



Kingfisher
Rubber & Plastics

Units 1 & 2 Woden Court
Saxon Business Park
Bromsgrove
Worcs. B60 4AD
Tel: 01527 570 570
Fax: 01527 575 200
sales@kingfisherrubber.co.uk
www.kingfisherrubber.co.uk

Storage and Age Control of Elastomers Sealing Elements According to ISO 2230

All the information in this documentation has been compiled with the greatest of care. Despite this we can bear no responsibility whatsoever for any errors present in the documentation. The recommendations are intended as guidelines.

Experience has demonstrated that storage conditions are much more important in determining the useful life of Rubber Profile than is time.

1. Temperature

The storage temperature shall be below 100°F (38°C), except when higher temperatures are caused by temporary climate changes, and articles shall be stored away from direct sources of heat such as boilers, radiators, and direct sunlight.

2. Humidity

The relative humidity shall be such that given the variations of temperature in storage, condensation does not occur. If the elastomers are not stored in sealed moisture proof bags, the relative humidity of the atmosphere in storage shall be less than 75% relative humidity, or if polyurethanes are being stored, shall be less than 65% relative humidity.

3. Light

Elastomeric seals shall be protected from light sources, in particular direct sunlight or intense artificial light having an ultraviolet content. The individual storage bags offer the best protection as long as they are UV resistant.

Note: It is advisable that windows of storage rooms where elastomers are stored in bulk be covered with a red or orange coating.

4. Radiation

Precautions shall be taken to protect stored articles from all sources of ionizing radiation likely to cause damage to stored articles.

5. Ozone

As ozone is particularly damaging to some elastomeric seals, storage rooms shall not contain any equipment that is capable of generating ozone such as mercury vapor lamps, high voltage electrical equipment giving rise to electrical sparks or silent electrical discharges. Combustion gases and organic vapor shall be excluded from storage rooms as they may give rise to ozone via photochemical processes.

6. Deformation

Elastomeric seals shall be stored free from superimposed tensile and compressive stresses or other causes of deformation. Where articles are packaged in a strain-free condition, they shall be stored in their original packaging.



Kingfisher

Rubber & Plastics

Units 1 & 2 Woden Court
Saxon Business Park
Bromsgrove
Worcs. B60 4AD
Tel: 01527 570 570
Fax: 01527 575 200
sales@kingfisherrubber.co.uk
www.kingfisherrubber.co.uk

7. Contact with Liquid and Semi-Solid Materials

Elastomeric seals shall not be allowed to come in contact with liquid or semi-solid materials (for example, gasoline, greases, acids, disinfectants, and cleaning fluids) or their vapors at any time during storage unless these materials are by design an integral part of the component or the manufacturer's packaging. When elastomeric seals are received coated with their operational media, they shall be stored in this condition.

8. Contact with Metals

Certain metals and their alloys (in particular, copper, manganese, and iron) are known to have deleterious effects on elastomers. Elastomeric seals shall not be stored in contact with such metals (except when bonded to them) but shall be protected by individual packaging.

9. Contact with Dusting Powder

Dusting powders shall only be used for the packaging of elastomeric items in order to prevent blocking or sticking. In such instances, the minimum quantity of powder to prevent adhesion shall be used.

10. Contact between Different Elastomers

Contact between different elastomers and elastomers of different seals shall be avoided.

11. Elastomeric Seals bonded to Metal Parts

The metal part of bonded elastomeric seals shall not come in contact with the elastomeric element of another seal. The bonded seal shall be individually packaged. Any preservative used on the metal shall be such that it will not affect the elastomeric element or the bond to such an extent that the seal will not comply with the product specification.

12. Stock Rotation

Elastomeric seal stock should be rotated on the FIFO (First In, First Out) principle.

The ISO 2230 standard splits the maximum storage time into an initial storage period and an extended storage period which may be applied after representative samples of the stored products were inspected. Inspection should be in accordance with the relevant production specification. A visual inspection should not show permanent distortions (like creases or flats), mechanical damage (cuts, tears, abraded areas), surface cracking when viewed under a magnification of 10X or changes in surface condition such as hardening, softening or tackiness. Testing can show if the relevant performance characteristics are within the acceptable limits.

If the storage temperature is over or under 25°C the storage life will be influenced. Storage at a 10°C higher temperature will reduce the storage time by about 50% and storage at a 10°C lower temperature will increase storage time by about 100%!

In general Kingfisher Rubber & Plastics recommends the following storage parameters:

- Ambient temperature (preferably not higher than 25°C (77°F))
- Dry environment and exclusion of contamination
- Protect against direct sunlight
- Protect against radiation
- Protect against artificial light or other light sources containing UV-radiation
- Protect from ozone generating electrical devices
- Store parts without tension (never hang frames or rings)

While storage for extended periods is possible under correct conditions, Kingfisher Rubber & Plastics expects that any quality concerns would be highlighted within one week from point of delivery.



Kingfisher

Rubber & Plastics

Units 1 & 2 Woden Court
Saxon Business Park
Bromsgrove
Worcs. B60 4AD
Tel: 01527 570 570
Fax: 01527 575 200
sales@kingfisherrubber.co.uk
www.kingfisherrubber.co.uk

Initial and extension storage periods for unassembled components following ISO 2230

Abbreviation Chemical name from ISO 1629 Common name

Group A

Initial storage period 5 years, extension storage period 2 years

BR	Butadiene rubber Polybutadiene
NR	Isoprene rubber, natural Natural rubber
IR	Isoprene rubber, synthetic Polyisoprene
SBR	Styrene-butadiene rubber SBR
AU	Polyester urethane rubber Polyurethane
EU	Polyether urethane rubber Polyurethane

Group B

Initial storage period 7 years, extension storage period 3 years

NBR	Acrylonitrile-butadiene rubber Nitrile
XNBR	Carboxylic- acrylonitrile-butadiene rubber Carboxylated rubber
HNBR	Hydrogenated NBR (with some unsaturation) Hydrogenated nitrile
CO, ECO	Polychloromethyloxiran and copolymer Epichlorohydrin
ACM	Copolymer of ethylacrylate (or other acrylates) and a small amount of a monomer which facilitates vulcanization Acrylic
CR	Chloroprene rubber Neoprene
IIR	Isobutene-isoprene-rubber Butyl
BIIR	Bromo-isobutene-isoprene-rubber Bromobutyl
CIIR	Chloro-isobutene-isoprene-rubber Chlorobutyl

Group C

Initial storage period 10 years, extension storage period 5 years

CSM	Chlorosulfonylpolyethylene Chlorosulfonated polyethylene
EPDM	Terpolymer of ethylene, propylene and a diene with the residual unsaturated portion of the diene in the side chain EPDM
FKM	Rubber having fluoro, perfluoroalkyl or perfluoroalkoxy substituent groups on the polymer chain Fluorocarbon
VMQ	Silicone rubber having both methyl and vinyl substituent groups on the polymer chain Silicone