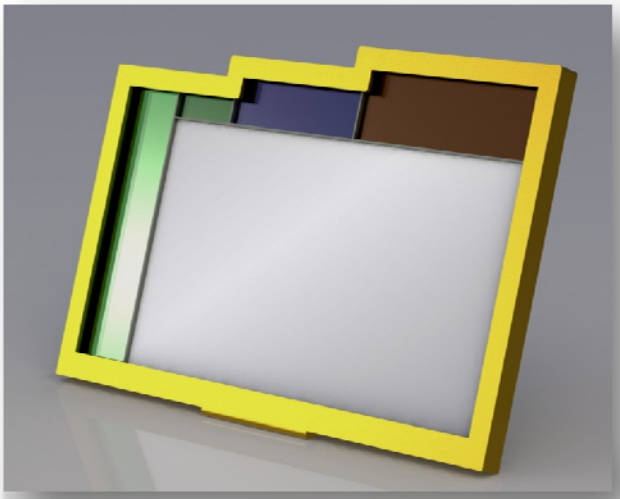
Art Deco Mirror



Official Document

Paul Smith

Alexandra Chin

Furniture and Product Design Yr 2

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Research

Introduction into Art Deco

'Art deco (/ˌɑrt ˈdɛkoʊ/), or deco, is an eclectic artistic and design style that began in Paris in the 1920s[1][2] and flourished internationally throughout the 1930s and into the World War II era.[3] The style influenced all areas of design, including architecture and interior design, industrial design, fashion and jewelry, as well as the visual arts such as painting, graphic arts and film. The term "art deco" was coined in 1966, after an exhibition in Paris, 'Les Années 25' sub-titled Art Deco,[4] celebrating the 1925 Exposition Internationale des Arts Décoratifs et Industriels Modernes (International Exhibition of Modern Decorative and Industrial Arts) that was the culmination of style moderne in Paris. At its best, art deco represented elegance, glamour, functionality and modernity. Art deco's linear symmetry was a distinct departure from the flowing asymmetrical organic curves of its predecessor style art nouveau; it embraced influences from many different styles of the early twentieth century, including neoclassical, constructivism, cubism, modernism and futurism[5] and drew inspiration from ancient Egyptian and Aztec forms. Although many design movements have political or philosophical beginnings or intentions, art deco was purely decorative.[6]

Art deco experienced a decline in popularity during the late 1930s and early 1940s, but had a resurgence during the 1960s with the first book on the subject by Bevis Hillier in 1968 and later an exhibition organised by him in Minneapolis in 1971.[1] It continued with the popularization of graphic design during the 1980s. Art deco had a profound influence on many later artistic styles, such as Memphis and pop art.

Architectural examples survive in many different locations worldwide, in countries as diverse as China, Latvia, Colombia, and the United States. In New York City, the Empire State Building, the Chrysler Building, and Rockefeller Center are among the largest and best-known examples of the style.'

The structure of Art Deco is based on mathematical geometric shapes.[14] It was widely considered to be an eclectic form of elegant and stylish modernism, being influenced by a variety of sources. The ability to travel and archaeological excavations during this time influenced artists and designers, integrating several elements from countries not their own. Among them were historical styles such as Greco-Roman Classicism, as well as the art of Babylon, Assyria, Ancient Egypt,[14][15] Aztec Mexico, and Africa.[5]

Much of this could be attributed to a popular interest in archaeology during the 1920s (e.g., the tomb of Tutankhamun, Pompeii, Troy, etc.). Art Deco also used Machine Age and streamline technologies[16] such as modern aviation, electric lighting, radio, ocean liners and skyscrapers for inspiration.[5] Streamline Moderne was the final interwar-period development, which most thoroughly manifests technology and has been rated by some commentators as a separate architectural style.[17]

Art-deco design influences were expressed in the crystalline and faceted forms of decorative Cubism and Futurism.[18][18] Other popular themes of Art Deco were trapezoidal, zigzagged, geometric, and jumbled shapes,[15][19] which can be seen in many early works. Two great examples of these themes and styles are in Detroit, Michigan: the Fisher Building and the Guardian Building.[20]

http://en.wikipedia.org/wiki/Art_Deco

Art Deco Colours

Need some help choosing an color palette for your Art Deco inspired home? Or perhaps you want to inject a little deco-color into your 1920s inspired wardrobe?

Here are the most popular Art Deco hues and color schemes.

Popular Art Deco Style Color Schemes
Bold & Bright

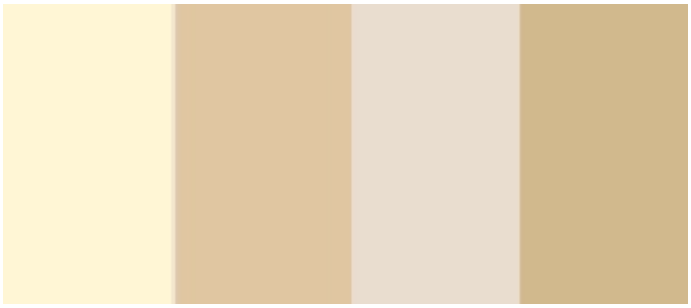
The economy was booming in during the Roaring 20s and lively, energetic colors began to symbolize the prosperity of the times. Hues like canary yellow, emerald green, peacock blue, royal purple and brilliant red became all the rage.

Metallics

Silver, Gold, Metallic Blues and Charcoal Greys also represented the wealth and prosperity of the times. Metallic finishes instantly add glitz, glamour and imply luxury and wealth. This is the epitome of Art Deco style.

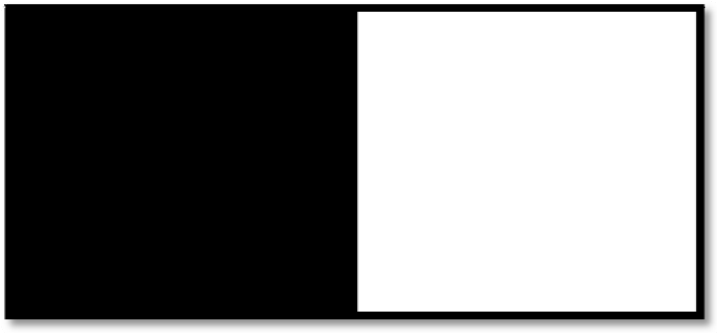
Neutrals

Art Deco was all about a streamlined, modern look and a neutral, monochromatic color scheme easily achieved this feel. Cremes, beiges, taupes and medium browns became popular choices for interiors and fashions.



Black & White

This is probably the most popular colour scheme during the 1920s and 1930s. Black and white checkerboard tiles, floors and wallpapers were very trendy. Also, fashions became ultra sophisticated and streamlined . The classic Chanel black and white ensemble was the ultimate in chic sophistication.



http://www.art-deco-style.com/art-deco-colors.html

Introduction in to Stained Glass

The term **stained glass** can refer to coloured glass as a material or to works produced from it. Throughout its thousand-year history, the term has been applied almost exclusively to the windows of churches and other significant buildings. Although traditionally made in flat panels and used as windows, the creations of modern stained glass artists also include three-dimensional structures and sculpture.

Modern vernacular usage has often extended the term "stained glass" to include domestic leadlight and objets d'art created from lead came and copper foil glasswork exemplified in the famous lamps of Louis Comfort Tiffany.

Stained glass, as an art and a craft, requires the artistic skill to conceive an appropriate and workable design, and the engineering skills to assemble the piece. A window must fit snugly into the space for which it is made, must resist wind and rain, and also, especially in the larger windows, must support its own weight. Many large windows have withstood the test of time and remained substantially intact since the late Middle Ages. In Western Europe they constitute the major form of pictorial art to have survived. In this context, the purpose of a stained glass window is not to allow those within a building to see the world outside or even primarily to admit light but rather to control it. For this reason stained glass windows have been described as 'illuminated wall decorations'.

Origins

Coloured glass has been produced since ancient times. Both the Egyptians and the Romans excelled at the manufacture of small coloured glass objects. Phoenicia was important in glass manufacture with its chief centres Sidon, Tyre and Antioch. The British Museum holds two of the finest Roman pieces, the Lycurgus Cup, which is a murky mustard colour but glows purple-red to transmitted light, and the Portland vase which is midnight blue, with a carved white overlay.

In Early Christian churches of the 4th and 5th centuries, there are many remaining windows which are filled with ornate patterns of thinly-sliced alabaster set into wooden frames, giving a stained-glass like effect.

Stained glass, as an art form, reached its height in the Middle Ages when it became a major pictorial form and was used to illustrate the narratives of the Bible to a largely illiterate populace.

In the Romanesque and Early Gothic period, from about 950 AD to 1240 AD, the untraceried windows demanded large expanses of glass which of necessity were supported by robust iron frames, such as may be seen at Chartres Cathedral and at the eastern end of Canterbury Cathedral. As Gothic architecture developed into a more ornate form, windows grew larger, affording greater illumination to the interiors, but were divided into sections by vertical shafts and tracery of stone. The elaboration of form reached its height of complexity in the Flamboyant style in Europe and windows grew still larger with the development of the Perpendicular style in England.

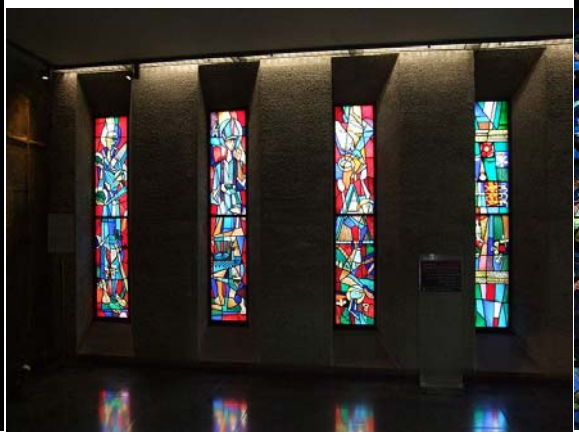
Integrated with the lofty verticals of Gothic cathedrals and parish churches, the glass designs became more daring. The circular form, or rose window developed in France from relatively simple windows with pierced openings through slabs of thin stone to wheel

windows, as exemplified by that in the West front of Chartres Cathedral, and ultimately to designs of enormous complexity, the tracery being drafted from hundreds of different points, such as those at Sainte-Chapelle, Paris and the "Bishop's Eye" at Lincoln Cathedral.

Innovations in Britain and Europe

Among the most innovative English designers were the Pre-Raphaelites, William Morris (1834–1898) and Edward Burne-Jones (1833–1898), whose work heralds Art Nouveau. Art Nouveau or Belle Epoch stained glass design flourished in France, and Eastern Europe, where it can be identified by the use of curvings sinous lines in the lead, and swirling motifs. In France it is seen in the work of Francis Chigot of Limoges. In Britain it appears in the refined and formal leadlight designs of Charles Rennie Macintosh.

http://en.wikipedia.org/wiki/Stained_glass


‘How To’ Stained Glass

Lead Came and Copper

Lead came and copper foil glasswork are the arts and crafts of cutting coloured glass and joining the pieces into picturesque designs.

The traditional method uses lead came. This is the method used for centuries in Europe, mainly in religious buildings such as cathedrals, churches and monasteries, and including wealthy or aristocratic homes.

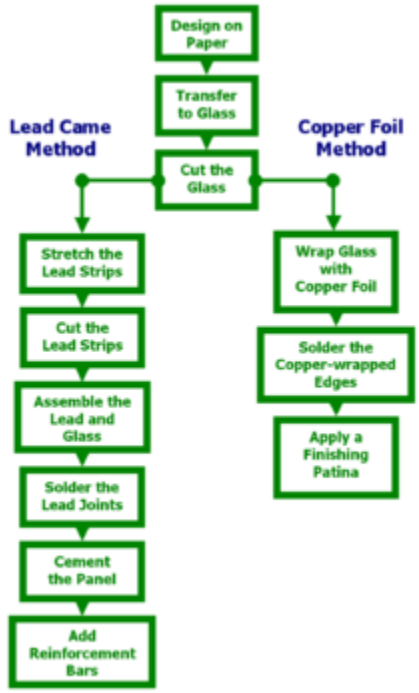
An alternative method, replacing the lead came with copper foil, was invented in the 19th century, enabling creation of three-dimensional works, in addition to two-dimensional ones to which the lead came method is limited. The copper foil artwork is commonly called *Tiffany* stained glass, even though there is a debate about whether John La Farge or Louis Comfort Tiffany invented this alternative to lead came glasswork.

In both lead came and copper foil glasswork, cut pieces of stained glass are joined together in a framework of soldered metal.

In the lead came method the pieces of glass are embedded into the channels of the came, and the joints between the came strips soldered together.

In the copper foil method, the edges of the glass pieces are wrapped with adhesive copper tape, and soldered together along the adjacent copper strips.

The process



The steps in creation of Lead Came and Copper Foil Glasswork

Design

The first step for both techniques is to create a design on paper. This draft must consider constraints such as reduction of buckling risk, overall structural integrity, limiting the convergence of lead lines, and cuttability of each piece of glass within.

The next step is to make a template copy of the design for cutting the glass. The width of the lead came or the copper foil that separates the pieces of glass may be compensated for with double blade pattern shears that remove a thin strip of material on the template copy.

For large designs, a scale model may be made, which is digitally photographed and further modified with CAD software. After measurements and other notations are applied, the full pattern is printed on a large-format printer.

Transferring the design to glass

Four methods may be employed.

- The cut paper may be glued to the glass before cutting it
- The cut paper to may be pressed against the glass and its outline traced on the glass with a marker.
- The pattern may be affixed to a light box or light source. Sheet glass is placed over the pattern, and traced with a marker.
- The edge of the pattern piece may be followed with the cutter.

Cutting the glass

The glass is scored using a steel or carbide wheel glass cutter lubricated with cutting oil. Glass is broken at the score using breaker-grozier pliers, running pliers or built in groziers on a traditional glass cutter. This works because glass breaks along its weakest point when it bends.

The ball end on many glass cutters is used to break complicated cuts in a piece of glass. Tapping the ball end along the score on the opposite side of the glass sends a vibration through the glass that helps it break along the score. Also, the notches in most basic glass cutters can be used to grab small bits of glass for breaking.

Grinding the cut glass

At this stage, the cut glass pieces have sharp edges and inaccuracies in their shape. The glazier can use an electric glass grinder with a diamond-coated grinding wheel to smooth the glass pieces, or a carborundum stone.

Assembling the lead and glass

Schematic cross-section drawing of two glass pieces embedded in three lead came pieces: 1 - U-shaped came; 2 - H-shaped came; 3 - glass

Each piece of glass is set in place upon a glazing drawing, with came shaped around it to make a matrix. Horseshoe nails and scraps of lead are used to hold the already-assembled pieces to the work surface. Horseshoe nails are used, because the steel is not tempered, and therefore has less chance of breaking the edge of a piece of glass. Sometimes on a delicate piece, a scrap of lead will cushion the glass from the nail. The glass and lead are assembled gradually, beginning from one corner of the work, and building-up away from it. The ends of the came are tucked under the ears of the other lead it meets.

Soldering the lead joints

The lead came is soldered at the joints between strips with lead/tin solder. This is in contrast to the copper foil method described below, where the whole length of the copper strip is soldered.

50/50 creates a flat bead, best used for tight lead joints and a base for copperfoil work. 60/40 creates a high bead, most commonly used for copperfoil work. It can be used on came but is not recommended.

Joints should be fluxed a few joints at a time, using a little bit of solder at a time. The iron should be moved in a circular pattern about a 1/2 inch. It is important to always test the Iron's temperature by testing it on a scrap piece lead first.

Cementing the lead and glass panel

The final step is applying a waterproofing putty made of linseed oil and calcium carbonate (commercial whiting). The glazing compound is worked into the space between the glass and lead, to strengthen and waterproof the work. Lastly, the ears are pressed down against the glass, securing the piece and further waterproofing the panel. Whiting is reapplied to window sparingly for cleaning and removing excess oils left from cementing. Do not rush this step, always read and follow the directions. Most products must sit for a few days.

Copper Foil Technique

Copper-foil glasswork connects pre-cut pieces of glass by wrapping their edges with adhesive copper tape, then soldering the copper-wrapped edges together. It is commonly called the "Tiffany" stained glass method. One of the advantages of copper-foil glasswork over lead-strip glasswork is that you can assemble the glass pieces in three-dimensional shapes when soldering them together. Lead-strip enables the creation of only two-dimensional panes. The three photos below show the use of this technique for fixing a glass jar of a candy vending machine.

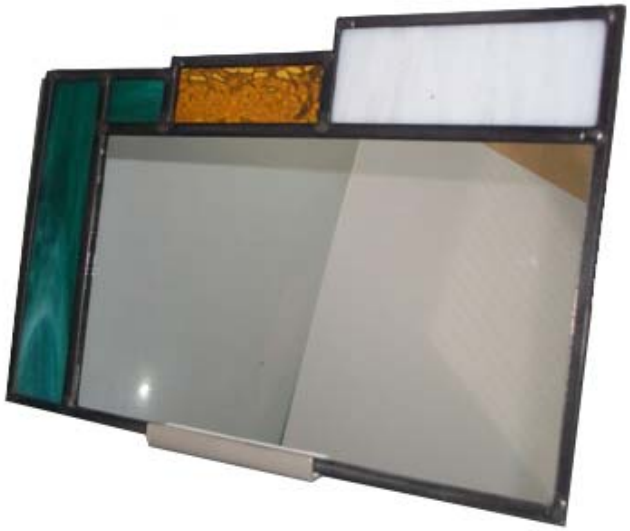
The steps of the copper foil process are depicted in the images below.

- Tip: Before you wrap, Wipe the glass with Rubbing Alcohol. This will remove excess oils and allow the adhesive to adhere better.
- The edges of the glass pieces are wrapped in copper foil. This is similar to the lead came method, where the edges are inserted into the came channels. The foil is then burnished onto all three glass surfaces using a burnishing tool, such as a fid or basic, to ensure there are no gaps between the foil and the glass.
- Flux is applied to all visible copper sparingly.

- The copper-wrapped glass pieces are soldered together. A bead of solder is run across every spot of visible copper foil, in contrast with the lead came method, where only the came edges called "joints" are soldered together.
- A finishing patina is applied to emphasize details or to quickly achieve the natural black patina that all lead develops with age.

http://en.wikipedia.org/wiki/Lead_came_and_copper_foil_glasswork

Design in question



Materials

Stained Glass

stained glass is glass that has been coloured by adding metallic salts during its manufacture. The coloured glass is crafted into *stained glass windows* in which small pieces of glass are arranged to form patterns or pictures, held together (traditionally) by strips of lead and supported by a rigid frame. Painted details and yellow stain are often used to enhance the design. The term *stained glass* is also applied to windows in which the colours have been painted onto the glass and then fused to the glass in a kiln.

http://en.wikipedia.org/wiki/Stained_glass

For lampshades, Uroboros, Bullseye and Youghiogheny glass are generally considered the best choices because they they have just the right balance of opalescence (opacity) and transparency. Spectrum glass, for example, tends to make lampshades that are too "dark." Bear in mind that mixing Youghiogheny glass with the glass of other manufacturers within a lamp shade is quite risky, because of unique properties - it tranmits the most light, yet reflects the least. In other words, when the shade is unlit, the glass looks very dark and near black, because little light is reflected off the surface. When the shade is lit from within as with a light bulb, it transmits the most, that is, the pieces of glass appear considerably brighter than other manufacturer's. If you decide to mix Youghiogheny with other glass, you have to be sure that you want the Youghiogheny pieces to be strikingly brigther than the rest.

http://art-of-stained-glass.com/1glassselection.html

Uroboros, Bullseye and Youghiogheny

see end of book for colour samples#

Lead Beading

LEAD CAME vs. FOIL

Which to choose?
Below is a table for quick reference:

Project Type	COPPER FOIL	LEAD CAME
Tiffany Lampshade	YES	NO
Old Style Lampshade	NO	YES but will sag
Suncatchers & Boxes	YES	NO
Geometric Panels	NO	YES
Purposely wobbly sized lead lines	YES	NO
Lead lines of different widths	NO	YES
Glass Painting	Not tradition	Tradition
Architectural Look	NO	YES

Tiffany Lampshades
Tiffany shades are renowned for their delicate leading and the intricate nature of the pieces of its glass. This could not be achieved with lead came. Furthermore, lead came construction is not well suited to mold work.

Old Style Lampshades
In the forties and fifties, many coarse-looking, multi-panel shades were made using lead came construction. Many of these shades end up at repair shops as the lead sags over time. If for some reason you require this old look, it is achieved with the use of lead came.

Suncatchers and Boxes
Suncatchers and boxes are generally made with copper foil for a lighter looking result.

Wobbly Lead Lines
If you are seeking a look where the lead lines are of a width that varies along their length, copper foil is the choice.

Different Width Lead Lines
Should you be interested in having lead lines of uniform widths along their length, but of various sizes, lead came is your choice. Frank Lloyd Wright and Charles Rennie Mackintosh made ample use of variety in the widths of their lead lines, it is an inextricable part of their designs.

Glass Painting

While nothing stops anyone from using copper foil in their painted project, there an unspoken rule among practitioners of the art that glass painted pieces are traditionally assembled in lead came. It's not often that glass painters use copper foil, even if they could, technically speaking. The emphasis is on simple pieces, intrically painted - so little reason to fuss over a lot of precision pieces and multitudes of lead lines.

Architectural Look
Expected to have significant numbers of straight lines, the architectural look is only achieved with lead came. Door insets and windows are nearly always in lead came. This is not a representational style, but one that is designed to fit with the house itself. Another reason to use lead came is that architectural stained glass is frequently exposed to temperature changes, and the putty of lead came constructions serves to cushion the expansion and contraction of glass, as well as mecanical shock (from shutting a door, for instance).

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Copper foil and lead came, in practice, are rarely combined in a single work; however, there is no contra-indication if this serves your artistic vision

Brass

Brass is a metal made of copper and zinc, having a muted yellow color, somewhat similar to gold.

Brass Properties

Some of the useful properties of brass include:

- Relatively resistant to tarnishing
- Good malleability
- Good acoustic properties
- Decorative golden color
- Relatively low melting point and flow characteristics make it a relatively easy to cast
- Nonmagnetic
- Low coefficient of friction

Applications of Brass

Brass is often used for: Musical instruments, Lamps, Knobs, Handles, Bowls, Bearings, Sleeves, Bushings, Nuts and bolts, Gears, Valves, Plumbing, Electrical devices, Bells, Hinges, Clock hands, Gibs, Slides, Machine tool components and Zippers.

Mild Steel

Mild Steel Properties and Uses

- Typical Mild Steel is made up of fixed composition of 2 % Carbon, manganese (1.65%), copper (0.6%) and silicon (0.6%). Apart from this, there can be variations in the presence of cobalt, chromium, niobium, molybdenum, titanium, nickel, tungsten, vanadium and zirconium.
- Presence of high range of Carbon makes the Mild Steel stronger and stiffer than the originating Steel. This is due to the fact that the Carbon atoms attach themselves in the interstitial sites of the Iron lattice. Though stronger, this Mild Steel is less ductile.
- It has ferromagnetic properties, which make it ideal for manufacture of electrical devices and motors. It has Mild amount of Carbon with range from 0.16% to 0.19%.
- The average industry grade Mild Steel has a density of 7.85 gm/cm3.its stiffness measured in the form of Young's modulus is around 210,000 Mpa.
- Stainless Steel is usually preferred over Mild Steel since it is corrosion resistant whereas the presence of Carbon in the Mild Steel makes it vulnerable to rust. As a structural Steel, it is highly used in construction as well as car manufacturing industry.
- Mild Steel is more cost effective and versatile than Steel. It is highly used when bulk amount of Steel is required

http://www.agrasenispat.net/blog/mild-steel-properties_459.htm

Price

£400 a tonne

Stainless Steel

Stainless steel is a type of alloy steel that resists rust and other forms of corrosion and has an attractive appearance. Stainless steel contains chromium which provides the unique stainless and corrosion resisting properties. Stainless steel has a unique self-healing property. Due to the alloying elements used, a thin, transparent layer is formed on the surface. In case the surface is scratched or damaged otherwise, this thin layer, which is only a few atoms thick, immediately rebuilds with the assistance of oxygen from air or water. This is the reason why stainless steel does not require any coating or other corrosion protection to remain bright and shiny even after decades of use.

Stainless Steel Properties

Stainless steel products have many significant advantages over other metals:

- Resists corrosion
- Retains strength even at high temperatures
- Hygienic due to the smooth and minimally porous surface (useful for hospitals and food processing plants)
- Bright aesthetic appearance
- Easily machined, welded, formed and fabricated
- Usually non-magnetic - useful for aerospace applications
- Excellent fatigue and impact resistance - useful in automotive body building
- High resistance to shock at low and high temperatures
- Yields durable long-life products

Applications of Stainless Steel

Stainless steel is often used in:

- Kitchens
- Restaurants
- Dairies
- Hospitals
- Aircraft
- Automotive
- Labs
- Chemical industry
- Pressure tanks
- Fasteners
- Architecture
- Construction

http://www.emachineshop.com/machine-shop/Stainless-Steel/page54.html

Acrylic

General properties of acrylic sheet:

o Strong and resists weathering

o Flexible when compared with glass

o Less breakable than glass

o Abrasion resistant

o Can withstand sunlight for long durations

o Resistant to most chemicals and industrial fumes

o Can transmit or filter ultraviolet light

o Can be cleaned easily

o Can be cut by various methods

o Corrosion resistant

o Good insulator.

Other general properties include the ability to transmit and control light. They are also stable against discoloration, and have superior dimensional stability, as you would notice if you have an acrylic brochure display, counter display, donation / suggestion box or point of purchase (p.o.p) display. Possessing an excellent combination of structural and thermal properties, clear acrylic plastic is as transparent as the finest optical glass:

o Possess a light transmittance of 92%

o Low haze level of approximately 1%

o Index of refraction of 1.49

It also has the ability to be injected with color, producing a full spectrum of transparent, translucent, or opaque colors depending on your needs. This process does no harm in terms of long-term durability; colored acrylics can be used outdoors for a long time. Why? They are formulated to filter ultraviolet energy in the 360-nm and lower band. Other acrylic formulations are opaque to UV light or provide reduced UV transmission.

And how about mechanical properties? Although not known for having many, acrylics can be used for short-term loading. If the intended use is long-term, stresses must be limited to 1,500 psi to avoid surface cracking and deterioration.

Acrylic does well in the cold, as the impact resistance of standard formulations is maintained in these conditions. It should be noted that high-impact acrylic grades have

greater impact strength than standard grades at room temperature, but impact strength decreases as temperature drops. Some types of acrylic are even known to resist bullets!

Acrylic plastics are highly scratch resistant, especially among other thermoplastics. It's a good idea, however, to ensure proper maintenance and cleaning. Keep in mind that abrasion-resistant acrylic sheet is available and has the same optical and impact properties as standard grades. You will see this in many of our brochure displays, racks, counter displays, donation / suggestion boxes and point of purchase (p.o.p) displays.

This brings up a good point - its versatility and adaptability. Are you aware that Jet-aircraft cabin windows are made from acrylic sheet? They do this by inducing molecular orientation during forming. This proves the potential strength of acrylic sheet. How do they react to other chemicals and compounds? Acrylic sheet and moldings resist solutions of inorganic acids and alkalies and aliphatic hydrocarbons such as VM&P naphtha, as well as most detergent solutions and cleaning agents. They are attacked by chlorinated and aromatic hydrocarbons, esters, and ketones.

Acrylic sheets are extremely durable and have weather resistant properties. They can be cleaned very easily and thus are excellent for making poster frames and sign holders.

Article Source: http://EzineArticles.com/895208

Price

1 m by 1m = £35.00

Mirror

Mirror Thicknesses Guidelines

Below are some general suggestions on which thickness of glass and mirror can be used for your project. FYI, all glass is made in metric units, so there will always be slight variances due to production tolerances and the conversion to English units.

3/32" Thick (2.5 mm)

- Picture frames
- Small insulated glass units
- Cannot be tempered

1/8" Thick (3.2 mm)

- Insulated glass units
- Small cabinet door panels
- Some specialty glass

5/32" Thick (4.0 mm)

- Insulated glass units
- Small cabinet door panels
- Most specialty glass

3/16" Thick (4.7 mm)

- Insulated glass units
- Larger cabinet door panels
- Not recommended for protective table tops
- Smaller mirrors

1/4" Thick (5.7 mm)

- All general glass applications
- Larger mirrors
- Not recommended for table tops

3/8" Thick (9.5 mm)

- Shower doors and enclosures
- Shelves
- Table tops
- Larger door panel inserts

1/2" Thick (11.5 mm)

- Larger shower doors and enclosures

- Larger shelves
- Larger table tops
- Countertops

3/4" Thick (19.0 mm)

- Very large table tops
- Very large shelves
- Larger countertops
- Industry quality standards does allow for minor bubbles to be present in 3/4" thick glass

http://clearlightglass.com/designoptions/thicknessguide.html

Price of Mirror

Thickness 4mm

1m x 1m = £96.63

Manufacture

Important Points

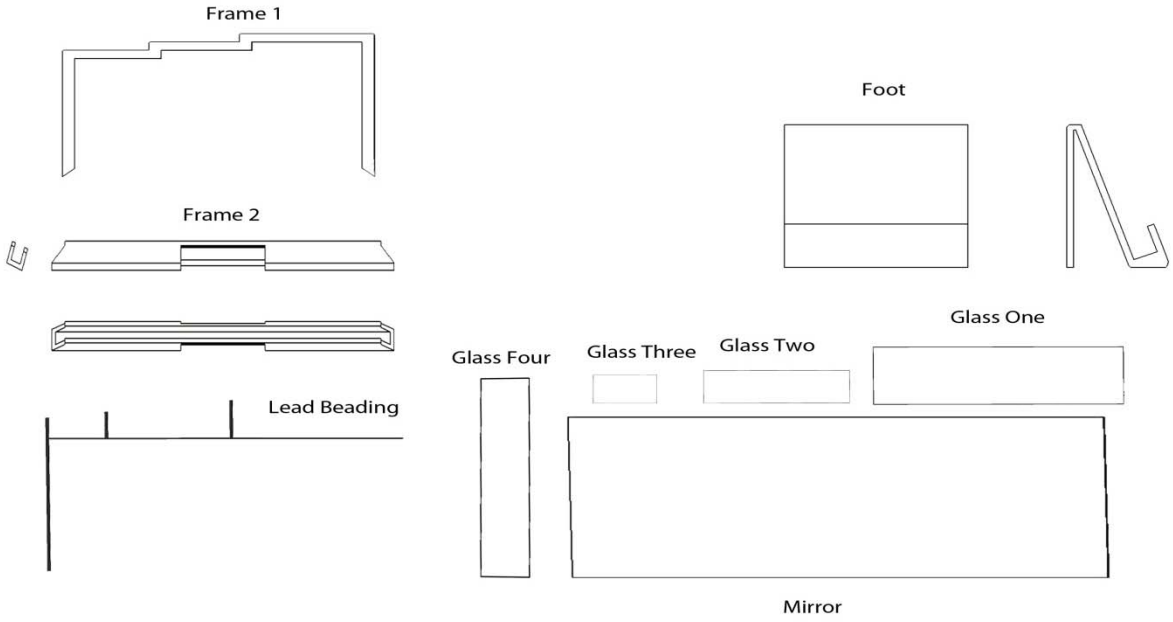
Lead Beading is cut in straight lines and then all soldered together with the glass included. Working drawing has been drawn with all parts soldered together.

Production of the Stand

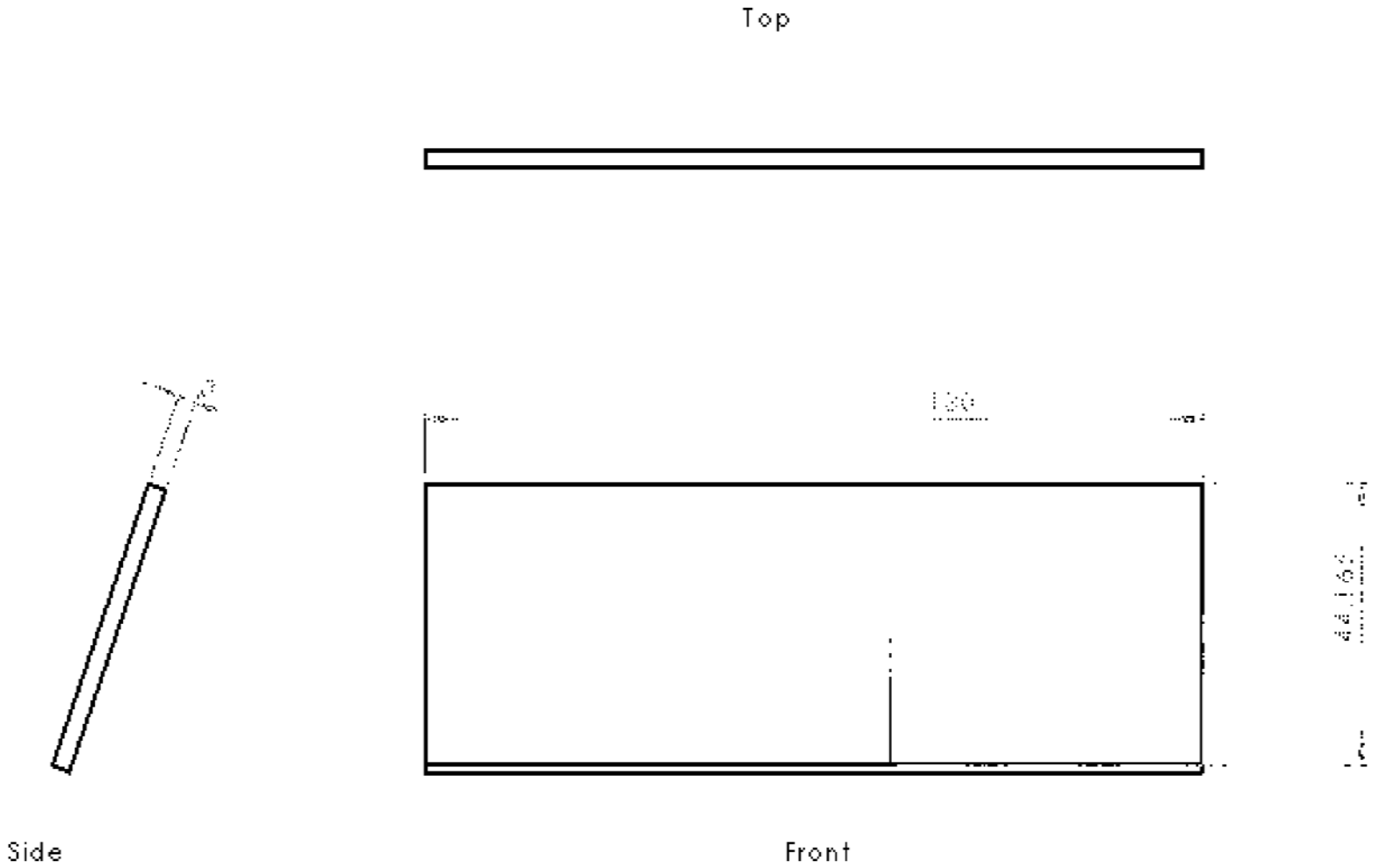
Brass Stand would be bent on a machine to get the angles. It is possible that it would be made in many parts and then welded together to make a solid shape.

Components

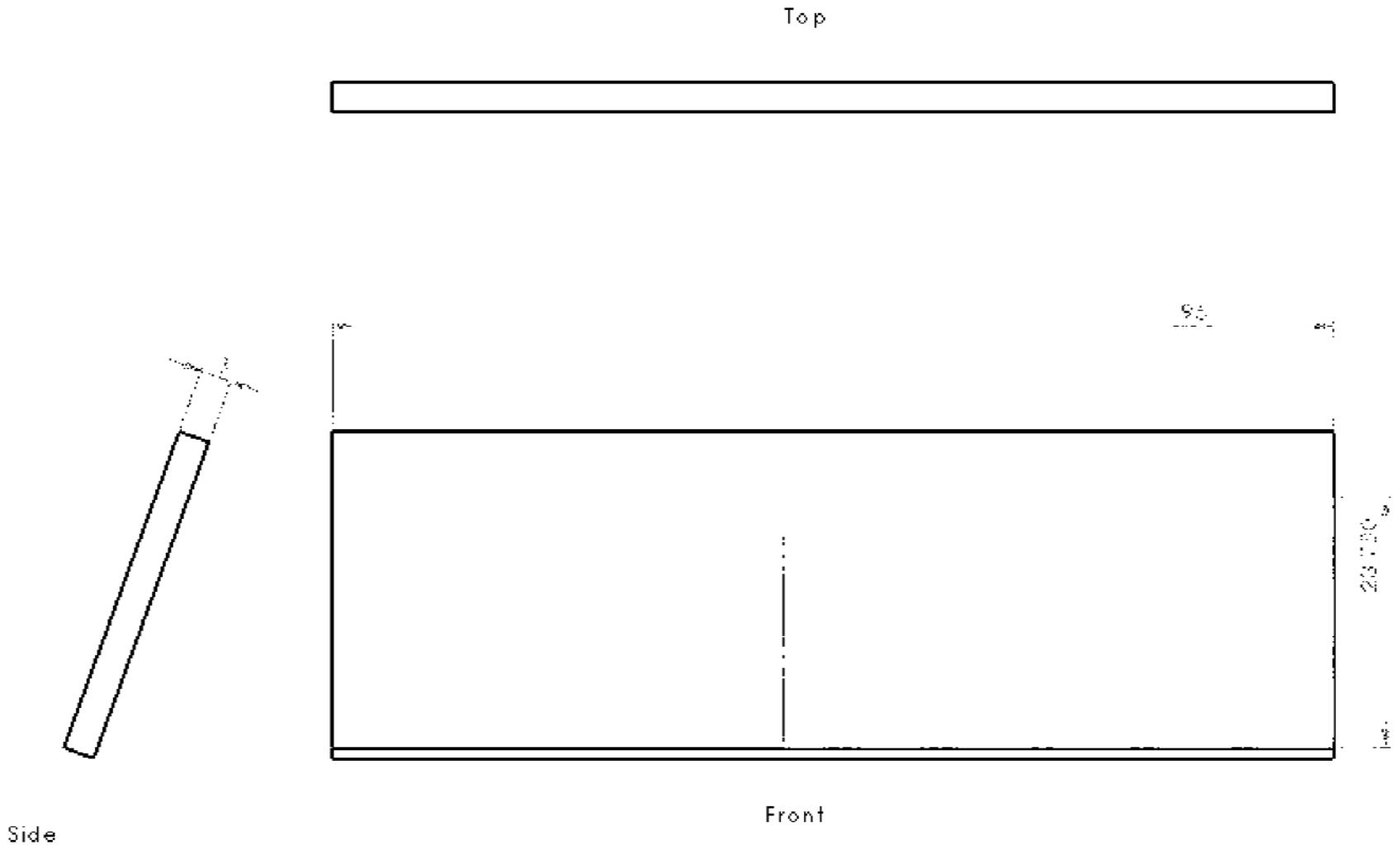

15.40 mm
219.500 mm
324.500 mm


Frame 1
Frame 2
Lead Beading
Foot
Glass One
Glass Four
Glass Three
Glass Two
Mirror

Glass One

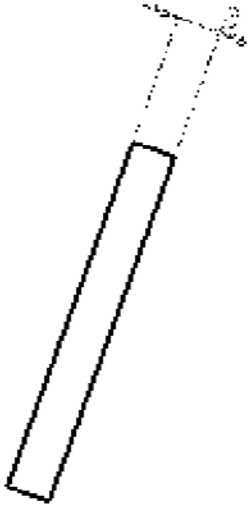


Glass two

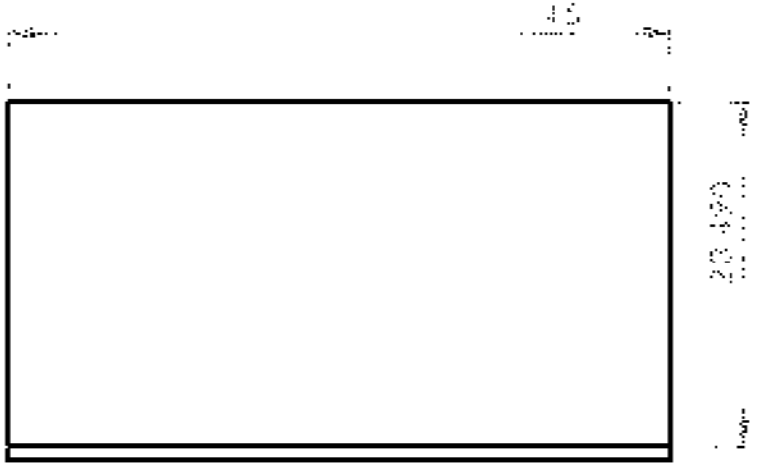


Glass Three

Top

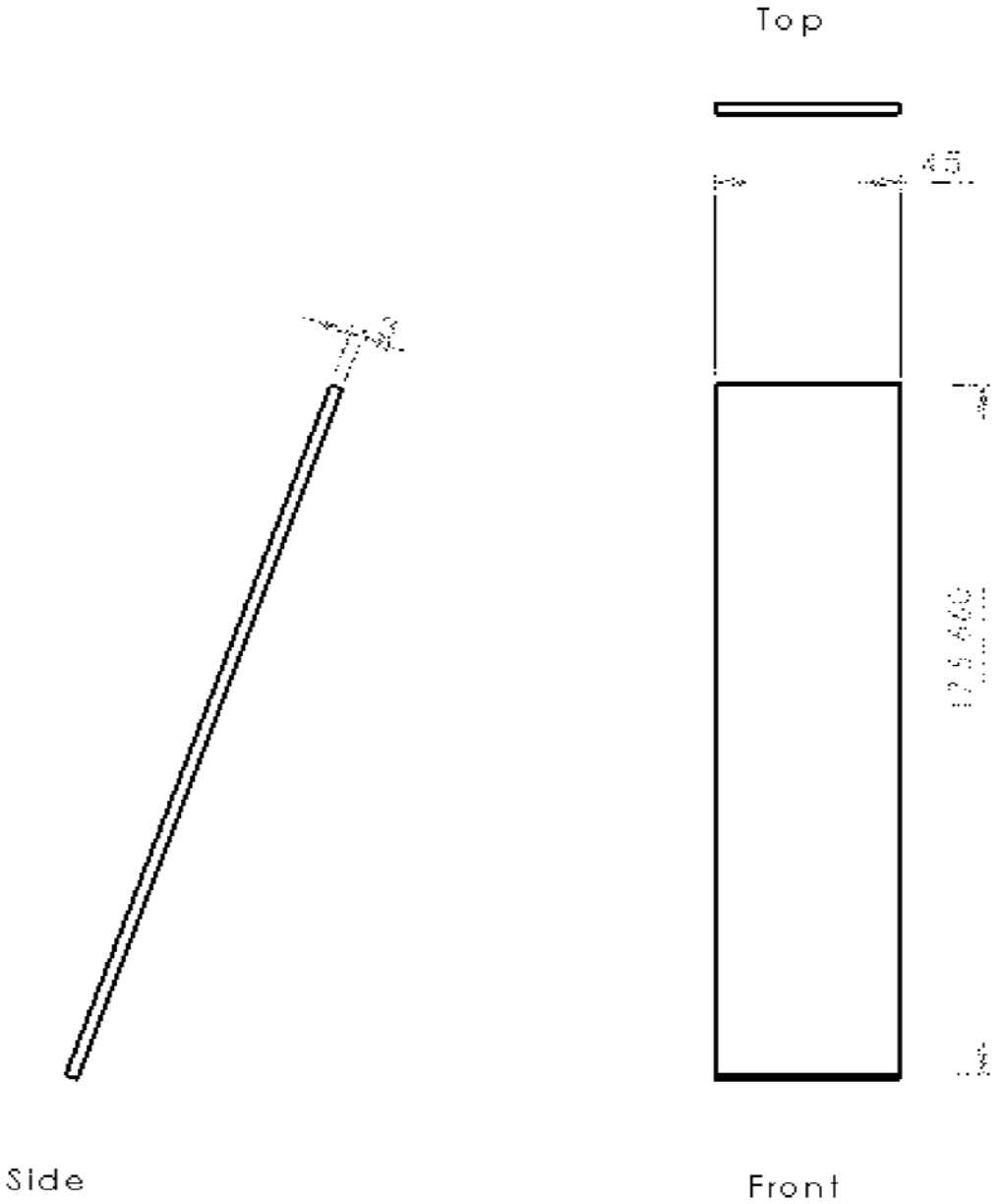


Side



Front

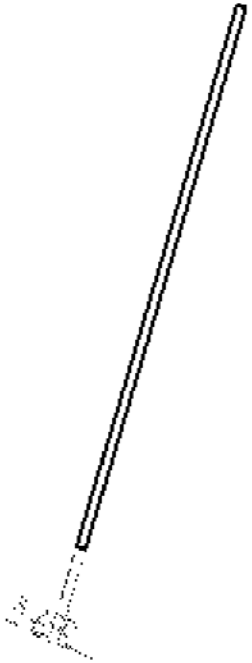
Glass Four



Mirror

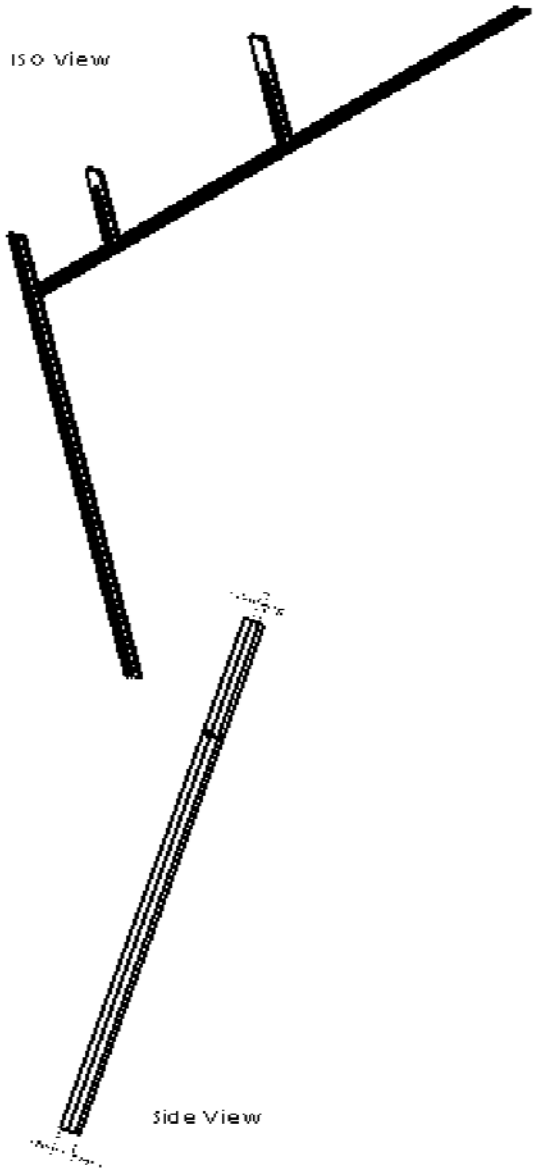
Top

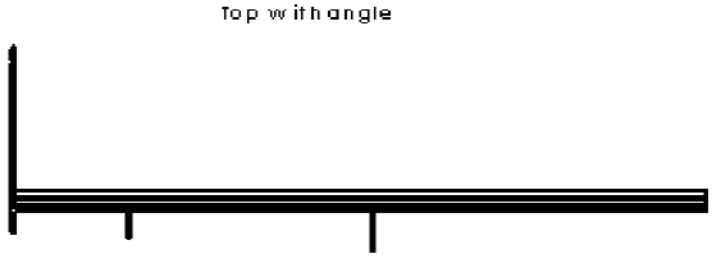
Side



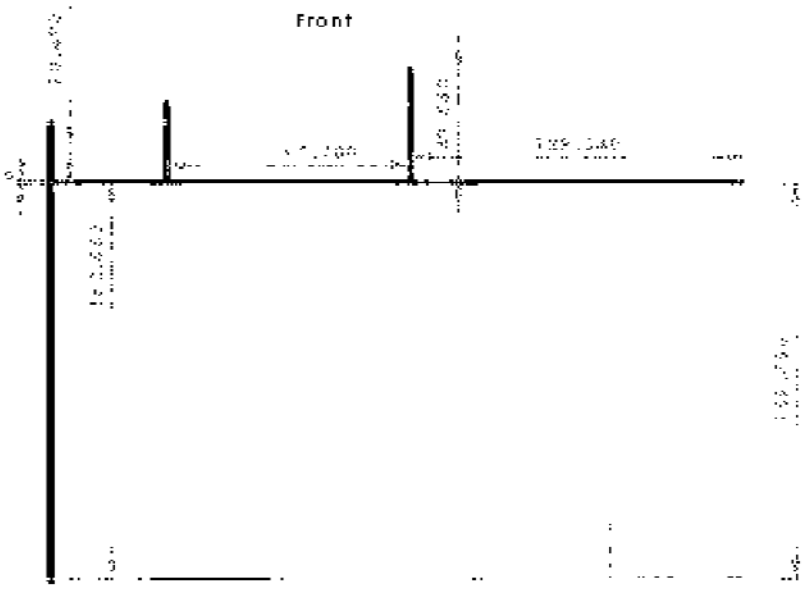
Front

Lead Beading

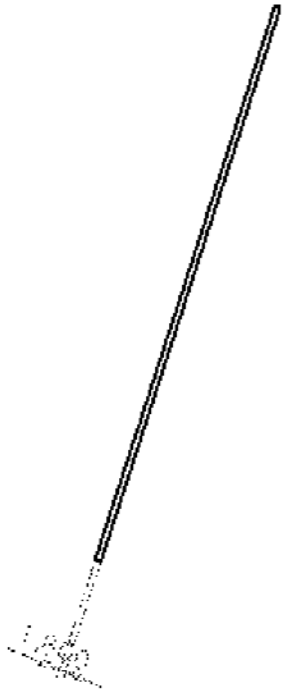




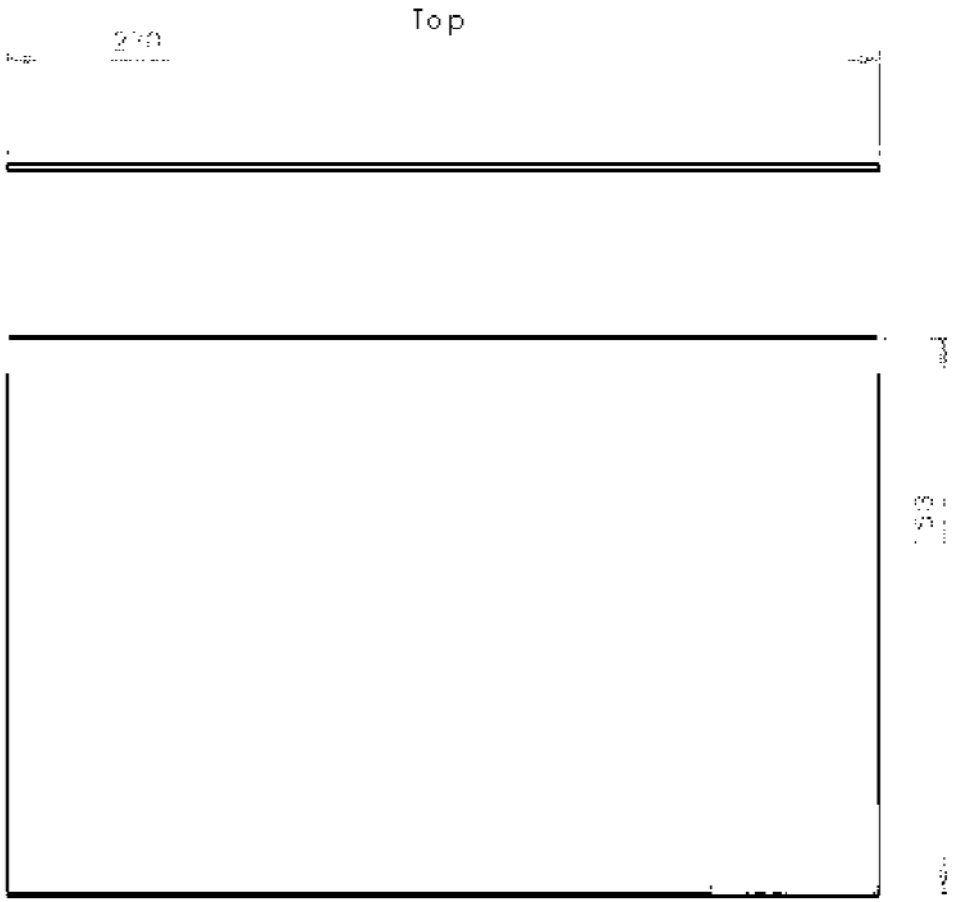
Grey section is the outer beading if included



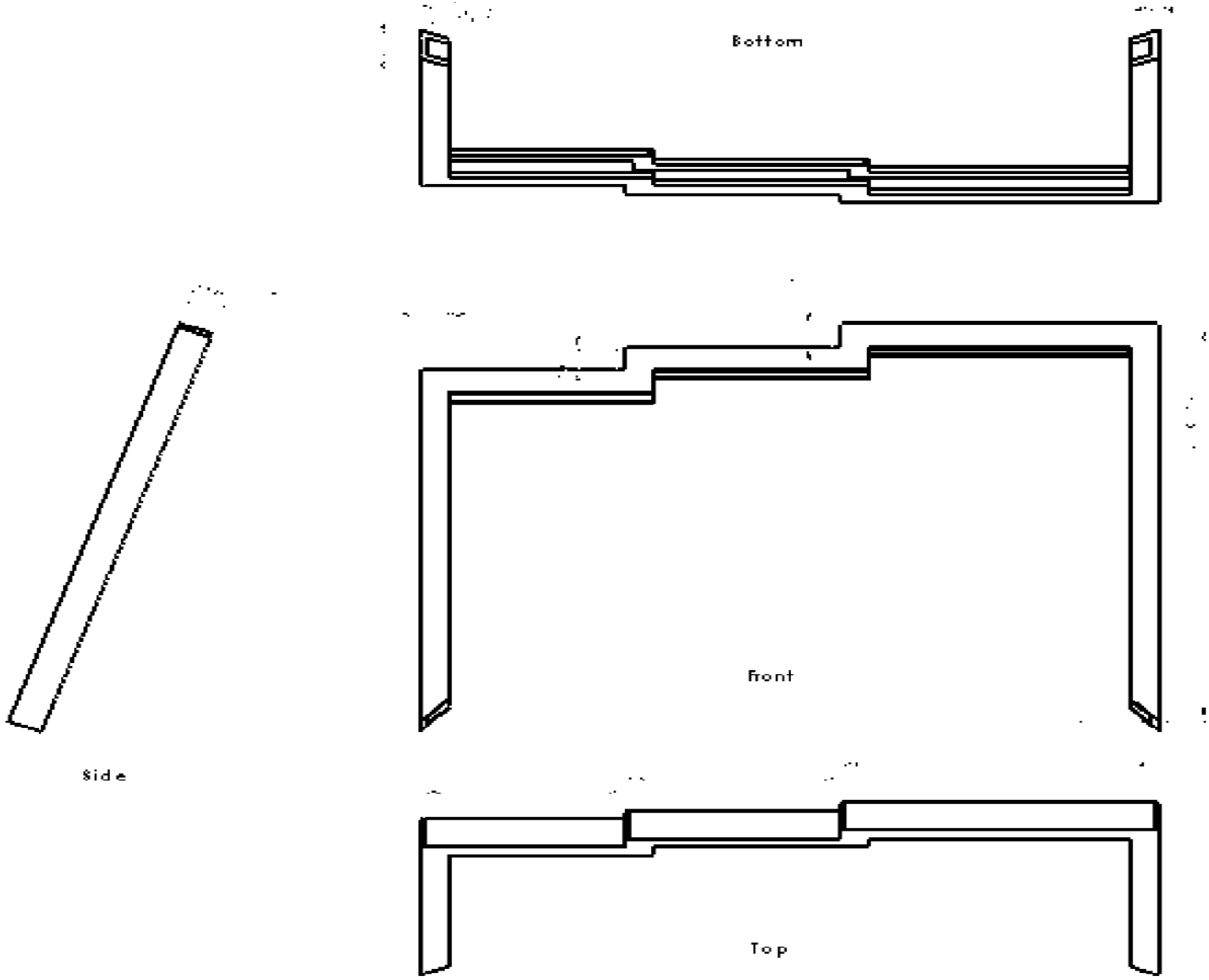
Back



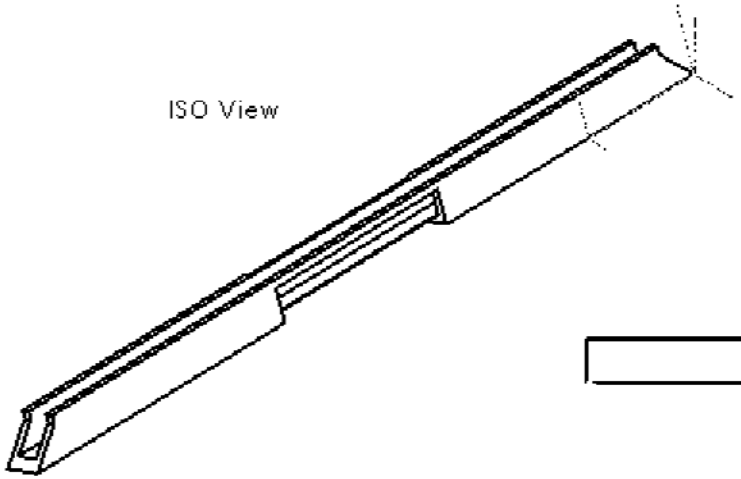
Side



Frame 1

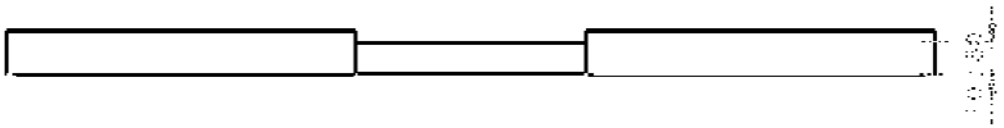


Frame 2

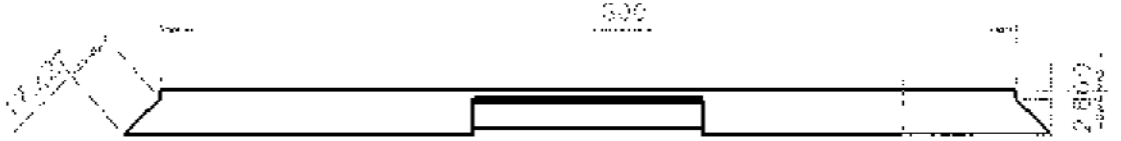


ISO View

Bottom



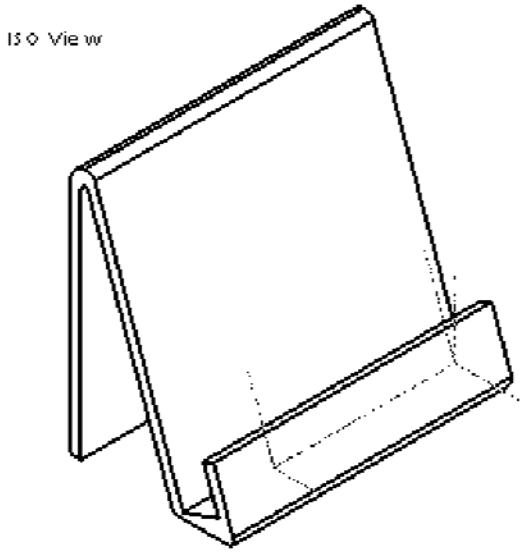
Side View

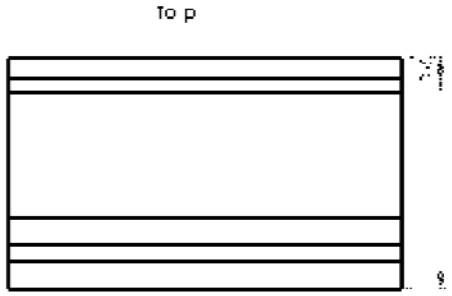


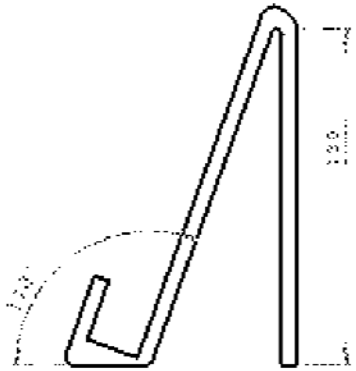
Front View

Top View

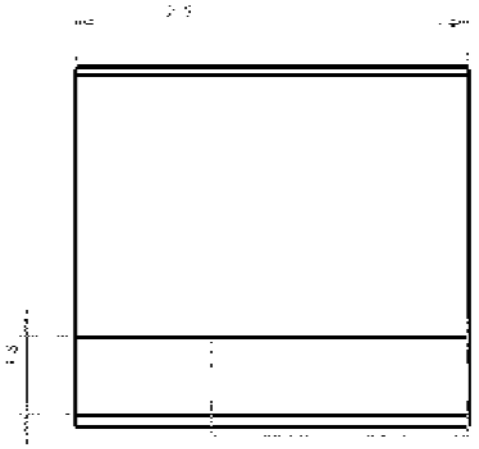
Stand





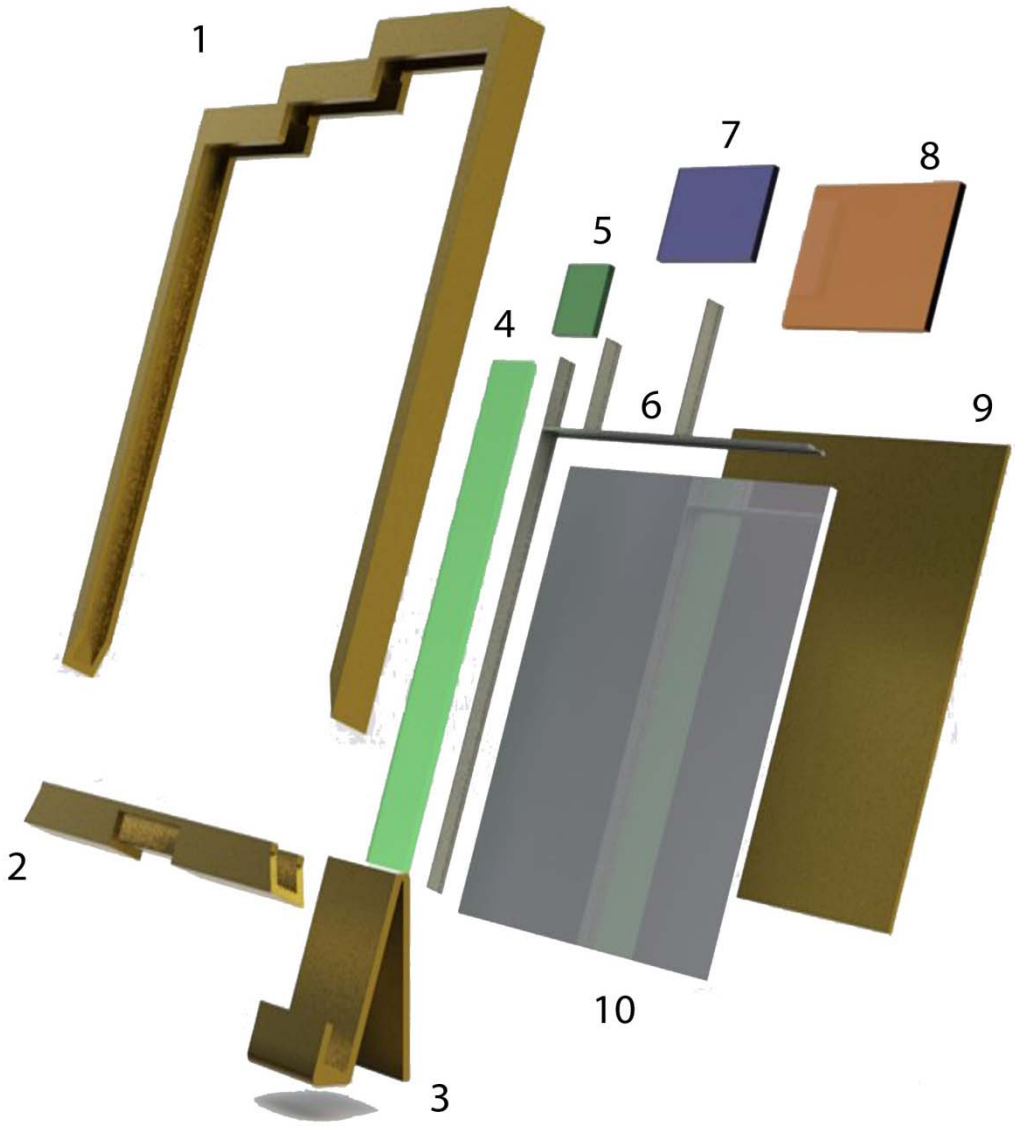


Side View



Front View

Exploded View

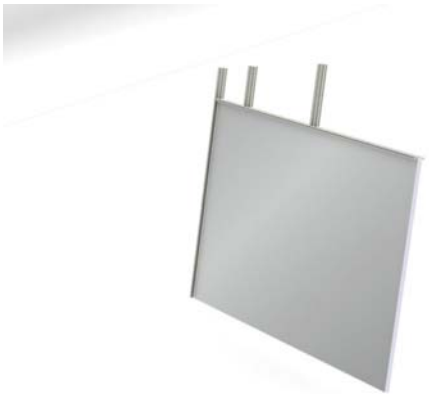


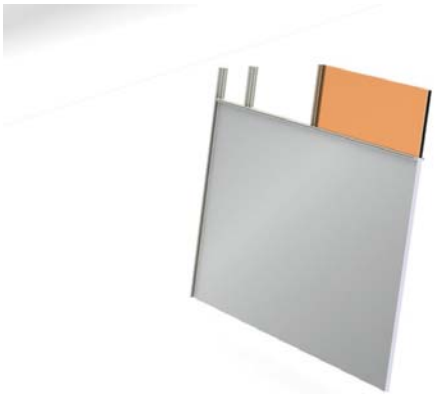
Key

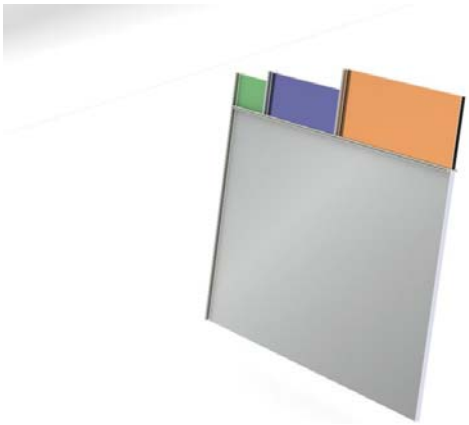
1 . Frame 1
2. Frame 2
3. Foot
4. Glass Four
5. Glass 3
6. Lead Beading
7. Glass Two
8. Glass One
9. Brass Back
10. Mirror

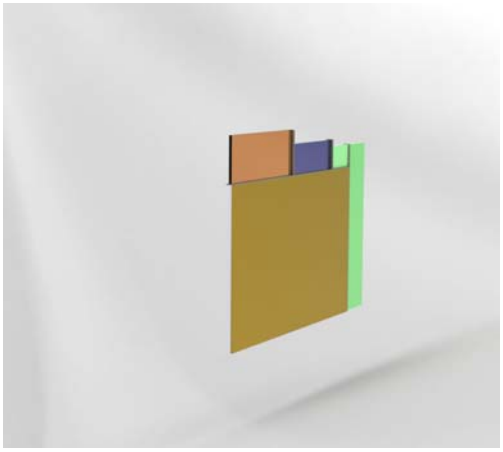
Production

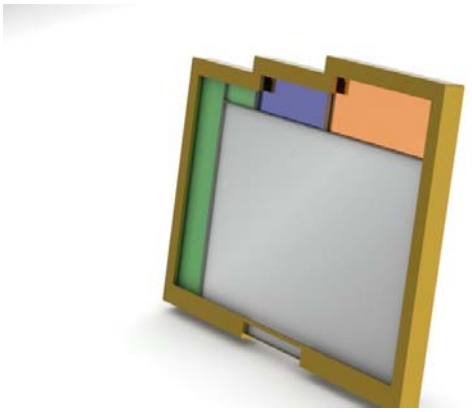
(Picture Step By Step)

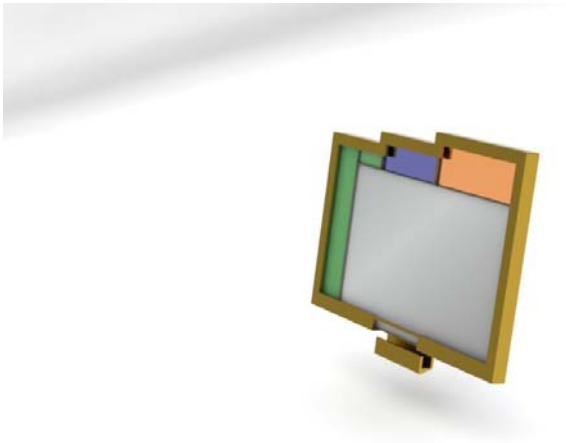












Costing

Manufacture of mirror and glass

Roughly £500 for 10 if done as a batch / same colour

Brass Frame

depends on finish

3.1 mm Roughly £151.32 a metre for one

Brass Stand

depends on thickness

3mm £ 188.00 1 metre x ½ metre

roughly £94 for one

Brass sheet

1.6 mm thick

£37.07 - 300mm sq min cut for one

Perspex (Instead of Brass Stand)

£1.50 for one stand

Total 426.39

Without Brass Frame / Stand – 88.57

Additional Information

There are around 3 different brands that manufacture stained glass that are most suitable for this project.

- Bullseye
- Roboros

- Youghiogheny

See back of booklet for more image samples

A handful of glass can be compatible which each other in the production stage despite their brand.

Each Company produces their own sample box which contains around 50+ stained glass samples for around £230 a box.

The image of stained glass on the internet will be a lot different than the real thing. (Can be seen from the information given on A4 sheets)

There are some discontinued colours if you can find any which might be stocked at a stained glass production company (it would make the product more niche)

All stained glass have different textures some might not have any (best to get samples if looking for a texture)

As it is glass the colour of it will be affected by the amount of light absorbed.

The size of the lead beading is important, the bigger the size the more strength. The Final Prototype uses 6mm which is what the production company suggested.

As the Lead Beading is quite thick and heavy it is possible that the frame can be taken of the design which would leave you with the lead beading as the actual frame. This again would save money

(Design of stand might have to change slightly to incorporate change)

<u>Most importantly – Manufacturing</u>

It is very hard to give an estimate on the cost of the mirror and the stained glass alone as it mostly depends on the type of brand glass that is used and the thickness of the mirror and the glass.

It might be possible to purchase the stained glass yourself from unable to stock what you want; it could also bring the costing down.

Estimate Costing of Final Prototype

Manufacturing of Mirror and Stained Glass - £60

(Production time just under two working days)

Thickness of mirror = 4mm

Thickness of stained Glass = Roughly 3/3.5 mm

Bullseye Glass

Roboros

Youghiogheny