Volume 7 , Issue 7
AUGUST 2019

TUCSIN 2019

CAREER FOCUS GLASS BLOWER

Dear Students

Do you want to become part of an ancient art in Glass blowing? If you get fascinated by shaping glass into decorative items than you might just be interested to find out more about this career. Glass blowing can be somewhat difficult, depending on several factors. This career requires very specialized knowledge, and only a handful of universities and technikons offer degrees. In this edition we will discover what it takes to become a successful Glass blower.

- Martina

WHAT IS A GLASS BLOWER AND WHY IS IT SO IMPORTANT?

Glass blowers use a blowpipe to shape glassware from globs of molten glass. They produce anything from unique ornaments and tableware to scientific equipment.

Chemistry labs around the world are full of glassware being used for all manner of experiments. Glass has many properties that make it useful for scientific applications, such as good chemical resistance and being transparent and good for heat transfer. But despite the important role glass plays in science, the skill to develop the glassware is in decline and it has now been classed as an endangered craft by The Radcliffe Trust.

Glass is one of the most versatile materials available to man and is made from the cheapest materials on earth - sand. Although glass makers have been making glass since cradle of civilisation, it was not until the late 15th century that they began to produce, amongst others, better lenses for spectacles, the first microscopes and scientific equipment.

Many new types of glass, such as laminated glass, heat resin glass and glass fabrics, were developed. Some glass blowers shape and attach hot glass to other objects forming pedestals and handles.

Glass is in everyday use and the trend is becoming increasingly apparent that people enjoy owning glass objects of beauty, whether it is a tiny elephant blown by a glass blower in an open-air market, or a magnificent glass sculpture.

A glass blower is tasked with designing and shaping glass into various shapes and designs, creating handcrafted giftware, stemware, glassware, ornate glass mirrors and windows, sculpture pieces and glass instruments used in laboratories. This is a labour-intensive and niche occupation. Glass blowing is the traditional method of producing glass objects over the last 250 years, and industrial progress has mechanised the process to a great extent. The process is divided into several phases and requires the use of equipment such as furnaces, blowpipes, baking kilns, and fine-art tools such as stencils, engraving plates, and needles. Working as a glass blower involves conceptualising product ideas on commission, gathering the necessary tools and materials and producing a finished product.

Inside this issue:

1. What is a Glass blower?
2. Typical work activities and skills
3. Requirements
4. Interesting facts

The Glassblower

TYPICAL WORK ACTIVITIES AND SKILLS

Glass blowers are hired to repair and restore old glassworks. Most blowers, or 'gaffers', work independently or are employed by private studios, well-established glass artists and some large-scale factories, such as Langham Glass and Bristol Blue Glass.

There are endless opportunities in this career and even people who are not very artistic but enjoy working with glass, could work at glass instrument making for scientific apparatus, or work in the glass blowing industry.

The two main areas within the glass industry are:

- the manufacture of flat (float) glass, mainly for the building industry
- the manufacture of glass products, mainly domestic and scientific glassware.

Glass workers operate and control machines to make molten glass, and press or blow it into molds to form or shape glassware products, for example bottles, jars and drinking glasses, as well as insulation and fiberglass products.

Glass workers may perform the following tasks: process raw chemical and glass materials; handle glass fiber to form a continuous length and then produce a usable customer product. They check conditions such as temperatures, pressures and gas compositions by adjusting valves on furnaces to regulate the temperature of molten glass according to production specifications and setting screws, air valves, turntable rates and the timing of plungers in glass pressing machines.

They also need to identify, correct where possible, or report breakdowns in the processing equipment, as well as oil and clean the machines. They undertake quality assurance activities and prepare written operational records. Finished products are checked for faults, the faulty items are separated out and good products packaged for distribution.

Glass workers may specialise as melt operators, glass machine attendants, glass makers or glass handlers. With experience and sometimes further training, it is possible to become a team leader, supervisor, sales representative, estimator or technical specialist. Glass blowers/designers need to stay in touch with the latest industry, design and business trends, including changes and improvements in glass-blowing methodologies and tools.

The bespoke requests are very technical – you have to be determined because it can take a long time to finish what you are making. You have to be a certain sort of person; perseverance and concentration are important. You also need to get your head around more technical aspects like engineering tolerances. Scientific glassblowing doesn't leave much room for error. If you are not precise, you could end up producing a piece of equipment that isn't fit for purpose, or is unsafe to use."

Trainees start of by mastering basic techniques, such as joining two pieces of glass. Much of the process involves benchwork, which is done by hand with a flame. This gives them a hands-on feel for how glass reacts. They then learn how to put all that they've learnt together. Everything they make needs to go into an oven to be annealed at 570 degrees.

Scientific glassblowers use the raw material Borosilicate, also known as lab glass, or Pyrex glass to laypeople. This is usually imported from Germany because they are world leaders in producing it.

Continuing professional education, coupled with an expanding portfolio of commissions and design samples, is an absolute necessity for career progression.

REQUIREMENTS

Secondary Education

Possession of an I**GCSE/NSSCO** Grade 12, or equivalent qualification, is required for admission to South African technikons.

Recommended subjects

English, Design Studies and Art (South-Africa)

Tertiary Education

Glass blowing can be studied within both undergraduate and graduate-level arts programs. Undergraduate students may take classes in stained **glass**, ceramics, mixed media and sculpting. Some colleges allow high **school** students to apply and begin taking courses part-time before graduation. **UNISA's School of Art** offers a 12 weeks undergraduate course you can also enrol for Diploma Fine &Applied Arts at **Tshwane University of Technology**, which is a three-year full-time course. Thereafter you can continue to do a BTech full-time for one year, and eventually continue to do a Masters Degree which is two to three years. An art portfolio is required to demonstrate your creativity, abilities and commitment.

Personality and Personal requirements

The prospective glass blower should be creative, artistic and imaginative. They should be able to visualize objects three-dimensionally and have a good eyesight. They should enjoy working with their hands and have an interest in working with machines. They should be good at solving practical problems and be physically fit.

Work Opportunities

Glass blowers work for manufacturers of glass utensils, glass blowing industries, manufacturing and packaging industries, glass merchants and glass processors. They can start their own business, with enough experience, initiative and capital.

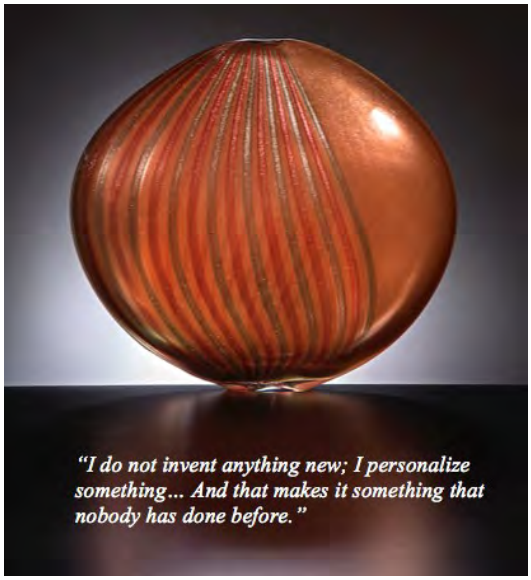
INTERESTING FACTS ABOUT MODERN GLASS BLOWING

⇒ The glass used in glassblowing is basically made from sand: That may be a bit of an oversimplification, but it's essentially true. The glass used in most glass art is made by melting pure silica along with additives such as soda and lime, which increase viscosity and reduce the melting point of the material. The many colors you see in glass art are typically made by adding metal oxides to batches of raw materials, creating rods of colored glass called canes, which are then added to clear glass base during the blowing process.

⇒ Glassblowing requires incredibly high temperatures: In nature, glass is made under certain very specific circumstances – such as lightning strikes and volcanic eruptions. That should give you some idea of the temperatures required to turn silica (sand) or other materials into glass. In glassblowing studios, called "hot shops", specialized furnaces are used to create temperatures as high as 2,400 degrees fahrenheit to melt raw materials into glass, or heat glass back up to around 2,000 degrees to make it soft enough to blow and shape.

⇒ Glass art must be cooled very slowly: Glass artists must frequently reheat the glass they are working with to keep it soft enough while they are working with it. But it's also very important to cool glass slowly under controlled conditions when they are finished working it. For this they use a type of oven called an annealer, which slowly cools the glass over many hours or even days. Glass that cools too slowly can crystallize, losing its transparency and become brittle, or even crack outright. Proper annealing cools and hardens the glass slowly to prevent this.

⇒ Glassblowing is often a team effort: Glassmaking is a collaborative art, often requiring tightly choreographed sequences of precisely timed movements and techniques by a team of glass artists. The lead artist, usually called the gaffer, directs a team of other artists who fill roles such as assistant, blower, blocker, burner, finisher, all responsible for different aspects of the process.



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