TASNEEF
هيئة الإمـــــارات للتصـــنـيـف
EMIRATES CLASSIFICATION SOCIETY

Amendments to the “Rules for the Certification of Lifts and Escalators for Passengers and Crew Members”

Effective from 1/1/2026

The Rules have been amended to introduce new requirements for Coated Steel Belts (CSBs) lift suspension devices in Chapter 5 “Suspension gear for lifts” (Prop. 318)

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5.1 REQUIREMENTS FOR SUSPENSIONS

Cars and counterweights are to be suspended from at least two independent ~~steel wire cables or two independent chains with parallel links, or similar, or supported by rams or other direct action devices.~~ lines having one the following configurations:

- two steel wire ropes;
- two chains with parallel links;
- two coated steel belts (CSBs).

Alternatively, the car may be supported by rams or other direct action devices. The coated steel belts characteristics are to comply with the specifications reported on [5.4]. The adoption of CSBs as means of suspension in a lift plant may be accepted only if coupled with an electric discharge rope monitoring system capable of detecting any damage or any impair in the steel wire ropes of the CSBs..

The CSBs installation is to be such that they are always protected from exposure to UV light. The operating temperature of the plant where CSBs are fitted shall be between -10 and +55 °C.

The maximum acceptable operating speed for plant using CSBs is equal to 2.5 m/s.

The CSBs are to be installed and inspected according to the plant manufacturer's instructions.

The steel cables must have a minimum diameter of 8 mm; the tensile strength of the wires and the other characteristics (construction, extension, ovality, flexibility, tests, etc.) shall be as specified in Part D of TASNEEF Rules for ships.

The diameter at groove bottom of traction sheaves, or drums, is to be not less than 40 times the diameter of the suspension cable.

In the case of winding up of cables on drums, the drum is to be helically grooved and is to have such dimensions as to have one layer of cable wound on the drum; when the car rests at its lowest position, on its fully compressed buffers, if any, 1.5 turns of cable are to still remain in the grooves of the drum.

In order that the cable correctly forms the loops, without overlapping, the angle of deflection (fleet angle) of the cables in relation to the drum grooves is not to exceed 4° on either side.

The checking calculation for cables and for CSBs is to be performed for the maximum value of the static tension, and the tensile strength of the cables and of the CSBs is to be such as to guarantee a safety factor of at least:

- 12, in the case of traction drive with three cables or more, drum drive with two cables or more and indirect acting hydraulic lifts;
- 16, in the case of traction drive with two cables only.
- 10, in case of chains.

The junction between the ~~cable or~~ wire rope, the chain or the CSB and the ~~cable or chain~~ relevant termination~~s~~ is to be able to resist at least 80% of the minimum breaking load of the ~~cable or~~ wire rope, the chain or the CSB.

In addition, for traction drive installations, the stability in respect of slipping of the suspension cables, as specified in 5.2, is to be ensured.

A plate is to be affixed in a suitable position with complete indication of the characteristics of the cables employed; the latter are, in turn, to be fitted with a small plate, duly secured, bearing the same indication.

The other car components connected to the suspensions are to have a safety factor, in respect of breaking strength of the material with which are made of, of at least 6.

5.2 STABILITY IN RESPECT OF SLIPPING

With regard to stability in respect of slipping, the provisions specified in Standard EN 81-50, paragraph 5.11, are to be complied with.

5.3 DISTRIBUTION OF LOAD BETWEEN THE CABLES OR THE CHAINS

An automatic device is to be provided for equalising the tension of suspension cables or chains, at least at one of their ends.

For chains engaging with sprockets, the ends fixed to the car as well as the ends fixed to the counterweight are to be provided with such equalisation devices.

For chains in the case of multiple return sprockets on the same shaft, these sprockets are to be able to rotate independently.

If springs are used to equalise the tension they are to work in compression.

Protection in the case of abnormal extension, slack rope or slack chain shall be provided as follows:

a) in the case of two rope or two chain suspension of the car an electric safety device shall cause the machine to stop in case of abnormal relative extension of one rope or chain;
b) for positive drive lifts and hydraulic lifts, if the risk of slack rope (or chain) exists, an electric safety device shall cause the machine to stop when slack occurs.

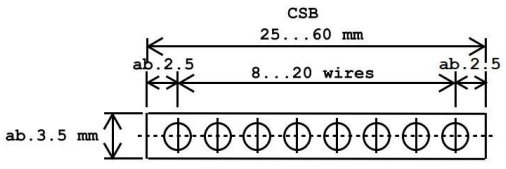
The devices for adjusting the length of cables or chains are to be made in such a way that they cannot work loose after adjustment.

5.4 REQUIREMENTS FOR CSBs

The coated steel belts consist of a set of parallel steel wire ropes embedded in a matrix of an elastomeric jacket usually with a rectangular cross section.

Examples of the geometrical layouts of CSBs are shown in Fig 1.

Figure 1



The wire ropes may have different layouts and constructions according to Part D of the TASNEEF Rules for ships. Wire ropes constructions that deviate from standard ones will be evaluated on a case-by-case basis.

Wire ropes that are embedded within CSBs are to be tested according to Part D of the TASNEEF Rules for ships.

The matrix of the elastomeric jacket is to have smoke and toxicity such to pass the tests prescribed in IMO FTP Code Part 2.

The elastomeric jacket used for the construction of the CSBs are to have a salinity resistance such to pass the tests required by the standard ISO 9227.

The elastomeric jacket used for the construction of the CSB is to have an average surface roughness (Ra) at least equal to 0.2 micron on the printed side and to 0.33 micron on the other side; no material removal is allowed.

The assembled CSB is to be finally tested for the ultimate tensile strength on 3 samples of each CSB type. All the tested samples must show results above the rated ultimate tensile strength.