

DIN EN 17639:2025-07 (E)

Safety of machinery - Cableway installations designed for the transport of material and specially designated persons - General safety requirements

Contents	Page
European foreword.....	6
Introduction	7
1 Scope.....	8
2 Normative references.....	9
3 Terms and definitions	11
4 List of significant hazards	12
4.1 General.....	12
4.2 Mechanical hazards.....	12
4.2.1 Crushing and shearing.....	12
4.2.2 Getting caught, dragged in and trapped.....	12
4.2.3 Structural stability.....	12
4.2.4 Hazards caused by individual components malfunctioning.....	13
4.2.5 Hazards caused by slips, trips and falls.....	13
4.2.6 Cableway-specific hazards.....	13
4.3 Hazards caused by electrical equipment.....	14
4.4 Thermal hazards	14
4.5 Hazards caused by transported goods	14
4.6 Hazards caused by not observing ergonomic principles.....	15
4.7 Hazards caused by failure of the power supply	15
4.8 Combination of hazards.....	15
5 Safety requirements and/or protective measures	15
5.1 General.....	15
5.2 General requirements	15
5.2.1 Health and safety.....	15
5.2.2 Measures to prevent the track rope from derailing.....	16
Figure 1 — Gimballed suspension system.....	18
5.2.3 Rope position monitoring	19
5.2.4 Presence of the haul rope and counter rope	19
5.2.5 Avoiding collisions.....	19
5.2.6 Crushing and shearing.....	19
5.2.6.1 Travelling, lifting, swing and other movement mechanisms.....	19
5.2.6.2 Clamping devices	20
5.2.7 Getting caught, dragged in and trapped.....	20
5.2.8 Structural stability.....	20
5.2.9 Measures to prevent operational hazards in the event of breakage.....	20
5.2.10 Transport routes and workstations	20
5.2.10.1 Access.....	20
5.2.10.2 Walkways, platforms, steps.....	21
5.3 Requirements for electrical equipment.....	21
5.3.1 General.....	21
5.3.2 Open-loop and closed-loop control systems	22
5.3.2.1 General	22
5.3.2.2 Start-up.....	22
5.3.2.3 Stopping, restarting	22

5.3.2.4	Emergency stop.....	23
5.3.2.5	Unexpected or unintended start-up.....	23
5.3.2.6	Removal of safety functions.....	23
5.3.2.7	Controlling speed on the track and on entry into the station.....	24
5.3.2.8	Command station and other control stations.....	24
5.3.2.9	Position monitor.....	24
5.3.2.9.1	General.....	24
5.3.2.9.2	Monitoring equipment.....	25
5.3.2.9.3	Additional requirements for electronic position switches.....	25
5.3.3	Safety functions and devices for the drives.....	25
5.3.3.1	Setpoint/actual value monitoring.....	25
5.3.3.2	Overspeed trip.....	25
5.3.3.3	Standstill monitoring.....	25
5.3.3.4	Deceleration monitoring.....	26
5.3.3.5	Entry monitoring.....	26
5.3.4	Lightning protection and earthing.....	26
5.4	Carriers.....	27
5.4.1	General.....	27
5.4.2	Carrier design.....	27
5.4.3	Carrier trucks.....	28
5.4.4	Haul rope truck connections.....	29
5.4.5	Maintenance and rescue.....	30
5.4.5.1	Rescue.....	30
5.4.5.2	Maintenance work.....	30
5.4.6	Carrier labels and markings.....	30
5.5	Ropes.....	30
5.5.1	General.....	30
5.5.2	Track ropes.....	31
5.5.3	Haul ropes and carrying-hauling ropes.....	31
5.5.4	Tension ropes.....	32
5.6	Special requirements for structures.....	32
5.6.1	General.....	32
5.6.2	Station structures.....	32
5.6.3	Track structures.....	32
5.7	Limit profile, track width and safety areas.....	32
5.7.1	General.....	32
5.7.2	Lateral and vertical displacement of the ropes.....	33
5.7.3	Transverse sway of the carriers.....	34
5.7.4	Longitudinal sway of the carriers.....	34
5.8	Mechanical equipment and drives.....	35
5.8.1	Stations.....	35
5.8.2	Rope pulleys, rope sheaves and rope reels.....	35
Table 1	— Minimum values for diameters of rope pulleys, rope sheaves and rope reels.....	36
5.8.3	Track rope saddles.....	36
5.8.4	Rope position securing and damage protection.....	37
5.9	Fire prevention.....	37
5.10	Measures for observing ergonomic principles.....	37
5.11	Measures in the event of a power failure.....	37
5.12	Measures where there is a combination of hazards.....	37
5.13	Other.....	37
6	Determining compliance with safety requirements and/or measures prior to putting the cableway on the market.....	38

6.1	Scope of technical documentation	38
6.2	Load assumptions and securities	39
Table 2 — Tensile safety		39
Table 3 — Assumptions for the design of the entire plant		41
6.3	User agreement between the customer and manufacturer	41
6.4	Final testing at the installation location prior to putting the cableway on the market	41
Table 4 — Verification procedures		42
6.5	Test equipment	44
7	User information	45
7.1	General	45
7.2	Signals and warning devices	45
7.3	Accompanying documentation (operating instructions)	45
7.3.1	General	45
7.3.2	Information about the cableway	46
7.3.3	Instructions for using the cableway	47
7.3.4	Information about operating personnel	48
7.3.5	Instructions for maintenance	48
Table 5 — Maximum permissible metallic cross-section loss		50
7.3.6	Instructions for rescue	50
7.4	Labelling	51
Annex A (informative) List of hazards according to EN ISO 12100:2010 and assignment of the corresponding safety requirements for cableways		52
Table A.1 — List of hazards according to EN ISO 12100:2010 and assignment of the corresponding safety requirements for cableways		52
Annex B (normative) Effect of safety devices and functions		56
Table B.1 — Safety devices and functions		56
Annex C (informative) Deviation to the EN 13223:2015 defined requirements		59
Annex D (informative) User agreements		60
Annex ZA (informative) Relationship between this European Standard and the fundamental requirements of the regulation to be covered, Directive 2006/42/EC		62
Table ZA.1 — Relationship between this European Standard and Annex I to Directive 2006/42/EC		62
References		65
 Images		
Figure 1 — Gimballed suspension system		18
 Tables		
Table 1 — Minimum values for diameters of rope pulleys, rope sheaves and rope reels		36
Table 2 — Tensile safety		39
Table 3 — Assumptions for the design of the entire plant		41
Table 4 — Verification procedures		42