INTERNATIONAL STANDARD 3897

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

Photography — Silver image photographic plates for record purposes — Storage conditions

Photographie — Plaques photographiques à image argentique pour archivage — Conditions de conservation

First edition — 1976-11-01

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 3897:1976
https://standards.iteh.ai/catalog/standards/sist/6912cf90-9aae-4a0b-9b10-e3f00c6361ab/iso-3897-1976

UDC 77.025

Ref. No. ISO 3897-1976 (E)

Descriptors : photography, photographic equipment, photographic plates, storage, preservation, specifications.

Price based on 7 pages

FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO Member Bodies). The work of developing International Standards is carried out through ISO Technical Committees. Every Member Body interested in a subject for which a Technical Committee has been set up has the right to be represented on that Committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the Technical Committees are circulated to the Member Bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 3897 was drawn up by Technical Committee ISO/TC 42, *Photography*, and was circulated to the Member Bodies in August 1975.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 3897:1976
https://standards.iteh.ai/catalog/standards/sist/6912cf90-9aae-4a0b-9b10-e3f00c6361ab/iso-3897-1976

It has been approved by the Member Bodies of the following countries :

Australia	Italy	Switzerland
Austria	Korea, Dem. P. Rep. of	Turkey
Belgium	Mexico	United Kingdom
Canada	Romania	U.S.A.
Finland	South Africa, Rep. of	U.S.S.R.
France	Spain	

No Member Body expressed disapproval of the document

© International Organization for Standardization, 1976 •

Printed in Switzerland

Photography — Silver image photographic plates for record purposes — Storage conditions

0 INTRODUCTION

Photographic plates have been in existence almost since the beginning of photography. Plates made many years ago and now stored in archives or other collections are invaluable and eminently worthy of preservation. Present-day usage of photographic plates dictates many special requirements, which gives them appreciable value.

Some obsolete types of photographic plate, no longer or rarely produced today, exist and require preservation in archives, museums, and other collections. Most of these plates are covered by these recommendations. The permanent record nature of some types of photographic plate has been established for many years (over 100 years in many instances). However, it is difficult to distinguish between various types of plate covered by the definitions, with respect to storage life. Nothing in the practices described should be construed as a recommendation for mixing the various types in storage. Although the same recommendations apply to plates of both short-term and long-term interest, much greater care must be taken to obtain maximum protection for plates of long-term interest.

The selection of satisfactory filing and packaging materials for storage presents several problems. Experience has shown that the life of packaging materials is usually shorter than that of the photographic plates themselves, and some materials have even contributed to plate deterioration. Non-corrosive packaging materials are preferable. Unfavourable long-term effects may result from : the presence of rust and other metal oxides; adhesives and adhesive tapes; rubber and rubber bands; chemicals and unsuitable fibre constituents in papers; certain plastic materials or their ingredients; unsuitable fibre content, chemicals or contaminants in cardboard; paints, lacquers or enamels; and deleterious constituents in hardwoods, softwoods, plywood, chipboard, and particle-board materials.

It is recognized that some users may elect to provide a lesser degree of protection than that recommended because of the limited value of the plate in terms of its end use, compared with the cost of providing storage facilities. However, the need for the protection of plates from the hazards of fire, water, and physical damage is obvious.

1 SCOPE AND FIELD OF APPLICATION

1.1 This International Standard defines terms and recommends practices for storage of black-and-white silver image photographic plates having integral photographic layers and intended for record purposes. No specific distinction is made, other than degree of care, between plates for short-term records and plates for permanent or archival records.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 3897:1976
https://standards.iteh.ai/catalog/standards/sist/6912cf90-9aae-4a0b-9b10-
iso-3897-1976

Recommendations for plate storage relate to storage materials, methods, conditions, and forms of protection applicable specifically to plates defined in 3.3. However, the storage recommendations may be applied, in a broader sense, to the plates defined in 3.4, 3.5 and 3.6.

1.2 Colour plates, those bearing dye or coloured images and those having layers applied by lamination or cementing in any of the various forms, are specifically excluded. Although also excluded, lacquered and opaqued plates will have their useful life prolonged under the storage conditions recommended. However, they should not be stored with non-lacquered or non-opaqued plates.

1.3 Processing procedures and requirements are also outside the scope of this International Standard and are not specified. However, these storage recommendations will also prolong the useful life of photographic plates that have not had optimum processing, but archival keeping cannot be expected. The importance of processing procedures to the preservation of plates is emphasized, nevertheless, since the glass support is inert and is not a factor in chemical stability. Plates require thorough fixing and washing after development to ensure the required image stability, to remove chemicals used during processing, and to avoid the possible formation of microscopic blemishes. Residual hypo in processed images must be low for long-term stability; this may be determined according to ISO 417. The drying process plays an essential rôle in avoidance of shrinkage of the emulsion layer, water spots and distortion.

2 REFERENCES

ISO 417, *Photography — Methods for determining thiosulphate and other residual chemicals in processed film, plates and papers.* [1]

ISO 536, *Paper and board — Determination of grammage.*

ISO 1974, *Paper — Determination of tearing resistance.*

3 DEFINITIONS

3.1 photographic plate : A photographic layer on "soda-lime-silica" sheet glass, except for the type of plate defined in 3.6.

3.2 photographic layer : A light-sensitive coating containing silver halide which yields a visible image of metallic silver after exposure and processing by the recommended photographic processes.

3.3 gelatin dry plate; dry plate : A glass sheet, with a silver halide/gelatin coating, which has been exposed and processed to form a silver image.

3.4 wet collodion plate; wet plate : A glass sheet bearing a thin silver halide/cellulose nitrate layer, which has been exposed and processed to form a silver image.

3.5 ambrotype plate : A type of wet collodion plate wherein the processed silver image appears as a positive when backed by a dark field.

3.6 ferrotype plate : An enamelled iron sheet bearing a thin silver halide/cellulose nitrate layer, which has been exposed and processed to form a silver image and which appears in positive form. (Not to be confused with a thin metal sheet with a glossy surface upon which high-gloss photographic prints are dried.)

3.7 image stability : The relative permanence of the image of a processed photographic plate. For example, fading, darkening or staining of a photographic image are forms of image instability.

3.8 spatial stability : The order of dimensional change in photographic plates. Glass plates have been used customarily when photographic material of a high order of spatial stability is required.

3.9 environmental conditions : The relative humidity, temperature, and purity of the air in contact with stored plates.

4 PLATE ENCLOSURES

Plates require protection against all types of physical damage such as breakage, scratches, abrasion, fingerprints, etc. Storage arrangements are dependent on the physical dimensions of the plate.

4.1 Materials

Enclosure materials should not adversely affect the plates when the relative humidity and temperature limits given in 7.1 and 7.2 are maintained. Materials which break down and produce acidity are troublesome.

4.2 Individual enclosures

Individual plates (except fine-grain types) should be placed in suitable individual envelopes, sleeves, or folders to exclude dirt, to protect the plates against mechanical damage and to facilitate identification and handling. Small plates (for example up to 10 cm × 15 cm) and fine-grain types should be stored preferably in a multiple-plate container of the type recommended in 4.3.

4.2.1 *Enclosure materials — Permanence requirements*

Some enclosure materials may have more effect on some types of photographic layer than on others (for example fine-grain silver halide/gelatin emulsions). The use of materials not covered by these recommendations should be based on a stability test, using a plate material of the type to be stored.

Enclosure material should be preferably

1) high alpha-cellulose pH-neutral paper [2] made from rag, bleached sulphite, or bleached kraft pulp with an alpha-cellulose content greater than 87 %, free from ground wood fibres and with a pH (cold extraction) between 6,5 and 7,5;

2) cellulose acetate sheeting without surface coatings and containing not more than 15 parts of plasticizer per 100 parts of ester;

3) polyethylene terephthalate sheeting without surface coating.

Chlorinated or nitrated plastic sheet materials, polyvinyl chloride sheeting, and highly plasticized sheeting should be avoided as enclosure material.

Enclosure construction should preclude the use of adhesives if possible. Polyvinyl acetate adhesives are suitable for use with paper. Pressure-sensitive and ether-linked materials should be avoided.

1) At present at the stage of draft. (Revision of ISO/R 417-1965.)

2) See annex A.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 3897:1976
https://standards.iteh.ai/catalog/stand… …-9aae-4a0b-9b10-
e3f00c6361ab/iso-3897-1976

Printing or other marking on the enclosure should not produce any visible effect on the plate under the conditions of the test. Fungus growth can be inhibited by the use of fungicidal additives. However, fungicides pose further storage problems and should be evaluated thoroughly.

4.2.2 *Enclosure materials – Physical requirements*

Enclosures should not create excessive pressure on the plate surface. Marks may originate from improperly located seams or wrinkles. The image layer of the plate should face away from the enclosure seam.[1)]

Enclosure design should permit storage of the plate on edge (i.e. in a vertical plane with one edge parallel to the horizontal). Plates should not be stored in a flat or horizontal position.

Plates should not be stored or handled with plate emulsion surfaces in contact. Multiple-plate containers should be used where certain types of plate are to be stored without contact with the major plate surfaces, and for storing groups of plates.

4.3 Multiple-plate storage containers

Rectangular multiple-plate containers are preferable for storing fine-grain types of plates, or groups of plates, and serve as transfer boxes for handling plates from storage to working area.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 3897:1976
https://standards.iteh.ai/catalog/standards/sist/6912cf90-9aae-4a0b-9b10-e3f00c6361ab/iso-3897-1976

Container materials should be preferably : anodized aluminium, stainless steel, steel with baked-on non-plasticized synthetic resin lacquer, or a suitable inert and impermeable plastic (for example polyethylene, polypropylene or cellulose acetate). The plastic should have no deleterious effect on the plates, taking into account the type of plate and its expected life as a record. Cardboard or wooden containers should be avoided.

Two categories of multiple-plate containers are

1) containers for a large number (for example 12 to 36) of small or fine-grain type plates without individual enclosures;

2) containers for a small number (for example 4 to 12) of large plates with individual enclosures.

4.3.1 *Containers for small plates and fine-grain types*

Small plates, 5 cm × 5 cm and smaller and up to 10 cm × 15 cm in size, and fine-grain types should be stored in covered rectangular containers. Each container should be fitted with grooved inserts which separate the plates from each other and support them vertically. No supporting material should be in contact with major areas of plate surfaces. The cross-section of the grooves should have the form of a "U" or "V" and contact should be at the extreme edge of the plate. Depending on plate size and thickness, 12 to 36 grooves are suitable.

4.3.2 *Containers for large plates*

Plates 13 cm × 18 cm and larger in individual enclosures may be stored in multiple-plate boxes designed to accommodate from 4 to 12 plates, depending on plate size and thickness. Box dimensions should permit the plates to be on edge when placed in storage. Boxes of this type are suitable for plates in the size range 13 cm × 18 cm to 30 cm × 40 cm or larger. The mass of the contents should control the quantity. The inside dimensions (length and height of the box) should be only slightly larger than the length and width of the individual enclosure.

5 STORAGE HOUSINGS

Plate types should be as defined in 3.3, 3.4, 3.5 and 3.6. Plates should be segregated carefully, by type, and stored in a well-separated storage housing to avoid interactions among various types which might produce adverse effects if mixing were to occur. It is particularly important to segregate collodion plates, ambrotype plates, and ferrotype plates since they contain cellulose nitrate. Cellulose nitrate is unstable and releases oxides of nitrogen which can attack the silver image on adjacent plates.

Plate dimensions should control the choice of housings. The mass of plates should be considered.

Storage housing materials should be non-combustible and non-corrosive, preferably : anodized aluminium, stainless steel, steel with baked-on non-plasticized synthetic resin lacquer. Other portions of the housings (i.e. shelving, racks, partitions, drawers, dividers) should be constructed of these metals. Wood, pressed-board, hardboard, particle-board, and other natural materials for housings should be avoided because, on ageing, they may produce active fading agents.

The lacquer finish on housing materials should be durable, should resist abrasion, and should not have deleterious effects on the stored plates. Adverse effects may be produced by finishes containing natural, acrylic, chlorinated, and highly plasticized resins. Reactive fumes from freshly finished or coated surfaces and long-term effects from surface finishes containing reactive accelerators, residual catalysts, ether linkages, or oxidizing agents should be avoided.

Storage housings should be of two types :

Type 1 Housing – Cabinets for plates in individual enclosures.

Type 2 Housing – Cabinets, shelves, or racks for plates in multiple-plate containers.

Storage housings should be constructed to permit access of air to the interior, provided there is no conflict with requirements for fire-protective storage.

1) See annex B.

5.1 Type 1 housings

Individual enclosures should be stored in drawer-type cabinets. Modifications of office-type drawer filing cabinets are suitable. Enclosures should be filed vertically on edge in the drawers, in one or more horizontal rows, depending on the plate size. The drawers should be flat-bottomed and the vertical height of the drawer should correspond to the vertical dimension of the enclosure. Enclosures should be grouped by size and the drawer height should preclude filing more than one vertical row of enclosures.

The drawers should be divided by suitable partitions between horizontal rows. The rows should be subdivided at appropriate intervals (for example 10 to 15 cm) to keep rows of individual enclosures upright, relieving pressure on the end enclosures in the row. Type 2 housings are preferable for enclosures larger than 30 cm × 40 cm.

Drawer-type cabinets are recommended also for storing small plate containers as described in 4.3.1. Small plate containers should be filed in a single layer in drawers whose vertical dimension corresponds to the vertical dimension of the small plate container. Correct orientation of the container should be maintained so that the stored plates are on edge.

5.2 Type 2 housings

Multiple-plate containers should be stored on open-sided shelving or racks, or in door-type cabinets equipped with shelving or racks. The containers should be oriented so that the plates are stored vertically on edge, with the longer dimension horizontal, on shelving where the spacing between shelves corresponds to the width dimension of the plates in the container.

The shelves should be divided by partitions, arranged to accommodate several containers, to keep the containers upright. The spacing between shelves should prevent storing more than one vertical row of containers on each shelf. Each row of containers should be supported by the structure.

Door-type cabinets with shelving may be used for storing small plate containers as described in 4.3.1. Containers should be stored, in a single layer, on shelving where the spacing between shelves corresponds to the vertical dimension of the small plate container. Correct orientation of the container should be maintained so that the stored plates are on edge.

6 STORAGE ROOMS

Plates should be stored in a separate air-conditioned storage room, preferably in the form of a vault. For full protection against exposure to fire and associated hazards, a fire-resistive vault should be provided in accordance with national regulations. Preservation of plates under conditions of fire involves protection against excessive temperatures, water and steam, other fire-fighting liquids and vapours, and collapsing or falling structures.

Attention is called to the fact that steam generation is a design characteristic for insulation of many safes. Some fire-resistive safes and cabinets use a type of insulation which, when heated, releases moisture and thus fills the interior of the safe with steam during a fire. Melting or stripping of the plate image layer can result. If such safes are used, plates should be in sealed containers.

Plates should be protected from water damage, such as from leaks, fire-spinkler discharge, and floodings. Storage vaults or rooms should be located above basement levels, where possible. The vault or room construction should be designed to prevent condensation of moisture on interior surfaces and within walls, especially during periods of low exterior temperatures.

6.1 Air-conditioning installation

Air-conditioning installations for fire-resistive rooms or vaults, and automatic fire control dampers in ducts carrying air to or from the storage vault, should be constructed and maintained on the basis of national recommendations.

7 ENVIRONMENTAL CONDITIONS

The humidity and temperature of the air in contact with plates, and the presence of air-entrained solid or gaseous impurities are important external factors affecting plate permanence. Humidity and temperature ranges in plate storage rooms are given which are suitable for both working and inactive storage. For long-term inactive storage, maintenance of the humidity and temperature nearer the minimum of the range given in each instance is preferable.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 3897:1976
https://standards.iteh.ai/catalog/standards/sist/6912cf90-9aae-4a0b-9b10-c3400e361a0f/iso-3897-1976

7.1 Humidity limits

The relative humidity in the storage area should be maintained at all times between a minimum of 20 % and a maximum of 50 %, and preferably below 40 %.

Prolonged exposure to relative humidity above 60 % will promote damage or destruction of the emulsion layer on gelatin dry plates due to mould growth. The conditions eventually will cause the emulsion layer to stick to filing enclosures or other contact surfaces.

Prolonged exposure to very low relative humidity may promote shrinkage or distortion of the image layer and potential frilling of the photographic layer on gelatin dry plates and wet collodion plates. Dry plate emulsion layers having low moisture content tend to develop electrostatic charges, causing attraction of dust particles. Desiccating agents shall not be introduced into the storage area.

7.2 Temperature limits

The temperature in the storage area should be maintained at all times between a minimum of 15 °C and a maximum of 25 °C, and preferably below 20 °C.

A most important aspect of temperature is its effect on relative humidity, which may be brought outside the recommended limits. High temperatures in storage should be avoided because consistent exposure to dry heat promotes shrinkage or distortion of the photographic layer.

Storage temperatures below the dew point of the air prevailing in plate handling rooms should be avoided. Moisture may condense on plate surfaces unless containers are used, and unless container and contents are brought to room temperature before opening. The warm-up time may amount to several hours because of the heat capacity of glass plates.

7.3 Air-conditioning requirements

Properly controlled air-conditioning is recommended for maintaining humidity and temperature within the limits specified. Slight positive air pressure should be maintained within the storage room or vault. Well-designed air-conditioning serves the function of minimizing the entry of air-entrained impurities and also of carrying away any unwanted oxidation by-products that may be generated from storage material.

Storage locations, such as basements, and underground areas, which have inherently low temperatures frequently exceed the upper limit of humidity given in 7.1. These areas usually are suitable for storing plates only when conditions are maintained by means of an automatic air-conditioning system.

Air-conditioning, humidification, and dehumidification equipment should be kept under adequate control. Automatic control systems are recommended and should be supervised by check thermometers and humidity indicators. "Fail-safe" precautions against overhumidification should be taken where the introduction of moisture vapour is required, even though controlled by instrumentation.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 3897:1976
https://standards.iteh.ai/catalog/standards/sist/6912cf00-9aae-4a0b-9b10-e3f00c6361ab/iso-3897-1976

7.4 Air purity

Dust and other air-entrained solid particles, when deposited on plates, may render the plates unsuitable for making reproductions because scratches or other physical damage may result. Reactive types of dust will cause fading or staining and render certain types of image completely unusable. Air supplied to plate storage areas and work rooms should be cleaned by means of mechanical filters, preferably of dry-media type having an arrestance rating of not less than 85 % or by means of other types of filter having an equivalent rating when tested by a nationally recognized code or method.

Many gaseous impurities are detrimental to photographic plates. Reaction with the silver in the photographic layer may cause staining, fading, or creation of microscopic ageing blemishes. Atmospheric contaminants such as peroxides, ozone, sulphur dioxide, hydrogen sulphide, etc. are generally present in industrial atmospheres. Special consideration should be given to the elimination of gaseous impurities, if present at levels judged injurious to plate preservation. Attention should be given to air intakes for air-conditioning systems supplying storage areas. Locations subject to chemical fumes or in proximity to dry chemicals should be avoided.

8 HANDLING AND INSPECTION

8.1 Handling and filing

Well-planned filing systems and proper handling of plates are important. Many types of plate may be used frequently, risking damage and imposing critical handling and filing requirements. Good housekeeping and cleanliness are essential. Plates should be handled by their edges. The wearing of thin cotton gloves by the handlers is good practice since finger-marks should be prevented. Dust should be avoided so that the plates do not become scratched. Worn enclosures should be replaced.

8.2 Inspection

Monitoring and inspection of stored plates are essential. The withdrawal of plates for use or reproduction should be accompanied by inspection for damage or other signs of deterioration. An adequate number of properly selected lot samples of plates should be inspected at two-year intervals. If deviations from recommended temperature and relative humidity ranges have occurred, inspection should be made at more frequent intervals. A random sampling plan established in advance should be used and a different lot should be inspected each time. If signs of deterioration are noted, corrective action should be taken. Indications that the filing materials are deteriorating should especially be noted and acted upon.

ANNEX A

EXAMPLE OF PAPER FOR USE IN FILING PHOTOGRAPHIC PLATES

A.1 GENERAL MATERIAL REQUIREMENTS

The paper is made from rag, bleached sulphite, or bleached kraft pulp with an alpha-cellulose content greater than 87 % and is free from highly lignified fibres such as ground wood. A minimum of sizing chemicals is used, the amount being dictated by the requirements of the end-use (filing enclosures, overwraps, interleaving, etc.); saturated organic sizing chemicals are used. The material is essentially free from particles of metal and metal compounds. No surface fibres which might offset onto photographic emulsions are present. The paper does not contain waxes, plasticizers, or other ingredients which will transfer to the photographic material during the photographic activity test listed in A.2.3 below.

Photographic quality gelatin and cellulose acetate adhesives are suitable for use with paper.

A.2 TESTING REQUIREMENTS

When International Standard methods are not available, nationally recognized methods should be employed in testing the suitability of the paper for an intended use. References given below serve only as examples.

A.2.1 Chemical tests

The paper is subjected to the following chemical tests :

a) microscopic analysis of fibres and phloroglucinol spot test for absence of ground wood;

b) analysis for alpha-cellulose content, which is to be greater than 87 %*;

c) determination, by cold extraction, of pH, which is to fall within the range 6,5 to 7,5**.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 3897:1976
https://standards.iteh.ai/catalog/standards/sist/6912cf90-9aae-4a0b-9b10-e3f00c6361ab/iso-3897-1976

A.2.2 Physical tests

The paper is subjected to physical tests as needed, such as for folding endurance, for tearing resistance (by ISO 1974), etc. The limits for test values are determined by the grammage (see ISO 536) and end-use of the paper.

A.2.3 Photographic activity test

The paper and a suitably prepared photographic test sample are to be subjected to an accelerated ageing test by incubation at 50 ± 1 °C and at 74 ± 2 % relative humidity for 10 days. At the end of this test, no visual pattern shall be transferred from the paper to the photographic plate, nor shall the image of the plate be affected. The latter may be determined more readily by having one-half of the photographic image against a piece of filter paper during the incubation to serve as a control.

---

* This may be determined in accordance with appropriate national standards such as TAPPI Standard T-429 os-69 (1969), *Alpha-cellulose in paper*; Technical Association of the Pulp and Paper Industry, 1 Dunwoody Park, Atlanta, Ga. 30341, U.S.A.; French Standard NF T 12-001, *Cellulose – Dosage des alpha, beta, gamma celluloses*; etc.

** This may be determined in accordance with appropriate national standards such as TAPPI Standard T-509 su-68 (1968), *Hydrogen ion concentration (pH) of paper extracts – Cold extraction method*; French Standard NF Q 03-005, *Determination du pH du papier*; etc.

ANNEX B

EXAMPLES OF DIMENSIONS AND CONSTRUCTION OF PHOTOGRAPHIC FILING ENCLOSURES

B.1 DIMENSIONS

Enclosures for processed photographic plates up to and including 16 cm × 21 cm are at least 1 cm larger in length and width than the nominal size of the plate for which they are intended. All enclosures for plates above size 16 cm × 21 cm are at least 1,5 cm larger in length and width than the nominal size of the plate for which they are intended.

B.2 CONSTRUCTION

Folder — a single sheet folded and without cemented seams.

Sleeve — a cemented side-seam enclosure with both ends open. The adhesive does not extend beyond the area of the overlap. The width of the outside flap is as narrow as practicable and does not exceed 2 cm for sizes up to 16 cm × 21 cm, or 2,5 cm for larger sizes.

Envelope (without jacket) — a cemented side- and bottom-seam enclosure with one end open. The adhesive does not extend beyond the area of the overlap. The width of the outside and bottom flaps is as narrow as practicable and does not exceed 2 cm for sizes up to 16 cm × 21 cm, or 2,5 cm for larger sizes. The open end is located along the shorter side of the envelope.

Envelope — a cemented side- and bottom-seam enclosure with a protective flap (seal flap) at the open end. This type provides better protection against contamination by dust or fungi than an envelope without seal flap. The adhesive does not extend beyond the area of the overlap. The width of the outside flap does not exceed 2 cm for sizes up to 16 cm × 21 cm, or 4 cm for the 50 cm × 60 cm size. The width of the bottom flap preferably does not exceed that of the outside flap. The seal flap is free from adhesive, and the width does not exceed 2 cm for sizes up to 16 cm × 21 cm, or 4 cm for larger sizes.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
ISO 3897:1976
https://standards.iteh.ai/catalog/standards/sist/6912cf90-9aae-4a0b-9b10-e3f00c6361ab/iso-3897-1976

ANNEX C

BIBLIOGRAPHY

C.1 NFPA No. 90A, *Standards for the installation of air conditioning and ventilating systems*; National Fire Protection Association, 60 Batterymarch Street, Boston, Mass., U.S.A. 02110.

C.2 NFPA No. 232, *Standard for the protection of records*; National Fire Protection Association, 60 Batterymarch Street, Boston, Mass., U.S.A. 02110.

C.3 UL 72-1969, *Standard fire resistance classification of record protection equipment*; Underwriters Laboratories, Inc., 207 East Ohio Street, Chicago, Ill., U.S.A. 60611.