

ISO/TR 11071-1:2004-07 (E)

Comparison of worldwide lift safety standards - Part 1: Electric lifts (elevators)

Contents		Page
Foreword		v
Introduction to the first edition (1990)		vi
Introduction to this edition		vi
1	Scope	1
2	Terminology	2
2.1	Lifts and elevators	2
2.2	Electrical safety devices and electrical protective devices	3
2.3	Safety gear and safeties	4
2.4	Other terms	4
3	Basis for lift safety standards development (basic assumptions)	4
3.1	Historical background	4
3.2	General	6
3.3	Assumption 1 - safe operation assured to 125 % of rated load	6
3.4	Assumption 2 - failure of electrical safety devices	8
3.5	Assumption 3 - failure of mechanical devices	10
3.6	Assumption 4 - imprudent acts by users	12
3.7	Assumption 5 - neutralization of safety devices during servicing	12
3.8	Assumption 6 - car speed linked to frequency of mains	14
3.9	Assumption 7 horizontal forces exerted by a person	14
3.10	Assumption 8 - retardation	16
4	Spaces and clearances	18
4.1	Historical background	18
4.2	Observations and suggestions by individual experts	21
4.3	Point agreed upon	22
5	Door systems and interlocks	22
5.1	Historical background	22
5.2	Observations and suggestions by individual experts	24
5.3	Points agreed upon	24
6	Kinetic energy	26
6.1	Historical background	26
6.2	Observations and suggestions by individual experts	32
6.3	Points agreed upon	32
7	Traction calculations	34
7.1	Historical background	34
7.2	Observations and suggestions by individual experts	34
7.3	Points agreed upon	37
8	Safety gear	38
8.1	Historical background	38
8.2	Observations and suggestions by individual experts	38
8.3	Points agreed upon	40
9	Overspeed governors	40

9.1	Historical background	40
9.2	Observations and suggestions by individual experts	40
9.3	Points agreed upon	42
10	Buffers	42
10.1	Historical background	42
10.2	Observations and suggestions by individual experts	44
10.3	Points agreed upon	46
11	Braking systems	46
11.1	Historical background	46
11.2	Observations and suggestions by individual experts	46
11.3	Points agreed upon	48
12	Electrical devices	48
12.1	Historical background	48
12.2	Observations and suggestions by individual experts	50
12.3	Points agreed upon	52
Annex A (normative) Tabulations		54
Annex B (informative) References		105
Annex C (informative) CEN/TC 10/WG 1 Document N144E		107