

Slabs for Cabs

by Catherine J. Gaber

A beautiful cab starts with the right slab. Some basic characteristics of the perfect slab, such as pleasing color or pattern, may seem obvious, but other qualities such as thickness, imperfections, hardness and alignment are just as important to consider. Special handling techniques may also affect your decision to select a particular slab. Let this be a guide to help you select the best slabs for your cabochons.

Size

Slabs should generally be between 1/4" to 3/8" thick, depending on the size of the cabochon to be created. Use thicker slabs for cabs larger than 30 mm x 40 mm or when a high dome is desired. Do not let a thick slab dictate an unnecessarily high dome. Excess material can always be removed. On the other hand, a large cab can be very difficult to form and will not have much of a dome if the slab is too thin. Slabs should also be cut evenly, so the thickness is the same throughout. End cuts of a boulder and uneven slabs can be used only with considerable care and effort.

Flaws

Slabs should be examined both wet and dry. Cracks in different materials can be revealed one way but not necessarily by the other. While a slab is drying, cracks will retain water and be most noticeable. If the slab has cracks or other imperfections, consider whether or not you should work around the flaws or discard the slab altogether. When working around a crack or bad spot, there may be a considerable loss of material, which can be difficult psychologically and sometimes financially.

For instance, when working opal, the decision to cut off some of the stone with no play-of-color can be difficult, but the resulting cab will be much more attractive without the dead spots. Some imperfections can be filled with epoxy or other reinforcing materials before working, but this may detract from the look of the cabochon, especially if the epoxy takes a better polish than the mineral. Some materials, such as porous turquoise and lapis lazuli, are routinely treated in this manner. Malachite that has been filled with poorly matched material should definitely be avoided, as the cabochon will not be as attractive as it could be. Discard slabs with any pits or vugs that would adversely affect the look or the durability of the cabochon.

Most cabling material looks best wet, since a wet slab most closely resembles the look of a polished cab. Any slab that dries out quickly, such as some jaspers, may be too porous to take a good polish and should be rejected. When translucency is a desired effect, such as with jade or williamsite, the edge of a dry slab should be held up to a strong light source to determine its suitability. Both sides of the slab should be examined for color patterns and flaws. Cutting into the slab while forming the cabochon will most likely change the color and pattern at least a little bit, as most slabs are not identical all the way through.

Hardness

The hardness of the minerals or rock types in the slab will affect how the material needs to be worked. Such softer materials as serpentine, howlite and marble must be worked with a much lighter touch. An even texture in a mixed material slab will usually be easier to work with than an uneven texture. Constituent minerals that are softer than the surrounding minerals may undercut or cut faster than the harder components, which will make polishing difficult. Common materials with this problem include unakite, rhodonite, charoite, some jaspers and agates, included minerals such as rutiled or tourmalinated quartz. The included materials have the

possibility of pitting when the grinding or polishing of the slab causes the inclusion to be pulled out of the matrix. Kyanite, which has prominent cleavage and a different Mohs hardness along different axes of the crystal, must be oriented properly to avoid splitting.

Alignment

Alignment is also an important consideration when selecting material for phenomenal stones, such as labradorite, cat's eye, moonstone, asteriated stones and rainbow obsidian. If the rough has not been cut to access its special attributes, the cabochon can not be a success. The difference of a few degrees will lead to off-center stars and cat's eyes or unrevealed layers of color.

Special handling

Some mineral will require special handling techniques to be worked properly. These must be considered before deciding to work with that material. The use of oil for cutting slabs is common, but must be avoided for such porous materials as turquoise, variscite or chrysocolla, which can absorb the oil and permanently change color. Soaking the slab in water overnight before sawing may help keep the stone from absorbing too much oil. Working malachite and shell releases hazardous particle into the air even when a lot of water is used, so a ventilator and mask are necessary safety precautions. Excessive heat can adversely affect the color of some stones such as opal. Calcite and ulexite are also heat-sensitive. To protect them, these stones may need to be cold dopped, using epoxy rather than hot wax.

Use

After the aesthetics of color, pattern, size and even the price of a slab have been established, and the cutting requirements, flaws and special handling needs of the selected material have been considered, there is one more aspect to think about before deciding on a slab: use. Will the cabochon be utilized as a practice piece, set in jewelry or wirewrapped or used for exhibition? Ask the dealer or collector how they have worked the material and what problems they have encountered and if they can offer any special advice. Consult a good reference book such as Gem Cutting by John Sinkankas, to learn about any special properties and polishing techniques that are recommended for unfamiliar materials.

Making a beautiful cab can be easy or challenging, but success is much more likely when slabs are selected carefully to best meet your needs.