

Italian high technology of **TANNING**



Guideline n°2 - 2nd

Tanning Machinery Safety

Guidelines for a more sustainable tanning processes; are designed for consider the specific issues and addressing dedicated suggestion or possible operational solutions to a better control of resources and contribute in limitation of the environmental impact of the process.

leather

INTERNATIONAL

TFL Anti-soiling Solutions

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1982

Fallen in love with
this wonderful bag
in Milan

1989

Marriage
Tom & Lisa

2006

Cruise in the
Caribbeans with
my husband

2000

Millenium party
in London

2012:

Still in love with
my white bag

TFL Anti-soiling Solutions

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Tanning machinery safety



Workplace accidents and health issues represent a serious problem all over the world.

According to ILO (International Labour Organisation) data, more than 270 million work-related accidents occur every year, at least 335,000 of them fatal.

International concern over the issue is fairly low key due to a lack of information, which hampers the adoption of appropriate measures. Suitable conditions of work are necessary both to ensure long-term sustainable growth and to guarantee profits and manufacturing quality.

The following text takes a brief look at the historical background and then examines the main risks involved in the leather processing industry.

Background

The idea of protective measures for workers and some sort of social commission made its appearance among European manufacturers in the early 1800s, when the first steps were taken to introduce occupational health and safety measures. In 1919, a hundred years later, ILO was founded and adopted its first six

Health and safety bodies - time line

1901	BSI	British Standards Institute
1906	IEC	International Electro technical Commission
1917	DIN	Deutsches Institut für Normung
1918	AFNOR	Association Française de Normalisation
1921	UNI	Ente Nazionale Italiano di Unificazione
1947	ISO	International Standardisation Organisation
1992	CEN	Comité Européen de Normalisation

European experience of health and safety standards in the use of machinery for leather processing. Written by the National Association of Italian Manufacturers of Footwear, Leather Goods, Tannery Machines and Accessories – Assomac*

conventions on this issue. Today the ILO has 178 member states and almost 200 conventions.

Awareness on safety issues through technological and engineering, human factor, social-technical and organisational models gradually increased during the 20th century. National and international organisations were founded to standardise manufacturing processes, products and designs to facilitate the growth of global markets.

CE labelling

From the 1990s onwards the European industry has taken a synergetic approach to health and safety, both in machinery and in the working environment. Directives and Technical Standards have been studied for each sector by specific Commissions and Working Groups, drawing on all the industrial expertise of EU member countries.

The CE Machine Directive and Declaration of Conformity have played a particularly important role in fostering an open market for machinery, and goods in general, within the European Economic area. The CE logo means that products conform to Essential Safety Requirements.

Right from the inception of the design stage for machinery a careful risk analysis assessment is carried out to identify and solve any potential dangers during the machine's assembling, transportation, installation, use, maintenance and dismantling.

Advantages of applying standards

Over time these standards have proved to be tools for innovation and rationalisation in technical terms and a means to develop better company organisation. Their use guarantees:

- Safety and prevention and better working conditions



- Qualified organisation of processes and economies of scale
- A reduction in production costs, plus interchangeability and operational coordination of products and services
- A permanent incentive to innovate and ensure compliance with legislation
- Increased competition and free exchange among all countries adopting the standards
- Respect for the environment and sustainable development

Tanning industry hazards

Leather processing presents a number of health and safety risks for workers.

We underline the specific aspects of tanning, not considering those generally present in all manufacturing processes such as those caused by the use of electricity or the contact with moving parts.

Wet-end department hazards:

- **Crushing**, drawing-in and trapping when feeding skins into roller machines for fleshing, shaving and setting-out

- **Cutting**, during splitting operations and blade changes
- **Ergonomic**, caused by handling whole wet hides which are particularly heavy
- **Chemical and biological**, from contact with raw hides and chemical compounds used during the tanning process
- **Toxicity**, particularly from inhaling hydrogen sulphide during deliming phase

Drying and finishing department hazards:

- **Crushing**, drawing-in and trapping by roller machines
- **Dust**, inhaling during the buffing phase
- **Crushing**, in moving plating machines, vacuum drying machinery and hydraulic presses
- **Thermal**, contact with hot surfaces in the drying plants
- **Toxicity**, Aerosols-VOC pollution during spraying phase

A careful risks assessment in each department carried out by the management and workers should highlight critical safety issues and, where necessary, prevent, reduce or eliminate hazardous situations through protective measures, installation of safety devices and operator training.

Indirect, but nonetheless important, benefits include reduction of process costs, improvement of worker relationships and greater recognition for company policies on an international level.

Tanning machinery standards

For the tanning machinery sector the existing international standards are limited to those prepared by the European Technical Committee TC200 under technical coordination by Assomac, the National Association of Italian Manufacturers of Footwear, Leather goods, Tannery Machines and Accessories.

Italian machinery manufacturers have been involved for many years on machine



Table 1. CEN standards covering tannery machinery

CEN/TC 200	Tannery machinery - Safety
EN 972	Reciprocating roller machines
EN 1035	Moving plate machinery
EN 13112	Splitting and bandknife shearing machines
EN 13113	Roller coating machines
EN 13114	Rotating process vessels (drums)

safety with a considerable degree of commitment. There are five standards (Table 1) covering the main machine categories used in leather processing.

Assomac have developed the Technical Committee 201 'Leather and imitation leather goods and footwear manufacturing machinery - Safety' (Table 2).

Assomac run training courses in many Italian industrial areas for designers and technicians to help machinery manufacturers optimise their response to safety norms and also produces the 'Assomac tannery engineering handbook' for each machine, with a chapter dedicated to safety, ergonomics and maintenance.

The handbooks are a useful tool for machinery users and are available in six languages: English, Italian, Spanish, French, German and Portuguese (e-mail :info@assomac.it).

Conclusions

Many surveys have highlighted how the application of safety standards have shown that they can be a strategic resource for enterprises, particularly small and medium-sized companies.

Machinery shut-downs due to accidents involving operators or because of poor maintenance negatively affect production output and quality of finished leathers. Furthermore the risk of losing specialist operators with long-term experience are hard to replace and cannot be underestimated.

The expertise that Italian mechanical engineering companies have acquired in developing applied technological solutions aimed at increasing the reliability of the production processes is undoubtedly linked to their ongoing, on-the-spot cooperation with tanners in tanning clusters such as Arzignano, Solofra and Santa Croce in Italy. Solutions to issues on the production lines within tanneries came from the research laboratories of

Table 2. Assomac Technical Committee 201 standards

CEN/TC 201	Leather and imitation leather goods and footwear manufacturing machinery - Safety
EN 930	Roughing, scouring, polishing and trimming machines
EN 931	Lasting machines
EN 1845	Footwear moulding machines
EN 12044	Cutting and punching machines
EN 12203	Shoe and leather presses
EN 12387	Modular shoe repair equipment
EN 12545	Noise test code - common requirements
EN 12653	Nailing machines
EN 13457	Splitting, skiving, cutting, cementing and cement drying machines

machinery manufacturers, boosting tannery output and setting the basis for implementing new production systems.

The importance of occupational health and safety on an international level can be appreciated by the establishment of a World Day for Health and Safety at Work which took place on April 28. The idea for the event came from US and Canadian workers in 1989 to commemorate workers who died or had been injured. The event is celebrated in more than 100 countries around the world and the theme for 2012 is: 'Promoting health and safety in a green economy'.

Another occasion to evaluate the latest technological innovation in productivity, process and safety is at the international trade fair for machinery and technologies for the tanning, footwear and leather goods industries, Tanning Tech and Simac to be held in Bologna, Italy, on October 9-11, 2012 organised by Assomac. ■

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Online reference

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