M4-EN.1 PRODUCTIVE PROCESS AND WORKING CONDITIONS

M4-EN.1.1 Cotton grinning (A΄)

M4-EN.1.2 Cotton grinning (B΄)

M4-EN.1.3 Cotton grinning (C΄)

M4-EN.1.4 Cotton grinning (D΄)

M4-EN.1.5 Cotton yarning (A΄)

M4-EN.1.6 Cotton yarning (B΄)

M4-EN.1.7 Cotton yarning (C΄)

M4-EN.1.8 Wool yarning

M4-EN.1.9 Weaving

Description of chapter

In this chapter, the individual departments of textile manufacturing unit are examined and individual risks per workplace are analyzed.

Aim of the chapter is to familiarize all the involved parties with the Occupational Health and the Safety in the sector of Textile Industry with their individual dangers at sub-sector.

M4-EN.1.1 Cotton grinning (A΄)

The nature of productive process together with the age of mechanical equipment of most units, in combination with more general factors (e.g. seasonal and no well-educated personal) render grinning as the most dangerous activity in textile industry and with considerably higher risk than remainder ones.

One of the most important risk sources is the presence of various persons that does not constitute permanent personnel of the enterprise. In ginning houses that is the entrance of producers which arrive independently and massively to deliver the seed cotton. Contrary to the remainder sub-sectors (spinning, weaving) where few and concrete suppliers exist, in this case massive gathering of non-employee (and consequently not educated nor immediately controlled) individuals exist in the workplace.

One further problem derives from the particularity of the cotton ginning operation (3 or 4 months per year) concerning the same workers. The majority is non-specialised seasonal personnel that arrives and works for varied time interval depending on the needs and often not necessarily repeatedly for the same employer each year.

M4-EN.1.2 Cotton ginning (B΄)

The time pressure of operation plants is severe and work schedule combined with the working conditions is in many cases over exaggerated. Of course, this pressure is still more increased in workers (maintenance personnel, electricians, etc) who also face the most severe risks.

The ginning work environment is considerably inferior in quality compared to the remainder sub-sectors. The levels of total cotton dust and noise are very high in all

stages of production. Moreover, in many of the installations (in older ginning houses) the peripheral walls from metal sheets are worn out resulting to exposure of many the workers to be in unfavourable weather conditions (temperature alternations, humidity) specifically during the last months of ginning period (winter).

Apart from health damage (professional total or partial hearing loss, byssinosis etc.) these unfavourable conditions also increase risks with regard to safety. High levels of noise decrease the capacity to notice dangerous moving equipment as well as the self-concentration and attention of worker.

These unfavourable conditions and lack of comfort can cause lack of attention in the workers or lead them to the adoption of arbitrary dangerous means for the prevention of these risks. It is recorded that the continuous monitoring is awkward particularly at the night shifts and due to the particularly time pressing conditions and complicated structure of workplace.

M4-EN.1.3 Cotton ginning (C΄)

Ginning sector is the only workplace in the textile industry, where the worker should work on occasion also in height because of the nature of equipment and productive process. This fact creates important risks for accident specifically in older ginning houses that do not ensure the essential means of protection for working in height.

Maintenance and repair are critical and particularly dangerous activities in ginning sector. Technicians are a "scarce resource" speciality during the grinning period, so they are in continuous alert and in many cases with exhaustive schedule.

This severe time pressure along with the 24 hours operation in many cases work against the adoption of essential measures of safety (complete immobilisation and detachment of equipment before touch, use of all essential means and measures to ensure visibility and accessibility - included the detachment of more elements, etc). On the contrary, in many cases intervention becomes hasty resulting to severe risks for the technician and for the operator afterwards.

Another risk source for the health and safety of workers is the continuous presence and movement of vehicles (Lorries, chargers, forklifts, etc.) in the workplace and often in closed spaces. Engine exhausts just add to the already problematic environment.

M4-EN.1.4 Cotton ginning (D΄)

In older ginning houses lack of sufficient lighting and the presence of obstacles and sensitive installations (system of suction) near vehicle pathways increase risks.

Many times this movement is unverifiable (absence of corridors of circulation is characteristic) and excessively fast, prompted from the time pressure during the ginning period, increasing considerably the risk of accident. This situation gets worse by the above-mentioned presence and handling of vehicles from individuals that do not constitute personnel (producers).

A critical point for the ginning operation is control room from where handling of production line is controlled. This room should be placed so that visibility to all other areas is naturally ensured (or alternatively with technical assistance, such as cameras and sensors). It should be insulated for noise and dust and it must ensure comfort for the operator that should have increased attention).

M4-EN.1.5 Cotton yarning (A΄)

The production process is completely automated, resulting in the reduction of workplace risks in combination with improvement of working conditions. The worker has mainly supervisory role, intervening only to correct. There are only few cases (e.g. not automated spinners) of continuous tasks from the worker (feeding). In modern spinning frames doffing (conjunction of utmost thread that is disrupted), which constituted the usual intervention of workers has also been automated.

With regard to the arrival of raw material, conditions are better than in ginning sector, since there are fewer suppliers and the phenomenon of presence of many uncontrolled visitors is not present. The presence of vehicles in the working place is usually limited in the openers section (blow room) and in the storage of finished product. Exhaust fumes from engines in combination with the mixing of dust is a remarkable factor but not as much as in ginning houses.

The most important problems in spinning sector concerns noise, cotton dust and cotton fibres, as well as weight lifting and handling and postures. Noise is observed in all stages of the production process and specifically in yarning because of the high speed of spindles.

M4-EN.1.6 Cotton yarning (B΄)

Cotton dust and the cotton fibres appear in a reverse order. The levels of dust are higher in the first stages of the production process (openers) where cotton is dirtier, whereas levels of pendulous fibres are increased in the last stages where the yarn has become thin and is moving with high speed.

Noise has been considerably limited in latest technology equipment. Great improvement is also been achieved concerning the emissions of cotton fibres in modern yarning equipment that usually includes means of suction (cleaners).

In older spinning equipment high emission of fibres in the spinners that are densely placed (roughly in a distance of 2m), creates a cloud, that apart from respiratory problems, decreases the concentration and attention of workers (reduction of visibility, hastiness) thus increasing the risk for an accident. Risks, for safety at the regular operation, mainly concern opener's movement and forklifts in the opening sector, in entanglements with overdraft moved and sharp elements (mainly in interventions for cleaning), in the transport of intermediary products specifically when it is manually handled, in wounds of fingers in spindles and in risk of accident from vehicles at the transport of ready product.

M4-EN.1.7 Cotton yarning (C΄)

The highest risk for an accident appears in maintenance. Even if regular operation is characterized by low risk, the access in the interior of machines during maintenance and repairs includes dangers because of the mobile and sharp parts that are revealed.

Essential measures should be taken, as the complete immobilisation and detachment from sources of energy or motion, reliance and means of ensuring control of free movement of mobile parts, means to achieve complete visibility and accessibility, etc).

The workers are usually full time employees and work environment is much better than in the ginning sector, which gives better opportunities for training of personnel

and acquisition of experience. Workers in spinning sector are characterized by more industrial culture contrary those working in ginning sector.

M4-EN.1.8 Yarning

It is a considerably more limited sector. Enterprises of this sector are smaller with limited accessibility to capitals and economies of scale that would allow modern equipment and measures for occupational health and safety. Work environment quality is lower than that in cotton yarning.

Workers are also in this case mainly full time employed, which allows training and acquisition of experience and industrial culture.

The levels of dust and fibres are much lower than those in cotton yarning because the nature of raw material. The noise is in higher levels mainly because of the technology of equipment.

Operation in spinning sector is also 24 hours. Risks during maintenance, repairs and cleaning are similar with those in cotton spinning (most parts are similar) and should be provided the above-mentioned precaution measures.

M4-EN.1.9 Weaving

Levels of dust cotton are decreased, since cotton already has also been cleaned. However, high concentration of dust appears in weavings with use of amylaceous fecula. The more important hazardous factors are noise and emissions of cotton fibres that are in high levels in the looms' sector.

The role of workers is also supervisory in the most important part (looms) but it involves higher intensity in the preparation (wrappers). The risk remains the same for equipment maintenance.

Employment is also in this case continuous, but the consequences of new flexible forms of work occur here as well.