LEGISLATION AND REGULATIONS IN VARIOUS COUNTRIES CONCERNING SAFETY IN THE USE OF ASBESTOS

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I would first like to express thanks on behalf of the ILO for being invited to participate in this meeting which reflects the increasing cooperation between two organisations, particularly regarding this subject, which the ILO has been so active in during the past years, and which is considered from the employers', workers' and government side of the tripartite structure of the ILO, to be a question of high importance.

I have prepared an overview on legislation, in order to show its multiple facets. Legislation is frequently understood as a ban or permission, or as exposure limits, when in fact, a number of all these activities which were discussed this morning can be regulated. It is highly important that they be regulated, so my overview will present the actions which are being undertaken in most industrialised countries.

INTRODUCTION

Regulations dealing with asbestos in the workplace were already in force in several European countries at the beginning of the 1930's. The main object at that time was to declare asbestosis an occupational disease and to give workers the right to claim compensation. Although these initial regulations also provided for some technical control measures, they did not provide sufficient protection, particularly due to high exposure limits established for airborne asbestos dust. Therefore, in the 1960's, revised exposure limit values started to be prescribed by legislation in most industrialised countries.

From about 1969 onwards, provisions governing technical control measures, monitoring, personal protection and medical surveillance, among others, have in some countries either become the subject of comprehensive regulations or have been included into existing regulations.

While prevention of asbestosis was the essential aim of legal regulations and technical measures up until the end of the 1960's, the carcinogenic risk associated with exposure to asbestos dust was not widely realised until later.

In view of the rapidly growing awareness of this situation, international organisations, mainly the ILO and WHO, and national authorities developed their present objectives in the 1970's. This activity started mainly in countries with a distinct occupational health concern. Stricter regulations on the working environment were issued, as well as a ban or a restriction on the use of asbestos where the occurrence of high concentrations of airborne asbestos dust could not be prevented—e.g. in spraying asbestos insulation—in order to eliminate potential health risks. This is the context in which the ILO Occupational Cancer Convention, 1974 (No. 139) and Recommendation, 1974, (No. 147) were adopted, both containing
provisions for the prevention and control of occupational hazards involved in the use of carcinogenic substances.

At present, comparison of legislation in different States reveals an extreme imbalance in the type, extent and stringency of laws and regulations.

One extreme is banning the use of asbestos or products containing it, the other is the non-existence of any regulation. Between these two extremes, one finds regulations demanding the substitution of asbestos by non-carcinogenic or less harmful alternatives of equal technical standard yet economically acceptable, and regulations for strict supervision of handling.

In countries where no legal regulations exist, it has been the responsibility of the asbestos-processing industries to voluntarily attempt to keep their employees' health risks as low as possible. This has sometimes been done in cooperation with national workers' representatives.

In this paper, the basic principles of legislation and regulations specifically covering work with asbestos will be summarised. Most countries have approved legislation concerning working conditions, environment and workers' health in general, and these texts also apply to work which involves occupational exposure to asbestos dust. However, because of their general nature, they have not been summarised in my report.

**GENERAL PROVISIONS AND ADMINISTRATIVE MEASURES**

The general principle of preventive regulations is to eliminate or reduce occupational exposure to airborne asbestos dust in the working environment to the lowest technically feasible level.

In line with this principle, the regulations of most countries stipulate that asbestos should, wherever possible, be replaced by alternative substances which offer the same technical advantages, but are harmless or less harmful, and that economic circumstances should be considered.

The field of application for the regulations in most countries covers workplaces where asbestos is mined or processed as well as the handling of products containing asbestos during which respirable airborne asbestos dust is likely to be formed.

The definition of asbestos is given in the regulations of almost all countries and covers fibrous silicate minerals of the amphibole and serpentine groups, in particular actinolite, amosite, anthophyllite, chrysotile, crocidolite and tremolite.

Notification of working operations and workplaces where asbestos or materials containing asbestos are used or handled, or proposed to be, particularly where such use or handling is likely to release airborne asbestos dust, is compulsory in some countries. The extent of the information which the notification must contain differs from one country to another. Basically, a description of the workplace and of the operations is required, as well as information on the type and quantity of asbestos or materials containing asbestos, the total number of workers exposed, the duration of the work period and the protective and preventive measures taken or to be taken.

Prohibitions or restrictions are included to varying extents in the regulations and refer to specific types of asbestos (particularly banning the use of crocidolite and amosite) or to special working operations or techniques, such as the spraying of dry asbestos for insulation purposes, which I mentioned earlier.
Authorisation by competent authorities for special operations or techniques is laid down in regulations in very many countries.

Caution signs and labels (we have seen several examples), are used in a series of countries either because they are required by law or because the producer or employer chooses to provide them. Warning signs are displayed at each location where airborne concentrations of respirable asbestos fibres may exceed the exposure limits prescribed by national legislation. The signs or warnings vary from country to country. A sign commonly used is one requesting that respiratory protective equipment be worn. Labels specified in national regulations vary widely. Generally, labels are required to state that formation of dust and breathing of respirable asbestos fibres is hazardous to health and has to be avoided and that safety rules have to be observed.

In all countries with existing legislation on asbestos, the duties of competent authorities, employers and workers are laid down in varying degrees of detail.

EXPOSURE LIMITS AND ENVIRONMENTAL MONITORING

Exposure limits indicate the levels of airborne asbestos dust in the working environment that may not be exceeded. The aim is to eliminate or to reduce the health consequences for the workers exposed, as far as practicable.

In the legislation of most countries, exposure limits are specified in terms of fibre number concentrations per ml or cc of air. The numbers range from 0.2 per ml and 0.5 per ml. The level is either the same for all types of asbestos or differs, depending on the type of asbestos. In some countries, such as the U. S. S. R., exposure limits specified as mass concentrations in mg/m$^3$ of air have been adopted.

Exposure limits are usually defined as time-weighted average (TWA) values, measured or calculated for a reference time of eight hours. Additionally, ceiling values or short-time values are adopted in some countries with figures of up to 10 f/ml for example, at any time or 12 f/ml for no longer than ten minutes.

Monitoring of airborne asbestos for checking compliance with exposure limits is prescribed in a more or less detailed way in all existing regulations, but needs standardisation at the international level. For measurement of respirable asbestos fibre concentrations (f/ml) the membrane filter and light microscopy method is unanimously prescribed. The frequencies of measurement per year and workplace are not usually regulated.

In some countries regulations require that monitoring be performed only by skilled personnel with adequate equipment, technical training and special authorisation. In others, only the utilisation of approved instruments is prescribed.

In most of the regulations, record-keeping for a prescribed period (e.g. 30 or 40 years) of all relevant monitoring data, including a full description of the work operation, is compulsory.

TECHNICAL PREVENTIONS

Transport, storage and handling of asbestos and materials or products containing asbestos is required by the regulations to be effected in such a way that respirable asbestos fibres formed by mining and milling of the mineral cannot be released or formed secondarily, and that the exposure limits are not exceeded.
Appropriate work practices for such operations are frequently prescribed in detail. The same is true for the disposal of waste containing asbestos. Moreover, in some countries special directives have been laid down in regulations concerning handling of waste containing asbestos at the disposal site for the protection of the environment.

**Engineering controls** in the working environment, such as total process enclosures, automation of working processes, separation of processes, producing coarse dust, wet processes, local exhaust ventilation and general ventilation, are the main technical measures to meet the exposure limits prescribed in regulations and work practices. Technical measures must ensure that the worker’s exposure to airborne asbestos dust is eliminated or reduced to the lowest level technically feasible.

**Cleaning** of premises, plant, machinery and equipment is emphasised in a number of work practices and regulations. Vacuum-cleaning equipment or other suitable means (e.g. wet processes) should preferably be used.

**PERSONAL PROTECTION**

**Respiratory protective equipment** should be provided for all workers and should be used in all situations where concentrations of airborne asbestos dust exceed or are likely to exceed the exposure limits and where technical control is not feasible. This should be regarded only as a temporary or emergency measure and not as an alternative to engineering control.

Examples of such situations or work operations quoted in the existing regulations and work practices of most countries are: maintenance of filtration plants; repair of machinery or equipment; assembly; putting new installations into operation; inspection of closed systems; special cleaning operations; and dust collecting and handling.

**Protective clothing** is requested to be provided and worn where airborne asbestos dust concentrations require the use of respiratory equipment. In some countries, the employer, in accordance with national regulations or in consultation with the workers’ representatives, must provide appropriate work clothes to be worn where personal clothing may become contaminated with asbestos dust.

When re-usable protective or work clothing is provided, further measures should be taken, e.g. installation of special locker rooms separated from those for personal clothing and provision for laundering of protective and work clothing.

In some countries these measures are totally provided only to workers exposed to airborne asbestos dust concentrations exceeding the exposure limits.

**MEDICAL SURVEILLANCE OF WORKERS, NOTIFICATION, COMPENSATION**

The national legislation establishes that any worker whose work exposes him to airborne asbestos dust must be given a medical examination, free of charge, before employment, at appropriate intervals during the period of employment, and where practicable, following cessation of employment.

The frequency of periodic medical examinations varies from country to country but it is usually every one to three years, depending on the duration and level of asbestos exposure and health status. In some countries only specially trained
physicians—with the essential equipment—are authorised by the competent authorities to perform these examinations.

In many countries health records must be preserved for more than 20 years. They must also be presented to the competent authorities on request. The employer may only receive a suitable certificate, containing no medical data, as to whether the worker is fit for the job or not according to the medical examination.

There are considerable differences in the procedures applied in different countries regarding the notification of occupationally related diseases. It would be desirable to achieve international standardisation. The same is true for the compensation of occupational diseases; there are very different national standards for assessment, whether medical or financial.

In a number of countries, the competent authorities have recently established national registries of all cases of asbestos-related diseases, they are used for epidemiological investigations and research, among other things.

**INFORMATION, EDUCATION AND TRAINING**

In many countries, it is mandatory for the employers to provide all workers with information, education and training in regard to sources of asbestos dust, potential health effects, risks associated with smoking habits and asbestos exposure, technical preventive methods or use of protective equipment; in some countries this is done voluntarily.

In many countries, the competent authorities or specialised institutions provide specialised training regarding safety in the use of asbestos and workers' health for occupational hygienists, safety engineers and occupational health physicians.

This was an overview of the basic principles of national legislation. At the international level there are a number of regulations, the most important is the action taken by the European Communities.

**INTERNATIONAL REGULATIONS**

**Action by the European Communities**

On September 19, 1983, the Council of the European Communities adopted a Directive on the protection of workers from the risks related to exposure to asbestos at work. Member States of the European Economic Communities must adopt the laws, regulations and administrative provisions necessary to comply with this Directive before 1 January 1987 (1 January 1990 in the case of asbestos-mining activities). The Directive does not affect the right of Member States to apply or introduce laws, regulations, or administrative provisions ensuring greater protection for workers, in particular regarding the replacement of asbestos by less dangerous substitutes. The Directive provides that the risk of exposure must be assessed and, if the concentration of asbestos fibres in the air at the place of work reaches or exceeds an action level set at 0.25 f/ml over an eight-hour reference period or equivalent to a cumulative dose of 15 fibre days per ml over three months, detailed provisions set forth in the Directive shall apply. These provisions relate in principle to those subjects which were discussed above.
ACTION BY THE INTERNATIONAL LABOUR ORGANISATION

The ILO has developed activities related to the control of the asbestos hazards at the workplaces, since 1973 when the first meeting of experts on the subject was convened. Further meetings took place in 1981 and 1983. In 1984, an ILO Code of Practice was published (1).

The Code provides guidance for governments, employers and workers on principles that should be followed for the control of specific hazards and the provision of safe working conditions.


In accordance with the double-discussion procedure provided for by the Standing Orders of the Conference, the first discussion of this item was held with a view to adoption of an international instrument or instruments on safety in the use of asbestos (2). The second discussion will take place at the 72nd. Session of the Conference in 1986 (3).

During the discussion, there was a general acceptance of the need for an International Convention and Recommendation on safety in the use of asbestos. Reference was made to the legislation in many countries regulating the use and the exposure limits, as well as to the availability of technical control measures which enable to eliminate or significantly reduce the exposure of workers to asbestos dust. One of the most important statements made that the only satisfactory solution for the prevention of asbestos-related diseases was the complete banning of asbestos, starting with crocidolite, which was considered to be the most dangerous form of this mineral. However, most of the delegates thought the common objective was that there should be no uncontrolled exposure and opposed a total ban of the use of asbestos. It was stated that for a number of technical purposes asbestos remained a suitable material, thus exceptions from the total ban of its use would be necessary.

Moreover, occupational exposure to asbestos would continue to exist in some trades, e.g. in repair or demolition work of constructions where asbestos insulation had been used in the past, even if the use of asbestos were to be restricted or banned. Therefore the necessity of international regulations for controlled use of asbestos.

The proposed Convention and Recommendation follow the format and general principles of such type of international instruments, in particular the Occupational Cancer Convention, 1974, and Recommendation, 1974, the Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 and Recommendation, 1977, and the Occupational Safety and Health Convention, 1981 and Recommendation, 1981. This is particularly true for general provisions such as responsibilities of the competent authority, employers and workers for prevention and control, and protection of workers against health hazards due to occupational exposure to asbestos dust. The principles of protective and preventive measures, of the surveillance of the working environment and workers' health, as well as of information and education are also largely based on the above-mentioned more general instruments. However, a number of provisions, particularly in the proposed Recommendation, specifically address health aspects in occupational exposure to asbestos such as: encouragement of research on and development of harm-
less or less harmful substitute materials or alternative technologies; appropriate labelling of containers or products containing asbestos in a language and manner that can be easily understood by the workers concerned; notification of certain types of work with asbestos; safe handling of work clothing contaminated by asbestos dust; safe disposal of asbestos waste; keeping medical examination records of workers and of environmental monitoring for a prescribed period; use of machinery or work processes which limit formation and in particular release of asbestos dust in the working environment; education of workers regarding the increased hazard of combining exposure to asbestos dust and smoking, and warning the workers of the potential health hazards that could be brought on to their families by taking their work clothes home.

The report and the proposed conclusions were adopted by the Conference. We are now receiving comments from the governments to these conclusions and for the remainder of this year, the draft instruments will be prepared and submitted to the next session of the Conference in 1986 for final decisions.

I have used the opportunity and brought with me a couple of copies of the Spanish version of the reports to the Conference. Both the first report, which provided the Conference with the basic data for the deliberations and the report, which contains the proposed text of the Convention and Recommendation, will be discussed next year. I also brought the Code of Practice on Safety in the Use of Asbestos. In the Annex of the Code there is a list of exposure limits in 27 countries. To my surprise, I could not find a single Latin American country mentioned there. Without this sounding like an excuse, I would like to say that I was not in charge of preparing the Code. Why did it happen? Because the ILO published only the data which had been provided by the governments, and not all governments sent in the data requested, so no information could be reflected. I think that this experience can help in encouraging Latin American countries to offer more cooperation to international organisations at this level.

In the Code you will also find the Recommended Methods for measurement of asbestos dust, which will also help to achieve international standardisation.

REFERENCES

