

Technically there is only one type of neon, it take around 5 years of practice to get good enough to bend

glass to a high enough quality to make a real neon sign. We can manufacture this in-house for you.

If you are interested in the difference between the “different” types, we hope to answer **What are the different types of Neon Signs** question here for you.

This page is still a work in progress. We will be adding videos in due course, but for the time being we have explained below.

## **NEON SIGNS (ONLY EVER MADE FROM GLASS)**

### **HOW IS A NEON SIGN MADE?**

Neon signs are made from straight lengths of glass, these come pre-powdered with a phosphor coating. The glass is heated by hand in a flame until it becomes soft, a bit like spaghetti. Once the glass is soft, it is removed from the flame and bent to shape over a paper pattern by hand, air is also blown into the tube at the same time to keep the tubes shape and diameter, this is either done by a mouth piece or by blowing directly into the end of the tube depending on the style of bending. After each bend is completed out of the flame, the glass is returned to the flame to be annealed, this is done to reduce any stress in the glass. The bend then need to cool before the next band can be done, each and every bend is made this way.



**Bending Glass in a Hot Flame to make a Neon Sign**

After the Bending process has been completed, parts are assembled into a section. A section can be a few letters when small or part of a large letter, shape or object. Once part are joined, electrodes are then attached to each end of the tube, the tube is then ready to be pumped.



### **Parts being joined to make neon section**

After the Electrodes have been attached the section moves to the final stages, this starts with the section being bombarded. The section is attached to a machine via some small stemming glass, once a seal is created the section is then put under vacuum, voltage is then applied to the tube once a certain pressure is reached, this applied voltage lights up the tube and starts warming the tube and electrodes up. As the tube warms harmless impurities are given off and then removed with the vacuum, (if they were not removed the tube would either not light or would fail quickly). The pressure of the tube is kept low until the electrodes have been activated and the tube has reached the correct processing temperature. Once the tube has been cleaned and the electrodes activated the vacuum is then increased, the tube is allowed to cool before the required gas (Neon or Argon) is added. Once complete the tube is removed from the bombarder and the placed into the aging bay.

The aging bay part of the process allows for the tube to fully come to life and checks for any problems with the tube. Once the tube is ready, all of the drop-backs (parts that are not needed to be seen) are painted out to give the lettering or design definition.

### **WHERE CAN A NEON SIGN BE USED?**

Neon signs can be used pretty much anywhere, indoors or outdoors, they are allowed to be used at touching height and don't burn you when touched. There are times, however, when other options would make more sense, or placing a cover over the neon would be a good choice and there are sometimes

electrical regulations that need to be considered. If you wish to discuss how you are looking to use your sign, get in [contact](#) and we will be happy to discuss this through with you. Please don't take the word of an LED company that doesn't make neon, as they generally don't understand or know about real neon.

## WHAT ARE THE OPTIONS FOR MOUNTING A NEON SIGN?

The mounting option for a neon sign are quite varied, from mounting it directly to a wall, to a clear acrylic panel, inside a hung acrylic box, to aged wooden boards or metal panels, basically most rigid surfaces are suitable. If you are unsure please feel to get in [contact](#) and we can discuss what you are trying to achieve. Check out our [Neon Sign](#) Page for more information.



**Sunshine Soul – Neon Sign Mounted to aged wooded boards.**

If you would like to see a quick video over view of the neon making process check out our [How is a Neon Sign Made](#) video, or to view some completed projects check out our [Custom Neon Signs](#) page or our [Neon Art](#) page

## LED FLEX NEON SIGNS (LED FLEX)

### HOW IS AND LED FLEX NEON SIGN MADE?

LED Flex Neon Signs are made using LED Flex, this needs to be mounted to something to hold its shape and is usually attached to either clear or black acrylic. The acrylic is cut using a CNC router to cut a channel in the shape of the required design, the router then cuts the outline of the text or the shape of the design. Once the backing has been machine processed, the flex is then glued in place, with small cuts

made into it so that it can be bent to the required shape or design. Pieces of the flex are connected by soldering small cables between them, these connections can be a bit fragile due to the size of the small cables used.



## **LED Neon Flex**

### **WHERE CAN IT BE USED?**

LED Flex Neon signs are mainly intended for indoor use. The reason for this is the way they are manufactured, cuts are made into the sealed LED Flex, these are necessary to bend the flex to follow the shapes required they are also cut in order to make the required soldered connections between pieces. These cuts need to be sealed back up, this is done manually with silicone and although it will provide weather resistance we wouldn't recommend their use for prolonged periods outside or in exposed locations. The acrylic backing can be on the fragile side.

### **LED FLEX NEON SIGN MOUNTING OPTIONS?**

Due to the nature of the way the LED Flex Neon signs are made they need to be mounted directly to acrylic. This can then be either hung, or fixed in place using sign supports or directly screwed to the wall. Check out our [LED Flex Neon Sign](#) page for more information.



**Open LED Flex Neon Sign mounted to Black Acrylic.**

If you would like to see some completed projects manufactured from LED Flex visit our [LED Flex Neon Signs](#) page, or you can view our video showing the product close up [here](#).

## **LED NEON (ACRYLIC BLOCK LETTERING)**

### **HOW IS LED NEON MADE?**

This version of “Neon” is made from a solid block of 30mm thick acrylic, the rear of the lettering is routed out to make space for LED’s to be put in to the back, the the outline is cut out for the lettering or design.

Once the router has completed cutting out the lettering or design, it is cleaned up. The backs are then cut from a choice of materials depending on its final use. The final design choice will either require a flat face or rounded face. if a round face is required the acrylic face is then routed and cleaned up, either type then moves onto the next phase.

The next step is the mounting and soldering of LEDs inside the back of the letters or design, the backs are secured in place and then the sides are wrapped in a block out vinyl. Suitable fixing are then secured in place for the lettering or design to fitted into place.



### LED "Neon" - Acrylic Parts

#### WHERE CAN IT BE USED

This type can be manufactured for either internal or external use, but we need to know beforehand as the process is slightly different depending on the use case. This type of design is robust and quite resistant to damage.



### Nando LED Neon - Block Acrylic Lettering

#### MOUNTING OPTIONS



There are a variety of options with this design including directly to a wall or mounted to a variety of rigid substrates, please get in [contact](#) to discuss your requirements. Cabling will need to be a consideration as each part will have a cable running to it. Check out our [LED Neon Section](#) for more information.



**Do What You Love LED Neon Sign mounted to tiles.**

A variety of completed projects can be viewed on our [LED Neon Signs Page](#).