

RUBBER PRODUCTS: Tyres, Inner Tubes, Flaps – guidelines of

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Packaging, storage and transport

1. Introduction

1.1 Scope of the guidelines

These guidelines set out the requirements for the packaging, storage and transport of rubber products, i.e. tyres, inner tubes and inner tube flaps.

1.3 Definitions

1.3.1 Enclosed warehouse

A building or room for storing rubber products under conditions that protect them from the direct impact of atmospheric conditions.

1.3.2 Open storage

A separate, open area with or without roofing

1.3.3 Short-term storage – up to one month

1.3.4 Long-term storage – above one month (max. 36 months)

2. Packaging

2.1. Tyre packaging

Tyres should be placed on pallets or racks. Place them vertically, side by side, in one layer. They may be placed vertically, side by side, in one layer, directly on the floor. For short-term storage, tyres may be stacked up to a maximum of 1.8 m high. In this case, drive tyres for agricultural tractors should be laid tread block on tread block.

2.1 Inner tube packaging

Inner tubes of the same size and grade with a complete valve should be formed into load units. Loading units (inner tubes) are to be packed in cartons.

2.2 Packaging of inner tube flaps

Flaps of the same size group should be formed into load units. The load unit can be packed into a carton.

3. Storage

3.1 General storage guidelines

Tyres, inner tubes and flaps should be stored in conditions that ensure cleanliness. They should not be stored in direct sunlight, heat or artificial light with a high content of ultraviolet rays (the penetration of natural light should be limited by painting the windows with paint).

The storage room should be dry and moderately ventilated. Avoid moisture and make sure that no condensation occurs. In enclosed warehouses, sunlight should be reduced by painting windows or using screens that absorb ultraviolet light.

Tyres, inner tubes and flaps should be stored so that they are not under stress in order to eliminate the causes of premature age-related crazing.

They should not be stored under conditions with direct impact of rubber-deteriorating agents. In enclosed warehouses, the following should not be stored with tyres: fuels, solvents, oils, greases, acids and alkalis, other chemicals and disinfectants, and substances that have a detrimental effect on rubber.

Storage rooms and storage yards should have no ozone generating devices, including electrical devices, high voltage devices, motors and other electrical devices that can cause sparks or silent electrical surges. It is recommended that contact with exhaust gases is avoided. Storage in enclosed warehouses is recommended.

3.2 Detailed tyre storage guidelines

Tyres that are to be stored for more than one month should be stored in enclosed warehouses, where the recommended storage temperature is between -5°C and + 25°C, and the relative humidity at the storage site should be less than 70%. Stored tyres should not be located closer than 1 m from pipelines and heating devices, which should be covered by a screen. For long-term storage, the tyres should be turned changing the pressure point every six months.

When storing tyres in open storage, only short-term storage is allowed – up to one month. Tyres should be placed under cover or covered with a material that protects against atmospheric conditions (material that protects against sunlight, rain and snow). An open storage site should have a permanently hard surfaced and dewatered floor. It is recommended that tyres are stored on racks or pallets.

When storing tyres mounted on rims, do not inflate the tyres to the maximum allowable working pressure – the pressure should be approximately 20-30% lower. Tyres on rims are best stored upright or in single layers on racks or pallets. It is not recommended to store tyres on rims for more than one month; after this time, the wheels should be mounted on a machine or device.

3.3 Detailed conditions for storing inner tubes

Inner tubes should be stored in the cartons or packaging in which they were delivered by the manufacturer. Storage in enclosed warehouses is recommended. When delivering inner tubes in bulk, it is recommended to store them flat on racks or pallets in a manner that protects them against damage and deformation. Inner tubes may be stored in stacks not exceeding 1 m in height. Inner tubes should not be hung, because this may cause them to elongate and deform. Storage is recommended at between -5°C and +25°C, with relative humidity at less than 70%.

3.4 Detailed conditions for storing flaps

Flaps should be stored in the cartons or packaging in which they were delivered by the manufacturer. Storage in enclosed warehouses is recommended. For bulk delivery, it is recommended to place them on racks or pallets, folded flat. They may be stored in stacks not exceeding 1 m in height. Flaps should not be hung, because this may cause them to elongate and deform. Storage is recommended at between -5°C and +25°C, with relative humidity at less than 70%.

3.5 Storage time

The maximum storage time for new rubber products, counted from the date of production, should not be longer than:

- for tyres – 36 months
- for inner tubes and flaps – 24 months

4. Transport of rubber products

Rubber products (tyres, inner tubes, flaps) should be transported in a manner that protects them against deformation, damage or destruction.

The means of transport should be dry and clean. They may not be transported with petroleum products, oils, acids, alkalis and other substances that are damaging to rubber.

During transport, rubber products should be stacked so that they are secured against movement. If the tyres are transported at a temperature below -30°C (minus thirty), at which the rubber begins to lose the characteristics of an elastic material, unloading should be carried out with extreme care so that there is no accidental mechanical damage.

Budzyń, 6 April 2020

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