



Storing collections in high bushfire risk areas

When preparing for the onset of a possible bushfire, you may want to consider shifting precious valuables off-site to a location less vulnerable to bushfires. Otherwise, choosing the right kind of storage furniture may make a significant difference in the event of a fire. In general, wood and glass provide better protection against heat and soot than plastics and metals. Closed and sealed containers provide better protection than open shelving.

Storage furniture

- Choose furniture that can be well-sealed, for example wooden boxes, trunks and heavy wardrobes, rather than using open shelving for storing items.
- Furniture made of thick, old, seasoned hardwoods are best as they take longer to ignite and burn and are less likely to discolour paper and textiles. This discolouration is caused by the acids released in freshly cut timber.
- Similarly, wood products like chipboard, Masonite® and MDF are fire resistant but emit formaldehyde and other damaging vapours in storage and during a fire.
- Position storage boxes low to the ground but slightly raised, about 10cm above the floor to avoid water damage.
- Aim to create as many layers of protection as possible between your precious items and the external environment. For example, store items in acid-free cardboard or paper pockets, folders and boxes. These can then be placed within a wooden enclosure and kept in a heavy cupboard.

A note on fire-proof safes

Fire-proof safes may provide some degree of protection in smaller, less intense fires. However, in extreme bushfires and at very high temperatures, the materials stored inside tend to burn, char and even vaporise – even if the safe itself remains relatively intact. As fire-proof safes are often made of metal, during intense heat they conduct heat to the interior. For this reason we do not recommend that you rely on fire-proof safes to protect your collections.

If you choose to use a fire proof safe, look for one meeting the Underwriter's Laboratory (UL) standards. UL standards specify the external temperatures safes can withstand and the internal temperatures and relative humidity they can maintain. UL-rated safes can maintain safe temperatures from half an hour to four hours in environments of up to 1093°C. Different models are rated specifically for the protection of paper (UL 350), tapes, cartridges, microfilm and microfiche (UL 150), and computer diskettes (UL 125). Model numbers specify the temperatures in Fahrenheit, just below the temperatures at which these materials melt, scorch or burn. To be UL-rated, safes must meet or exceed their test standards. Bear in mind that bushfires can reach temperatures of up to 1200°C.

Storage materials

- When enclosing materials within a crate or trunk, use cardboard and paper-based boxes, folders and pockets where possible.
- Use the best quality material you can afford – acid free materials will provide better long-term protection to your collections.
- Archival plastic storage material (polyester, polypropylene, polyethylene) has many advantages, but in a fire most plastics melt at relatively low temperatures, lower than temperatures that char paper. Different plastics melt at different temperatures. PVC is harmful as a storage material and it melts at 80°C, well below archival plastics. Paper and cardboard tend to char before they burn. Polyester (Mylar®), used in high quality photo pockets, melts at roughly the same temperature at which paper ignites, making it the most heat resistant archival plastic.

Frames

- Use wooden frames. Even though they become charred and will need replacing, wooden frames have been found to provide the best protection to the art work inside. Often, the art work will remain relatively unharmed.
- Metal frames may warp or distort, allowing protective glass to fall out and thus expose the contents to soot and fire.
- Use 3mm or thicker glass for protection within frames, and use it for as many works as you can. Combined with wooden frames, glass provides much better protection than acrylic (e.g. Perspex®), which melts. Glass will become soot-covered and may even crack, but can sustain higher temperatures than acrylic.
- Be aware that glass is heavier than acrylic and shatters on impact. Make sure framed works are secured in a manner appropriate to their weight.
- Use cardboard back boards, rather than plastic – 3mm or thicker, where possible.
- Seal frames with gummed paper tape to protect the artwork from dust and soot.

Remember that fire is only one type of risk your collection will face. Fire fighting measures may cause water damage to items already charred and soot damaged and increase the risk of mould.

There are many good reasons to choose plastic and metal storage furniture and enclosures, including cost and ease of access. You may decide that the benefits of using plastics and metals outweigh the potential risk from fire damage.

If you would like more advice about storing collections safely, please contact your local AICCM Division or contact the Conservation Department of one of your State collecting organisations.

www.aiccm.org.au

Prepared by the AICCM Victorian Division

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<http://mc2.vicnet.net.au/home/rhsvstate/web/issue4a.html>

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