Global / Fine Art & Specie

# Fine Art Storage and Handling

## Best practices for protecting high-value collections

**Storing and handling fine art and specie, whether in dedicated storage facilities, galleries, museums or private collections, requires careful planning and disciplined risk management. Environmental conditions, physical security, access control, handling procedures and legal requirements all play a critical role in protecting valuable assets over time.**

This technical sheet provides a practical overview of key best practices to help reduce risk, preserve the integrity of valuable objects and support safe operations across the storage and handling process. It addresses core areas such as climate control, lighting, air quality, storage methods, handling and transport, framing, pest control, theft prevention, security measures, recovery planning and fire safety.

# Fine Art Storage and Handling
## Best Practices

### Environmental Conditions

Environmental requirements may vary depending on the nature of the objects being stored, including paintings, sculptures, textiles, artifacts and other fragile or sensitive items. In general, maintaining stable climate conditions is essential. Climate partitioning may be required when storing particularly delicate objects or works with specific conservation needs.

As a general reference, many collections are maintained within a temperature range of approximately 20°C to 22°C and a relative humidity range of 45% to 55%, with limited fluctuations. To support consistency, facilities should implement a centralized monitoring system using temperature and relative humidity sensors, with regular review of recorded data.

Some museums and institutions are also adopting broader, risk-based climate corridors to reduce energy consumption and support more sustainable operations. Where appropriate, wider but stable ranges may be acceptable, provided they are defined according to the collection materials, building characteristics, local climate and conservation requirements.

Abrupt or substantial changes in temperature and relative humidity are often more likely to cause damage than the overall levels themselves.
For this reason, stability, gradual seasonal adjustment and continuous monitoring are key to reducing the risk of deterioration, deformation, mold growth or material stress.

### Water Damage Prevention

Water damage is one of the most significant risks to stored or displayed artworks. As an additional preventive measure, facilities should consider installing floor-level water leak detection systems connected to automatic shut-off valves and remote alerting. Secondary containment measures, such as drip trays, sump pumps and raised storage solutions, can also help prevent water from reaching artworks in the event of a leak, overflow or drainage failure.

### Lighting

UV filters are recommended for windows, lighting systems and display areas where artworks are stored or exhibited. As a general principle, light exposure should be kept to a minimum and direct sunlight should be avoided.

Highly sensitive works, such as watercolors, textiles and works on paper, should generally be displayed under low light levels, often around 50 lux. Paintings and less sensitive works may tolerate higher levels, often up to approximately 200 lux, depending on the materials and conservation advice. In all cases, cumulative exposure over time should be considered, not only the intensity of light at a given moment.

Low-energy LED lighting with minimal heat output is generally preferred. Particular care should be taken when artworks are displayed near windows, in showcases or in areas exposed to changing natural light conditions.

### Air Quality

Good air quality is essential to reducing the risk of dust accumulation, surface contamination and material degradation. Storage and display areas should be equipped with appropriate air filtration systems, including HEPA (high efficiency particulate air) filters where relevant, to help remove dust, airborne particles, pollutants and other contaminants.

Where artworks are exposed to materials that may release chemicals or volatile organic compounds, additional filtration or VOC (volatile organic compounds) removal systems should be considered. Regular housekeeping is also essential to limit dust build-up, maintain clean storage areas and support the effective performance of ventilation and air filtration systems.

### Handling

Artworks should be handled as little as possible and only by trained or authorized personnel. Appropriate protective gloves, such as cotton or nitrile gloves depending on the object, should be worn to prevent fingerprints, contamination or surface damage.

Painted surfaces should never be touched directly. Paintings should be handled by the frame, stretcher or stable edges, and only one artwork should be moved at a time. Any movement should be planned in advance, with a clear route and prepared destination.

Unnecessary handling, dusting or cleaning should be avoided. Where cleaning or conservation treatment is required, a qualified conservator or restorer should be consulted.

For artworks displayed in public or crowded areas, such as galleries, exhibitions or art fairs, physical protection should be considered to reduce the risk of accidental contact, impact or damage.

### Transport

When moving artworks, appropriate packaging should be used according to the medium, size, fragility and condition of each object. For international shipments, proper crating is recommended, including certified wood where required, suitable crate markings and clear handling instructions. Reusable, rentable or sustainable climate crates may also be considered.

Transport should be carried out by trusted fine art shippers and experienced art handlers, using climate-controlled vehicles where appropriate. Customs, import and export requirements should be checked in advance.

A curator or responsible representative should be present during receiving, packing and unpacking to help prevent damage or mishandling. Each stage should be documented with photographs and condition reports. Consignment agreements and insurance certificates should also be in place before transport.

### Framing

Artworks should be framed using acid-free and conservation-grade materials. UV-protective glass or acrylic is recommended to help reduce light-related deterioration, particularly for sensitive works on paper, photographs and textiles.

Where stretching is required, especially for large canvases, a suitable stretcher system should be used. Keyable stretchers may be considered to allow careful adjustment of canvas tension over time.

If a framing or conservation workshop is present on the premises, combustible materials such as paint, varnish, solvents and adhesives should be stored in appropriate metal fire-resistant cabinets.

### Pest Control

Routine inspections and visual checks should be conducted in storage and display areas, on artworks, and inside storage containers, packaging and crates.

## Storage Method

As a general principle, artworks should not be stored below street level, particularly in basements or other areas exposed to increased risks of flooding, humidity or restricted ventilation. Works should be stored at least 20 cm, or approximately 6 inches, above the floor to reduce exposure to water, dust and accidental impact.

**Paintings and framed works**
Paintings and framed works should generally be stored vertically, ideally on dedicated racks, with sufficient spacing between each work. Archival paper, foam sheets or conservation matboards may be used as protective separators. Large paintings may require flat storage or additional support to prevent warping. Long-term storage of paintings rolled or in tubes should be avoided, and artworks should not be leaned directly against walls, furniture or unstable surfaces.

**Works on paper, unframed works, prints, drawings and pastels**
Unframed works on paper should ideally be stored flat in metal cabinets, using acid-free, archive-quality flat storage boxes or Solander boxes. Care should be taken to avoid pressure, bending, abrasion or direct contact with unsuitable materials.

**Sculptures and three-dimensional works**
Sculptures and three-dimensional objects should be stored on specialized shelving, plinths or stands designed to provide balance and stability. Objects should be protected with non-abrasive, soft materials, and, where appropriate, stored in custom-made supports, mounts or protective frames adapted to their shape, weight and fragility.

**Textiles**
Textiles should generally be rolled loosely around an appropriate support, with acid-free paper or conservation-grade materials used as protection. Tight rolling should be avoided. Where flat storage is required, archival-quality flat storage boxes or suitable shelving are preferred. Textiles should not be folded, as folds can create stress points and long-term damage.

**Digital art**
Digital artworks should be stored on secure, backed-up cloud servers or external hard drives, with clear procedures for access, authentication and long-term file preservation. Cybersecurity, access control and regular backup verification should form part of the storage strategy.

Free-standing racks, shelving units and heavy cabinets should be properly anchored to the building structure where appropriate, using suitable bracing and anchors, particularly in areas exposed to seismic risk or vibration.

Checks should look for signs of insects, rodents, fleas, mold, woodworm or similar activity, particularly in frames, crates and organic materials.

All artworks and packaging should be inspected before, or at the point of, entry into a storage or display area. Food, flowers and plants should not be allowed in areas containing art. Dedicated areas should be provided for food storage and consumption, and these areas should be kept clean, monitored and emptied regularly.

## Security Measures

Access to storage and display areas should be limited to authorized personnel only, with clear access control protocols in place. A comprehensive audit trail system is recommended to monitor and record access activity, including entry and exit times.

Facilities should be secured with anti-intrusion alarms, electronic locks, keycard or biometric access, CCTV surveillance and motion detectors. Alarm systems should cover unauthorized access, smoke, fire and water detection, and should be connected to a central monitoring station for continuous oversight.

Where appropriate, on-site security guards should be considered, including during idle hours. Random perimeter patrols can provide an additional layer of protection and help deter unauthorized access or suspicious activity.

## Theft Prevention

Smaller objects should be stored and displayed in locked showcases fitted with safety glass. Where appropriate, breakage sensors connected to the alarm system should be installed, particularly for high-value or easily portable items.

Objects containing gold, precious metals, jewels or other high-value materials may require enhanced theft prevention measures to ensure that protection is proportionate to the risk.

## Recovery Plan

In case of fire or natural catastrophes, its important to have a disaster and recovery plan that includes evacuation, art evacuation, restoration, and storage methods.

## Fire Safety

Smoke detection systems should be installed throughout the facility, and fire suppression systems should be considered where appropriate.
Fire extinguishers should be suitable for the specific risks and layout of the premises, and personnel should be trained in emergency procedures and the proper use of fire protection equipment.

Hot work operations, such as cutting and welding, should generally be avoided inside areas containing or adjacent to artworks. Where hot works are necessary, a formal hot work permit procedure should be implemented, including appropriate supervision and fire watch.

During installation periods, or when multiple electrical tools and devices are being used at the same time, an infrared thermal inspection of the electrical system should be considered to help identify overheating or potential faults.

# Additional measures

## Documentation, Cataloging and Provenance

Each artwork should be inspected, labeled and photographed, with detailed records maintained for identification, condition and location. Condition reports should be completed upon arrival, prior to any movement, and following transport or installation where appropriate. Artworks should also be monitored routinely.

The location of each work should be logged at all times, whether in storage, on display, on loan or in transit. Dedicated collection management databases, electronic article surveillance systems, barcodes or RFID tags may be used to support tracking. A regular physical inventory should also be conducted to verify documentation, condition and location.

Detailed provenance records should be maintained, including past ownership, historical context and supporting documentation. Original documents should be preserved securely, with digital copies and regular backups. Where possible, originals should be stored separately from the artworks.

Before acquisition, ownership, authenticity and legal status should be carefully reviewed, including any potential issues relating to title, cultural heritage laws, import/export restrictions or prior loss records. Tools such as The Art Loss Register may support this process.

Certificates of authenticity should be obtained where available, issued by the artist, estate or a recognized authority. Where no certificate is available, an expert opinion from a recognized competent body or specialist should be considered. Certificates and key documents should be stored in a fireproof safe or secure lockbox, preferably away from the artworks themselves.

Import/export, customs and VAT requirements should be checked and documented where applicable.

Together, these measures help preserve the integrity of fine art collections, whether works are in long-term storage, on display or in transit. By combining security, regular monitoring, climate control, proper handling, pest management and robust documentation, owners and operators can reduce risk and support the long-term protection of valuable artworks.


**Bibliography and further reading:**

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