SBS Study

Mapping of national initiatives on existing lifts modifications

Small Business Standards

2022

EFESME

Small Business Standards (SBS) is the association representing and defending Small and Medium-sized Enterprises (SMEs) interests in the standardisation system at the European and international levels. Its 21 members are national and European sectoral and inter-professional associations representing SMEs in 32 European countries.
Rue Jacques de Lalaing 4, 1000 Brussels, Belgium • info@sbs-sme.eu • T +32(0)2 285 07 27 • www.sbs-sme.eu • Transparency Register 653009713663-08

EFESME, the European Federation for Elevator Small and Medium-sized Enterprises, is the European SMEs voice in the lift industry, representing and defending at EU level the interests of SMEs operating in the lift business.
Rond-Point Schuman 6, 7th floor 1040 Brussels, Belgium • secretariat@efesme.org • T +32(0)2 230 74 14 • Transparency Register 272211134200-17

Abstract

The core business of most lift SMEs is in maintenance, repair and modernisation services. Nevertheless, **there is no European agreement nor standard on how to deal with safety in major modification and modernisation of lift installations**, especially when it concerns major works.

Nevertheless, in some member countries the national standardisation bodies have developed local good practices that define the requirements for carrying out repair and modernisation works on installations "in a workmanlike manner", making it much easier for European lift SMEs.

To complete this study, a survey has been launched in 2022 among the EFESME members to gather information on what practices exist at national level. Based on these national contributions, the experts involved have **compared the results to see if there are any common practices or approaches** at the national level.

Following this methodology, **the result of the study shows whether there is a need for common European guidelines to support the execution of the most complex interventions on existing installations**, or whether the situation, although handled differently at national level, has reached its balance.

This is to be taken in mind especially since maintenance, repair, and modernisation work on existing installations is mostly carried out at national level, without SMEs from another state being involved.

Such recommendations, if needed, could also take the form of a technical specification or a technical report.

Introduction and scope

The *core business* of European small and medium-sized companies operating in the lift systems sector is after-sales services, i.e. the servicing, repair, replacement, and modernisation of existing systems. The regulation of this type of activity is left to the Member States, as EU legislation only deals with the design, the installation, and the declaration of conformity of lifts until they are placed on the market. Once the lift is in operation, the legal competence for the management and safety of the installations is transferred to the Member States.

For more complex operations, such as the replacement of important components, the modification of the shaft or the increase of speed or surface area of the cabin (which should be paired with an equivalent change in its capacity and load capacity), there is no EU legislation in place. Also, no EU-wide prescriptions or indications exist on how to approach these operations in order not only to complete them in full safety, but also to follow common practices at European level, as is the case for other aspects of the lifecycle of the installation.

The only standard that comes relatively close to this concept is *EN 81:80: 2019 Safety rules for the construction and installation of lifts - Existing lifts - Part 80: Rules for the improvement of safety of existing passenger and goods passenger lifts*, a guideline on how to improve the safety of existing lifts. However, this standard does not give any guidance to practically execute the above-mentioned operations.

In this context, it might be useful to produce a document, the nature of which is to be discussed and detailed, which allow these important modifications on existing lifts to be carried out safely.

As a matter of fact, in the lifts sector big multinational companies have large technical departments that provide corporate-level guidelines to standardise procedures and operate on existing lifts when safely performing important modifications. Such guidelines are only available to said large companies and their technical experts, as they are not made public, therefore external technicians do not have access to this information. Moreover, as there are no common guidelines, the internal guidelines of large companies and multinationals might be diverging between one other.

On the other hand, European lift SMEs, can only rely on the individual expertise of their technicians, since, contrary to larger companies, they do not have the financial and non-financial resources to dedicate to the creation of such guidelines. However, in some member countries, such as Italy, France, Spain and Germany, the national standardisation bodies have developed national standards of good practice that define the requirements for carrying out repair and modernisation work on installations "in a workmanlike manner", making the situation much easier for lift SMEs.

EFESME and SBS's objective is to survey EFESME members, representing lift SMEs all around Europe, to ascertain what tools are available to lift SMEs in these Member State to safely carry out

major works on existing installations, addressing the issue by analysing different points of view and interventions to be carried out, such as:

- Whether there are binding provisions in national legislation, standards of good practice or national guidelines, or good practices developed by associations or groups of companies;
- Whether there are no specific provisions and practices and all actors in the sector have to proceed according to their own individual experience and knowledge;
- How certain interventions are carried out, in order to make a technical comparison between the various procedures (more or less complete or complex to execute).

The reality of the sector is that maintenance, repair and modernisation work on existing installations are mostly carried out within the national market, with limited internationalisation and involvement of SMEs from other countries. **The conclusions of the survey show whether there is a need for common guidelines to support the execution of the most complex interventions on existing installations, which could take the form of a technical specification**.

If indeed deemed necessary by the lift industry, the lift SMEs and the national lift SMEs associations involved, **in the future such a technical specification could lead to the creation of a standard to be proposed to CEN for technical development**.

Depending on the type of document deemed necessary (should this happen), **two different scenarios** would open up:

⇨ **A technical specification or a recommendation** would be the more suitable option whether the average state of the art of the existing lifts in the Member States is found to be quite different each other, so that it could be difficult to address solutions which could be too prescriptive to adapt to different conditions;

⇨ **A standard**, on the other hand, would be the preferable option if the average state of the art of the existing lift is found to be more similar in the Member States, as it could be, for instance, for lifts already complying with the Lifts Directive (first 95/16/EC and even 2014/33/EU), but not with the present harmonised standards.

Nevertheless, these are future considerations that are beyond the primary objective of this SBS Feasibility Study. The primary objective is to verify whether SMEs in the sector perceive the need to compensate for the lack of common European indications, or rather whether national regulations already provide sufficient guidance and requirements regarding how to carry out certain interventions.

These considerations will only have to be taken into account if the outcome of the SBS Feasibility Study demonstrates a widespread interest and/or need for a common document among European lift SMEs. These same considerations are not the primary goal of this research objective, but a potential consequence of its result if needed.

Methodology applied

1. Analysis of the problem with EFESME's technical experts

The lack of European guidelines and standards on how major modifications are carried out on existing installations has long been known in the industry. Lift SMEs are aware of this lack of prescriptions at European level, which might be addressed in some cases by national regulations. EFESME and Small Business Standards are well aware of this issue, given the constant contact with lifts SMEs in its membership. EFESME and SBS have carried out this Feasibility Study to analyse in a methodical and detailed manner **whether there is a need to develop some form of European-wide guidelines to give guidance on how to technically perform modifications on existing lifts**.

At this time, there is no European standard on the subject - the standard that comes closest to the concept is *EN 81:80: 2019 Safety rules for the construction and installation of lifts - Existing lifts - Part 80: Rules for the improvement of safety of existing passenger and goods passenger lifts*. This standard, however, has a different scope, **the improvement of the safety of existing lifts**.

The central question to be answered with this feasibility study is:

Given the current lack of any kind of regulation at European level for this type of intervention, **is the development of some kind of common European guideline or standard desirable (to be detailed according to the results of this study), or do European lift SMEs believe that the situation (in some cases legislated and managed at a national level) can continue in the current manner?**

All of the consulted experts involved in EFESME's work and activities and in this feasibility study in particular, come from a lift SME background. They are, as a matter of fact, owners, or technicians of lift SMEs, and/or work for national lift SMEs associations that protect and support lifts SMEs in their country.

2. Questionnaire development: legislative and practical aspects

In order to analyse the problem and to achieve its objective, i.e. to check whether there is a pressing need among lift SMEs to develop some European guideline and/or standard, EFESME and its team of technical experts have developed a questionnaire (*Annex I - Questionnaire*), which analyses both the regulatory and the more practical aspects of the problem:

- 13 of the 15 questions are technical in nature, wanting to go into detail about how major changes to existing installations are carried out in the various states where the EFESME members consulted are based. These answers revolve around both practical aspects (materially, how the modification is carried out), and more formal and administrative aspects (through which elements of national and/or European legislation this happens).
- The first two questions, on the other hand, are more "political" and concern the existence of national legislation or guidance documents dedicated to major modifications on existing installations.

Given the afore-mentioned SMEs background of all the EFESME experts involved in this exercise, **it was ensured that the questionnaire was simple and quick to fill in** - so that it was not too time-consuming for lift SMEs and associations to participate. Furthermore, **its content touched on very practical issues, such as the type of intervention to be carried out and the methodologies for doing so, to have material knowledge from the field**.

3. Collection of contributions from EFESME members and a partner in Switzerland

The questionnaire was then distributed to EFESME members and to a partner in Switzerland working with Swiss SMEs (the Swiss market is integrated into the European lift market and is associated with the CEN, accepting the validity of the relevant harmonised standards in the same way as the EU member states). The context in which the SBS Feasibility Study is developed was explained, as well as the emphasis on the importance of the members' participation in the collection of information to get the whole picture at the European level.

The questionnaire was distributed to EFESME members via email, and web-meetings were organised with members and the experts involved to explain the objective of the SBS Feasibility Study in more detail and to answer the questions together. It is notable (and somewhat to be expected) that the first and most comprehensive answers came from those European countries and EFESME members where the lift market is larger and more regulated, and where the national lift SME associations are well organised and present on the territory.

For an overview of all contributions received, divided into tables question by question to make the consultation more practical and immediate, please see *Annex II – Summary of contributions*.

4. Analysis of the answers obtained and comparison of the results of the questionnaire

Once the contributions sent by the national members had been collected, the EFESME

experts compared the information received to verify:

- How many of the consulted EFESME members responded and from where;
- The situation within the various states in which the EFESME members consulted are based;
- The presence or absence of a national standard explaining how to carry out major works on existing installations;
- How these same works are practically carried out.

On the basis of the answers obtained, the experts checked whether common positions and best practices existed, or whether this same convergence could be achieved from the various national approaches. Here, the experts dealt with different types of input received from the various national members, whose approaches to the questionnaire differed, indicating different attitudes and practices regarding major interventions on existing installations.

Having completed the analysis of the contributions and the comparison of the results, it was decided, for reasons of convenience and easier consultation of the results, to organise them in a series of fifteen tables, one per question, so that the answers of the individual contributors among the EFESME national members are clearly visible and readable.

The above-mentioned *Annex II - Summary of contributions* at the end of this study collects all national contributions.

5. Development and finalisation of the conclusions

Based on the analysis of the answers and the comparison of the results of the questionnaire, the EFESME experts came to conclusions summarising what they learned during the study. The conclusions have an approach designed to be easily accessible to European lift SMEs, as they are the focus of all EFESME's work, and of SBS's support in standardisation in this area. The concluding document was then written using the language and technical knowledge common and familiar to small and medium-sized enterprises in the European lift sector, so that it can be a useful information document for them.

Not only that. The conclusions reached by the experts involved also contain a series of recommendations, based on the conclusions themselves and the data collected during the study, addressed to the European lift industry, as well as to the several and different stakeholders interested, so that it can best answer the question:

Is the development of some kind of European legislation regarding the modifications on existing lifts desirable, or do European lifts SMEs believe that the current situation (mainly regulated and managed at a national level) can continue as in the current manner?

Findings

Based on the answers the questionnaire has received so far, **differences in the methodological approach of the answers are evident, even before the substance**.

The different situations presented at national level are very different: the result of the questionnaire cannot paint a complete picture. In addition, a part of the members answered incompletely, and some did not send a reply at all - a summary of the answers received can be found in the following *Annex II – Summary of contributions*.

In spite of the lack of a single methodology in the different Member States, **some important considerations for the European lift industry can be obtained from the answers received**.

Of course, voluntary modifications are made to existing lifts in all countries. Nevertheless, a first basic difference between them, as far as appears from the replies received, is the following:

- ⇨ *In some of the countries considered there is a public body (or private body in charge of a public service) that controls the outcome of the work carried out on the lifts and authorises their safe return to operation, while in other countries this is not the case*.

Where there is no control of the outcome of the work carried out, there does not even appear to be a regulation in this regard, and it is not clear what procedure companies follow to safely return modified lifts to operation. It is presumable that the most organised companies have internal procedures, and it is possible that other companies will follow them if they are made aware of them in some way. This, for example, should be the situation in Switzerland.

According to the answers received, the countries where these controls appear to exist, are Bulgaria, Germany, Italy, Netherlands, Romania, and Spain. In Switzerland, the situation is handled in this way in some cantons, but not in others.

It should be added that in some cases (e.g. Italy) it appears that the verification of the work done is carried out immediately after it has been completed. In other cases ordinary verifications are carried out at certain intervals (e.g. every two years), and it is only then that the conformity of the work is examined

In such countries where a public entity control exists,

1. There are some where a punctual risk assessment is carried out on a job-by-job basis, and in those cases, it appears that the state of the art, i.e. the standard for new lifts EN 81-20, is referred to for its execution, but without further details. Countries where the control exists, but where there seems to be no national

regulation, appear to be Bulgaria and some Swiss cantons.

2. In others, the reference is the standard EN 81-80 on improving the safety of existing lifts, i.e. voluntary work is framed as part of a more comprehensive action conceived at EU level, made compulsory in the Member State, aimed not at maintaining but at increasing the safety of lifts where upgrades are voluntarily carried out.

3. In some countries (e.g. Romania), a part of the voluntary adaptations outlined in EN 81-80 has been imposed as mandatory.

4. Finally, in some countries there is a national reference standard, more or less complete, bearing in mind that in any case no standard can cover all the cases that may arise. Even in these countries, therefore, if the case is not covered by the standard, a risk assessment must be carried out, which a competent body then evaluates before recommissioning.

The list of these countries is not long at this point in the investigation: in Italy there is the UNI 10411 series of standards, in France the NF P82-230, in Germany the TRBS 1204 part 4, in the Netherlands the SI19, in Spain the AEM1 under RD 88/2013. The Hungarian member of the Federation states that it exists but does not give details. Keep in mind that in some countries, such as France, some work proposed by EN 81-80 has already been performed as it has been made mandatory, however there is a standard for how to perform those not yet done in that logic.

An examination of these national regulations shows that, while not identical, they are similar in several aspects. For example:

1. Firstly, the level of coverage of the standard with respect to the possible work that can be carried out on the lift, which in some cases is greater than in others.

2. On the other hand, the level of updating to the state of the art more or less high.

3. Furthermore, and this is very important, common European standards on the installation of new lifts have only existed since the late 1980s, and only became de facto mandatory after the publication of the Lift Directive 95/16/EC. Prior to this, lifts were regulated differently in different countries, and the level of safety ensured to them was different, leading to the fact that the starting point today is not the same everywhere.

For example, in Italy it was essentially mandatory to installing a car door, while this was not the case in Switzerland, France or Belgium. As such, in Italy there is less need to standardise the installation of a car door on an existing lift that does not have one, than in one of these countries.

A harmonisation of these national standards into a single one seems possible, but, on this basis, not easy.

This is because there is no objective level of safety to which existing lifts can be voluntarily upgraded. What is objective is only the maximum level, which is ensures by the

standard for new lifts EN 81-20. There is also a minimum level, which is not to lower the level of safety of an existing lift compared to its pre-modification status. This concept seems trivial, but, from a technical point of view, it is more complex than it might appear at first glance. Some upgrades if not studied carefully can add safety on one side but take away safety on the other.

Based on the different national experiences where a standard exists, **it could be theoretically possible to develop a European standard with the priority aim of suggesting its adoption to authorities and companies in countries where there is none**. **This, however, would be complicated**, as it would be a challenge to national standards where they exist, none of which would guarantee exactly the level of the European standard.

It must be remembered that **the unifying element that has led to the CEN elaborating a common standard for new lifts, today EN 81-20, is the existence of a Directive**, first 95/16 and then 2014/33, which is mandatory throughout the EU in this field, but does not cover the safety of existing lifts, as these are outside its scope. Previously, the ten-point Recommendation 95/216/EC of 8 June 1995 on improving the safety of existing lifts was issued, which led CEN to issue a voluntary standard, EN 81-80. This Recommendation was published almost simultaneously with the Lift Directive, which defines safety rules for newly installed lifts. The safety of existing installations is a national competence, but it was nevertheless felt that action should be taken at European level to urge Member States to adopt national legislation to achieve an adequate and as far as possible uniform level of safety on all lifts in operation in the then European Community.

At the end of this work, based on the results of the survey and these considerations, the time does not seem ripe to unify the various existing national standards into a single one, even to be proposed only in countries where there is none.

A proposal could be to proceed as was done at the time when EN 81-80 was drawn up, i.e. that the EU should propose a Recommendation, or an equivalent legal act, **which would not, however, enter into the technical merits, but into the methodological ones**. A detailed list of proposals potentially forming part of such a Recommendation is available here below.

⇨ *If a Recommendation, or equivalent act, were to be issued in this sense, the question of a possible unification of national standards into a European one could be taken up again, covering work carried out voluntarily on existing lifts, on a sounder basis than that found today thanks to the survey carried out.*

Final Recommendations

The SBS feasibility study concludes that, for the time being, **it is not appropriate to propose a common European standard** dealing with major modifications of existing lifts. Nevertheless, **the Commission, based on the following suggestions, could issue a European Recommendation, or an equivalent act based on the following suggestions:**

1. Although the study found no particular interest at European level in developing a common guideline, this does not exclude the possibility of developing a similar document at national level, where one does not yet exist. Such a document, more or less extensive in its coverage, would have to take as its reference the state of the art, i.e. EN 81-20 and other applicable harmonised standard, or less recent editions of the same.

2. Each Member State should have a body to check the main modification works carried out on existing lifts, such as replacement of ropes, machinery, control panel, etc.

3. It would be advisable for this verification to be carried out immediately after the work has been completed, and not at the time of any subsequent periodic verification. This is because, if the modification work had been carried out improperly, the negative consequences (and potential risk) could continue until the next verification, which might be a long time away itself.

4. In any case, it is advisable for the standard to cover the work most frequently carried out in the country. It should be borne in mind that this list is not necessarily the same in all countries, since, as already mentioned, it depends on the initial state of the art of safety, i.e. on what national standards were in use at the time when the system was installed, before the European standard was adopted.

5. Where this is not done, the controlling body should have a job-by-job risk assessment carried out by the executing company, examine it and approve it. This procedure, of course, is more complex and costly than adopting the standard, and in particular discriminates against SMEs, which are less well equipped in this respect.

Annexes

Annex I - Questionnaire

Annex II - Summary of contributions

Annex I - Questionnaire

1) In your country, are inspections carried out by third parties (public or private) after major modifications have been made to an existing lift?

(Here major modifications include in particular the replacement of the machinery or the hydraulic power unit, control panel, traction ropes, door locks, safety gear and/or speed limiting device, addition of landing doors and/or modification of the travel length and others as follows)

2) Is there a national reference standard or legislation for these voluntary operations?

3) How is the variation of the static load managed in electric lifts?

4) How is the reduction of clearances between moving parts and shaft guards managed?

5) How is the relocation or insertion of equipment in the machinery space managed?

6) How is the replacement or extension of existing (fixed or movable) power cables managed?

7) How is the replacement of the controller managed?

8) How are modifications to landing doors and/or their locks managed?

9) How is the replacement of the machinery or traction pulley or sheaves in an electric lift managed?

10) How is the replacement of the hydraulic power unit or valve unit managed in a hydraulic lift?

11) How is the increase in the speed of the lift handled?

12) How is the increase of travel length managed?

13) How is the replacement of traction ropes handled?

14) How is the replacement of the speed controller managed?

15) How is lift car replacement managed

Annex II – Summary of contributions

The following *Annex II - Summary of contributions* contains the responses obtained from EFESME members and partners regarding:

- The role of third parties (such as the notified bodies) in the inspection of existing installations after a major modification has been carried out;
- The existence or not of some national legislation setting the rules on how these interventions are carried out;
- How these interventions (replacement of components, modifications to components, ...) are materially carried out.

The questionnaire is composed of 15 questions, prepared by EFESME experts with a background as much technical as from the SME world, in order to develop an easy and accessible document for the representatives of small and medium-sized lift companies contacted by EFESME.

13 of the 15 questions are technical in nature, wanting to go into detail about how these major changes to existing installations are carried out in the various states consulted.

These answers revolve around, depending on the case, more practical aspects (materially, how the modification is carried out) or more theoretical aspects (through which elements of national and/or European legislation this happens).

The first two questions, on the other hand, are political on the existence of national legislation dedicated to major modifications on existing installations.

Each question has a dedicated table with the answers obtained, divided state by state, in order to make reading the various pieces of information as convenient as possible. The EFESME secretariat remains available for any questions on the input obtained.

METHODOLOGY

In order to obtain the information needed to develop this Feasibility Study, EFESME and its experts developed the above questionnaire, and then contacted its members, plus a partner in Switzerland, to obtain useful information to complete this Study.

For more information on the study, and on how it was developed, please refer to the main document.

Country	***Question #1:*** ***In your country, are inspections carried out by third parties (public or private) after major modifications have been made to an existing lift?***
Bulgaria	Yes, the inspections are carried out by governmental agency.
France	Yes, it depends of the complexity of the modernization and if the lift is CE or not.
Germany	An approved inspection body must inspect certain modifications affecting the safety of the lift installation before being put into service.
Hungary	[TO BE VERIFIED]
Italy	Yes. The owner of the installation must instruct an authorised body (ASL, ARPA, Notified Body or inspection body) to carry out an extraordinary inspection of the installation pursuant to Article 14 of Presidential Decree 162/99. The lift can only be put back into operation following a report with a positive outcome.
Netherlands	Yes, through a notified lift inspection body.
Romania	Yes, by a state-authorised body.
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Generally speaking, no.

Country	Question #2: Is there a national reference standard or legislation for these voluntary operations?
Bulgaria	No, after a big modifications for example change of motor or controller, risk assessment, project papers and certificates must be presented by the lift company to the governmental inspection authority. Then they visit the project to verify the job done and run technical inspection on the existing lift.
France	The national reference standard is the code NF P82-230 witch describe all the modifications to do for the modernization of a lift.
Germany	It is not a voluntary measure. It is regulated by the Ordinance on Industrial Safety and Health (Betriebssicherheitsverordnung) and the associated TRBSs, in particular TRBS 1204 Part 4 (soon to be incorporated into the "Act on the Adaptation of the Product Safety Act and the Reorganisation of the Law on Systems Requiring Monitoring").
Hungary	Yes.
Italy	The reference standard for the management of existing lifts is Chapter II of the aforementioned Presidential Decree 162/99. For the execution of modifications to existing installations, the state of the art is represented by the national technical standards of the UNI 10411 series. You will find below the relevant 10411 points answering each question.
Netherlands	For modifications of the machinery or hydraulic power source, traction cables, safety equipment and/or speed limitation device, addition of landing doors and/or modification of the row length, tests shall be carried out by inspection through an inspection body.This does not apply to smaller components. In addition, the Warenwetbesluit Liften (national law) states that the lift must be inspected after every repair and/or change. A document called SI19 issued by SBCL (the authorized management foundation for lift safety procedures) defines to which components this applies to. Currently there is a discussion between the CAB's (inspection bodies) and the industry, since the WBL indicates after every repair and/or change (so not exhaustive) and SI19 limits itself to a specific list of (safety) components (which is therefore exhaustive).
Romania	Yes, but it covers a small part of the interventions, and is more akin to a local version of EN 81-80, rather than UNI 10411 (the relevant Italian standard).
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	No.

Country	Question #3: How is the variation of the static load managed in electric lifts?
Bulgaria	No special instructions, it should be in accordance with the standards for new lifts, but without changing a lot on the construction of the existing lift.
France	In reference to the EN 81-20. At the French level, the standard EN 81-20 (and EN 81-50) is applied as much as possible, including through the national French standard NF P82-230. The French standard NF P82-230 gives explanation and solutions to be close EN 81-20 or EN 81-1 and 2. The aim of modernisation is to bring the lift to the level of EN 81-20 and 50 for the modernised part whenever possible. This represents 90% of the cases. The fact that the standards of the time are applied to the unmodified parts is also checked.
Germany	Subject to testing by an approved monitoring body see TRBS 1204 Part 4 Annex 2.
Hungary	If the car area is bigger than the allowed, temporarily a load-weighing device can be a solution. In a long term it must be changed, but to do so a building permit is required. During this process the load bearing capacity of the building must be checked by a specialist.
Italy	According to UNI 10411-1 point 6 and UNI 10411-2 point 6. Appendix C of the same standard indicates the documentation that the maintenance company must submit in connection with the work carried out, which is then verified by the competent body.
Netherlands	By means of (through) weighing contacts.
Romania	In a less organic way than in other countries, e.g. Italy. For example, replacing the winch is in no way obligatory to update the switchboard where necessary and to check whether the speed limiter should be replaced.
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Schindler, the main player in the market, uses internal procedures, which the market has absorbed almost as standard. The work is sometimes done less organically than in Italy, depending in fact on the cases.

Country	Question #4: How is the reduction of clearances between moving parts and shaft guards managed?
Bulgaria	No special instructions, it should be in accordance with the standards for new lifts, but without changing a lot on the construction of the existing lift
France	In reference to the EN 81-20. At the French level, the standard EN 81-20 (and EN 81-50) is applied as much as possible, including through the national French standard NF P82-230. The French standard NF P82-230 gives explanation and solutions to be close EN 81-20 or EN 81-1 and 2. The aim of modernisation is to bring the lift to the level of EN 81-20 and 50 for the modernised part whenever possible. This represents 90% of the cases. The fact that the standards of the time are applied to the unmodified parts is also checked.
Germany	No test, protective distances according to EN must be maintained.
Hungary	According to EN 81-80.
Italy	According to UNI 10411-1 point 7 and UNI 10411-2 point 7. Appendix C of the same standard indicates the documentation that the maintenance company must submit in connection with the work carried out, which is then verified by the competent body.
Netherlands	By service engineer during maintenance.
Romania	By service engineer during maintenance, but still in a less organic way than in other countries, e.g. Italy.
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Schindler, the main player in the market, uses internal procedures, which the market has absorbed almost as standard. The work is sometimes done less organically than in Italy, depending in fact on the cases.

Country	***Question #5:*** ***How is the relocation or insertion of equipment in the machinery space managed?***
Bulgaria	No special instructions, it should be in accordance with the standards for new lifts, but without changing a lot on the construction of the existing lift.
France	In reference to the EN 81-20. At the French level, the standard EN 81-20 (and EN 81-50) is applied as much as possible, including through the national French standard NF P82-230. The French standard NF P82-230 gives explanation and solutions to be close EN 81-20 or EN 81-1 and 2. The aim of modernisation is to bring the lift to the level of EN 81-20 and 50 for the modernised part whenever possible. This represents 90% of the cases. The fact that the standards of the time are applied to the unmodified parts is also checked.
Germany	Not permitted, according to state building regulations. Will be criticised by the ZÜS (*Zugelassene Überwachungsstelle* - approved inspection bodies) at the next periodic inspection.
Hungary	Must be done during a major refurbishment.
Italy	According to UNI 10411-1 point 9 and UNI 10411-2 point 9. Appendix C of the same standard indicates the documentation that the maintenance company must submit in connection with the work carried out, which is then verified by the competent body.
Netherlands	[TO BE VERIFIED]
Romania	By service engineer during maintenance, but still in a less organic way than in other countries, e.g. Italy.
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Schindler, the main player in the market, uses internal procedures, which the market has absorbed almost as standard. The work is sometimes done less organically than in Italy, depending in fact on the cases.

Country	***Question #6:*** ***How is the replacement or extension of existing (fixed or movable) power cables managed?***
Bulgaria	No special instructions, it should be in accordance with the standards for new lifts, but without changing a lot on the construction of the existing lift.
France	In reference to the EN 81-20. At the French level, the standard EN 81-20 (and EN 81-50) is applied as much as possible, including through the national French standard NF P82-230. The French standard NF P82-230 gives explanation and solutions to be close EN 81-20 or EN 81-1 and 2. The aim of modernisation is to bring the lift to the level of EN 81-20 and 50 for the modernised part whenever possible. This represents 90% of the cases. The fact that the standards of the time are applied to the unmodified parts is also checked.
Germany	Not subject to inspection according to TRBS 1204, but according to VDE 0100 and DGUV V3 by a competent person.
Hungary	There is no specific regulations.
Italy	According to UNI 10411-1 point 10 and UNI 10411-2 point 10. Appendix C of the same standard indicates the documentation that the maintenance company must submit in connection with the work carried out, which is then verified by the competent body.
Netherlands	[TO BE VERIFIED]
Romania	By service engineer during maintenance, but still in a less organic way than in other countries, e.g. Italy.
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Schindler, the main player in the market, uses internal procedures, which the market has absorbed almost as standard. The work is sometimes done less organically than in Italy, depending in fact on the cases.

Country	Question #7: How is the replacement of the controller managed?
Bulgaria	No special instructions, it should be in accordance with the standards for new lifts, but without changing a lot on the construction of the existing lift.
France	In reference to the EN 81-20. At the French level, the standard EN 81-20 (and EN 81-50) is applied as much as possible, including through the national French standard NF P82-230. The French standard NF P82-230 gives explanation and solutions to be close EN 81-20 or EN 81-1 and 2. The aim of modernisation is to bring the lift to the level of EN 81-20 and 50 for the modernised part whenever possible. This represents 90% of the cases. The fact that the standards of the time are applied to the unmodified parts is also checked.
Germany	Subject to inspection by an approved inspection body, see TRBS 1204 Part 4 Annex 2.
Hungary	Documentation needs to be given to a notified body. If the accessing lift has a manual car door it must be replaced with an automatic one.
Italy	According to UNI 10411-1 point 11 and UNI 10411-2 point 11. Appendix C of the same standard indicates the documentation that the maintenance company must submit in connection with the work carried out, which is then verified by the competent body.
Netherlands	By inspection through an notified inspection body.
Romania	By service engineer during maintenance, but still in a less organic way than in other countries, e.g. Italy
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Schindler, the main player in the market, uses internal procedures, which the market has absorbed almost as standard. The work is sometimes done less organically than in Italy, depending in fact on the cases.

Country	Question #8: How are modifications to landing doors and/or their locks managed?
Bulgaria	No special instructions, it should be in accordance with the standards for new lifts, but without changing a lot on the construction of the existing lift.
France	In reference to the EN 81-20. At the French level, the standard EN 81-20 (and EN 81-50) is applied as much as possible, including through the national French standard NF P82-230. The French standard NF P82-230 gives explanation and solutions to be close EN 81-20 or EN 81-1 and 2. The aim of modernisation is to bring the lift to the level of EN 81-20 and 50 for the modernised part whenever possible. This represents 90% of the cases. The fact that the standards of the time are applied to the unmodified parts is also checked.
Germany	Subject to inspection by an approved inspection body, see TRBS 1204 Part 4 Annex 2.
Hungary	If only the locks are replaced a confirmative declaration needs to be given to notified body signed by an authorised person. If the complete doors are replaced a complete documentation needs to be given to the notified body.
Italy	According to UNI 10411-1 point 12 and UNI 10411-2 point 12. Appendix C of the same standard indicates the documentation that the maintenance company must submit in connection with the work carried out, which is then verified by the competent body.
Netherlands	By the service engineers. And in case of replacement of the doors, by inspection of an inspection body.
Romania	By service engineer during maintenance, but still in a less organic way than in other countries, e.g. Italy.
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Schindler, the main player in the market, uses internal procedures, which the market has absorbed almost as standard. The work is sometimes done less organically than in Italy, depending in fact on the cases.

Country	***Question #9:*** ***How is the replacement of the machinery or traction pulley or sheaves in an electric lift managed?***
Bulgaria	No special instructions, it should be in accordance with the standards for new lifts, but without changing a lot on the construction of the existing lift.
France	In reference to the EN 81-20. At the French level, the standard EN 81-20 (and EN 81-50) is applied as much as possible, including through the national French standard NF P82-230. The French standard NF P82-230 gives explanation and solutions to be close EN 81-20 or EN 81-1 and 2. The aim of modernisation is to bring the lift to the level of EN 81-20 and 50 for the modernised part whenever possible. This represents 90% of the cases. The fact that the standards of the time are applied to the unmodified parts is also checked.
Germany	Identical in construction not subject to inspection, not identical in construction subject to inspection by an approved inspection body see TRBS 1204 Part 4 Annex 2.
Hungary	If only the traction sheave and/or the ropes are replaced a rope calculation needs to be given to the notified body. If the machine is replaced a complete documentation needs to be given to the notified body.
Italy	According to UNI 10411-1 point 14. Appendix C of the same standard indicates the documentation that the maintenance company must submit in connection with the work carried out, which is then verified by the competent body.
Netherlands	By inspection through an inspection body.
Romania	By service engineer during maintenance, but still in a less organic way than in other countries, e.g. Italy.
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la nstrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Schindler, the main player in the market, uses internal procedures, which the market has absorbed almost as standard. The work is sometimes done less organically than in Italy, depending in fact on the cases.

Country	***Question #10:*** ***How is the replacement of the hydraulic power unit or valve unit managed in a hydraulic lift?***
Bulgaria	No special instructions, it should be in accordance with the standards for new lifts, but without changing a lot on the construction of the existing lift.
France	In reference to the EN 81-20. At the French level, the standard EN 81-20 (and EN 81-50) is applied as much as possible, including through the national French standard NF P82-230. The French standard NF P82-230 gives explanation and solutions to be close EN 81-20 or EN 81-1 and 2. The aim of modernisation is to bring the lift to the level of EN 81-20 and 50 for the modernised part whenever possible. This represents 90% of the cases. The fact that the standards of the time are applied to the unmodified parts is also checked.
Germany	Identical in construction not subject to testing, not identical in construction subject to testing by an approved monitoring body see TRBS 1204 Part 4 Annex 2.
Hungary	A complete documentation needs to be given to the notified body.
Italy	According to UNI 10411-1 point 14. Appendix C of the same standard indicates the documentation that the maintenance company must submit in connection with the work carried out, which is then verified by the competent body.
Netherlands	By inspection through an inspection body.
Romania	By service engineer during maintenance, but still in a less organic way than in other countries, e.g. Italy.
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Schindler, the main player in the market, uses internal procedures, which the market has absorbed almost as standard. The work is sometimes done less organically than in Italy, depending in fact on the cases.

Country	***Question #11:*** ***How is the increase in the speed of the lift handled?***
Bulgaria	No special instructions, it should be in accordance with the standards for new lifts, but without changing a lot on the construction of the existing lift.
France	In reference to the EN 81-20. At the French level, the standard EN 81-20 (and EN 81-50) is applied as much as possible, including through the national French standard NF P82-230. The French standard NF P82-230 gives explanation and solutions to be close EN 81-20 or EN 81-1 and 2. The aim of modernisation is to bring the lift to the level of EN 81-20 and 50 for the modernised part whenever possible. This represents 90% of the cases. The fact that the standards of the time are applied to the unmodified parts is also checked.
Germany	Subject to inspection by an approved inspection body, see TRBS 1204 Part 4 Annex 2.
Hungary	A building permit is required.
Italy	According to UNI 10411-1 point 15 and UNI 10411-2 point 15. Appendix C of the same standard indicates the documentation that the maintenance company must submit in connection with the work carried out, which is then verified by the competent body.
Netherlands	By inspection through an inspection body.
Romania	By service engineer during maintenance, but still in a less organic way than in other countries, e.g. Italy.
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Schindler, the main player in the market, uses internal procedures, which the market has absorbed almost as standard. The work is sometimes done less organically than in Italy, depending in fact on the cases.

Country	Question #12: How is the increase of travel length managed?
Bulgaria	No special instructions, it should be in accordance with the standards for new lifts, but without changing a lot on the construction of the existing lift.
France	In reference to the EN 81-20. At the French level, the standard EN 81-20 (and EN 81-50) is applied as much as possible, including through the national French standard NF P82-230. The French standard NF P82-230 gives explanation and solutions to be close EN 81-20 or EN 81-1 and 2. The aim of modernisation is to bring the lift to the level of EN 81-20 and 50 for the modernised part whenever possible. This represents 90% of the cases. The fact that the standards of the time are applied to the unmodified parts is also checked.
Germany	Subject to inspection by an approved inspection body, see TRBS 1204 Part 4 Annex 2
Hungary	A building permit is required.
Italy	According to UNI 10411-1 point 16 and UNI 10411-2 point 16. Appendix C of the same standard indicates the documentation that the maintenance company must submit in connection with the work carried out, which is then verified by the competent body.
Netherlands	By means of a ride duration relay.
Romania	By service engineer during maintenance, but still in a less organic way than in other countries, e.g. Italy.
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Schindler, the main player in the market, uses internal procedures, which the market has absorbed almost as standard. The work is sometimes done less organically than in Italy, depending in fact on the cases.

Country	Question #13: How is the replacement of traction ropes handled?
Bulgaria	No special instructions, it should be in accordance with the standards for new lifts, but without changing a lot on the construction of the existing lift.
France	In reference to the EN 81-20. At the French level, the standard EN 81-20 (and EN 81-50) is applied as much as possible, including through the national French standard NF P82-230. The French standard NF P82-230 gives explanation and solutions to be close EN 81-20 or EN 81-1 and 2. The aim of modernisation is to bring the lift to the level of EN 81-20 and 50 for the modernised part whenever possible. This represents 90% of the cases. The fact that the standards of the time are applied to the unmodified parts is also checked.
Germany	Not subject to inspection, provided the diameter and number remain the same and rope safety is guaranteed.
Hungary	Rope calculation needs to be given to the notified body according to the EN 81-50.
Italy	According to UNI 10411-1 point 17 and UNI 10411-2 point 17. Appendix C of the same standard indicates the documentation that the maintenance company must submit in connection with the work carried out, which is then verified by the competent body.
Netherlands	By inspection through an inspection body.
Romania	By service engineer during maintenance, but still in a less organic way than in other countries, e.g. Italy.
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Schindler, the main player in the market, uses internal procedures, which the market has absorbed almost as standard. The work is sometimes done less organically than in Italy, depending in fact on the cases.

Country	***Question #14:*** ***How is the replacement of the speed controller managed?***
Bulgaria	No special instructions, it should be in accordance with the standards for new lifts, but without changing a lot on the construction of the existing lift.
France	In reference to the EN 81-20. At the French level, the standard EN 81-20 (and EN 81-50) is applied as much as possible, including through the national French standard NF P82-230. The French standard NF P82-230 gives explanation and solutions to be close EN 81-20 or EN 81-1 and 2. The aim of modernisation is to bring the lift to the level of EN 81-20 and 50 for the modernised part whenever possible. This represents 90% of the cases. The fact that the standards of the time are applied to the unmodified parts is also checked.
Germany	Identical in construction not subject to testing, not identical in construction subject to testing by an approved inspection body see TRBS 1204 Part 4 Annex 2.
Hungary	The wiring diagram and documentation needs to be shown following the replacement.
Italy	According to UNI 10411-1 point 18 and UNI 10411-2 point 18. Appendix C of the same standard indicates the documentation that the maintenance company must submit in connection with the work carried out, which is then verified by the competent body.
Netherlands	[TO BE VERIFIED]
Romania	By service engineer during maintenance, but still in a less organic way than in other countries, e.g. Italy.
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Schindler, the main player in the market, uses internal procedures, which the market has absorbed almost as standard. The work is sometimes done less organically than in Italy, depending in fact on the cases.

Country	***Question #15:*** ***How is lift car replacement managed?***
Bulgaria	No special instructions, it should be in accordance with the standards for new lifts, but without changing a lot on the construction of the existing lift.
France	In reference to the EN 81-20. At the French level, the standard EN 81-20 (and EN 81-50) is applied as much as possible, including through the national French standard NF P82-230. The French standard NF P82-230 gives explanation and solutions to be close EN 81-20 or EN 81-1 and 2. The aim of modernisation is to bring the lift to the level of EN 81-20 and 50 for the modernised part whenever possible. This represents 90% of the cases. The fact that the standards of the time are applied to the unmodified parts is also checked.
Germany	Not subject to inspection if the weight does not change, otherwise subject to inspection by an approved inspection body, see TRBS 1204 Part 4 Annex 2.
Hungary	A simple documentation needs to be given to the notified body.
Italy	According to UNI 10411-1 point 22 and UNI 10411-2 point 22. Appendix C of the same standard indicates the documentation that the maintenance company must submit in connection with the work carried out, which is then verified by the competent body.
Netherlands	By inspection through an inspection body.
Romania	By service engineer during maintenance, but still in a less organic way than in other countries, e.g. Italy.
Spain	This point is covered by the Real Decreto 88/2013, de 8 de febrero, por el que se aprueba la Instrucción Técnica Complementaria AEM 1 "Ascensores" del Reglamento de aparatos de elevación y manutención, aprobado por Real Decreto 2291/1985, de 8 de noviembre, published on the Official Gazette on the 22nd of February, 2013.
Switzerland	Schindler, the main player in the market, uses internal procedures, which the market has absorbed almost as standard. The work is sometimes done less organically than in Italy, depending in fact on the cases.

Small Business Standards

Rue Jacques de Lalaing 4
B-1040 Brussels
+32 (0)2 285 07 27
info@sbs-sme.eu

Transparency Register 653009713663-08


@SBS_SME


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