# ISO 8100-1:2026-03 (E)

## Lifts for the transport of persons and goods - Part 1: Safety rules for the construction and installation of passenger and goods passenger lifts

## Contents

Page


**Foreword** ..... **vi**

**Introduction** ..... **viii**

**1 Scope** ..... **1**

**2 Normative references** ..... **2**

**3 Terms and definitions** ..... **4**

**4 Safety requirements and/or protective measures** ..... **9**

4.1 General ..... 9

4.2 Well, machinery spaces and pulley rooms ..... 10

4.2.1 General provisions ..... 10

4.2.2 Access to the pit ..... 13

4.2.3 Access doors, emergency doors, access trap doors and inspection doors ..... 16

4.2.4 Notices ..... 17

4.2.5 Well ..... 17

4.2.6 Machinery spaces and pulley rooms ..... 30

4.3 Landing and car doors ..... 36

4.3.1 General provisions ..... 36

4.3.2 Height and width of entrances ..... 37

4.3.3 Sills, guides, door suspension ..... 37

4.3.4 Horizontal door clearances ..... 38

4.3.5 Strength of landing and car doors ..... 42

4.3.6 Protection in relation to door operation ..... 48

4.3.7 “Car here” indication ..... 57

4.3.8 Locking and closed landing door check ..... 58

4.3.9 Locking and emergency unlocking of landing and car doors ..... 58

4.3.10 Requirements common to devices for proving the locked condition and the closed condition of the landing door ..... 62

4.3.11 Sliding landing doors with multiple, mechanically linked panels ..... 62

4.3.12 Closing of automatically operated landing doors ..... 62

4.3.13 Electric safety device for proving the car door closed ..... 62

4.3.14 Sliding or folding car door with multiple, mechanically linked panels ..... 63

4.3.15 Opening the car door ..... 63

4.4 Car, counterweight and balancing weight ..... 64

4.4.1 Height of car ..... 64

4.4.2 Available car area, rated load, number of passengers ..... 64

4.4.3 Walls, floor and roof of the car ..... 70

4.4.4 Car door(s), floor, walls, ceiling and decorative materials ..... 71

4.4.5 Apron ..... 72

4.4.6 Emergency trap doors and emergency doors ..... 72

4.4.7 Car roof ..... 73

4.4.8 Equipment on top of the car ..... 78

4.4.9 Ventilation ..... 78

4.4.10 Lighting ..... 78

4.4.11 Counterweight and balancing weight ..... 79

4.5 Suspension means, compensation means and related protection means ..... 79

4.5.1 Suspension means and related sheaves/drums/sprockets ..... 79

4.5.2 Minimum diameter ratio, safety factor, fatigue lifetime and suspension means terminations ..... 82

4.5.3 Suspension means traction/transmission ..... 90

4.5.4 Winding up of ropes for positive drive lifts ..... 90

4.5.5 Distribution of load between the suspension means ... 91
4.5.6 Compensation means ... 91
4.5.7 Protection for sheaves, pulleys and sprockets ... 92
4.5.8 Traction sheaves, pulleys and sprockets ... 95
4.5.9 Marking of suspension means and compensation means ... 95
4.6 Precautions against free fall, excessive speed, unintended car movement and creeping of the car ... 96
4.6.1 Application of protections means ... 96
4.6.2 Safety gear and its tripping means ... 97
4.6.3 Rupture valve ... 105
4.6.4 Restrictors ... 106
4.6.5 Pawl device ... 107
4.6.6 Ascending car overspeed protection means ... 108
4.6.7 Protection against unintended car movement ... 110
4.7 Guide rails ... 112
4.7.1 Guiding of the car, counterweight or balancing weight ... 112
4.7.2 Forces and load cases ... 113
4.7.3 Combination of masses and forces ... 116
4.7.4 Impact factors ... 116
4.7.5 Permissible stresses and deflections ... 117
4.8 Buffers ... 118
4.8.1 General provisions ... 118
4.8.2 Stroke of buffers ... 119
4.9 Lift machinery and associated equipment ... 120
4.9.1 General provision ... 120
4.9.2 Lift machine for traction lifts and positive drive lifts ... 120
4.9.3 Lift machine for hydraulic lifts ... 126
4.10 Electric installations and appliances ... 134
4.10.1 General provisions ... 134
4.10.2 Incoming supply conductor terminations ... 137
4.10.3 Contactors, contactor relays, components of safety circuits ... 137
4.10.4 Protection of electrical equipment ... 138
4.10.5 Main switch, supply disconnecting devices and isolating devices ... 138
4.10.6 Electric wiring ... 140
4.10.7 Lighting and socket outlets ... 141
4.10.8 Control of the supply for lighting and socket outlets ... 141
4.10.9 Protective earthing ... 142
4.10.10 Identification of electrical components ... 142
4.10.11 Emergency supply ... 142
4.11 Protection against electric faults; failure analysis; electric safety devices ... 142
4.11.1 Protection against electric faults; failure analysis ... 142
4.11.2 Electric safety devices ... 143
4.12 Electrical Controls ... 149
4.12.1 Control of lift operations ... 149
4.12.2 Final limit switches ... 158
4.12.3 Alert initiation and intercom system ... 159
4.12.4 Identification of the software ... 159

**5 Verification of the safety requirements and/or protective measures ... 159**
5.1 Verification methods ... 159
5.2 Specific examinations and tests on installed lift ... 163
5.2.1 General ... 163
5.2.2 Braking system (4.9.2.2) ... 163
5.2.3 Electric installation ... 164
5.2.4 Checking of the traction (4.5.3) ... 164
5.2.5 Car safety gear (4.6.2) ... 165
5.2.6 Counterweight or balancing weight safety gear (4.6.2) ... 165
5.2.7 Pawl device (4.6.5) ... 165
5.2.8 Buffers (4.8) ... 166
5.2.9 Rupture valve (4.6.3) ... 166
5.2.10 Restrictor/one-way restrictor (4.6.4) ... 166
5.2.11 Pressure test ... 167
5.2.12 Ascending car overspeed protection means (4.6.6) ... 167
5.2.13 Stopping of the car at landings and levelling accuracy (4.12.1.1.3) ... 167

5.2.14 Protection against unintended car movement (4.6.7) 167
5.2.15 Protection against falling/shearing (4.3.9.3.4) 167
5.2.16 Balancing of vertically sliding door (4.3.3.3.5) 167
5.2.17 Counterweight balance (4.5.3) 167
5.2.18 Balancing weight balance (4.5.3) 168

**6 Information for use 168**
6.1 General 168
6.2 Instructions 168
6.2.1 General 168
6.2.2 Basic data and characteristics 168
6.2.3 Operating information for use 169
6.2.4 Information for maintenance, inspection, repair and periodic checks 170
6.2.5 Information for emergency operation 172
6.3 Logbook 172

**7 Building-related boundary conditions 172**
7.1 General provisions 172
7.2 Plans for the installation in the building 173

**Annex A** (normative) **List of the electric safety devices 174**

**Annex B** (normative) **Information on the building-related conditions in which the lift is installed 176**

**Annex C** (normative) **Pit access ladder 181**

**Annex D** (informative) **Relationship between this document and ISO 8100-20:2018 187**

**Annex E** (informative) **Operations overview 190**

**Bibliography 191**