

European Standards and Directives **- Assessment of Conformity and Certification**

Summary

New directives and technical standards are elaborated in intensive long-term work for the requirements to be imposed on cableways intended for passenger service in Europe. The existing national technical regulations will be gradually transferred into an harmonised European Standard. At the same time, consultations are going on for an European legislation also agreed to be established.

Moreover, uniform testing and acceptance procedures for the installations and their components will emerge in the course of this harmonisation work under the new notion of "Assessment of Conformity".

The main topics of the project for an European Directive, the basic European standards and the procedures for testing and assessment of conformity are described in a general overview.

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1. Introduction

Passenger ropeways are transportation systems existing in large numbers world-wide today and serving above all tourism in the mountains – in winter and summer alike. Moreover, a further field of application is developing with new transportation tasks in the urban and suburban traffic of the cities, at leisure centres or for special events, as e.g. world trade fairs.

Millions of people are conveyed on these transportation systems, mostly for their recreational activities during their leisure time.

The technology of the ropeways permits solutions to transportation problems for which other traffic facilities, like railway and bus would be out of question. Great differences in altitude are surmounted and steep line layouts realised, impassable terrain or built-up urban territories are crossed.

The great number of persons transported and the frequently hazardously exposed situation of the passengers creates a very high need of protection and a justified high demand on the safety level.

On the threshold to the next century, Europe is just about to grow into an economic union with a single market without borders, where the trade barriers of the old nations are removed and a free exchange of goods is made possible. In the centre of this policy there is also the aim of increasing the competitiveness of industries in the European Union. A clearly visible signal for this common economic territory is the introduction of the "Euro" as a common currency on 01.01.1999 and its use as the only means of payment also in day-to-day practice commencing on 01.01.2002.

One of the presuppositions for this policy of a free movement of goods within a common market is technical harmonisation – particularly the harmonisation of the requirements to be met by industrial products. Hitherto these requirements have been established in national laws particularly for safety, health and for the protection of the environment. Such national laws are step by step integrated into harmonised directives effective all over Europe, which are then taken over uniformly in national legislation. This European harmonisation of the laws is effected to establishing essential requirements – above all safety requirements – to be met by the products in the common market. These essential safety requirements have to ensure a high safety level.

For passenger ropeways, too, a European directive has recently been elaborated. Under the presidential term of Austria, the draft of a European directive for ropeways was discussed during the second half-year of 1998 with the greatest possible energy and with a strong engagement of all parties involved and political understanding for the common market was reached thereon in November 1998. This draft will be finished by wording of the details as soon as possible.

This "Directive of the European Parliament and of the Commission for Passenger Ropeways" settles the technical requirements and the procedures for taking components and complete assembly groups into circulation on a uniform basis for all of Europe. The construction and commissioning of the complete installation, governed by the local circumstances and the realisation of the infra-structures on site remains in the competence of the local authorities in charge.

2. European Directive for ropeways and CEN-Standards for ropeways

2.1 Directive of the EU for ropeways

The directive of the European Union (EU) for ropeways is based on the following fundamental objectives:

- a high safety level for the passengers transported, for the persons employed and for other persons;
- free movement of goods for products meeting the directive;
- subsidiary responsibility of the individual member states for the installation as a complete system, including its infra-structure.

For becoming familiar in depth with the EU directive for ropeways it is absolutely necessary to study the text of the directive in detail. The following survey is intended to provide a first impression of its contents.

The EU directive for cableways is divided into three main parts:

- Considerations
- Wording of the regulations
- Annexes.

T h e c o n s i d e r a t i o n s

are preceding the wording of the regulation and they provide general explanations on the background, motives and aims of the directive. They are not law, but they will be used as reference and for assistance in interpretation in a later use of the wording.

The wording of the regulations

contains the binding regulations of this European Directive for Ropeways in the Articles, as a basis for being taken over in the national legislation of the member states within the EU.

The Annexes

contain more detailed information, e.g. on the basic safety requirements, on the safety analysis to be established, on the procedures for providing proof with regard to safety-related components and component assembly groups built together to form partial systems, on the minimum requirements for the notifying of third parties.

The following selection of definitions, sections from the wording of the directive and explanations offer a first survey on central, important subjects of the directive:

Range of application

The directive is applicable to passenger ropeways - installations comprising several components which are planned, built, assembled and commissioned for their operation in the service of passenger transportation. In particular, the facilities involved are funiculars, aerial ropeways and ski lifts.

Essential terms are the "installation" and the "safety component", as follows:

- "Installation" - is the overall system erected on its destination and comprising the infra-structure and the partial systems described in Annex I of the directive. The infra-structure consists of the line layout, the system data, the station and the individual structures along the line including the foundations especially planned for every installation and erected on site.
- "Safety component" - is a basic component, a group of constituent parts, a sub-assembly group or a complete assembly group and every piece of equipment integrated as part of the installation for ensuring the safety and specified in the safety analysis, the failure or error function of which jeopardises the safety or health of any person, including passengers, operating personnel or third persons.

Basic requirements and standards

Installations and their infra-structure, partial-systems, as well as the safety components have to meet the basic requirements (Annex II of the directive).

In case of installations including their infra-structure, partial-systems and safety components corresponding to the standards harmonised in Europe it is assumed that they meet the basic requirements.

Safety analysis

A safety analysis has to be established for every planned installation, where all aspects of the system and its environment relevant with regard to safety are considered within the scope of planning, execution and commissioning and where based on the existing experience all risks are determined that could occur during operation.

Based on the safety analysis a safety report will be established, where the measures planned for the elimination of eventual risks have to be indicated. In addition, this report will contain a listing of the safety components and of the partial-systems,

Safety components and partial-systems

Safety components and partial-systems in the sense of the directive may not be introduced into the market and taken into operation, unless they contribute towards ensuring that the installations into which they are integrated cannot jeopardise the safety and health of persons and eventually of goods, provided that they are built in and serviced according to good engineering practice.

Installations

Every member state will establish a procedure for the authorization of the construction and commissioning of installations and of their infra-structure intended to be realised within its territory.

The member states will take all appropriate measures to ensure that installations in the sense of this directive may not be built and taken into operation, unless it is guaranteed that the corresponding basic requirements are met in planning and execution of the installations and of their infra-structure.

Clause of the domestic market

The member states may not prohibit, restrict or obstruct safety components and partial-systems for use in ropeways from being brought into the common market within their territory based on this directive, if such safety components and partial-systems meet the provisions of the directive.

Protective clause

If a member state realises that a safety component or a partial-system used according to its destination is in danger of failing to meet the basic requirements, this member state will take all suitable measures to restrict the range of application for such safety component or partial-system or to prohibit its use.

Assessment of conformity

Prior to bringing a safety component or a partial-system into the common market, the manufacturer or his authorised representative residing within the EU has to subject the safety component or partial-system to a procedure for the assessment of its conformity.

This procedure for the assessment of conformity will be performed based on an order placed by the manufacturer or his authorised representative residing within the EU, through a notified body selected by the orderer.

Declaration of conformity

Prior to bringing a safety component or a partial-system into the common market, the manufacturer or his authorised representative residing within the EU has to apply the CE-mark and to issue a declaration of conformity. With this, the manufacturer declares that the safety component or partial-system meets all relevant provisions of the directive and that all testing procedures specified have been carried out.

Notified Bodies

The member states will inform the Commission and the other member states on the notified bodies to which the performance of the testing procedures for safety components or partial-systems have been entrusted, indicating the areas for which the individual testing agencies are responsible. The Commission will allocate identification numbers to these notified bodies.

Permanent committee

A permanent committee of representatives appointed by the member states will be formed; this committee is presided by a representative of the Commission.

The permanent committee may deal with all questions arising in connection with the performance and practical application of the directive.

2.2. CEN standards

A coherent series comprising a total of thirteen standards is being elaborated by CEN (Comité Européen de Normalisation) for a detailed harmonisation of the technical regulations for passenger ropeways in Europe.

Upon their completion, these CEN standards will become formally effective in every individual member country of the EU by being transferred without change into national standardisation. Moreover, also European standardisation institutes of non-EU countries have joined CEN by contract, among them Switzerland.

In the various Working Groups of the Technical Committee TC 242 - Safety requirements for passenger ropeways - the following partial sections have been dealt with since June 1990 under the leadership of the French standardisation institute AFNOR and meanwhile major part of them has already been completed:

- 1 Definitions
- 2 General requirements
- 3 Calculations
- 4 Ropes
- 5 Tensioning devices
- 6 Mechanical equipment
- 7 Vehicles
- 8 Electrical systems
- 9 Civil works
- 10 Trials, maintenance, operation controls
- 11 Evacuation and rescue
- 12 Operation
- 13 Quality assurance

All these standards form an integral unity for planning, production, assembly, maintenance and operation of passenger ropeways and ski lifts.

The CEN standards for ropeways were elaborated separately, independent of the EU directive for ropeways. However, they are in a close relationship with the directive for ropeways. They represent the detailed concretisation of the basic safety requirements for the directive, which could therefore be kept general, fundamental and open.

Essential general principles for the normalisation for ropeways are:

High safety requirements are the highest principle for planning, production, assembly, maintenance and operation of ropeways and ski lifts.

Only companies and specialised personnel having the necessary knowledge and experience and ensuring a careful execution and proper operation may be entrusted with planning, production, assembly, maintenance and operation of ropeways and ski lifts.

All components have to be exactly calculated, mechanically and electrically well designed and manufactured with the use of unobjectionable, resistant materials having the required properties.

Deviations from the European standards are admissible, particularly in case of innovations and where components are replaced on existing installations, if the deviation is substantiated by a safety analysis and if at least an equivalent safety level is reached.

In addition to the provisions for the protection of the persons transported, the European standards, moreover, contain requirements for the protection of the employees.

The facilities have to be built in such manner as to permit their operation and the performance of maintenance work without jeopardising the personnel, provided that the regulations are observed. Besides, the facilities have to be planned and executed in such a manner as to keep required maintenance work at a minimum. Components requiring maintenance in regular intervals of time have to be easily accessible and easy to reach. The detailed building requirements for the protection of the employees are already included in the requirements for the individual components and component groups.

The European standards were elaborated in Working Groups where the parties concerned, i.e. the ropeway companies, the manufacturers, the authorities and third parties, have participated. These participants represent major part of the concentrated experience from existing safety regulations and from the experience and knowledge of the expert engineers involved. The companies and expert engineers involved have to a considerable part contributed to these standards voluntarily and gratuitously.

3. Assessment of conformity

3.1 Procedures for the assessment of conformity

The contractual start of the common market in Europe on the 1st January 1993 allows a free movement of goods in the entire territory of the EU. This free movement of goods covers from the beginning not all conceivable products, but great groups of industrial products, such as machinery, building products, medical equipment, telecommunication devices or toys. A presupposition for a well-functioning free movement of goods is the harmonisation in the technical field, attained by the application of common directives. Accordingly, also ropeway components originating from industrial production will participate in the common European market as soon as the directive for ropeways becomes effective. Moreover, the harmonisation by the EU directives contributes towards an enhanced product quality and aims at strengthening the competitiveness of the industries in the community on global markets growing together continuously.

For facilitating the application of the directives elaborated by the EU, since 1985 in a new, less complicated approach and issued by the Commission, a "bundle of instruments for quality management" has been implemented, encompassing among other items a European standardisation and the assessment of conformity (certification, third parties, etc.) and integrating the private economy to a far extent into the procedures for the approval of the products. These instruments allow the manufacturers to provide their industrial products with the CE-mark that forms a "technical passport" for these products which is valid in the whole territory of the community and proves the agreement with the regulations of the community.

The tests to be performed by notified third parties within this scope are realised upon orders placed by the manufacturer, who in this way furnishes the required proof for his products in a single procedure. This single proof is valid in the whole European Union and replaces the tests that hitherto had to be performed again in every individual country.

The main objective of the procedure for the assessment of conformity (testing procedure) is to ensure in front of the public represented through the local authorities on site that the products brought into the market meet the requirements of the directive particularly with regard to the health and safety of the users and consumers. Therefore, the procedure for the assessment of conformity is a precautionary measure growing in importance with the extent of the risk that the consumer incurs with the use of a certain product (or service).

On the other hand, the manufacturer is from the start integrated into testing, because he is the orderer and thus the motor of the testing procedure, so that the execution of the tests can accompany the production without any obstruction.

The procedures for the assessment of conformity are systematically divided into two steps based on the fact that the manufacturing process of a product is usually divided into the two steps of *d e s i g n* and *p r o d u c t i o n*. As a rule and particularly in case of safety-related products, a product is controlled in both steps. The directive for ropeways follows the same principle.

The assessment of conformity for safety components of ropeways offers the manufacturer the possibility to choose between several procedures, all of which, however, have to provide a high protection level based on Article 100 a of the EC treaty.

Survey on the assessment of conformity for safety components

Design	Production
(1) EC-Type Testing Module "B"	(1a) Quality Assurance Production Module "D" (1b) Testing of Products Module "F"
(2) Comprehensive Quality Assurance Module "H" (*)	(2) Comprehensive Quality Assurance Module "H" (*)
(3) Individual Test Module "G"	(3) Individual Test Module "G"

Among the three different procedures – Type Testing with production control; Tests including a Comprehensive Quality Assurance system; Individual Tests – the manufacturer can choose the procedure most adequate for the structure of his company and for his individual products. The results of the three different procedures are recognised as equivalent.

It should be pointed out especially that the directive also provides a possibility for an assessment of conformity without established Quality Management Systems. This is intended to maintain the chances of access to the market for small and medium sized companies without formalised quality management systems. Nevertheless it is a declared aim to encourage the manufacturers to introduce, apply and certify to Quality Management Systems.

A special feature of the directive for ropeways is the area of "Partial-Systems", i.e. larger coherent assembly groups combining entire partial sections of a ropeway. These partial-systems were determined as follows:

- Ropes and rope connections
- Drive system and brakes
- mechanical equipment
- electrical systems
- Vehicles
- Rescue equipment.

These partial-systems – appearing for a first time as a systematic level in the directive for high-speed railway traffic and now in the directive for ropeways – make it possible to extend testing beyond the individual safety components by testing larger partial sections of a ropeway coherently, so as to make the remaining approval procedure even less complicated and providing a uniform classification for it.

For these "Partial-Systems" – where they are applied in individual cases – the EU ropeway directive provides an own testing procedure designated as EC – Approval. The procedure of the EC-Approval is applied according to the "Individual Test" module, Here, the rights and obligations of the third party are described in more detail. The original text of the directive contains more detailed information on the subject.

3.2 Notified Bodies

Corresponding to the concept of conformity assessment as described herein before, the manufacturers have various different coherent and equivalent possibilities ("Modules") on hand.

It is the task of special, notified independent third parties - the notified bodies - to perform the assessment of conformity in the sense of the directive.

These third parties are notified by the member countries where they have their seat to the EU Commission and to the other member countries and in this way they are given the status of a "notified body" recognised all over Europe.

The authorities of the member states entrusted with such registrations are not only empowered to notify such third parties, but also to revoke the registration, if the necessary conditions are not any longer given.

The registered notified bodies are assigned to these authorities. As these notified bodies practically assume the responsibility of the authorities entrusted with the registration, they have to be accountable in front of them. With this, they are subject to the jurisdiction of the respective member state, who therefore can notify only third parties having their seat in his territory.

The number of notified bodies is in the discretion of the member state concerned. However, it is necessary that the technical conditions are met.

The notified bodies are as a rule notified by the ministries, who are the competent authorities for the implementation and execution of the respective directives.

The decision on notifying a third party, i.e. the selection among the agencies that have substantiated their competence, is reserved to the authorities of the individual member states. According to the jurisdiction of the community they are not obliged to notify every technically competent agency. And the jurisdiction of the community also provides that an agency cannot derive a claim for being registered based on its technical competence, while on the other hand the authorities are obliged to notify only third parties that have furnished proof of the necessary technical competence.

The number of registrations can be oriented along the demand in the market. This should be kept in mind by the member states in the preparation of their notification.

The Commission will co-ordinate the handling of the notification procedure and the allocation of identification numbers. The Commission, moreover, takes care that the other member states are informed on the names, identification numbers and tasks of the notified bodies and that this information is published in the Official Gazette of the European Communities. Moreover, it will ascertain, eventually in agreement with the member countries, the demand in the market for notified bodies.

The notified bodies are responsible for the proper execution of the assessment of conformity. They are liable for errors in their work and they must have a corresponding insurance protection. However, the liability for the products remains as before with the manufacturer or respectively with the importer.

As the range of application of the directive for ropeways is technically rather wide and extensive, it might be possible that not all notified bodies have the necessary competence to test all partial products coming within the purview of the directive. In such cases it is admissible to notify bodies for only part of the products within the scope of the directive.

The notified bodies are independent and have to remain so. Their independence from the orderers and from all other parties has to be guaranteed.

It has to be decided in the individual case, whether or not a third party has the necessary measure of independence. An important criterion is an organisation offering the guarantee that the persons entrusted with the assessment of conformity can take their decisions free from commercial influences.

The main task of the notified bodies is to provide the services required in connection with the assessment of conformity under the conditions established in the directive. The service required has to be provided for those participating in the market (manufacturers, importers, users), and has to be provided with the necessary competence, independence and without any discrimination.

The agencies reported play an important part not only immediately after issuing the directives, but also during the transition period. In co-operation with the Commission and with the member states the agencies have to create the pre-requisites for a proper execution of the procedure and they have to find generally recognised, practicable solutions enabling a transition from existing national test methods to common test methods and contributing towards avoiding unnecessary repetitions of tests.

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