, sculpting, moulding and colouring small prosthetic pieces and bald caps

Plastic, wooden or metal modelling/ sculpting tools	A range of plastic, wooden or metal tools can be used to sculpt the prosthetic pieces and create shapes and texture.
Craft board	This is used to protect your work station when sculpting.
Hairdressing brushes and combs	These are used to prepare the performer's hair before facial casting or making a bald cap.
Latex sponges	These are used to apply latex to the head block when making a bald cap.
Measuring cups	These are used to measure out the correct quantities of products when mixing different ratios of products together.
Sandpaper and files	These are used to smooth and finish off any rough pieces of plaster when making a sculpt for remoulding and recasting.
Paint brushes	These have numerous uses, such as applying cap plastic to the head block, creating texture on clay by stippling, sweeping dust away when sanding rough edges and so on.
Table	You need to work at a suitable table that is at the right height and is large enough to accommodate all of your products, tools and equipment.
Extractor	This is very important as it will ventilate the room while you are working with the chemicals required to create prosthetic pieces. A portable extractor can be used if the room you are working in does not have an extractor fitted already.
Metal bin with lid	This will safely contain chemical waste and consolidate any fumes. Plaster should be kept separate from other waste and all waste must be disposed of correctly.
Head block	This is the mould block used when making bald caps.
Special effects brushes	These are used to apply cap plastic to the head block when making a bald cap and for colouring small prosthetic pieces.
Water spray	This is used to prevent alginate drying and cracking during the casting process. It can also be used when working with water-based clay.
Hairdryer	This can be used to dry each layer of the bald cap while you are creating it.
Plastic sheets	These are used to protect the floor and the work station.
Gowns	These are used to protect the performer and your clothing while you are working. Plastic gowns, sheets or bags should be used when casting as alginate stains material.
Towels	These are used to protect the performer's neck and for comfort while you are casting.
Plastic gloves	These are used to protect your hands.
Bowls	These can be used for mixing plaster of Paris or paints.
Cling film	This is used when making a template of the performer's head shape.
Permanent marker pen	This is used to outline the hairline when making a template of the performer's head shape.
Sticky tape	This is used when making a template of the performer's head shape.

Small prosthetic pieces and bald caps

A wide range of small prosthetic pieces can be used to enhance a performer's features, develop a character and to create realistic special effects. Details on how to apply and remove these pieces are given in Chapter 12, pages 272–279.

Bald caps

Bald caps can be used to create authentic-looking baldness as well as for fictional characters or for a complete look in body art competitions. Bald caps are usually made from either latex or cap plastic.

Latex bald caps have a thicker texture than cap plastic and are ideal when there is less need for realism. The edges cannot be blended with acetone but can be blended out using liquid latex or Pros-Aide adhesive on a sponge, stippling it over the edges to disguise and blend the latex into the performer's skin. If this method is used, a skin sensitivity test must be carried out 24–48 hours beforehand.

Cap plastic is a very fine, malleable product and it produces a bald cap that is thinner in texture than a latex bald cap. It can be blended neatly with acetone using the bleeding technique, making the bald cap look virtually invisible and seamless against the performer's skin.

Bald caps can be coloured with camouflage make-up to create authentic baldness. Grease or oil-based paints and alcohol-based paints can also be used.

Prosthetic pieces: ears, noses, chins, wounds, fingers, full face and half face

Prosthetic facial features can be made out of latex in the same way as a latex bald cap. You will need to use liquid latex to blend out a latex prosthetic ear, nose or chin, stippling the edges to create a seamless finish.

Noses can also be made of silicone, which is a more advanced material than latex that is widely used on higher-budget productions. It is light and soft in texture, and it can move with the performer's face, giving it a more realistic appearance. The edges can be blended out easily with isopropyl alcohol, creating a flawless finish.

Fingers can be made with a high level of accuracy by casting them in alginate. This could be for a prosthetic piece or for use as a prop rather than fitting the fingers to a performer's hands. Latex is the cheapest product to use to create prosthetic fingers.

A full face is when the performer's whole face is cast and a prosthetic piece is made to their exact size and shape, ensuring a perfect fit. Half-face prosthetic pieces are also made from face casts, again to ensure an exact size and accurate fit to the performer's face.

See Chapter 13 for information on creating wound effects.

Casting, sculpting and moulding techniques

Casting

Casting is the process of making an accurate impression of somebody's face or another part of their body. This negative impression is then filled with plaster of Paris to create a positive cast, which should be an accurate depiction of the face or the body part. This is also exactly the same process used when creating a flat prosthetic piece. You are casting the sculpt that has been created on a flat surface and taking a negative impression of it.

Using alginate

Alginate is the moulding material used to cast faces and other areas of the body. It comes as a powder that sets very quickly once mixed with cold water and applied to the face or body. Alginate is available in three different setting times – slow setting, normal setting and fast setting – which go off in 4–12 minutes. You can also slow down the setting process by mixing the alginate with very cold water. If you mix the alginate with water that is at room temperature, it will go off quicker, so you will have to work fast when applying it to the performer's face. For ease, make sure you are sitting near your water supply or have plenty of water to hand.

If you require more time to apply, choose a slower setting alginate. If you require the performer not to be waiting around for the cast to set, choose a faster setting alginate.

PPE and the performer's comfort

Preparing the area that you are working in is a key part of the casting process. The area around the chair should be protected in case of any spills, and plastic sheets are good for this purpose. PPE should also be worn: you should wear an apron and a pair of gloves, while the performer should wear a gown with towels placed around their neck.

It is important to use a chair that is both comfortable for the performer and that can be adjusted to a height and angle that allows you to work safely. The chair should have two arms and a footrest.

For casting the face, the performer should be slightly reclined. If the performer is laid flat, gravity will change the face shape, while if they are sitting upright, the alginate will run off their face.

Before starting the casting process, you should have a one-to-one discussion with the performer, fully explaining the process. Check with the performer to see if they are claustrophobic or have any respiratory conditions. During this discussion, agree a system for the performer to indicate if they are happy and comfortable, for example by holding their thumb up, or if they do not feel comfortable, for example by pointing their thumb downward.

HEALTH AND SAFETY

Always wear PPE when casting and protect the area where you are working.

Never do a facial cast if the performer has a cold and is struggling with their breathing.

HEALTH AND SAFETY

You must agree a signal that the performer can use to indicate a problem during the casting process.

Continue to explain what you are doing as you work, so that the performer feels fully informed and comfortable with the process. If they indicate that they feel distressed at any point, you must remove the alginate cast immediately.

Facial casting process

- 1 The first step in facial casting is to prepare the model's hair. This is done by wrapping the hair flat to the head – either by using soap and water or hair gel – and applying a bald cap. Whichever product you decide to use, small sections of the hair are taken and the soap or gel is applied to the hair. The hair should be combed and then wrapped clockwise around the performer's head, ensuring that it is completely flat. The process is described fully in Chapter 12, pages 274–275. The end result should be that no hair can come into contact with the alginate so that it does not leave an impression in the facial cast.
- 2 Once you have applied the bald cap, making sure no hair is visible, prepare the eyebrows and eyelashes by applying a small amount of petroleum jelly. This acts as a releasing agent and makes sure that the alginate does not stick to the hairs. Carefully, place a small piece of cotton wool with a slight smear of petroleum jelly over it into the depression of the ear, making sure it is not pushed into the ear itself.
- 3 Place the alginate powder into a large clean bowl and slowly add very cold water. Follow the manufacturer's instructions on the proportions of alginate powder to water to use. Start mixing very quickly and vigorously with your hands so that no powder is left in the bowl and it is free of lumps. It should have the consistency of thick custard – thick enough for it to sit on the performer's face and not run off.
- 4 Make sure that the performer's eyes are fully closed and their mouth is shut when you apply the alginate. Their nostrils must be kept completely clear at all times so that they can breathe freely.
- 5 Once you have applied the alginate, you can put a little cotton wool on it before it goes off as this will help the plaster bandages to stick on later.
- 6 Once the alginate has gone off, start to add the plaster bandages. The bandages should be dipped in a little water and then applied on top of the alginate, starting with the perimeter of the face in a criss-cross pattern for more strength and durability. Place the bandages across the full face, paying attention across the nose area and keeping the nostrils clear. Once the bandages are in place, they should be left for five minutes for them to go off and become hard.
- 7 When the plaster bandages are hard, ask the performer to sit upright with your guidance, then ask them to tip their head so that they are facing towards the floor. This allows gravity to help with the removal of the facial cast. If the cast does not come off, ask the performer to wiggle their face, especially their nose, from side to side.
- 8 Make sure that your hands are cupped underneath the cast to support it once it has released from the performer's face, then gently place

HEALTH AND SAFETY

Someone must watch the performer's nostrils at all times during casting to ensure that no products cover them.

it into a box of sand or wood shavings. You could also use towels or even a wig cradle, as these will be soft enough to hold the cast in place without damaging the nose. Spray it lightly with water to maintain the alginate and stop it from drying. Alginate tends to shrink when it dries out, which means that it will not give you an accurate impression.

- 9 Work quickly to fill the negative face impression you have taken with plaster of Paris. Prepare the cast by filling the air holes created by the performer's nostrils with small amounts of cotton wool covered with a thin layer of petroleum jelly. This will stop the plaster running through them. Alternatively, you can use quick-setting alginate pushed through underneath the cast.
- 10 Aftercare for your performer will be minimal as alginate comes away from the skin very cleanly. You may need to wipe away any petroleum jelly that has been used on the lashes and eyebrows, remove the cotton wool from the performer's ears and put their hair back to its original state.

It is advisable to have a minimum of three people working on a facial cast:

- one person to sit alongside the performer, communicating the process to them and looking for any signs of distress
- one person to mix the alginate to the correct consistency and apply it directly to the face, being guided by the first person to ensure that the performer is completely comfortable with the process
- one person to support the person applying the alginate by picking up drips or runs and, most importantly, ensuring that the performer's nostrils are completely clear at all times by removing any alginate from the performer's nostrils.

You can now mix the plaster of Paris to fill your negative facial impression.

Filling the negative impression

Health and safety protocols must be followed when working with plaster of Paris. A face mask should be used at all times to protect you against dust particles. You must also follow stringent regulations when disposing of plaster of Paris: it must not be disposed of down a sink as it can block the plughole and pollute the water system.

- 1 Wearing full PPE (apron, gloves and mask), fill a bucket or large bowl with tap water, then add the plaster gradually with a measuring cup, building an island in the middle of the bucket or bowl. Make sure that you follow the manufacturer's instructions on the water-to-plaster mixing ratios.
- 2 Using your hands, start to mix the water and plaster together in a slow circular motion, being careful not to create air bubbles. The plaster will slowly start to thicken up, firstly to a creamy consistency then to a custard consistency. Once it has thickened to a consistency similar to thick custard, it is ready to fill your negative impression.

HEALTH AND SAFETY

Always wear a face mask when working with plaster of Paris. Never try to set any limb in plaster of Paris. This is very dangerous as the heat that it produces can burn the skin.

HANDY HINT

Air bubbles are generally caused by creating too much air in the mix, so be careful to mix firmly but not vigorously and do not whip the plaster. Air bubbles can distort the impression, which will mean that it is not accurate.

HANDY HINT

Hard wax can be used to fill in little holes and flaws that might have occurred during the casting process.

HEALTH AND SAFETY

Follow the manufacturer's instructions on how to dispose of the plaster of Paris correctly. You also need to consult your local council's guidelines.

- 3 Scoop a handful of plaster into the negative cast, laying it gently into and across the face, making sure that detail is being captured. Once you have scooped your initial layer, you can continue scooping the plaster of Paris gently into the impression until it is full. Leave it to go off: it will take up to an hour to dry fully.
- 4 When the plaster is dry, gently peel the alginate and plaster bandages away from the plaster of Paris cast. As you start to peel the edges away, the alginate should easily come away from the face cast. This will leave you with a positive face cast made out of plaster of Paris.
- 5 If you have any sharp edges or bumps on your cast, file them down. If you have accumulated air bubbles, they can be filled in with a little hard wax or clay and smoothed over.
- 6 Dispose of the alginate in a dustbin. The plaster bandages and any remaining plaster of Paris need to be disposed of separately following health and safety protocols.

Sculpting

You can now move on to the sculpting stage, working with clay and sculpting tools to create the prosthetic piece. The objective is to create a sculpture that replicates your design plan, making it look as realistic and accurate as possible by paying attention to its balance, shape and symmetry as a three-dimensional object.

Different types of clay can be used, each with different properties.

- Water-based clay dries when exposed to the air but it is very easy to work with, especially when adding texture. However, this can also be a disadvantage when adding releasing agents as you can lose the texture due to it being too soft.
- Sulfur-free plasticine clay and wax-based clay are used more commonly as they do not dry when exposed to the environment, which means you can start a sculpt and keep working on it for several days without it drying. They can be a little harder to work with at first but, because they are firmer, they hold the fine detail you have created when you add the releasing agent.

Place your positive face on a craft board to make it easier for you to work from. Begin by placing a small amount of your chosen clay on it and start to mould an initial shape following your design plan and a realistic reference. This is the process to follow whether you are sculpting a nose, chin, brows, cheeks or any other facial feature.

You need to keep the feature you are sculpting in proportion to the face, making sure that it is balanced and symmetrical. You can use your fingers initially, then you can start to use sculpting tools to shape the feature. There is a range of plastic, wooden and metal tools for sculpting clay that can help you to create shapes and angles that would be difficult to form with your fingers.

As you progress with your sculpting, developing a shape and size that resembles your design plan, you can begin to incorporate fine details. You can do this with tools, but you can also use alternative products: for

HANDY HINT

Remember, what you see as you sculpt is exactly what will be seen on your prosthetic pieces.

example, orange peel is good for replicating the appearance of skin. Stipple sponges are another great tool that can be used to imitate the texture of skin. The use of alternative items can demonstrate your creativity and your ability to think outside the box.

The edges of your sculpt should be very finely blended into the plaster of Paris face cast to make them look seamless. As you look at your mould, you will see what is going to be replicated to be applied to the performer's face. This is your positive sculpt.

Moulding

Once you have finished creating your positive sculpt, it needs to be recast in plaster of Paris to create a negative mould. This negative impression will be a true and accurate impression of your sculpt. This negative impression is then recast with your chosen product to make your prosthetic piece.

Recasting the negative piece

- 1 Apply a releasing agent to the sculpted mould and surrounding plaster to ensure that it releases easily from the plaster of Paris.
- 2 Use clay to build a wall around the perimeter of your sculpted piece. The wall needs to be higher than the sculpt to allow the plaster of Paris to cover the sculpt completely. The wall must be fully fixed down and have no holes in it.
- 3 Mix the plaster of Paris, following the guidelines given on page 7. When the plaster reaches the right consistency, pour it gently over the sculpt, being careful not to create air bubbles. Keep adding the plaster until you have completely covered the sculpt. Leave it to dry for at least an hour to allow the plaster to go off.
- 4 Once the plaster is dry, separate the two pieces: the positive mould and the negative cast. The negative cast is the impression you have taken from your mould. Clean up the negative cast, removing any remnants of clay and making sure that it is a true impression with no flaws or holes.

You are now ready to create your final prosthetic piece. The process used will depend on the product that will be used to make the piece. The type of product that you work with will depend on the budget of the production.

Working with latex

Latex is applied to negative pieces with either a brush or a sponge. The latex is stippled into the negative piece, making sure that all areas of the negative are covered. Care needs to be taken when working on the edges of the negative cast – the edges on the prosthetic pieces need to be fine, so the edges on the negative have to be left even finer.

Latex can also be rocked, using a rotating motion to move the latex around the mould. This ensures that the impression is covered and creates further layers of latex, enabling it to stick to itself.

You will need to repeat the process several times so that the prosthetic piece is thick and durable enough. Once you have applied several layers

HANDY HINT

Be inventive when creating texture on your prosthetic pieces and experiment with alternative tools and equipment.

HANDY HINT

Small amounts of coloured flocking can be added to the product that you are making the prosthetic piece from to create a realistic mottled appearance. This flocking is available in a range of colours and lengths.

and the latex is totally dry, you can start to lift the piece out from its negative cast. Using a powder brush, gently dust your prosthetic piece with translucent powder around the edges and start to lift the edges slowly with a palette knife. Keep dusting with powder, brushing and slowly lifting the piece from the negative mould. You may damage your prosthetic piece if you rush this process.

Working with foam, gelatin and silicone

Working with foam, gelatin or silicone is similar to working with latex, but you will use both your negative and positive cast together.

- 1 Apply plenty of releasing agent to both the negative and positive casts in preparation.
- 2 Follow the manufacturer's instructions for mixing the foam, gelatin or silicone.
- 3 Pour the product into the negative mould, making sure that you fill the mould completely.
- 4 Place the positive face cast straight into the negative face cast. This should be done accurately so that they line up perfectly. This enables the product to sit around what was the sculpted mould, creating your prosthetic piece.
- 5 Follow the manufacturer's instructions on curing/drying time. Once the product has dried, separate the two casts from each other, slowly lifting the positive face away from the negative cast. When they are separated, you will see the prosthetic piece left in the negative cast.
- 6 As with latex, use a powder brush and translucent powder and gently begin to lift the piece away from the cast with a palette knife. Work the powder around the edges of the prosthetic piece continuously until the piece is completely free from the cast, then gently lift it out.

Your prosthetic piece should be completely flawless and free from defects, holes and tears. It is now ready to apply to the performer.

Colouring and painting small prosthetic pieces

When colouring small prosthetic pieces, the aim is to match the performer's skin colour perfectly. This can vary from their flesh colour to a fictional character's flesh colour. This can be achieved using a range of products, such as camouflage make-up, grease- or oil-based paints and alcohol-based paints. You can also use airbrush make-up. Latex must be coated with a layer of adhesive and powdered before it will take any make-up, although PAX paint can be applied directly onto latex.

One of the hardest challenges when colouring a prosthetic piece is to create the appearance of natural warmth. Real body parts, such as noses, chins and ears, have blood pumping through them, giving them a warm tone. If prosthetics are not coloured with warm tones, they can appear flat and grey and will not look like they belong to the performer or blend in with the performer's skin tone.

HANDY HINT

You cannot use the same mould for both latex and silicone as they do not mix and the silicone will not cure.

HANDY HINT

PAX paints can be expensive, but you can make your own from equal quantities of acrylic paint and adhesive. Latex can also be coloured using acrylic paint.

Stippling techniques will add colour that you can build on, especially with camouflage and grease- or oil-based paints. Both orange and black stippling sponges can be used to add textured sparse colour as opposed to a block of colour.

Splating techniques are also good for adding colour without creating a block colour. You can use a toothbrush or stiff paintbrush and a range of different colours to add different tones that will create a more realistic look. You can only use this technique with alcohol-based paints.

More information on colouring prosthetic pieces is given in Chapter 12.

Maintenance of prosthetic pieces and bald caps

Bald caps and prosthetic pieces are expensive and time-consuming to create, so it is very important to maintain and look after them.

Take care when removing bald caps and prosthetic pieces, working slowly and carefully to keep the edges intact and to avoid pulling, tearing or damaging them.

Once you have removed the cap or piece, clean off any sticky residue from the adhesive with a brush and the correct adhesive remover. Gently rub away and dissolve the adhesive, holding a tissue in place at all times to catch any drips.

When the cap or piece is clean and free from residue, dust with translucent powder and pack it with soft tissue to retain its shape. Store it in an airtight container in a cool, dark, dry place for future use.

2 CREATE AND ENHANCE SMALL PROSTHETIC PIECES AND BALD CAPS

Create a bald cap

Making a template

The first stage of making a bald cap is to make a template of the performer's head shape, similar to that when taking measurements for a wig (see Chapter 18).

Firstly, make sure that your work station is set up correctly, with all products, tools and equipment in front of you so that you can access them easily. You and the performer should wear PPE and the performer should be sitting at a height that you can work from easily.

Comb the performer's hair back flat to the head so that the hairline is exposed for you to see. Long hair can be tied back into a loose ponytail at the nape of the neck, while fuller hair can be sprayed with some water to flatten it to the head.



▲ **Figure 17.1** Wrap the head with cling film and mark the hairline with permanent marker

Place a piece of cling film from the front of the performer's head along to the nape of their neck. Then, place a second piece of cling film from ear to ear so that the cling film is criss-crossed. Now apply sticky tape to the cling film, starting at the centre of the forehead, across the top of the head and down to the nape of the neck. Take another piece from ear to ear over the top of the head and across the occipital bone (see Chapter 2, page 51). Apply further sticky tape to reinforce the shape of the head so that you gain a true reflection of the performer's head shape.

Take a permanent marker pen and draw around the performer's hairline accurately and apply sticky tape over the line you have drawn to prevent it rubbing off. Gently remove the template from the performer's head and cut around the drawn hairline with a pair of scissors. Place the template on your head block and draw around it, directly onto the head block, leaving a 1 cm overlap to accommodate an edge that can be blended out onto the performer's skin. You can then remove the template and start to prepare the head block.

Preparing the head block

Ensure that your head block is suitable. Its surface needs to be completely smooth and have no imperfections as these will be picked up in your cap plastic or latex. Any batch numbers present on the head block can be filed off or concealed by smoothing a little bit of hard wax over them. When you are happy that the head block is entirely smooth, apply a very light layer of petroleum jelly over it. This will act as a releasing agent, stopping the cap plastic or latex from sticking to it.

Creating the bald cap

Bald caps are typically made from cap plastic or latex. These materials have different properties so require slightly different techniques.

Cap plastic

Health and safety protocols must be followed when working with cap plastic. You should wear PPE and work in a ventilated room.

Pour a small amount of cap plastic into a bowl. Using a large brush, start painting the cap plastic on to the head block. Start at the centre of the forehead, near to but not on the pen mark, keeping your brushstrokes very light. Painting a thin layer will help you to maintain a thin edge on the bald cap, making this easier to blend out onto the performer's face afterwards.

Working vertically across the top of the head, add slightly more cap plastic to the crown area as this will help reinforce the strength of the bald cap. Continue to work the cap plastic across the head from front to back, keeping the edges of the bald cap slightly thinner to avoid thick edges.

HANDY HINT

Hard wax can be used to camouflage flaws on the head block prior to making a bald cap.

Once the head shape has been covered from front to back, dry the cap plastic with a cold hairdryer at a low setting so that the cap plastic does not move. Once it is touch dry, very lightly dust the cap plastic with some translucent powder. This enables you to see where you have covered, but this method could potentially weaken the finished bald cap.

The next layer of cap plastic should be painted in the opposite direction – from ear to ear – again making sure that you cover the full head and that all the edges of the bald cap are kept thin. Dry this layer as well and dust with translucent powder.

Repeat this process until seven layers have been applied, swapping between back-to-front and side-to-side layers every time. Working in opposite directions while applying cap plastic reinforces the strength of the bald cap and ensures that there are no weak spots.

To avoid overstretching the bald cap, leave it to dry fully for 24 hours before beginning to remove it from the head block.

You will need a small palette knife, a bowl of translucent powder and a powder brush to remove the bald cap from the head block. Begin by using your palette knife to gently lift it from the nape of the neck. As it starts to lift away from the head block, use your powder brush to apply plenty of powder underneath the bald cap. This prevents it from sticking to itself and creating folds or creases. Being careful not to overstretch the bald cap, gently lift it from the head block, avoiding any rips or tears.

Latex

The first layer of latex on the head block should also be applied from front to back, but it should be applied with a latex sponge rather than a paint brush. Latex can build up on paint brushes and clog them up, making it difficult to apply even strokes across the head block. Use a stippling technique to apply latex across the head block, ensuring that you keep the edges of the bald cap really thin as latex cannot be bled out in the same way as cap plastic when the bald cap is applied.

As with cap plastic, a total of seven layers should be stippled across the head block, alternating between back-to-front and side-to-side. The edges need to be kept thin and the crown area should be reinforced. The latex should be dried between each layer with a hairdryer on a cold setting. Latex should not be powdered between each layer as this will weaken it, so powder should only be applied when all the layers have been completed. Leave it to set for 24 hours.

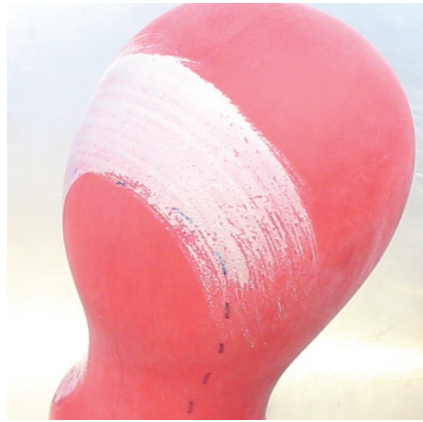
Once the cap is dry, it can be removed from the head block in the same way as a cap plastic bald cap. Starting at the nape of the neck, use a palette knife to gently lift the latex edges, dusting the inside with plenty of powder to stop the latex sticking together. Work your way up to the top of the head slowly and gently, powdering continuously and avoiding pulling or stretching the bald cap.

HANDY HINT

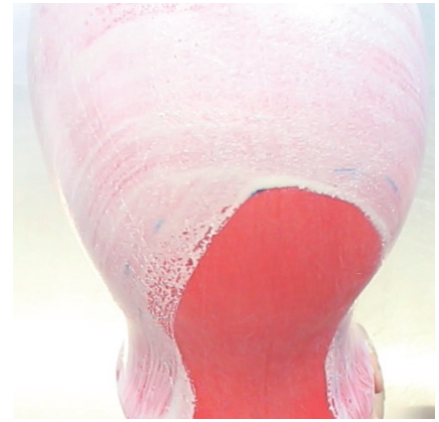
Do not use your professional make-up brushes when making prosthetic pieces and bald caps. Purchase a cheaper range of art brushes or even paint brushes to use with cap plastic. Kitchen sponges are a cheap option that you could use when working with latex.



Step 1 – Prepare the head block. Ensure it has a smooth surface then apply a thin layer of petroleum jelly to it. Make sure you can see the pen mark clearly.



Step 2 – Starting at the centre of the forehead, begin applying the first layer of cap plastic or latex to the head block with a brush or sponge, as appropriate for the product.



Step 3 – Keep the application very light to ensure a thin coverage, particularly at the edges.



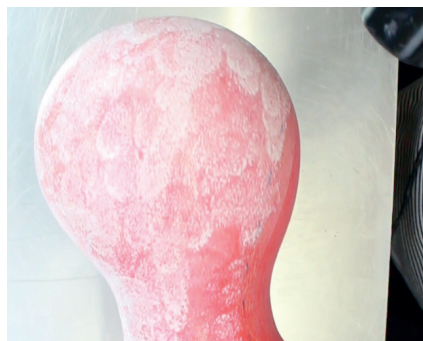
Step 4 – Once the head shape has been covered, dry it with a hairdryer on a cold setting. Make a note with pen and paper that the first layer has been completed.



Step 5 – Check that it is dry to the touch. If using cap plastic, you could apply a light dusting of translucent powder to identify any areas you have missed.



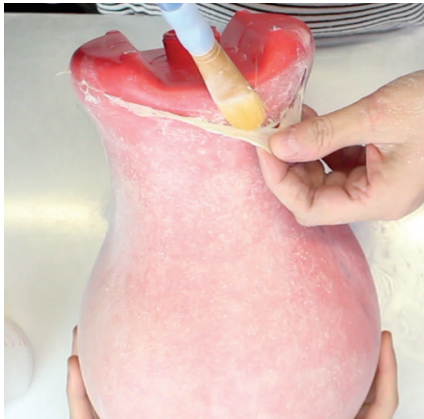
Step 6 – Apply the next layer, ensuring full coverage and check that the edges remain thin.



Step 7 – Use a cold hairdryer to dry this second layer.



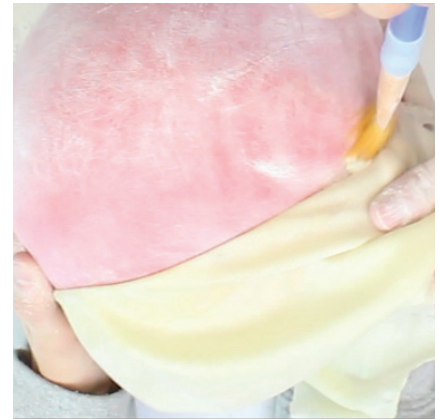
Step 8 – Continue the process until you have applied a total of seven layers, then leave it for 24 hours to set.



Step 9 – Once the bald cap is fully dry, remove it from the head block, starting from the nape of the neck. Lift the edges away gently, applying plenty of powder underneath to prevent sticking.



Step 10 – Take care not to stretch the bald cap as this could result in rips and tears.



Step 11 – Slowly work your way up the head, continuing to apply powder, until the entire bald cap has come away from the head block.

Storing bald caps

Once you have fully removed your bald cap from the head block, apply plenty of powder all over it. Examine it fully, making sure that there are no holes, rips, tears, creases or folds, and that it is in shape. Pack the inside of the bald cap with soft tissue to prevent it sticking together and to help it retain its shape.

The bald cap should be wrapped in soft tissue for storage and placed in a container (preferably an airtight container if you are using latex). Keep it cool and dry until needed. Ideally, latex bald caps should be used straight after making them, because latex becomes harder with age.

Create a small prosthetic piece

For details on creating a small prosthetic piece, see the section on crafting, moulding and sculpting techniques on pages 5–10.

Paint a small prosthetic piece to create a realistic effect

For details on painting prosthetic pieces, see the section on colouring and painting small prosthetic pieces on pages 10–11.

ACTIVITY

Create a prosthetic finger by casting your finger using alginate. Colour your prosthetic finger to make it look realistic.

Test your knowledge

- 1 Which type of bald cap can be applied using the bleeding technique on its edges?
 - a Latex
 - b Cap plastic
- 2 What is acetone used for?
- 3 What product is used to take the initial impression of a performer's face?
- 4 What is a negative cast?
- 5 What is a positive cast?
- 6 What is the benefit of using alternating front-to-back and side-to-side strokes when making a bald cap?
- 7 What alternative products could be used to create the texture of skin when sculpting?
- 8 What paints would you choose to work with when using the splattering technique to colour a prosthetic piece?
- 9 Why do you need to keep the edges of a bald cap thin?

Practical assignment

Scenario

You are working on a theatre production of *Wicked* and have been asked to create a nose for the Wicked Witch of the West.

Task

Cast a face, then sculpt a nose for this character.

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