Introduction to EN 81-20/-50

Issue: 2015-03-27
Background
EN 81-20 and EN 81-50

Technical Committee 10 (TC10) in CEN

Developing and maintaining European standards for lifts, escalators and moving walks

Established in 1971

Contribution of more than 400 National experts

Two main standards
- EN 81-20 (EN81-1 and EN81-2) for Lifts
- EN115-1 for Escalators
EN 81-20 and EN 81-50
CEN/TC 10 Work Program

Total of 44 standards, 37 published and 7 under development
EN 81-20 and EN 81-50
Revision of EN 81-1 and EN 81-2

Result of revision of EN 81-1 and EN 81-2, two new standards

EN 81-20: Requirements for complete passenger or goods passenger lift installations independent of the driving system

EN 81-50: Description of the examinations, calculations and tests of lift components used in any type of lift (passenger, goods passenger, goods only lift, etc.)

New format for the standards, with many changes to all aspects and many new or improved safety provisions
EN 81-20 and EN 81-50
Preparation for revision of EN 81-1/2

CEN TC 10 (Lifts, escalators and moving walks)

Interpretations

Comments Outstanding from previous revisions

Standardisation Requirements
- CEN Guides 4, 6 and 12
- CEN Guide 414

Comments from European interest groups
- EU Commission
- Notified Body for Lifts
- Trade Associations
- Etc.

Legislative
- Lifts Directive
- Machinery Directive
- Low Voltage Directive

Ease of use and Maintenance

More than 700 items for revision were identified!

Comments from International interest groups
- China
- Other Asia Pacific Countries
- North America
- Etc.
Examples of safety improvements for passengers
EN 81-20 and EN 81-50

Examples of safety improvement for passengers

→ Protection against Unintended Car Movement (UCM), with open doors
  - Detect the unintended car movement, when the car door is open or landing door is unlocked
  - Stop the lift within a limited distance
EN 81-20 and EN 81-50
Examples of safety improvement for passengers

→ Higher requirements for strength of landing and car doors
  ▪ Addition of door retainers
  ▪ To withstand an impact force of 1000N
  ▪ To be tested with a soft pendulum shock device

→ Preventing door striking the passengers when entering or leaving the lift car
  ▪ Non-contact detection device to open the door before striking the passenger

→ New requirements for considering loading and unloading devices
  ▪ Design to consider the weight of the devices
  ▪ Pictograms to inform the users
EN 81-20 and EN 81-50
Examples of safety improvement for passengers

→ Higher requirements for strength of car walls
  - *Withstand 1000N*

→ Higher level of car lighting
  - *100 lux (instead of 50 lux)*

→ Prevision against possible fall into the lift well due to self-rescue
  - *Not to be able to open the car door from inside the car when the car is outside the unlocking zone*

→ Higher requirements for rescue of trapped persons
  - *Rescue crew to be able to move the car in all conditions*
Examples of safety improvements for workers
EN 81-20 and EN 81-50

Examples of safety improvement for workers

- Higher requirements for refuge spaces on the car roof and in the pit
  - Larger safety refuge volumes
  - Safety refuge volume per person present on the car roof and in the pit
  - Emergency light on the car roof

- Higher requirements for balustrades on the car roof
  - For balustrade of 1100 mm, distance between the lift and the well reduced from 850mm to 500mm
  - Strength of the balustrade is defined

- Higher requirements to prevent risk of trapping on the car roof and in the pit
  - To open the landing door from the pit
  - To leave the car roof when the car is blocked for maintenance
EN 81-20 and EN 81-50
Examples of safety improvement for workers

→ Specific requirements for the size and location of landing door unlocking device
  - *No need to stand on the toes or stool to open the landing door*

→ Higher requirements for access to pit and machine rooms, e.g. ladders
  - *Dimensions, strength and location have been defined*

→ Control station in the pit to avoid using ladders and stools to reach car components
  - *Moving the car under the control of the person in the pit*
  - *Reset the lift from outside the well*
EN 81-20 and EN 81-50

Examples of safety improvement for workers

→ Specific requirements for over-connecting the car or landing door contacts during the maintenance operations
  - Audible signal on the car during the operation
  - Lift may put into normal service only when the over-connecting is disabled

→ Accurate definitions for lighting in the well
  - Addition of the emergency lighting (5Lux)

→ Additional protection against electrical shock
  - Electric shock protection according to HD 60364-4-41
    - Basic and fault protection
  - Additional protection: 30mA RCD for
    - Socket outlets depending on shaft and/or well lighting and dependent circuits
    - Control circuits for landing controls and indicators (voltage > 50 V AC)
    - Circuits on the lift car (voltage > 50 V AC)
EN 81-20 and EN 81-50

Building interfaces (examples)

→ Well Ventilation
  - *It is the responsibility of the building designer, based on the information provided by the lift designer*

→ Accessible space under the pit
  - *Safety gear in the counterweight must be provided*

→ Well design
  - *It is no longer allowed to use ladders to access pits with depth >2500mm*
  - *Well walls to withstand 1000N*
  - *If glass is used, it must be laminated glass*
  - *Ledges with depth \(\geq 0.15\)m to be chamfered or protected from person standing*
Time table
Published: 6th August 2014 (DAV)
- This is the date that CEN has sent the EN 81-20/50 standards to all National Standardization Bodies

Published in Turkey (TS EN 81-20): 30th October 2014
- Turkey (TSE) is a full member of CEN

Harmonised (Lifts Directive): 12th December 2014
- From this date, EN 81-20/50 is harmonised and may be applied to comply with the Lifts Directive. EN 81-1/2 also remains valid (harmonised)

EN 81-1/2 will be withdrawn by 31st August 2017
EN 81-20 and EN 81-50
CEN/TR 81-12

CEN TC 10 (Lifts, escalators and moving walks)

→ Use of EN 81-20 and EN 81-50 in specific markets

→ Based on the comments received from ISO non-European members during the prEN 81-20/50 CEN Enquiry

→ It provides
  ■ Comparison of clause numbers of EN 81-1/2 and EN 81-20/50 to assist with adoption of the new standards
  ■ Explanation on the basics of EN 81-20/50, for example importance of “assumptions” in the standard or understanding the meaning of “shall”, “should”, etc.
  ■ Some guidance on how to align the EN 81-20/50 requirements with national regulations (outside Europe)

→ Published in October 2014
On-going related actions
**CEN TC 10 (Lifts, escalators and moving walks)**

**EN 81-20 and EN 81-50**

*Other related development due to EN 81-20/50*

- **Standards to be revised due to publication of EN 81-20/50**

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<th>Affected Standard</th>
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*DOW of the superseded standards to be aligned with DOW of EN 81-20/-50 (31st August 2017)*