

LIFT AND ESCALATOR REGULATIONS IN DEVELOPED AND DEVELOPING COUNTRIES

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ABSTRACT

Vietnam is one of the newly developing countries in South East Asia, with a great potential for economic development. In recent years, the Vietnamese Government set up a series of regulations and standards for the commissioning and inspection of lift systems, as well as safety requirements for installation and operation. This paper will highlight the major differences between British Standards and Vietnamese Standards. Minor discrepancies will be identified for technical discussion, with extracts (in English) from the Vietnamese regulations presented to clarify the different regulations.

1. INTRODUCTION

A number of decrees, regulations and standards in connection to the lift industry have been made recently in Vietnam. In 1991, the Nation Ministry Committee Chairman (now Prime Minister) signed an order to publish the Labour Protecting Decree. This Decree determined the duties and competence of the Nation Labour Security Inspecting Committee to control the organizations, machines, equipment, material and substances that must be regulated for safety reasons. Based on this Decree, the Technique Security Examining Centre was established. I shall briefly discuss the Vietnamese Government bodies and statutory regulations. In the last section, I shall highlight the major differences of British Standards compared with Vietnamese Standards.

2. GOVERNMENT BODIES RELATION TO LIFT CONTRACTORS

The Ministry of Labour Invalids and Social Welfare has implemented the "Labour Protecting Decree" on behalf of the Vietnamese Government. Figure 1 illustrates the organization structure of the Ministry of Labour Invalids and Social Welfare.

In order to delegate the power to the State Inspector of Labour Security, and unify the managerial works, the Minister of Ministry of Labour Invalids and Social Welfare signed the Decree in April 1994 and set up three Technique Security Examining Centres in different areas which are subordinated directly to the Ministry.

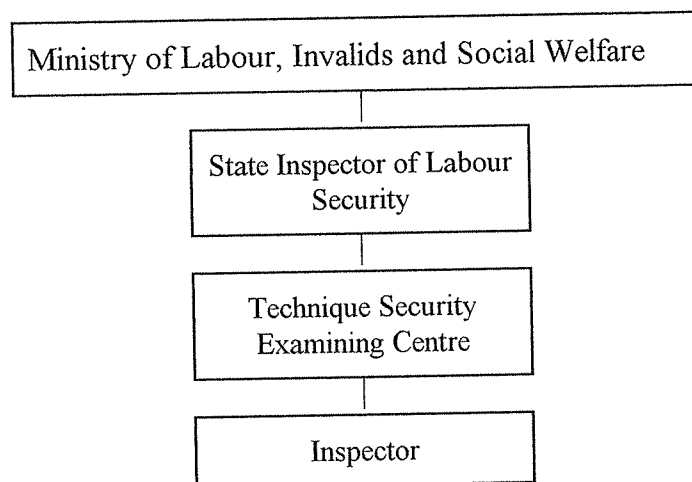


Figure 1 Structure of Ministry of Labour, Invalids and Social Welfare

2.1 The main duties of the State Inspector of Labour Security are

- Granting authorization for production, installation, fabrication, repair of machines, and equipment that needs to be regulated for safety reasons.
- Unifying the process of authorization in all areas of the nation.
- Inspecting every relevant organization and individual (including foreign investors) to ensure compliance with the Labour Security Law and the regulations.
- Examining and approving the labour security standards and proposed plans for constructing new installations.

2.2 Technique Security Examining Centre has the following duties

- According to the request of the State Inspector of Labour Security to carry out the evaluation of the labour security measurement.
- At the request of State Inspector of Labour Security, participating in the investigation of labour events or disasters that occur at any installation.
- Liaise with local and foreign technical centres or standard organizations.

2.3 Inspector

The selected inspector of the Technique Security and Examining Centre must be a graduate from the university in a special technical field and have attended the training course of technique security examination.

3. VIETNAMESE STATUTORY REGULATIONS

There are four major principles in the Ordinance relating to the lift industry.

1) *Requirements of Lift Contractors and their Employees*

A company which intends to obtain an authorization for installation, maintenance and repair, must fulfill the following conditions and terms.

- To be a legal entity which has already been granted a License for production.
- Have sufficient technicians educated at technical institutes.
- Have professional employees who have passed the basic training and periodic instruction course for safety.
- Have a technical and industrial capability for the installation and repair works, for instance, production machinery, control equipment, adjusting and measuring instruments.
- To establish the necessary technical documents in order to change or assist any of the users. This must include lift records, and instructions for the safe operation of the lift, and instructions for maintenance and the period for regular inspections.

2) *Requirements of Manufacturer*

For the manufacturer to produce lifts which can be installed in Vietnam, the manufacturer must provide an original technical manual. This should be designed to international standards or according to local national standards. Furthermore, the accessories or assemblies must be of the same manufacture, or if they are made by different manufacturers, the lift manufacturer must provide technical assurance of their quality and suitability.

3) *Requirements of Testing*

The regulations stipulates the examinations and tests to be carried out after installation. Tests must be agreed with a technical committee, including the official of Technique Security Examining Centre, representative of the lift installation company and representative of lift user. The examinations should cover the performance of the lift, load testing and the associated safety equipment.

The test shall be used to measure the level of performance, to establish whether they meet the standards and ensure acceptable conditions for safe operation.

For performance test, operational velocity, low velocity and stopping level shall be inspected. The safe operation tests shall include: unloaded lift test, static lift test and moving lift test. The test results report shall be written, and signed by the lift installation company representative.

When the examined lift meets the requirements of security rules, the Technique Security and Examining Centre shall send the completed document to the State Inspector of Labour Security within 10 days, from the day of signing the report. Not later than 10 days, from the date of receiving the document, the State Inspector shall respond to the Centre and the installation company issuing license for operation.

- 4) In addition to the above requirements, the Prime Minister signed a Decree in 1995, stating that "No matter the nature of the organizations, individuals (including foreign organization and individuals) who are authorized by the Labour Invalids and Social Ministry, to apply for the permission to use machines, equipment, materials etc., they must pay the stipulated fee." The machines, equipment and materials which need to comply with the requirements of safety are defined in the Ordinance.

4. MAJOR DIFFERENCES BETWEEN THE B.S. AND V.S.

The major Vietnamese standards relating to the lift industry are :

V.S. 5744: Lift-Safe Requirements for Installation and Use

V.S. 5865: Lifting Appliances-Wire Ropes, Drums, Pulleys, Chains and Chain Wheels Safe Requirements

V.S. 5866: Lift-Safety Mechanisms

V.S. 5867: Lift-Cabin, Counterweights, Guide Rails Safe Requirements

On the whole, British Standard 5655 mainly concerns the technical aspect of the lift installation and the related safety standard of lift operation. Vietnamese Standards 5744, 5865, 5866, 5867, serve as general requirements for the lift production, installation, testing, operation as well as the employees safety and responsibility.

Compared with the V.S., the B.S. provides more technical data/details. This minimizes the degree of confusion and misunderstanding. For example: the guide-rail length, B.S. states that "The car guide rail lengths shall be such as would accommodate a further guided travel, expressed in m, of at least $0.1 + 0.035V^2$." V.S. states that "Guided rails' height must have a value so that when cabin counterweights move to the last limited position, the sliding edges do not slip out of the guide-rail."

The followings points are worthy of being noted:

1. Vietnamese Standards only apply to lift speeds, up to 2.5 m/s.
2. Vietnamese Standards include labour safety requirements.

5. CONCLUSIONS

In the past, due to the political instability and high inflation rates, foreign investment was limited in Vietnam. In recent years, the situation has changed, because the Vietnamese Government made special concessions such as tax reductions and customs duty exemptions. Accordingly, Vietnam will continue to strive to achieve US \$40-50 billion investment by the year 2000, half of this from foreign companies. Most of this investment will be channeled into basic infrastructure, such as power plants, roads, commercial real estate and hotels. On the surface, therefore, Vietnam seems to be a prime location for lift companies to develop new business.

In fact, the labour supply, comprehensive regulations and the government policies in Vietnam are the main factors for lift manufacturers and contractors to consider. Firstly, Vietnam provides a pool of low cost labour, although there is a lack of competent and skilled workers. Therefore foreign manufacturers and contractors may need to provide technical support as well as training courses. Secondly, as discussed before, Vietnamese Standards are still not comprehensive, although they comply with ISO-4190. There are still some uncertain factors, such as the legal system and indemnification.

In conclusion, Vietnam provides a great potential market for the lift industry. However, in order to win contract in Vietnam, foreign contractors need to overcome formidable bureaucracy as well as a bewildering array of procedural rules.

6. REFERENCES

- [1] **B.S. 5655 Part 1,1996**
Lift and Service Lift - Safety Rules for the Construction and Installation of Electric Lifts
- [2] **ISO 4190-1,1990**
Lift Installation, Part 1
- [3] **V.S. TCVN 5744,1993**
Lift - Safe Requisitions for Installation and Using
- [4] **V.S. 5865,1995**
Lifting Appliances - Wire Ropes, Drums, Pulleys, Chains and Chain Wheels Safety Requirements

- [5] **V.S. 5866,1995**
Lift - Safety Mechanism
- [6] **V.S. 5867,1995.**
Lift - Safety Mechanism
- [7] **Decision No. 121/LDTBXH,1994**
Promulgation of the definitions of every organization, machines, equipment, materials that must be kept in strict security
- [8] **Decision No. 222/LDTBXH,1994**
Competence and duties of the "State Inspector of Labour Security"
- [9] **Decision No. 225/LDTBXH,1994**
Establishment of the "Technique Security Examining Centre"
- [10] **Decision No. 226/LDTBXH,1994**
Organization and activities of " Technique Security Examining Centre"

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