

LISI AUTOMOTIVE RECOMMENDATIONS

Use and Storage conditions

This document specifies the recommendations of use and storage conditions of the parts provided, directly or indirectly, by each LISI S.A. affiliate for the automotive field (hereinafter “LISI AUTOMOTIVE”).

This document is a supplement to the LISI Automotive general terms and conditions (<https://www.lisi-automotive.com/en/media-center-2/documentations/>)

These recommendations are cumulative and not exhaustive.

Enforceability of the quality commitments taken by LISI AUTOMOTIVE is subject to the unconditional and full compliance with each of these recommendations

Once at the customer plant, part storage is of the responsibility of the LISI AUTOMOTIVE customer. In any case LISI AUTOMOTIVE may bear any liability for any damage linked with the part' storage at the customer plant.

Moreover, LISI AUTOMOTIVE waive any type of liability and/or application of any warranty for parts in case of loss of traceability on the Parts.

The updated document can be found on the LISI Automotive website:

<https://www.lisi-automotive.com/>

1. Recommendations of storage

1.1. General recommendations

1.1.1. The climatic environment of the goods during the period of handling, transport and storage must avoid aggressive agents such as:

Aggressive agent	Description, example	requirement	Recommendation
Water	-Rain -Water leak	No exposure	Transportation of goods in a closed container Unloading the goods under roof
Water vapour	-Fog -When the air temperature drops below its dew point	To be minimised	-Temporary storage in a chilly and dry area in case of important gap of temperature before and after storage -Specific packaging for delivery by plane and by boat
Saline air		To be minimised	Specific packaging for delivery by boat
Solar-rays		To be minimised	Keep out of sunray
Micro-organisms		No exposure	Storage and transportation in a clean environment
Chlorine agent		No exposure	Storage and transportation in a clean environment
Radiation of all kinds		To be minimised	

1.1.2. The packaging must be kept closed and without any damage, in the original packaging, until the use of the goods in the line of production. The storage must avoid any damage on the packaging like shock, damage by rodents, damage by stack of the packages...

The repackaging is not allowed.

Once opened, the parts must be used within 1 week, except goods with specific storage conditions (see classification of goods) which must be used within 1 day.

1.1.3. The customer must manage its stock on first-in-first-out (FIFO) basis

1.1.4. Avoid excessive high and low temperature during transport and storage

1.1.5. Store and use the goods in a tempered area, ideally between 10°C and 50°C with humidity between 40% and 70%.

1.2. Specific recommendations

It is advised to calculate the dew point of the storage room and to specify a maximum value for goods with specific storage conditions (see chapter “classification of goods”)
 Specific actions must be implemented if the dew point is out of the specification like the heat of the storage area

2. Classification of goods

Storage period is defined as a period between the date of departure from LISI AUTOMOTIVE plant and date of consumption in customer assembly plant

2.1. Steel parts

Part	Sensitivity	Maximal storage period	Specific storage conditions
Without any corrosion protection	corrosion	No commitment	See chapter 1.2
With surface treatment: dry phosphating	corrosion	No commitment	See chapter 1.2
With protective temporary corrosion	corrosion	2 months	See chapter 1.2
With surface treatment: phosphating + lubrication	corrosion	2 months	See chapter 1.2
With thread lock coating	humidity temperature	12 months	See chapter 1.2
With sealant and top coats	humidity temperature	12 months	
Long term corrosion resistant (Electrolytically zinc-alloy- plated; zinc flake)	corrosion	18 months	
Hardness > 380 HV for permanent tensile stress applications	Hydrogen embrittlement	6 months	See chapter 1.2

2.2. Plastic parts

Material	sensitivity	Maximal storage period	Specific storage conditions
All plastic	Aging Temperature Solar-rays	6 months	
Polyamide	Humidity	4 months	Humidity follow up and action if needed

3. General requirements of use

- Do not change directly or indirectly the part by modifying some or part of its characteristics as surface treatment, cleanliness, magnetism...

Before use, do not carry out operations which can modify surface coating of the product

- Do not add lubricant (ex: oil) on the parts threads
 - Do not wash the parts
 - ...
 - Do not exceed elastic limit of parts, except if specified
 - Do not exceed insertion force in use
 - Comply with tightening conditions defined for the part
 - Do not change the manual assembly by an automatic assembly without agreement from LISI AUTOMOTIVE
 - Avoid blind fastening without technical agreement
 - Do not fasten the part in a stagnant and trapped aggressive agent permanently in contact with it
 - Avoid shock, abrasion and scratching by reducing height of fall in the process and time vibration feeds
 - Avoid any contamination, especially for parts with specific cleanliness requirements: use suitable gloves, clean the feeding feeds and limit the time in the feeding feeds
 - Do not use part dropped on the floor
 - Do not use part in a damaged original packaging
 - Do not re-use parts / or disassemble the good, except specific written agreement with LISI AUTOMOTIVE
 - Do not use the good on other applications than the one for which the part has been developed without prior express authorization of LISI AUTOMOTIVE.
 - Quenched and Tempered (QT) steels with hardness higher than 380HV under a sufficient tensile stress are susceptible to external hydrogen embrittlement (EHE) particularly when exposed to a corrosive environment
- The higher the hardness (yield strength) of QT steels, the more susceptible the material is to EHE. Sensitivity varies with steel alloy, yield strength, corrosive environment and the applied tensile stress.