9.10 Ascending car overspeed protection means

A traction drive lift shall be provided with ascending car overspeed protection means conforming to the following:

9.10.1 The means, comprising speed monitoring and speed reducing elements, shall detect uncontrolled movement of the ascending car at a minimum 115 % of the rated speed, and maximum as defined in **9.9.3**, and shall cause the car to stop, or at least reduce its speed to that for which the counterweight buffer is designed.

9.10.2 The means shall be capable of performing as required in **9.10.1** without assistance from any lift component that, during normal operation, controls the speed or retardation, or stops the car, unless there is built-in redundancy.

A mechanical linkage to the car, whether or not such linkage is used for any other purpose, may be used to assist in this performance.

9.10.3 The means shall not allow a retardation of the empty car in excess of 1 g_n during the stopping phase.

9.10.4 The means shall act:

a) to the car, or

b) to the counterweight, or

c) on the rope system (suspension or compensating), or

d) on the traction sheave (e.g. on the sheave directly or on the same shaft in the immediate vicinity of the sheave).

9.10.5 The means shall operate an electric safety device in conformity with **14.1.2** if it is engaged.

9.10.6 When the means has been activated its release shall require the intervention of a competent person.

9.10.7 The release of the means shall not require the access to the car or the counterweight.

9.10.8 After its release, the means shall be in a condition to operate.

9.10.9 If the means requires external energy to operate, the absence of energy shall cause the lift to stop and keep it stopped. This does not apply for guided compressed springs.

9.10.10 The speed monitoring element of the lift to cause the ascending car overspeed protection means to actuate shall be, either:

a) a governor conforming to the requirements of **9.9, or**

b) a device conforming to **9.9.1, 9.9.2, 9.9.3, 9.9.7, 9.9.8.1, 9.9.9, 9.9.11.2**, and where equivalence to **9.9.4,**
9.9.6.1, 9.9.6.2, 9.9.6.5, 9.9.10 and **9.9.11 .3** is assured.

9.10.11 The ascending car overspeed protection means is regarded as a safety component and shall be verified according to the requirements in **F.7**.

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9.11 Protection against unintended car movement

9.11.1 Lifts shall be provided with a means to stop unintended car movement away from the landing with the landing door not in the locked position and the car door not in the closed position, as a result of failure in any single component of the lift machine or drive control system upon which the safe movement of the car depends, except failure of the suspension ropes or chains and the traction sheave or drum or sprockets of the machine.

NOTE A failure of the traction sheave includes a loss of traction.

9.11.2 The means shall detect unintended movement of the car, shall cause the car to stop, and keep it stopped.

9.11.3 The means shall be capable of performing as required without assistance from any lift component that, during normal operation, controls the speed or retardation, stops the car or keeps it stopped, unless there is built-in redundancy and correct operation is self-monitored.

NOTE Machine brake according 12.4.2 is considered to have built-in redundancy.

In the case of using the machine brake, self-monitoring could include verification of correct lifting or dropping of the mechanism or verification of braking force. If a failure is detected, next normal start of the lift shall be prevented.

Self-monitoring is subject to type examination.

9.11.4 The stopping element of the means shall act:
a) on the car, or
b) on the counterweight, or
c) on the rope system (suspension or compensating), or
d) on the traction sheave (e.g. on the sheave directly or on the same shaft in the immediate vicinity of the sheave).
The stopping element of the means, or the means keeping the car stopped may be common with those used for: preventing overspeed in down direction, preventing ascending car overspeed (9.10).
The stopping elements of the means may be different for the down direction and for the up direction.

9.11.5 The means shall stop the car in a distance:
not exceeding 1,20 m from the landing where the unintended car movement has been detected, and
– the vertical distance between the landing sill and the lowest part of the car apron shall not exceed 200 mm, and
– the free distance from car sill to landing door lintel, or from landing sill to car door lintel shall not be less than 1,00 m (see Figure 4).

These values shall be obtained with any load in the car, up to 100 % of rated load
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Figure 4 — Unintended car movement

9.11.6 During the stopping phase, the stopping element of the means shall not allow a retardation of the car in excess of:
-1 g_n for unintended movements in up direction,
– the values accepted for safety gears in down direction.
These values shall be obtained with any load in the car, up to 100 % of rated load, moving away from a standstill position at landing level.

9.11.7 The unintended movement of the car shall be detected by at least one switching device at latest when the car leaves the unlocking zone (7.7.1).
This switching device shall:
– either be a safety contact in conformity with 14.1.2.2, or
– be connected in such a way as to satisfy the requirements for safety circuits in 14.1.2.3, or
– satisfy requirements of 14.1.2.6.

9.11.8 The means shall operate an electric safety device in conformity with 14.1.2 if it is engaged.
NOTE This can be common to switching device of 9.11.7.

9.11.9 When the means has been activated or the self-monitoring has indicated a failure of the stopping element of the means, its release or the reset of the lift shall require the intervention of a competent person.

9.11.10 The release of the means shall not require the access to the car or the counterweight.

9.11.11 After its release, the means shall be in a condition to operate.

9.11.12 If the means requires external energy to operate, the absence of energy shall cause the lift to stop and keep it stopped. This does not apply for guided compressed springs.

9.11.13 The unintended car movement with open doors protection means is regarded as a safety component and shall be verified according to the requirements in F.8.&