

# **SILICONE GFA PROTOCOL WITH SMOOTH-ON'S DRAGON SKIN AND SLACKER**

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## **Introduction**

This document concerns the steps in creating so-called silicone gel-filled prosthetics. It will include suggestions on sculpting, moulding, casting, pre-painting and application of such prosthetics. Basic knowledge of prosthetic make-up techniques is necessary and will help to understand more clearly the steps involved in creating silicone GFA's in general. The intention of this document, however, is to give also the beginner to prosthetic make-up a clear guidance to work with.

## **History**

Silicone Gel-filled appliances or prosthetics are a development of breast implant technology introduced in the sixties/seventies of the last century. The preferred choice for making prosthetics for the entertainment industry has been - and for part still is – foam latex rubber. Foam latex rubber has been used since the around 1930 and gained more popular use after being used in “the Wizard of Oz” in 1939. Foam Latex Rubber however displays several qualities which do not make it the perfect material for the simulation of skin. Human tissue, for instance, is translucent as in foam latex is opaque. Foam also crinkles when compressed as skin and fatty tissue displaces. Through the end of the eighties and the beginning of the nineties several make-up artists have began to experiment with silicone prosthetics. Dick Smith has researched it for awhile and supported Canadian artist Gordon Smith (no relation) to find a workable system. Gordon Smith worked with several medical specialist and came up with the first (in the entertainment industry, that is) Silicone GFA system for the feature “Legends of the Fall”(1994). Since then several companies have found new and better ways to make and adhere silicone prosthetics.

## **The Slacker System**

A silicone GFA is in essence a prosthetic (like a silicone breast implant) that contains of a soft inner gel with a dry outer surface. The inner gel can be adjusted to created stiffer or more softer material creating any kind of human tissue ranging from cartilage to fatty tissue. The Slacker System from Smooth-On is a versatile silicone prosthetic system that can be used in numerous ways. It enables the user to get different densities of skin by using different barrier materials, and different mixtures in creating the actual gel. All component are “milky” clear and can easily be coloured to a translucent skin colour that blends easy with the skin and, if coloured correctly, needs little make-up to be believable.

## **Moulds**

For moulds one can use several options. Dental plaster or polymer strengthened gypsums are a easy and stable choice of mould making products. Polyester resin and fibreglass make lightweight and easy to handle moulds. Fresh fibreglass, however, contains large amounts of un-vaporized styrene and may contaminate the silicone and prevent it from curing. Baking out the fresh fibreglass moulds may bake out all styrene and make them good for casting. Another more recent use for moulding may be fast cast polyurethanes such as Smooth-On's Smooth-Cast 300 casting plastics or better Smooth-On's Smooth Cast 383 and 385 filled Polyurethane plastics. These resins may be used for smaller sectional moulds such as the nose and chin.

For this guide we'll use Alpha gypsum moulds such as BPB's Crystacast Gypsum Plaster. Start by creating a positive on which to sculpt your desired visage. For clay the best choice should be non-sulphur based clays as sulphur will inhibit the cure of platinum cured silicones. Good choices are: Chavant's NSP series or Chavant's “Le Beau Touché”, the latter is wax based and has proven to be the “safest” of all plasticines to use. After sculpting a negative is produced. The moulds are left to harden and after several hours, but preferably overnight, the moulds are opened and the clay is cleaned away. Keep the removed clay and measure it's volume for later reference. Mild solvents such as alcohol can be used for such purpose.

## **Preparing the mould**

The best way for creating silicone prosthetics is to inject the silicone in the moulds. To do so an injection and several de-airing holes need to be drilled in the positive of the mould. To locate the best places for such holes, a quick cast should be made of the mould. Spray both halves of the mould with a wax release agent and mix up a small batch of dental or prosthetic alginate, in a volume enough to fill the mould. The amount of alginate can be measured by measuring (in volume) the removed clay from your sculpture. After the alginate is set, remove it out of the mould and re-position it on the positive. A alternative material for this purpose is a gelatine formula consisting of

- 100 gr. Sorbitol
- 100 gr. Glycerin
- 50 gr. 300 bloom Gelatine powder
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It's not necessary to create good edges with either technique, since this casting's only purpose is to define the perimeter of your appliance edge. Trace the surroundings of your prosthetic and mark air-venting holes around every two inches (5 cm) about 3-5 mm inward the prosthetic. Also select an injection point, preferably on a thicker part of the prosthetic, somewhere in the centre. Drill your injection hole with a 5 mm drill bit so it will fit a 60 ml. syringe with catheter tip. Also drill 1-2 mm diameter vent holes at the marked points.

## **Colouring and injecting the silicone**

Clean your moulds from any debris that may have formed from drilling your injection and vent holes. Apply a release agent from combining

- 1 part of regular dishwashing detergent to
- 3 parts of isopropyl alcohol (99%).
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Apply two layers of this mixture and dry them thoroughly. Force dry with a hairdryer if necessary. Now make a small batch of Dragon Skin Q in a clean mixing vessel. For most larger moulds a mixture of

- 10 grams Dragon SkinQ A component and
- 10 grams Dragon SkinQ B component
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are sufficient. Stipple this, using a polyurethane sponge (available from upholstery companies – DO NOT USE A LATEX SPONGE!) in a thin layer on both the positive and the negative of your moulds. Close the moulds carefully and clamp them shut.

Make a inner gel by measuring in several mixing cups of:

- 1 part of Dragon SkinQ A component,
- 1 part of Dragon SkinQ B component
- 3 parts of Slacker.
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Mix all three component in a clean mixing beaker and add small amounts of SilPig flesh tone until you create a translucent flesh tone. Use green pigment to "cool" the colour, brown to darken it slightly. Other pigments can be used to adjust the colour as close to the model's skin. A slight amount of black is used to create the necessary greyness that is present in human skin. A small amount of red flocking will give more depth to your finished prosthetic. As a alternative FuseFX S-series of internal silicone pigments can be used as a balanced colouring system. Pour the final mixture over in the 60 ml. syringe(s). Slowly inject the gel in the closed mould(s). Several syringes might be necessary to fill up your mould. Leave the last syringe in the mould to create back pressure while curing. Cure the moulds for at least 1,5 hours or (preferably) longer. Plat cat can be added to the gel mix to facilitate a even quicker curing time.

## **De-Moulding and pre-colouring**

For de-moulding be sure that the gel is completely cured. Normally this takes about 90 minutes. Check the remaining left-over material in the mixing cups to be sure that full curing has been completed. Next dump the mould in a bucket of water and leave it there for at least 30 minutes. The "crawling" properties of the

water may have re-activated the soap which was applied as a release agent. Remove the mould from the water, dry it with a towel and deposit it on a clean working surface. With careful prying the mould will easily open. Use caution, care and patience as the inner prosthetic, although quite resilient, can still easily be torn or damaged with violent and rough treatment. Wash the resulting prosthetic under running water to remove all residue release agent. Put it back on the positive for drying.

Pre-colouration is useful to add a permanent colouration to your prosthetic that won't rub off during use.

The other benefits are continuity and most importantly a shorter application time of the finished prosthetic. Colouration can easily be achieved with two methods:

Colouring using Smooth-On's Psycho Paint in conjunction with SilcPig pigments. Psycho Paint is a two-part silicone elastomer which can be coloured using Silc-Pig silicone pigments to make a silicone paint that's lasting and easy to apply. Thinned Phsyco-Paint can even be airbrushed. The other method is the use of FuseFX silicone paint: a silicone paint in convenient double syringes available in 44 dazzling colours ranging from skin tones to special effect colours such as blood colours and the like.

## **Applying the Prosthetic**

Make sure that the prosthetic is clean and free of dust and grease. This can be achieved by lightly cleaning it with a tissue and some 99% alcohol. Clean the face with a astringent and make sure that there are no creams on the face containing aloe vera as this might inhibit the prosthetic glue. After the face is also thoroughly cleaned from dirt and grease a barrier cream might be applied to both protect the cream and promote adhesion of the prosthetic.

Mix an equal amount of Smooth-On's Skin Tite adhesive on a wax disposable palette. Deposit the Skin Tite in clearly labelled squeeze-bottles makes handling more convenient. Apply the Skin Tite using a polyurethane sponge and be sure to apply the Skin Tite equally and evenly over the entire surface of the face where the prosthetic is supposed to be applied. Apply the prosthetic to the middle of the face first and then force out any air by softly, yet firmly push outward from the nose. Use dull tweezers when necessary to lay the prosthetic edge flat. It is advisable, when the prosthetic covers the whole face for instance, to slightly tilt the head backwards instead of applying the prosthetic when sitting up – this way gravity will force the prosthetic on the face instead of sliding off. When using this technique it is sometimes better to glue the prosthetic in two phases first the face tilted back and then the neck sitting up – not to distort the prosthetic making it fit and buckle unnaturally. Thicken up a new batch of Skin Tite this time with some ThiVex and/or Aerosil thickener. Use this to seal and hide any noticeable edge. Use a hairdryer to quick-cure this material instantly. Powder slightly with a translucent facepowder to avoid stickiness.

## **Applying colouration to the prosthetic**

Traditional grease-paints are not advised to colour the prosthetic – They do not stay put and have the tendency to make prosthetic edges stand out more. It's better to stick to alcohol activated paints such as Skin Illustrator, Temptu or Reel Creations body art inks. These can be lightly washed over both the exposed skin and the prosthetic blending everything into a balanced make-up. It is advised to get the base tone of the prosthetic as close to the performer's skin tone as possible and use as little external colouring as possible.