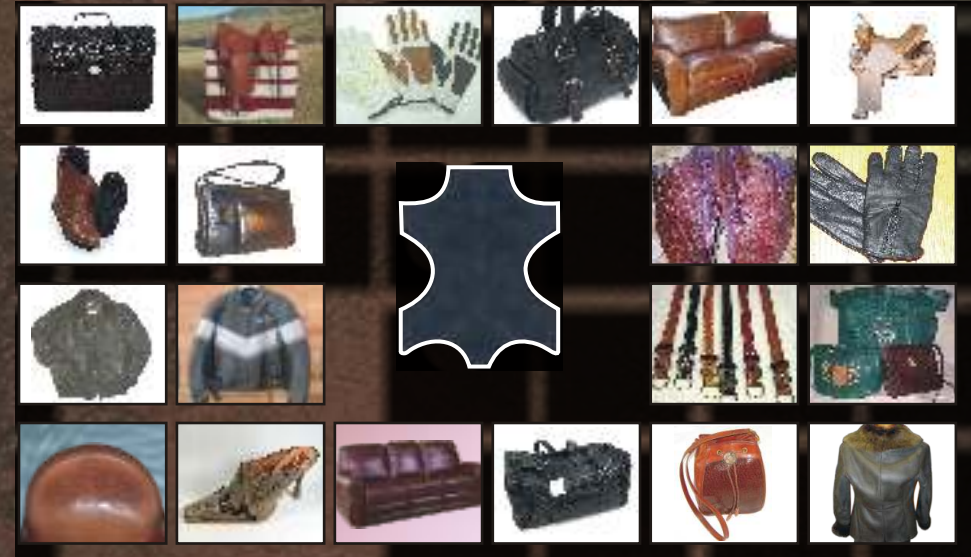


HANDBOOK ON MANDATORY & VOLUNTARY STANDARDS ON LEATHER AND FOOTWEAR PRODUCTS (IN MAJOR INTERNATIONAL MARKETS)



Published by :



Federation of Indian Micro and Small & Medium Enterprises (FISME)

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**A Handbook on Mandatory and Voluntary Standards on Leather and Footwear Products
(In Major International Markets)**

This Handbook is published by Federation of Indian Micro and Small & Medium Enterprises (FISME) to help the Small and Medium Enterprises engaged in Leather Sector increase their market access in major international markets. This handbook would serve as a guide to the potential exporters to know the voluntarily and mandatory standards applicable in major international markets. The guide would also help them in locating the agencies that may help them in complying with these standards.

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A Handbook on Mandatory and Voluntary Standards on Leather and Footwear Products
(In Major International Markets)

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Caution:

While every effort has been made to ensure accuracy of the standards in major international markets, the handbook cannot be taken as legal document for various standards. Further, the views expressed about voluntary and mandatory standards on leather and footwear are purely of the author and are not the expressions of either FISME or Project partners.

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The guide is the outcome of a series of stakeholder workshops organized under SME Component of "**Strategies and Preparedness for Trade and Globalization in India**" in Agra and Kanpur leather clusters in India, coordinated by Federation of Indian Micro and Small & Medium Enterprises (FISME) Tier-I partner of SME Component and in association with Agra Footwear Manufacturers and Exporters Chamber (Agra, Uttar Pradesh), AADHAR, (Agra, Uttar Pradesh) and Banther Industrial Pollution Control Company (Unno, Uttar Pradesh). Mr. A. Sahasranaman - member of Indian Administrative Service (IAS), J&K Cadre and former UNDP/UNIDO Regional Programme Coordinator has compiled the publication in its current form.

The guide is also available in electronic form at www.smeindia.net

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INTRODUCTION

A Handbook on Mandatory and Voluntary Standards on Leather and Footwear Products (In Major International Markets) has dealt at length with the emergence of various non-tariff barriers to global trade in leather and leather products, the underlying causes and the measures taken by India in dealing with them.

It bears mentioning here that the global trade in leather and leather products has been following a predictable pattern over the past three decades. The growth of the leather industrial sector in India in the past two decades has been impressive, its export turnover having increased from Rs. 748 crores in 1984-85 to Rs. 10,690 crores in 2004-05. The overall turnover of the industry is estimated at about Rs. 20,000 crores per annum.

Though Agra and Kanpur are the traditional centres of leather and footwear manufacture, they have also modernised their production facilities and are exporting substantial volumes of footwear, leather goods and upholstery leather worldwide. In the past, if the price and quality of the product were found attractive, a purchase was certain. But today, things have changed drastically due to the new global trade framework and the setting up of new norms for RSLs, environmental guidelines etc. Today many buyers are laying down a number of parameters dealing with residual chemical limits too. The importers claim that these are to satisfy their own laws. The manufacturers wonder if these laws are deliberate attempts to create technical barriers for trade, since the specifications seem to become more strict every year. The suppliers have no choice but to comply with these as the requirements are mandatory in nature and they consequently lead to an increase in production costs. Similarly, buyers from developed countries are imposing many social conditions to be observed by the suppliers, such as avoidance of child labour, better factory layout, complying with national and local laws relating to worker safety and welfare, freedom of association of workers etc.

Through this handbook, the author has presented information that is necessary to an Indian exporter of leather goods. The multitudes of norms and standards have been explained in a simplified manner

Exhaustive details on various aspects related to the leather sector like commodities subjected to restrictions globally, location of laboratories throughout the country that conduct tests for various restricted items have been incorporated.

Detailed sections showing mandatory and voluntary requirements for each of our big trading partners like the EU and its member countries, USA, China, UAE and Australia have been added. Also keeping in account the increasing need for the evolving concept of social accountability in the new WTO-regime, topics like eco-labeling, SA8000, various mandatory social standards and laws relating to social accountability have been dealt with.

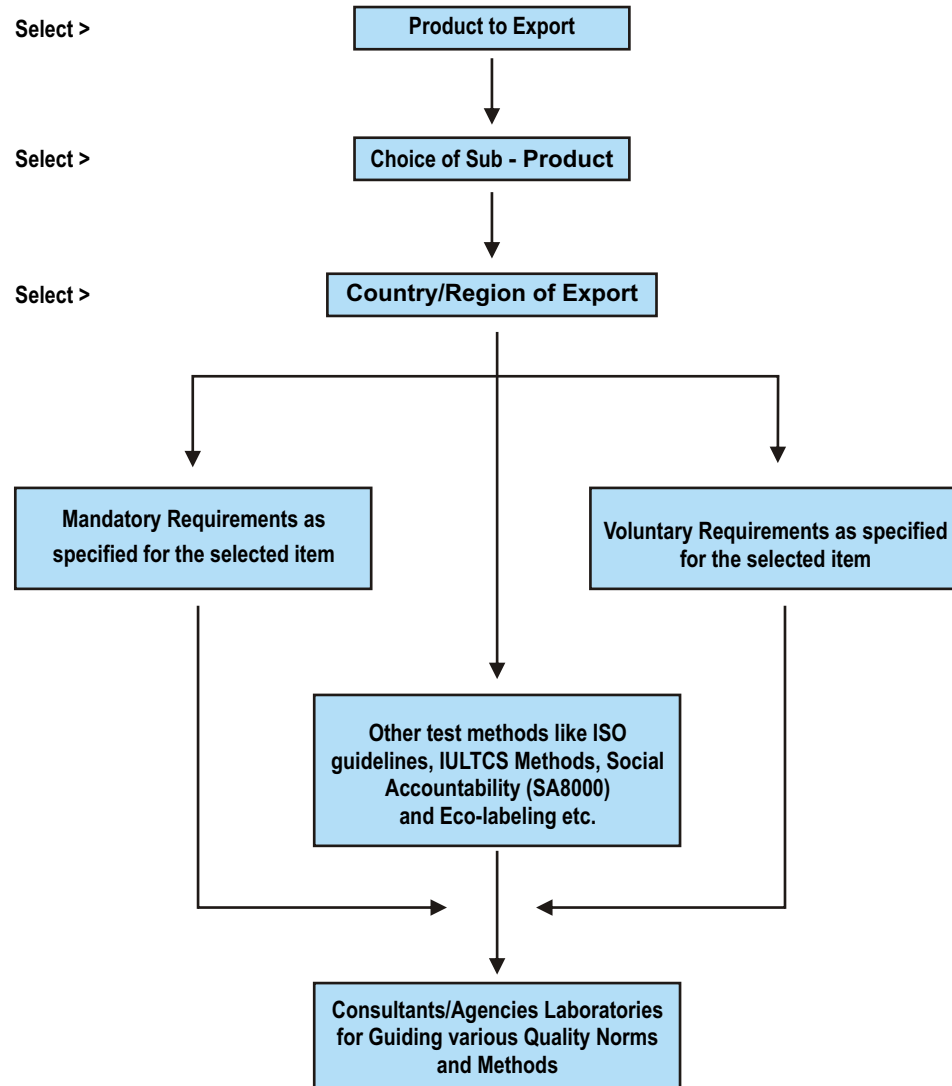
Besides, mandatory standards with regards to safety footwear and other voluntary requirements, which are universally applicable, are also given.

Quality specifications and parameters with respect to major type of finished leather, namely upper leather, garment leather and water proof leather are also dealt with in a concise manner.

In the end, various universally applicable test methods by International Organization for Standardization (ISO), the International Union of Leather Technologists and Chemists Societies (IULTCS) & European Committee for Standardization (Comité Européen de Normalization, CEN) are also presented in a detailed manner.

In future, competition from the global market for leather and leather products is likely to be mainly among the developing countries of Asia, South America and some African countries. As there will be fierce competition on price points, the industry in any country that is able to achieve compliance with many of these requirements will be able to steal a march over others.

GUIDE TO PUBLICATION



THE INDIAN LEATHER SCENARIO

The leather industrial sector comprises of tanneries (where raw hides and skins are converted into leather) and factories converting leather into a variety of consumer products such as footwear, garments and outerwear, and assorted leather goods such as wallets, passport cases, key chains, handbags and briefcases. Apart from the quality of raw materials, the process of its conversion into leather and later, of the design, product development and the manufacture of products, play a key role in adding value to it.

The industry is spread all over the country. While tanning is broadly distributed among Tamil Nadu (55-60%), Kanpur (12-15%), Kolkata (18-20%) and Jullunder (5-7%), the footwear industry is concentrated in Agra, Kanpur, New Delhi and surrounding areas of Haryana and UP, Chennai, Ambur and Ranipet. Mumbai and Kolhapur area used to be strong in some types of footwear in the past but of late their importance as a production centre has declined. Kolkata and surrounding areas produce a sizeable volume of footwear for the domestic market. Leather garments are concentrated in Delhi and Chennai, while leather goods are dominant in Kolkata, with Chennai and Kanpur also producing some volumes.

The top five importers of leather and leather products from India along with their share in 2004-05 are shown in Table 1:

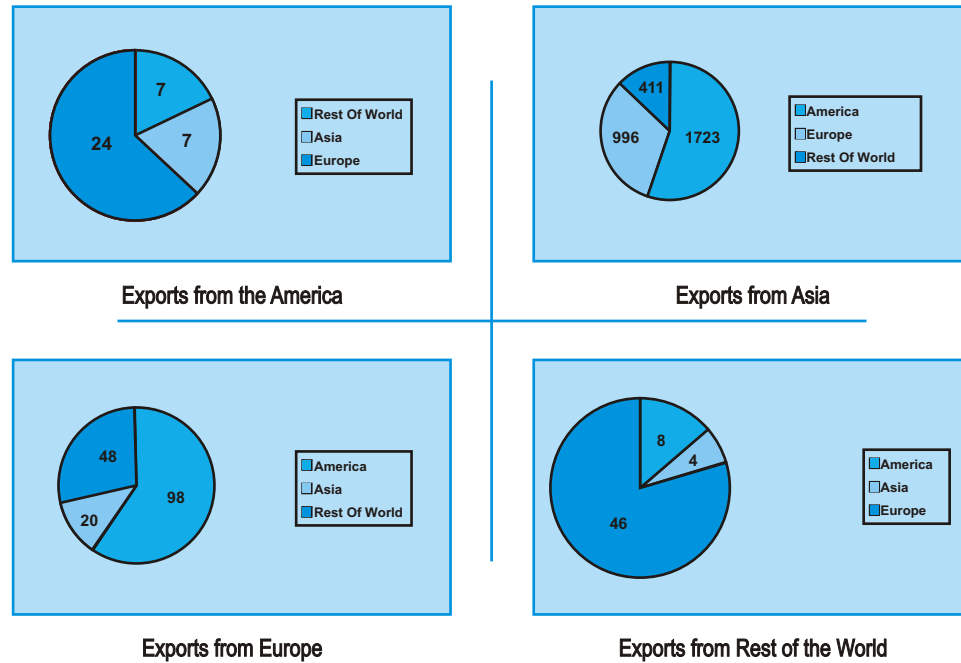
Table 1 : Major Importers of Indian Leather & Leather products

S.No.	Country / Region	Share
1.	European Union	60%
2.	United States of America	12%
3.	Hong Kong/China	11%
4.	United Arab Emirates	2%
5.	Australia	1.5%

The global trade in leather and leather products has been following a predictable pattern over the past three decades. The global trade was a mere 4 billion US dollars in 1971. It rose to 16 billion US dollars in 1984 and it stood at 68.57 billion US dollars in 2003 (excluding non-leather footwear). To understand the reasons for the dramatic rise in global trade, one has to appreciate that leather and leather products continue to be consumed in large volumes in developed countries like the USA, Europe, Australia and Japan. Until these countries could meet their own requirements, developing countries of Asia used to be suppliers of raw material to them. But since the late 1970s and through the 1980s the leather industry in all except a handful of developed countries, virtually closed down primarily because of rising wage levels. This gave an opportunity to developing countries, particularly of Asia to pump investments into this sector and manufacture leather products, especially footwear and leather goods, in order to meet the requirements of these developed countries. In the first decade of this century, a complete reversal of roles took place – developed countries have become exporters of raw material and the developing countries, exporters of value added leather products. There is hardly any footwear produced in the USA; more than 80% of requirements of footwear in most of the EU member countries (except Italy and Spain) are imported. A similar situation prevails in respect to other leather products such as leather outerwear, gloves, handbags, wallets, etc. It can be stated with a high degree of certainty that this situation is irreversible.

The following diagrams highlight the flow of footwear around the world. This tendency has intensified in the past eight years.

Footwear Flows (In million pairs)



(Source: World Footwear, Vol 13 No. 3, May/June 1999)

It should be stated here that the extraordinary opportunities afforded by the global market for leather and leather products have been taken advantage of mainly by the countries of the Far East. China (accounting today for over 60% of all footwear produced in the world), Vietnam, Indonesia and Thailand have been the main beneficiaries. Many American and European companies too have invested in this sector in these countries. In South America, Brazil has been a notable beneficiary. India too has been increasing its export but not at rates comparable to what the Far Eastern countries have been able to achieve.

This global reality has to be kept in view while examining the various non-tariff trade barriers that are emerging in the market.

The following table presents a picture of global trade in leather and leather products.

**Table 2 : Global trade in leather and leather products and India's export
(All values in million US \$)**

S.No	Product	1994	1999	2003	Remarks
1.	Leather				Much of global import is of raw/semi processed hides and skins.
	Global Import	12596	12790	17052	
	China's export	278	351	1144	
2.	Footwear				Average Unit Value realization: India: US \$ 10.51 / pair China: US \$ 5.07/pair
	Global Import	23598	26901	33297	
	China's export	2606	3958	5355	
3.	Footwear components				>90% India's export in this category is of shoe uppers.
	Global Import	4069	4538	4612	
	China's export	335	323	465	
4.	Garments				China is very strong in pig leather garments; India has no presence in this category.
	Global Import	4361	3162	4132	
	China's export	1159	1219	2350	
5.	Leather goods				
	Global Import	5814	6703	8882	
	China's export	1217	1124	2682	
6.	Saddlery & Harness				Kanpur is the only location where these articles are made in India.
	Global Import	275	416	593	
	China's export	16	59	107	
	Total	50713	54510	68568	
	China's export	5611 (11.06%)	7034 (12.90%)	12103 (17.65%)	
	India's export	1612 (3.17%)	1589 (2.91%)	2163 (3.15%)	
7.	Footwear - Non Leather				Presence of India in NLF is very low; domestic pull is high for such footwear.
	Global Import	14113	17191	19164	
	China's Export	3100 (21.96%)	4398 (25.58%)	7134 (37.22%)	
	Grand Total	64826	71701	88182	
	China	8711	11432	19237	
	India	1626	1603	2216	

It may be seen from the above table that India's export of leather and leather products (excluding non-leather footwear) which stood at US \$ 1.61 billion dollars in 1994 marginally declined to US \$ 1.59 billion dollars in 1999. In 2003, it had increased to US \$ 2.16 billion dollars and in 2004 it is estimated to have gone up to US \$ 2.29 billion. If we look at it over a ten year period from 1994 to 2004, whereas the global import had increased by 35.21% during the corresponding period, India's export had increased by only 34.18% from a rather low base. Looked at differently, India's share in the global import had marginally declined in this period from 3.17% to 3.15%. During the same period, China's share in the global import has increased from 11.06% to 17.65%. There were obviously serious limitations in India exploiting the opportunities afforded by the process of global economic liberalization. Countries like China, Vietnam and to an extent, South American countries such as Brazil have been the main beneficiaries.

Factors responsible for sluggish growth of Indian exports

The main factors responsible for the rather sluggish growth of Indian export of leather and leather products as compared to that of China are:

- Fragmented production base, dominance of the household and small-scale sector, with limited resources for expansion, modernization and marketing.
- Very small expansion of the production base in the medium and large sector, particularly in tanning and footwear sectors; leather garment and goods sectors have all along been in the small-scale sector. Consequently, supporting infrastructure for making production aids and components, particularly for footwear, has not grown adequately.
- Comparatively lower productivity, poor quality consistency, system deficiencies resulting in longer turn around time for making samples (2 to 3 weeks against 1 or 2 days in China) and later longer duration for transport of goods to destinations by sea (10 days from China as compared to an optimistic 21 days from Indian ports to Europe).
- Because of the comparatively lower business turnover of individual enterprises, including medium and large ones, capacity to invest in product development, expanding production and marketing efforts has been seriously constrained.
- Various environmental issues, particularly in south and east India, jolted the confidence of the industry and severely hampered the investment prospects here in the last decade; a similar situation in Kanpur also affected the overall confidence of the industry.
- Very few FDI or JVs despite liberalization of policy in early 2000.

Targets

The Council for Leather Exports has proposed to the Department of Commerce, Ministry of Commerce and Industry 'A road map of Indian leather industry – a vision document for 2010 - 11', an action plan for increasing the export of leather and leather products from India from its current level of US \$ 2.29 billion (2004-05) to US \$ 7.00 billion by the year 2010-11. The main requirements highlighted in this road map are:

- Capacity to manufacture an additional 2 billion sq. ft of leather has to be created. Import of raw/semi-processed hides and skins likely to be increased by 5 to 6 times of their current level to meet the gap between demand and supply.
- An additional investment of Rs 7300 crores would be needed for creating required capacities in all segments to meet the projected target of export. Adequate finance for capital and operating expenses must be provided.
- Training of additional manpower – 0.5 million direct employment – is required.
- An investment of Rs. 3000 crores would be required to create the necessary social infrastructure for housing workers and employees.
- Appropriate marketing strategy – volume markets and brand promotion are likely strategies.
- Improvement of investment climate by establishing Special Economic Zone (SEZs) to attract domestic and foreign investors. Five SEZs planned, one each at Chennai, Kanpur, Kolkata, Agra and Tada. Two exclusive tanning complexes to be developed, one near Nellore in Andhra Pradesh and another near Ennore, close to Chennai.
- Transport infrastructure – sailings to Europe and USA without transshipment at Colombo or Singapore to reduce transit time.

In an interactive session between the Union Minister of State for Commerce and the leather industry, in June 2006, the vision statement of the leather industry has been summarized in terms of five strategic shifts. These are:

- The product mix of the Indian leather sector should be aligned with that of the global trade – 65% of global import is accounted for by footwear whereas it is only 36% of India's export. An aggressive shift towards footwear manufacture and export is the first strategic shift proposed.
- USA accounts for 33% of all footwear imported globally; accordingly India's export of footwear to the USA should be increased from the current 12% of its export to 25% in next five years.
- Product focus in footwear should shift from men's shoes to casual, athletic and lady's footwear.
- The focus of Indian footwear industry should cover not only medium and high price segments but also popular price range products.
- Export of finished leather, at present 24% of country's total export, should be progressively replaced by value added products.

Policy framework

In terms of policy framework, since the trade policy of India has to align with the WTO framework, the import duty on machinery and equipment, components, consumables and even consumer products like shoes, bags, etc. has been considerably reduced, including provision for duty free import of capital goods against certain export obligations. This process will go on until the agreed levels are reached. Import of raw, semi-processed and finished leather is permitted duty free. However, export of semi-processed leather attracts duty. Except for reimbursing the duty and taxes paid on inputs by exporters, no other incentive is currently available to the exporters. Duty free import of various inputs for export production is permitted under the trade policy. Marketing assistance is currently available under the Market Assistance Scheme of the Government of India. With the removal of the leather sector from the list of industries reserved for the small scale sector, today FDI or JVs are eminently feasible in this sector, what with many industrial units in Italy and Spain fast closing down. In general the policy framework for the growth of leather sector is quite favourable.

Future

There is a great deal of optimism in the leather sector. From the point of view of the growing global market and India's own capabilities, this optimism is not misplaced. However, the industry has to be aware of the changing requirements of the global trade framework and constantly upgrade itself to meet these without fail. In the ensuing fiercely competitive global environment, failure to meet such requirements could go against an exporter or the image of a country. Against this background, the subject of this study is of vital importance. It is hoped that the contents of this report will benefit the exporters not only of Agra and Kanpur but all over the country.

COMMODITIES SUBJECTED TO RESTRICTIONS

Design and style play a very important role in the selection of leather and leather products. Accordingly, the specific requirements of different buyers vary with regard to the type of leather required and various other components used. There are no uniform mandatory standards prescribed in this regard.

However, there are many specifications, particularly relating to the Residual Substances Limits (RSLs), in all leather and leather products, imported into different countries/regions. These restrictions apply to all leather products as per the following HS codes:

- HS 64 Footwear, gaiters and the like; parts of such articles
Description: Footwear, gaiters and the like; parts of such articles
- HS 4203 Articles of apparel and clothing accessories, of leather
Description: Articles of apparel and clothing accessories, of leather or of composition leather including belts and gloves.
- HS 4201 Saddlery and harness
Description: Saddlery and harness for any animal (including traces, leads, knee-pads, muzzles, saddle cloths, saddle bags, dog coats and the like), of any material.
- HS 4202 Trunks, suitcases, vanity cases, executive cases, briefcases, school satchels, spectacle cases, binocular cases, camera cases, musical instrument cases, gun cases, holsters and similar containers; travelling bags, insulated food or beverages bags, toilet bags, rucksacks, handbags, shopping bags, wallets, purses, map-cases, cigarette cases, tobacco-pouches, tool bags, sports bags, bottle cases, jewellery boxes, powder boxes, cutlery cases and similar containers of leather.

STANDARDS APPLICABLE ON LEATHER AND LEATHER PRODUCTS

A standard is a document, established by consensus that provides rules, guidelines or characteristics for activities or their results. As defined in ISO/IEC Guide 2:1996s, standards may be of two types

1. **Mandatory:** A set of standards that are backed by the legislation of a country
2. **Voluntary:** A set of standards that are established and backed by the respective industry or sector

When the large majority of products or services in a particular business or industry sector conform to **International Standards**, a state of industry-wide standardization can be said to exist. This is achieved through consensus agreements between national delegations representing all the economic stakeholders concerned - suppliers, users and, often, governments. They agree on specifications and criteria to be applied consistently in the classification of materials, the manufacture of products and the provision of services. In this way International Standards provide a reference framework, or a common technological language, between suppliers and their customers - which facilitates trade and the transfer of technology. For businesses, the widespread adoption of International Standards means that suppliers can source products and services from all over the globe and a producer has access to a much larger market for his products.

Standards play an important role in everyday life. They may establish size or shape or capacity of a product, process or system. They can specify performance of products or personnel. They can also define terms so that there is no misunderstanding among those using the standard. As examples, standards help ensure that film to fit your cameras can be purchased anywhere in the world, that a light bulb fits a socket, and plugs for electrical appliances fit outlets. With standards our homes, workplaces and public buildings are safer from collapse, fire and explosion.

In this section, the mandatory and voluntary restrictions as well as the laboratories where these can be tested have been provided. As already indicated, these restrictions have been given as are applicable in the EU, USA, China/Hong Kong, the UAE and Australia.

MANDATORY REQUIREMENTS OF VARIOUS COUNTRIES/UNION

1.1 Mandatory requirements in European Union

Table 3 : European Union – Mandatory requirements¹

Sl.	Mandatory RSLs	Limit	Test procedure	Laboratories where tests can be conducted (Annex 2)	References
1.	Pentachlorophenol	1000 ppm	ISO 14494	1 to 9	EC Directive 1999/51/EC of 26 May 1999
2.	Azo dyes (which release one or more of 22 aromatic amines by reductive cleavage)	30 ppm	CEN ISO/TS 17234: 2004	1 to 9	EC Directive 2004/21/EC of 24 February 2004, refer table I.a for list of aromatic amines.
3.	Chrome VI	3 ppm	TS 14495	1 to 10	Council Directive 88/378/EEC
4.	Nickel	0.2 µg/cm ² /week	EN 1811	1, 4 to 10	Council Directive 2004/96/EC of 27 September 2004
5.	Lead	90 ppm	ASTM E1645-01, ASTM E1613-99	1, 4 to 10	EU Law EN71
6.	Cadmium	100 ppm	Microwave digestion and ICP analysis	1, 4 to 10	Directive 91/338/EEC
7.	Arsenic	Should not be present		1, 4 to 10	Commission Directive 2003/2/EC of 6 January 2003
8.	Organotin compounds	Should not be present	Ethanol extraction and GC-MS or LC-MS	1, 4 to 9	Commission Directive 2002/62/EC
9.	Specific flame retardants	1000 ppm	Solvent extraction and analysis by GC-MS or LC-MS	1, 4 to 9	EU Directive 2003/11/EC, refer table I.b for list of aromatic amines.
10.	Phthalates	1000 ppm for products for ages 0-3	GC-MS or HPLC-DAD	1, 4 to 9	EU legislation 1999/815/EEC, refer table I.c for list of aromatic amines.
11.	Polychlorinated biphenyls (PCBs) and Polychlorinated terphenyls (PCTs)	May not be used	USEPA 8082	8,9	Council Directive of 1 October 1985 (85/467/EEC)
12.	Biocides	23 approved types only can be in product	Relevant ISO / CEN test method	1, 4 to 9	European Parliament and Council Directive 1998/8/EC

¹ http://ec.europa.eu/enterprise/chemicals/legislation/markrestr/index_en.htm

Packing: Sum of Lead, Cadmium, Chromium (VI) and Mercury: 100 ppm, as per European Packaging and Packaging Waste directive 94/62/EC.

**Table 4: List of amines in connection with restriction on azocolourants
(Refer item no.2 of Table 3)**

Sl.	Name	CAS No.
1.	Biphenyl-4-ylamine 4-aminobiphenyl xenylamine	92-67-1
2.	Benzidine	92-87-5
3.	4-Chloro-o-toluidine	95-69-2
4.	2-Naphthylamine	91-59-8
5.	o-aminoazotoluene 4-amino-2', 3-dimethylazobenzene 4-o-tolylazo-o-toluidine	97-56-3
6.	5-Nitro-o-toluidine	99-55-8
7.	4-chloroaniline	106-47-8
8.	4-methoxy-m-phenylenediamine	615-05-4
9.	4,4'-methylenedianiline 4,4'-diaminodiphenylmethane	101-77-9
10.	3,3'-dichlorobenzidine 3,3'-dichlorobiphenyl-4,4'-ylenediamine	91-94-1
11.	3,3'-dimethoxybenzidine o-dianisidine	119-90-4
12.	3,3'-dimethylbenzidine 4,4'-bi-o-toluidine	119-93-7
13.	4,4'-methylenedi-o-toluidine	838-88-0
14.	6-methoxy-m-toluidine p-cresidine	120-71-8
15.	4,4'-methylene-bis-(2-chloroaniline) 2,2'-dichloro-4,4'-methylenedianiline	101-14-4
16.	4,4'-oxydianiline	101-80-4
17.	4,4'-thiodianiline	139-65-1
18.	o-toluidine 2-aminotoluene	95-53-4
19.	4-methyl-m-phenylenediamine	95-80-7
20.	2,4,5-trimethylaniline	137-17-7
21.	o-anisidine 2-methoxyaniline	90-04-0
22.	4-amino azobenzene	60-09-3

**Table 5: List of restricted flame retardants
(Refer item no.8 of Table 3)**

Sl.	Name	CAS No.
1.	tris-(2,3-dibromopropyl)-phosphate (TRIS) ²	126-72-7
2.	polybromobiphenyls (PBB) ³	59536-65-1
3.	tris-(aziridinyl)-phosphineoxide (Tris(1-aziridinyl)phosphine oxide) or (TEPA)	245-55-1
4.	Pentabromodiphenyl ether (PBDE)	32534-81-9
5.	Octabromodiphenyl ether (OctaBDE)	32536-52-0
6.	bis (2,3-dibromopropyl)phosphate	5412-25-9

² This restriction is based on European Union legislation supplement to annex of 76/769/EEC that states the substance is "prohibited". The amendment for TRIS is 79/663/EEC from 24 July, 1979

³ Council Directive 83/264/EEC from 16 March 1983

Table 6: Phthalates
(Refer item no. 9 in Table 3)

Sl.	Name	CAS No.
1.	di-isononyl phthalate (DINP)	28553-12-0
2.	Di(ethylhexyl) phthalate (DEHP)	117-81-7
3.	di-iso-decyl phthalate (DIDP)	26761-40-0
4.	di-n-octyl phthalate (DNOP)	117-84-0
5.	Butyl benzyl phthalate (BBP)	85-68-7
6.	Dibutyl phthalate (DBP)	84-74-2

The above-mentioned mandatory requirements are prescribed by the European Commission. Some EU member countries have more stringent requirements than the above-mentioned requirements. The stricter requirements are provided below, countrywise.

1.1.1. Germany (Table 7)

Sl.	Mandatory RSLs	Limit	Reference
1.	Pentachlorophenol	5 ppm	German Consumer Goods Ordinance and Chemicals Act 1993 of 14 October 1993, Bundesgesetzblatt 1993 part I, page 1720-1733 in accordance with Article 15, Annex 1 of the Chemical Ordinance
2.	Solvents Pentachloroethane (CAS No.76-01-7) (mass) Carbon tetrachloride (CAS No.56-23-5) (mass) 1,1,1,2-Tetrachloroethane (CAS No.630-20-6) (mass) 1,1,2,2-tetrachloroethane (CAS No.79-34-5) (mass)	0.1% 0.1% 0.1% 0.1%	Germany - Chemicalienverbots Verordnung (Prohibition of Chemicals Ordinance), section 16
3.	Formaldehyde	Above 1500 ppm should be marked	LMBG B 82.02-1 Untersuchungen von Bedarfsgegenständen; Bestimmung der Formaldehydabgabe aus textilen Bedarfsgegenständen; Ausgabe: 1985-06

1.1.2. Norway (Table 8)

Sl.	Mandatory RSLs	Limit	Reference
1.	Formaldehyde	For children below 2 yrs: 30mg/kg Normally coming into direct contact with the skin: 100mg/kg Not normally coming into direct contact with the skin: 300mg/kg	Regulations concerning the limits of certain chemicals.
2.	Flame retardant, Decabromodiphenyl ether (CAS No.1163-19-5)	Not detected	Norwegian legislation (proposed) ⁴

1.1.3. Finland (Table 9)

Sl.	Mandatory RSLs	Limit	Reference
1.	Formaldehyde	Baby articles (<24 months): 30 mg/kg; Direct skin contact: 100 mg/kg; No direct skin contact: 300 mg/kg.	Trade and Industry Ministry Decision on maximum content of Formaldehyde

1.1.4. France (Table 10)

Sl.	Mandatory RSLs	Limit	Reference
1.	Formaldehyde	Baby articles (<36 months): 20 mg/kg; Direct skin contact: 100 mg/kg; No direct skin contact: 400 mg/kg.	Business for Social Responsibility

1.1.5. Lithuania (Table 11)

Sl.	Mandatory RSLs	Limit	Reference
1.	Formaldehyde	Baby articles (<36 months): 20 mg/kg; Direct skin contact: 75 mg/kg; No direct skin contact: 300 mg/kg.	Business for Social Responsibility

1.1.6. Poland (Table 12)

Sl.	Mandatory RSLs	Limit	Reference
1.	Formaldehyde	Baby articles (<36 months): 20 mg/kg; Direct skin contact: 150 mg/kg	Business for Social Responsibility

⁴ Restricted substances limit, Business for Social Responsibility

1.1.7. Austria (Table 13)

Sl.	Mandatory RSLs	Limit	Reference
1.	Formaldehyde	Labelling requirement that are likely to come into contact with skin containing more than 1500 mg/kg free formaldehyde	http://www.eiatrack.com/s/1324?kw=

1.1.8. Netherlands (Table 14)

Sl.	Mandatory RSLs	Limit	Reference
1.	Formaldehyde	Direct skin contact: 120 mg/kg	http://www.eiatrack.com/s/1324?kw=

1.1.9. Denmark (Table 15)

Sl.	Mandatory RSLs	Limit	Reference
1.	Cadmium	75 ppm	Danish statutory order no.1199 of December 23, 1992
2.	Phthalates	500 ppm for children up to 3 years	Denmark statutory order 151

1.2 Mandatory requirements in USA

Table 16. USA - Mandatory

Sl.	Mandatory RSLs	Limit	Test procedure	Laboratories where tests can be conducted (Annex 2)	References
1.	Formaldehyde	1%	ISO TS 17226:2003	1 to 9	Consumer Protection Act
2.	Chrome VI	100 ppm	TS 14495	1 to 10	
3.	Lead	600 ppm, 100 ppm in packaging	ASTM E1645-01, ASTM E1613-99	1, 4 to 10	US 16 CFR 1303 and Act 113 The Safe Packaging Act of Commonwealth of Pennsylvania
4.	Cadmium	100 ppm	Microwave digestion and ICP analysis	1, 4 to 10	Resource Conservation and Restoration Act
5.	N-methylpyrrolidine (NMP) (solvent)	Products to be labelled in California	Not applicable	Not applicable	California Proposition 65

Product specification with respect to restricted substances - Brand owners and retailers. Leading brand owners and retailers of various leather products like footwear, garments and leather goods have their own standards for their products. In some cases the limits required by the brand owners / retailers are stricter than the mandatory requirements.

As a case study the limits prescribed by "Nike", a famous brand of athletic footwear, is listed in following table .

Table 17: NIKE's list of RSLs

Sl.	Restricted substance	Mandatory requirement	Nike limit ⁵
1.	Pentachlorophenol	In most EU member countries 5 ppm, in some EU countries 10 ppm and others, 1000 ppm	5 ppm
2.	Azo dyes	30 mg/kg in EU	30 mg/kg
3.	Chromium VI	3 mg/kg (detection limit) in Germany	Not detected, detection limit 3 mg/kg
4.	Disperse dyes	Applicable for 9 dyes	Applicable for 20 dyes
5.	Formaldehyde	Varies from 20 to 1500 ppm	Synthetic leather/ textile components of shoe: size 165 mm: < 20 ppm, size > 165 mm: 75 ppm Natural leather component: size 165 mm: < 30 ppm, size > 165 mm: 150 ppm
6.	Cadmium	100 ppm in EU	50 ppm
7.	Lead	90 ppm	100 ppm
8.	Total chromium	No legislation for total chromium, legislation only for Cr (VI)	3 ppm, if more analyse for Cr (VI)
9.	Nickel	Maximum release: 0.5 µg/cm ² /week	Maximum release: 0.5 µg/cm ² /week
10.	Phthalates	500 - 1000 ppm applicable only for baby/kids shoes	For all shoes: Size 165 mm: 500 ppm for each phthalate or 1000 ppm total

⁵ Source: Nike Finished Product Restricted Substances List (RSL), July 2003

Similarly, the acceptable limit on finished product of leather for Pentachlorophenol (PCP) prescribed by "Marks & Spencer" is 0.5 ppm (Source: Environmental, Chemical and Factory Minimum standards for Dyeing, Printing and Finishing Clothing and Textiles, September 2005) whereas the legal requirement in Germany is 5 ppm.

1.3 Mandatory requirements in Hong Kong/China

Table 18: Hong Kong/China - Mandatory

Sl.	Mandatory RSLs	Limit	Test procedure	Laboratories where tests can be conducted (Annex 2)	References
1.	Azo dyes	30 ppm	ISO TS 17234: 2003	1 to 9	National Standard of the P.R.C., Leather and Fur - Limit of Harmful Matter ⁶
2.	Formaldehyde	baby (<24 months): 20 ppm, major part having direct contact with skin: 75 ppm, little parts having direct contact: 300 ppm	ISO TS 17226: 2003	1 to 9	Consumer Protection Act

1.4 Mandatory requirements in UAE, Australia

In the UAE and Australia, no mandatory restrictions exist. In Australia, the Australian Environmental Labelling Association (AELA) has developed an environmental product-labeling programme, namely 'Good Environmental Choice'. However, as of now, the programme has not been extended to leather and leather products.

⁶ http://www.puntofocal.gov.ar/notific_otros_miembros/chn174_t.pdf

1.5 Mandatory standards for safety footwear globally

The following table shows the requirements for safety footwear.

Table 19: Global mandatory standards for safety footwear

Parameter	Test method	Value
Tensile strength of leather split Breaking force of rubber	ISO 3376: 2002 Annex A of ISO 2023:1994	Min. 15 N/mm ² Min. 180 N
Elongation at break of polymeric materials Modulus at 100% elongation	ISO 4643:1992	Min. 250% 1.3 MPa to 4.6 MPa
Tear strength of leather Tear strength of lining leather	ISO 3377:2002	Min 120 N Min 30 N
Tear strength of coated fabric and textile Tear strength of lining made of coated fabric and textile	ISO 4674:2003	Min 60 N Min 15 N
Water absorption resistance Water penetration	As provided by relevant standards	< 30% after 60 minutes Shall not occur during 60 minutes nor exceed 2 g after a further 30 minutes
Water vapour permeability Water vapour coefficient	ISO 14268:2002	> 0.8 mg/cm ² .h > 20 mg/cm ²
pH of aqueous extract	ISO 4045:1998	Shall not be < 3.5 and if pH is below 4 the difference figure shall be < 0.7
Tongue tear strength of leather Tongue tear strength of lining leather Thickness of insole	ISO 3377:2002 ISO 4674:2003 As provided by relevant standards	Min. 36 N Min. 18 N > 2.0 mm
pH of aqueous extract of insole	ISO 4045:1998	Shall not be < 3.5 and if pH is below 4 the difference figure shall be < 0.7
Water absorption of insole leather Water desorption Abrasion resistance	As provided by relevant standards	> 35% m/m > 40% m/m No surface tearing before 400 cycles
Abrasion resistance of non-leather outsole	ISO 4649:2002	Relative volume loss shall be not greater than 250 mm ³ for materials with density of 0.9 g/ml or less and not greater than 150 mm ³ for materials with density higher than 0.9 g/ml. For outsoles from all-rubber or all-polymeric footwear, the relative volume loss shall be not greater than 250 mm ³ .

For detailed requirements the relevant standard may be referred to. The applicable standards related to safety footwear are provided in the following table.

Table 20

Description	European Committee for Standardization ⁷	International Organization for Standards ⁸
Personal protective equipment - test methods for footwear	EN ISO 20344:2004	ISO 20344:2004
Personal protective equipment - safety footwear	EN ISO 20345:2004	ISO 20345:2004
Personal protective equipment - protective footwear	EN ISO 20346:2004	ISO 20346:2004
Personal protective equipment - occupational footwear	EN ISO 20347:2004	ISO 20347:2004

⁷ <http://www.cenorm.be/CENORM/BusinessDomains/TechnicalCommitteesWorkshops/CENTechnicalCommittees/Standards.asp?param=6142&title=CEN%2FTC+161>

⁸ <http://www.iso.org/iso/en/CatalogueListPage.CatalogueList?ICS1=13&ICS2=340&ICS3=50&scopelist=CATALOGUE>

VOLUNTARY REQUIREMENTS OF VARIOUS COUNTRIES/ UNION

2.1 Voluntary requirements in European Union

European Union - Voluntary

Name of the voluntary standard: EU Eco-label for footwear

Product: Footwear ⁹

Assessment and verification requirements

The specific assessment and verification requirements are indicated within each criterion.

Where ever appropriate, test methods other than those indicated for each criterion may be used if their equivalence is accepted by the competent body assessing the application.

The functional unit is one pair of shoes. Requirements are based on shoe size 40 Paris point. For children's shoes the requirements apply for a size 32 Paris point (or the largest size if maximum size is smaller than 32 Paris point).

Where ever appropriate, competent bodies may require supporting documentation and may carry out independent verifications.

The competent bodies are recommended to take into account the implementation of recognised environmental management schemes, such as EMAS or ISO 14001, while assessing applications and monitoring compliance with the criteria (note: it is not required to implement such management schemes).

⁹ http://ec.europa.eu/environment/ecolabel/product/pg_footwear_en.htm#revisedcriteria

Table 21. European Union – Voluntary

Sl.	Voluntary standards	Limit	Test procedure	Laboratories where tests can be conducted (Annex 2)	References
1.	Chrome VI (residue in product)	10 ppm	CEN TC 309 WI 065 - 4.2 or DS/EN 420 or DIN 53314:1996-04	1 to 10	Commission Decision 2002/231/EC
2.	Free and partially hydrolysable formaldehyde (residue in product)	Textile components 75 ppm, Leather 150 ppm	CEN TC 309 WI 065 - 4.4	1 to 9	
3.	Pentachlorophenol and Tetrachlorophenol	Shall not be used. Textiles < 0.05 ppm, In leather < 5 ppm	CEN TC 309 WI 065 - 4.5	1 to 9	
4.	Azo dyes (no azo dyes that may cleave to any of 22 forbidden amines.	< 30 ppm	CEN TC 309 WI 065 - 4.5	1 to 9	
5.	N-nitrosamines (9 numbers)	Should not present	EN 12868	11, 4 to 9	
6.	C10-C13 chloralkanes	Shall not be used	Declaration from supplier	Not applicable	
7.	Arsenic Cadmium and Lead	Should not present	CEN TC 309 WI 065 - 4.3	1, 4 to 10	
8.	PVC	Shall not contain PVC. Recycled PVC may, however, be used in outsoles, where no use is made of DEHP (bis(2-ethylhexyl) phthalate), BBP (butylbenzylphthalate) or DBP (dibutylphthalate) in preparing the recycled PVC.	Declaration from supplier	Not applicable	
9.	Electric and electronic components	Should not be used	Declaration from supplier	Not applicable	
10.	Packaging	Cardboard boxes: shall be made from a minimum of 80% recycled material, plastic bags: shall be made from 100% recycled material			

Other parameters related to leather and shoe production include waste treatment to achieve the following results and usage of energy:

1. The wastewater from leather tanning sites and from the textile industries shall be treated, either by an in-house or municipal waste water treatment plant/facility so as to achieve a reduction of the COD content of at least 85%. Test method: ISO 6060.
2. Tannery waste water after treatment shall contain less than 5 mg Chromium (III)/l. Test method: ISO 9174 or EN 1233 or EN ISO 11885 for Cr.
3. The total use of VOCs during final footwear production, for the following categories, shall not exceed on average: a) General sports, school footwear, occupational, men's town, cold weather footwear: 25 g VOC/pair, b) Casual, women's town: 25 g VOC/pair, and c) Fashion, infants, indoor: 20 g VOC/pair. Test method: TC 309 WI 065 - 4.7.
4. Energy consumption per pair of footwear to be declared on voluntary basis.
5. *Information on the packaging: (a) User Instructions:* The following information (or equivalent text) shall be supplied with the product: 'These shoes have been treated to improve their water resistance. They do not require further treatment.' (This criterion is applicable only to footwear that has been treated for water-resistance) 'Where possible repair your footwear rather than throw them away. This is less damaging to the environment.' 'When disposing of footwear, please use appropriate local recycling facilities where these are available.' (b) *Information about the Eco-label:* The following text (or equivalent text) shall appear on the packaging: 'for more information visit the EU Eco-label website: <http://europa.eu.int/ecolabel>'. *Assessment and verification:* the applicant shall provide a sample of the product packaging and of the information supplied with the product, together with a declaration of compliance with each part of this criterion.
6. *Information appearing on the Eco-label:* Box 2 of the eco-label shall contain the following text: low air and water pollution, harmful substances avoided. *Assessment and verification:* the applicant shall provide a sample of the product packaging showing the label, together with a declaration of compliance with this criterion.
7. *Parameters contributing to durability:* Occupational and safety footwear shall carry the EC mark (in accordance with Council Directive 89/686/EEC of 21 December 1989 on the approximation of the laws of the Member States relating to personal protective equipment). All other footwear shall meet the requirements indicated in the table below. *Assessment and verification:* the applicant shall provide a test report corresponding to the parameters indicated in the table below, using test methods CEN TC 309 WI 065 - 4.9.

Table 22

	General sports	School footwear	Casual	Men's town	Cold weather footwear	Women's town	Fashion	Infants	Indoor
Uppers flex resistance (kc without visible damage)	Dry = 100 Wet = 20	Dry = 100 Wet = 20	Dry = 80 Wet = 20	Dry = 80 Wet = 20	Dry = 100 Wet = 20 -20oC = 30	Dry = 50 Wet = 10	Dry = 15	Dry = 15	Dry = 15
Uppers tear strength (Average tear force, N): Leather Other materials	80 40	60 40	60 40	60 40	60 40	40 40	30 30	30 30	30 30
Outsoles flex resistance: Cut growth (mm), Nsc = no spontaneous crack	≤ 4 Nsc	≤ 4 Nsc	≤ 5 Nsc	≤ 6 Nsc	≤ 6 Nsc at -10°C	≤ 8 Nsc			
Outsoles abrasion resistance D 0.9 g/cm ² (mm ³) D < 0.9 g/cm ² (mg)	≤ 200 ≤ 1150	≤ 250 ≤ 170	≤ 200 ≤ 150	≤ 350 ≤ 200	≤ 200 ≤ 150	≤ 400 ≤ 250			≤ 450 ≤ 300
Uppersole adhesion: (N/mm)	4.0	4.0	3.0	3.5	3.5	3.5	2.5	3.0	2.5
Outsoles tear strength (Average strength, N/mm)	8	8	8	6	8	6	5	6	5
D 0.9 g/cm ² D < 0.9 g/cm ²	6	6	6	4	6	4	4	5	4
Colour fastness of the inside of the footwear (lining or inner face of the upper). Grey scale on the felt after 50 cycles wet	2/3	2/3	2/3	2/3	2/3	2/3		2/3	2/3

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In addition, specialist cold footwear shall meet the following requirements for water resistance:

Uppers: penetration time 240 min, absorption < 25%

Outsoles: penetration time 60 min, and after 2 hours absorption < 20% (highly water resistant - applicable only to certain soiling material)

Other than the EU Eco-label for footwear, the member countries in the EU also have separate Eco-label schemes. These are dealt separately.

2.2 Voluntary requirements in USA

USA - Voluntary

Though more than 20 environmental labelling programmes are in the USA, none of them covers leather or leather products.

2.3 Voluntary requirements in Hong Kong / China

Table 23: Hong Kong/China – Voluntary

Product: Footwear¹⁰

Sl.	Voluntary condition	Limit	Test procedure	Laboratories where tests can be conducted(Annex 2)	Reference
1.	Basic performance - quality of shoe	Relevant requirement of product quality standards	Not applicable	Not applicable	State Environment Protection Administration
2.	Basic requirement - Pollutant emission of the footwear company	Should conform with pollutant emission standards nationally or locally	Not applicable	Not applicable	
3.	Pentachlorophenol	Detection limit ≤ 0.05 mg/kg	GB/T 18414.1 or GB/T 18414.2	1 to 9	
4.	Azo dyes	Detection limit ≤ 20 mg/kg	GB/T 17592.1 or DIN 53316:1997	1 to 9	
5.	Chloro decane, Chloro hendecane, Chloro dodecane, Chloro tridecane	Not allowed to be used in shoe	Document review and field inspection	Not applicable	
6.	Nitrosamines	Not allowed to be used in rubber for shoes	Document review and field inspection	Not applicable	
7.	PVC	Not allowed to be used in shoe	Document review and field inspection	Not applicable	
8.	Blue colourant	Not allowed to be used in leather materials.	GB/T 17592.1 or DIN 53316:1997	1 to 9	
9.	Chrome (VI)	Less than 10mg/kg	SN0704 - 1997	1 to 10	

¹⁰ <http://www.sepacec.com>

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Product: Footwear

Sl.	Voluntary condition	Limit	Test procedure	Laboratories where tests can be conducted (Annex 2)	Reference
10.	As, Pb and Cd	Should not be added in shoes artificially; and their extractable contents < 10mg/kg	GB/T 17593	1, 4 to 10	
11.	Extractable formaldehyde content from textile of shoes	75mg/kg	GB/T 2912.1	1 to 9	
12.	Extractable formaldehyde content in shoes	150mg/kg	GB/T 2912.1	1 to 9	

2.4 Voluntary requirements applicable internationally

There are two eco-label schemes applicable for leather and leather products globally. These are provided by international organizations. These are provided below:

Table 24: ICT Eco-Tox Label, International Council of Tanners

Sl.	Voluntary standards	Limit	Laboratories where tests can be conducted (Annex 2)	References
1.	Pentachlorophenol	5 mg/kg	1 to 9	International Council of Tanners
2.	Azo dyes	50 mg/kg	1 to 9	
3.	Chrome VI	5 mg/kg	1 to 10	
4.	Soluble nickel salts	2.5 mg/kg	1, 4, 8, 9, 10	
5.	Cadmium	50 mg/kg	1, 4 to 10	

Table 25 : Öko-Tex Standard 100, International Association for Research and Testing in the Field of Textile Ecology

Sl.	Voluntary standards	Limit	Laboratories where tests can be conducted (Annex 2)	References Oeko Tex
1.	Pentachlorophenol	0.05 ppm for baby / 0.5 ppm for others	1 to 9	Association ¹¹
2.	2,3,4,5,6-Tetrachlorophenol	0.05 ppm for baby / 0.5 ppm for others	1 to 9	
3.	Azo dyes	20 ppm	1 to 9	
4.	Chrome VI	0.5 ppm	1 to 10	
5.	Formaldehyde	20-300 ppm	1 to 9	

¹¹ <http://www.oeko-tex.com/en/main.html>

The detailed limit and fastness values for certification under Öko-Tex Standard 100 are provided in Annex 1.

Voluntary standards in EU member countries

Though a harmonized EU eco-label is applicable in all member countries of European Union, the member countries also have their own eco-label schemes. These are in accordance with the EC regulation No. 1980/2000 of the European Parliament and of the Council of 17 July 2000. The country specific Eco-label schemes are provided below:

A. Germany

There are two eco-label schemes are applicable to leather and leather products in Germany, namely, Schadstoffgeprüft (SG) provided by Prüf- und Schuhforschungsinstitut Pirmasens; TÜV Rheinland sicherheit und Umweltschutz GmbH; Institut Fresenius, Germany and Test Mark for Leather provided by Lederinstitut Gerberschule Reutlingen, Germany.

Table 26: Schadstoffgeprüft (SG), Prüf- und Schuhforschungsinstitut Pirmasens; TÜV Rheinland sicherheit und Umweltschutz GmbH; Institut Fresenius, Germany¹²

Sl.	Voluntary standards	Limit	Test procedure	Laboratories where tests can be conducted (Annex II)
1.	Odour	Characteristic for the product	SNV 195 651	Nil
2.	Colour fastness Fastness to rubbing with perspiration solution acidic / alkaline	At least 3	DIN EN ISO 11640, DIN EN ISO 11641 E04 (solution)	1, 4, 8,9
3.	pH of aqueous extract	3.5-7.0	DIN EN ISO 4045	1 to 9
4.	Formaldehyde free and released formaldehyde	150 mg/kg, for children (< 36 months) 50 mg/kg	DIN ISO/TS 17226, edition: 004-01	1 to 9
5.	Pentachlorophenol	0.5 mg/kg	LMBG § 35 B 82.02-8, edition: 2001-06	1 to 9
6.	Chlorinated phenols some other than PCP	1 mg/kg	In accordance with LMBG § 35 B 82.02-8, edition: 2001-06	1, 4 to 9
7.	Forbidden azo dyes	< detection limit (DL:30 mg/kg)	§ 35 LMBG 82.02-3	1 to 9
8.	Chrome VI	< detection limit (DL:3 mg/kg)	DIN CEN/TS 14495, ausgabe: 2003-08	1 to 10
9.	Glyoxal, Gluterldehyde each	1 mg/kg	DIN 53313	1 to 9
10.	Tributyltin compounds Dibutyltin compounds Monobutyltin compounds	Not detectable < 1 mg/kg < 1 mg/kg	Solvent extraction and definition in accordance with DIN 38407 TI.13	8,9 8,9 8,9

¹² http://www.pfi-ps.de/typo3/fileadmin/verwaltung/sg_english.pdf

Sl.	Voluntary standards	Limit	Test procedure	Laboratories where tests can be conducted (Annex II)
11.	Pesticides/Wood preservatives	1 mg/kg	In accordance with DFG S19	1, 4 to 9
12.	Soluble mineral tanning agent, total Al, Cr, Ti, Zr content	200 mg/kg, for children (< 36 months) 50 mg/kg	Extraction, definition, total content of soluble Al, Cr, Ti, Zr, via by CP-OES, AAS	1 to 9
13.	Substances extractable by washing out: Upper leather/ lining leather/upper leather / lining leather/chromium free	1.5% 2.5% 15% 5%	DIN 53307	1 to 9
14.	Other heavy metals		Extraction with acidic sweat solution in accordance with DIN EN ISO 105 E04, determination by means of ICP-OES, AAS	1 to 10
	Antimony	2.0 mg/kg		
	Arsenic	0.2 mg/kg		
	Cadmium	0.1 mg/kg		
	Cobalt	4.0 mg/kg		
	Copper	60.0 mg/kg		
	Lead	0.8 mg/kg		
	Nickel	4.0 mg/kg		

Table 27: Test Mark for Leather, Lederinstitut Gerberschule Reutlingen, Germany

Sl.	Voluntary standards	Limit	Test procedure	Laboratories where tests can be conducted (Annex II)	References
1.	Pentachlorophenol	5 mg/kg	DIN 53313	LGR	Lederinstitut Gerberschule Reutlingen, Germany
2.	Azo dyes	< detection limit (DL:30 mg/kg)	DIN 53316 E		
3.	Chrome VI	< detection limit (DL:3 mg/kg)	DIN 53314		
4.	Formaldehyde	200 mg/kg	B82.02 Section 35 LMBG		

B. Netherlands

B.1. Stichting Milieukeur for footwear

Category 1 (intensive use): Men's (daily use), sport, children's (daily use), industrial (safety) footwear
Category 2 (average use): Ladies' (daily use), sandals, men's and children's (high fashion for special occasions), specific season-related footwear
Category 3 (light use): ladies' (high fashion for special occasions), slippers and footwear for around the house)

B.1.a. Environmental requirements

Table 28: Raw materials

Sl.	Requirement	Limit	Test procedure
1.	Energy content including energy used during manufacturing (wrenching, heat setting, soling and finishing):	Category 1: 96 MJ/pair (not for safety footwear and children footwear) Category 2: 75 MJ/pair (not for children footwear) Category 3: 60 MJ/pair Safety footwear: 150 MJ/pair Children footwear: 60 MJ/pair	As described in the schedule
2.	The following materials may not be added: halogenated fire retardants; colouring agents with an LD50 (rat, oral)- value smaller than 2000 mg/kg; colouring agents with an LC50 (fish, 96h) or EC 50 (daphnia, 48 h) or an IC50 (algae, 72 h) smaller than 100 mg/l; colouring agents for which the LC and the LD value is unknown; benzidine analogous colouring agents; additives for which the arsenic, cadmium, chrome (except CrIII tanned leather), copper-, mercury-, lead and zinc-concentrations exceed BAGA limit; chlorophenols appearing on the "black list" for substances. Chlorous Volatile Organic Substances	Declaration of the supplier and or manufacturer, signed by the (Managing) Director + list of colouring agents used with LC50 and / or LD 50 values and references. For the toxicity values, the International Substance Information System (ISIS) is to be consulted.	Not applicable

Table 29: Leather

SI.	Environmental requirement	Method
1.	The chrome release into water may not exceed 120 mg/pair during the entire chain. For all of the proceeded leather, no more than 0.33Cr/kg leather may be emitted during the tanning process (this is equal to a Cr emission of 2 ppm at a water consumption of 40 m ³ /ton of hides)	Declaration of suppliers, signed by the (Managing) Director (Cr emissions can be analysed according to NEN 6444 or NEN 6448)
2.	The leather processed in the shoe must be treated with finishes with a water base, unless the manufacturer can prove that other VOS-reducing measures restrict VOS emissions during finishing. Use of VOS must be restricted so that the total VOS use does not exceed the requirement under "shoe production".	Declaration of the shoe manufacturer and/or tanner, signed by the (Managing) Director.
3.	During the entire tanning process of the leather used in the footwear, all of the waste water, must be dumped via a (communal) biological water purification installation.	Declaration of the supplier, signed by the (Managing) Director
4.	At least 75% of the purchased upper material must be used for the leg.	Declaration of the shoe manufacturer and/or leg-supplier, signed by the (Managing) Director.

Table 30: Synthetic upper and lining materials

SI.	Environmental requirement	Method
1.	The synthetic upper material contained in the shoe must be finished with finishes which have a water base, unless the manufacturer can prove that other VOS reducing measures restrict VOS emissions during finishing. Use of finishes containing VOS must be restricted so that the total VOS use does not exceed the requirement under "shoe production".	Declaration of the shoe manufacturer and/or supplier, signed by the (Managing) Director.

Table 31: Cotton

SI.	Environmental requirement	Method
1.	The cotton contained in the shoe must be treated with finishes which have a water base, unless the manufacturer can prove that other VOS reducing measures restrict VOS emissions during finishing. Use of finishes containing VOS must be restricted so that the total VOS use does not exceed the requirement under "shoe production".	Declaration of the shoe manufacturer and/or supplier, signed by the (Managing) Director.
2.	Cotton may not be bleached with bleaches containing chlorine	Declaration of the supplier, signed by the (Managing) Director.
3.	During the improvement process, all of the waste water, has to be dumped via a (communal) biological water purification system	Declaration of the supplier, signed by the (Managing) Director.

Table 32: Synthetic sole materials and rubber

SI.	Environmental requirement	Method
1.	During the production of rubber sole, use of finishes containing VOS must be restricted so that the total VOS use does not exceed the requirement under "shoe production".	Declaration of the shoe manufacturer and/or supplier, signed by the (Managing) Director.
2.	No TDI may be processed into PUR. The maximum emission of MDI during production may not exceed 50 g/ton and 20 g/m ³ .	Declaration of the shoe manufacturer and/or supplier, signed by the (Managing) Director.
3.	No Volatile Organic Substance may be used for the foaming of synthetic materials (this includes hydrocarbons containing chlorine) causing the total VOS use to exceed the requirement under "shoe production".	Declaration of the shoe manufacturer and/or supplier, signed by the (Managing) Director.
4.	No more than 2% sulphur may be used as vulcanization material and no nitrodiphenylamine as aggregate.	Declaration of the shoe manufacturer and/or supplier, signed by the (Managing) Director.

Table 33: Shoe

SI.	Environmental requirement	Method
1.	The total use of VOS during the entire shoe production process (including use of glue, finish and paint/dyes during tanning and sole production) may not exceed following values: Category 1: 50 g VOS /pair Category 2: 45 g VOS/pair Category 3: 40 g VOS/pair	Declaration of the shoe manufacturer signed by the (Managing) Director.

B.1.b. Functional requirements

Table 34: Upper leather

Sl.	Property	Requirement	Method
1.	Tearing strength	Category 1: 80 N Category 2: 50 N Category 3: 40 N	ISO 3377
2.	Water proofness - water absorption - water transmission	Max. 30% after ½ hour Max. 0.5 g after ½ hour	IUP 10
3.	Rub fastness	No more than slight damage (min. 4 according to ISO 105 AO2)	UF 450
		Friction Felt Leather	Veslic C4505
		50/40/30 Dry Wet	
		50/40/30 Wet Dry	
		30/25/20 Rubber Dry	
20/15/10 Rubber Wet			
4.	Resistance to repeated flexing, wet and dry	No more than slight damage (min. 4 according to CTL-F65):	IUP 20
		<i>Cat 1: Flexes Leather type</i>	
		100,000 Split leather with top layer	
		20,000 Patent leather	
		20,000 Other types	
		<i>Cat 2: Flexes Leather type</i>	
		60,000 Split leather with top layer	
		15,000 Patent leather	
		15,000 Other types	
		<i>Cat 3: Flexes Leather type</i>	
40,000 Split leather with top layer			
10,000 Patent leather			
10,000 Other types			

Table 35: Synthetisch Schachtmaterial

Sl.	Property	Requirement	Method
1.	Tear strength	Cat 1: 40 N Cat 2: 25 N Cat 3: 20 N	ISO 4674
2.	Resistance to repeated flexing	Very slight damage (min. 4-5 according to CTL-F65) after: Cat 1: 150.000 Cat 2: 100.000 Cat 3: 70.000	IUP 20
3.	Rub fastness Finish layer	No more than slight damage (min. 4 according to ISO 105 AO2):	IUF 450
		Rubs Felt Material	
		Cat 1 / Cat 2 / Cat 3	
		50/40/30 Dry Wet	
		50/40/30 Wet Dry	
30/25/20 Rubber Wet			
			Veslic C4505

Table 36: Textile Schachtmaterial

Sl.	Property	Requirement	Method
1.	Tear strength	Cat 1: 40 N Cat 2: 25 N Cat 3: 20 N	ISO 4674

Table 37: Lining leather

Sl.	Property	Requirement	Method
1.	Tear strength	Cat 1: 30 N Cat 2: 25 N Cat 3: 20 N	ISO 4674
2.	Rub fastness	No more than slight damage (min. 4 according to ISO 105 AO2), colouring minus 3:	IUF 450
		Rubs Vilt Leer	
		<i>Cat 1 / Cat 2 / Cat 3</i>	
		50/40/30 Dry Wet	
		50/40/30 Wet Dry	
		30/25/20 Rubber Wet	
20/15/10			Veslic C4505

Table 38: Synthetic lining (with top layers)

Sl.	Property	Requirement	Method
1.	Tear strength	Cat 1: 15 N Cat 2: 12.5 N Cat 3: 10 N	ISO 4674
2.	Abrasion resistance	All categories: No more than slight damage after ☞ 40.000 revolutions dry ☞ 20.000 revolutions wet	EN 3445.14

Table 39: Textile lining

Sl.	Property	Requirement	Method
1.	Tear strength	Cat 1: 15 N Cat 2: 12.5 N Cat 3: 10 N	NEN 3361

Table 40: Binnenzoolleder

Sl.	Property	Requirement	Method	
1.	Water soluble matter	<i>Cat 1 Cat 2 Cat 3</i>	IUC 6 IUC 6 ISO 5399	
		- Total		≤15% ≤12% ≤12%
		- Salts		≤1.5% ≤1.5% ≤1.5%
		- Epsom salt		≤1.0% ≤1.0% ≤1.0%

Sl.	Property	Requirement	Method
2.	Water absorption	Absorption (at least): Cat 1: 90 mg/cm ² Cat 2: 75 mg/cm ² Cat 3: 65 mg/cm ² Desorption (at least): Cat 1: 60% Cat 2: 50% Cat 3: 40%	EN 344 5.15

Table 41: Non-leather insole materials

Sl.	Property	Requirement	Method
1.	Abrasion resistance	No visible damage after 1000 wear strokes	EN 344 5.15
2.	Water absorption	Absorption (at least): Cat 1: 90 mg/cm ² Cat 2: 75 mg/cm ² Cat 3: 65 mg/cm ² Desorption (at least): Cat 1: 60% Cat 2: 50% Cat 3: 40%	EN 344 5.15

Table 42: Sole leather

Sl.	Property	Requirement	Method
1.	Thickness	Cat 1: 4.0 mm Cat 2: 2.5 mm Cat 3: 2.5 mm	ISO 2589
2.	Abrasion resistance	Cat 1: 350 mm ³ Cat 2: 400 mm ³ Cat 3: 450 mm ³	ISO 4649

Table 43: Rubber and synthetic sole material

Sl.	Property	Requirement	Method			
1.	Thickness	Cat 1: 4.0 mm Cat 2: 2.5 mm Cat 3: 2.5 mm	ISO 2589			
2.	Abrasion resistance	Maximum volume loss in mm ³ according to material and application	SO 4649			
				<i>Cat 1</i>	<i>Cat 2</i>	<i>Cat 3</i>
		Material		150	200	300
		Rubber		150	250	350
		TR		150	200	300
PUR	250	350	450			
Poro-achtigen						
3.	Resistance to repeated flexing	Maximum growth of the incision: Cat 1: 4 mm Cat 2: 6 mm Cat 3: 8 mm	EN 344 5.17			

Sl.	Property	Requirement	Method
4.	Hydrolysis resistance	The treated material must comply with the guidelines for the resistance to repeated flexing	ISO 5423 Annex c

Table 44: Shoe construction

Sl.	Property	Requirement	Method
1.	Bond of sole to upper	Adhesive strength	EN 344 5.1.3.2
		- Glue sole	
		- Stitched sole	Satra PM 92
		Cat 1: 500.000 flexes Cat 2: 400.000 flexes Cat 3: 250.000 flexes	

B.1.c. Product information

The following information should be visible on purchase and/or in the enclosures:

- That the footwear is sufficiently water proofed not to require further treatment (with closed footwear)
- That the shoe can be repaired. Repair is less damaging to the environment than disposal.

This requirement does not apply to safety footwear.

B.1.d. Additional requirements

If the shoes are packaged they should be packed in a cardboard box consisting of no less than 80% recycled paper.

Fur and leather made from the skin of animals specially bred for their skin may not be used in the footwear.

Individual company environmental logos are not permitted. Otherwise, the following requirement applies: compliance with the Environmental Advertising Code, especially article 7.

B.1.e. Quality control

Control research is carried out once a year. Other inspections will be conducted if complaints provide sufficient reason for it.

B.1.f. Clarification

"Declaration of the manufacturer" refers to a technical dossier containing information about design, construction, materials' specifications, laboratory research (preferably conducted by a third party), certificates from suppliers etc., and/or by means of an annual report/book-keeping and/or other administrative documents that they meet the demands laid down.

Certification and inspection will be carried out on the basis that both the producer of the material and the shoe manufacturer have a good environmental protection system or quality assurance system. A protection system conforming to the ISO-9000 series or an inspection based on a report of an ISO-9000 series (or comparable) certified independent research institute is preferred here.

Whether or not an on-site inspection is necessary is left to the discretion of the certification institution. This will involve spot checks and will occur in case of doubt.

B.2. Stichting Milieukeur for furniture

The environmental and functional requirements for certification leather used in the production of furniture are provided in the following tables. The requirements of other materials are not provided here.

B.2.a. Environmental requirements for leather used in furniture

Table 45

Sl.	Environmental aspect	Requirement	Method
1.	Chrome emission	Chrome emission to water for tanning 0.33 g Cr/kg leather	Statement by the producer, signed by the (Managing) Director
2.	Finish	The leather must be provided with a finish on a water basis	Statement by the producer, signed by the (Managing) Director
3.	Colours	No benzidine analogous colours may be added to the leather	Statement by the producer, signed by the (Managing) Director
4.	Heavy metals	Colours, pigments and additives (with the exception of chrome salt for tanning) which result in arsenic, cadmium, chrome, copper, mercury and lead concentration in the leather exceeding the BAGA limit, are not permitted	Statement by the producer, signed by the (Managing) Director

B.2.b. Functional requirement of leather in furniture

Table 46

Sl.	Functional aspect	Requirement	Method
1.	Quality of leather covering Durability:		
	Rub resistancy	No stain forming	IUF 450 - dry felt: 500 rubbing movements - wet felt: 200 rubbing movements - wet felt moisten with: artificial sweat solution: 100 rubbing movements (ILS-F9 and IUF 450: after repeated stretching to 30%, 100 rubbing movements with wet felt)
		Colour change: > 3-4	Grey scale IUF 132
		Damage > 4	ILS-F64
		Difference in colour > 4	Grey scale IUF 131
	Resistance to repeated folding nappa leather	Finish or scumble: > 4	ILS-F65
	Colour fastness	> 3	ISO 105 B02 of IUF 402
	Resistance of leather to repeated stretching	Finish, scumble, fibre: >4	ILS-F65
	Stitching finish nappa leather	a) full fibre: > 2.0 N/cm b) slit with coating: > 5.0 N/cm	IUF 470 IUF 470
	Resistance at tear site of leather (nappa)	> 50 N	ISO 9290 or IUP 8

B.2.c. Quality control

The frequency of quality control is once a year. An interim check will take place when complaints give rise to this.

The statements can be tested before the eco-label is granted by means of a company inspection. After granting of the eco-label, inspections will be conducted within the scope of the control for the assessment of the company statement.

One piece of furniture must be offered to undergo the full series of tests, unless the certification institute has sufficient independently substantiated information by means of reports and documents that test results of the full series of tests are available.

The certification institute will determine by means of reports and documents if samples of deviating parts of the piece of furniture are to be offered for testing. Eco-label can be granted to a collection if all the requirements are met.

Notes:

"Statement by the producer" means that the manufacturer concerned has to be able to show by means of a technical document, where files on the design, construction, specifications of materials, laboratory research (preferable by third parties), certificates of suppliers etc., and/or by means of an annual report, accounting and/or other administrative documents to a certification institute that they meet the specific requirements.

"Besluit Aanwijzing Gevaarlijke Afvalstoffen" (BAGA) (Dangerous Substances Designation Decision) concerns the latest current version of this guideline.

QUALITY SPECIFICATIONS FOR LEATHER

Though the fashion design and aesthetic properties of leather are more important, there are certain quality standards for different types of leathers. These quality standards correspond to the functional properties of the end product. Generally, however, the functional properties are acceptable to buyers based on mutual agreement between the buyer and the seller.

The quality parameters vary widely depending on the various factors, to name a few, quality and type of raw material, quality of water, quality of chemicals added in processing, performance of machineries, technical skill of personnel, availability of testing and lab facilities, service from suppliers, etc.

As an example, the quality specifications as per GERIC-EURIS guidelines to major type of finished leathers, namely shoe upper, garment leather, and waterproof leather are provided in the following tables.

3.1 Upper leather

Table 47

Parameter	Standard	Value
Distention of grain	ISO 3379, IUP 9	Min 7.00 mm
Tearing load	ISO 3377, IUP 8	Min 35 N for lined footwear and min 50 N for unlined footwear
Temperature resistance	IUF 458	Min 80°C
Finish adhesion	IUF 470, ISO 11644	Slightly corrected grain leather: Dry min 3.0 N/cm, wet min 2.0 N/cm, corrected grain leather: dry min 5.0 N/cm wet min 3.0 N/cm
Flexing endurance	IUP 20	Dry min 50,000 flex, wet min 10,000 flex
Rub fastness	IUF 450, ISO 11640	Min 50 motion
Water vapour absorption	After 8 hours	10 mg/cm ²
On request		
Tensile strength	ISO 3376, IUP 6	Min 150 N abs.
Elongation at break		Not under 40%

3.2 Garment leather

Table 48

Parameter	Standard	Value	
		Nappa leathers	Suede, nubuck and nappa aniline
Light fastness	IUF 402	Min 4	Min 3
Rub fastness	IUF 450	Dry 50 motions Wet 20 motions	Dry 20 motions Wet 10 motions
Flexing endurance	IUP 20	Min 50,000 flx	Nappa effect: 20,000 flx
Finish adhesion	IUF 470	Min 2 N/cm	Not applicable
Tear resistance	Slit tear	Min 200 N/cm	Min 150 N/cm
Water penetration	IUF 420	Min 10 minutes	Min 5 minutes
pH of aqueous extract	IUC 11	Not below 3.5	Not below 3.5
Tensile strength	IUP 6	Min 1200 N/cm ²	Min 1200 N/cm ²

3.3 Waterproof leather

Table 49

Parameter	Standard	Value
Tensile strength	IUP 6	30 N/mm ²
Stitch tear	DIN 53333	120 N/mm
Tearing load	IUP 8	40 N/mm
Water absorption	IUP7	
After 2 h		Max 30%
After 24 h		Max 45%
Water vapour permeability	IUP 15	200 mg/cm ² /h
Mineral solubles	IUC 6	Max 2%
Chromium oxide (Cr ₂ O ₃)	IUC 8	Min 2.5%
Fat	IUC 4	8 to 15%
pH of aqueous extract	IUC 11	Not below 3.5, below 4.0, difference figure max 0.7

TEST METHODS

4.1 International Organization for Standardization (ISO)

The International Organization for Standardization (ISO) is the world's leading developer of international standards. ISO standards specify the requirements for state-of-the-art products, services, processes, materials and systems, and for good conformity assessment, managerial and organizational practice. ISO standards are designed to be implemented worldwide¹³.

ISO is a network of the national standards institutes of 157 countries, on the basis of one member per country, with a Central Secretariat in Geneva, Switzerland, that coordinates the system.

ISO is a non-governmental organization: Its members are not, as is the case in the United Nations system, delegations of national governments. Nevertheless, ISO occupies a special position between the public and private sectors. This is because, on the one hand, many of its member institutes are part of the governmental structure of their countries, or are mandated by their government. On the other hand, other members have their roots uniquely in the private sector, having been set up by national partnerships of industry associations.

Therefore, the ISO is able to act as a bridging organization in which a consensus can be reached on solutions that meet both the requirements of business and the broader needs of society, such as the needs of stakeholder groups like consumers and users¹⁴.

The standards published by International Organization for Standards for footwear¹⁵ are provided below:

Table 50

S.No.	Reference number	Title of the standard
1.	ISO 5403:2002	Leather -- Physical and mechanical tests -- Determination of water resistance of flexible leather
2.	ISO 9407:1991	Shoe sizes -- Mondopoint system of sizing and marking
3.	ISO 9986:1990	Composition cork for shoe outsoles
4.	ISO 17693:2004	Footwear -- Test methods for uppers -- Resistance to damage on lasting
5.	ISO 17694:2003	Footwear -- Test methods for uppers and lining -- Flex resistance
6.	ISO 17695:2004	Footwear -- Test methods for uppers -- Deformability
7.	ISO 17696:2004	Footwear -- Test methods for uppers, linings and insoles -- Tear strength
8.	ISO 17697:2003	Footwear -- Test methods for uppers, lining and insoles -- Seam strength
9.	ISO 17698:2003	Footwear -- Test methods for uppers -- Delamination resistance
10.	ISO 17699:2003	Footwear -- Test methods for uppers and lining -- Water vapour permeability and absorption
11.	ISO 17700:2004	Footwear -- Test methods for uppers, linings and insoles -- Colour fastness to rubbing
12.	ISO 17701:2003	Footwear -- Test methods for uppers, lining and insoles -- Colour migration
13.	ISO 17702:2003	Footwear -- Test methods for uppers -- Water resistance
14.	ISO 17703:2003	Footwear -- Test methods for uppers -- High temperature behaviour
15.	ISO 17704:2004	Footwear -- Test methods for uppers, linings and insoles -- Abrasion resistance
16.	ISO 17705:2003	Footwear -- Test methods for uppers, lining and insoles -- Thermal insulation
17.	ISO 17706:2003	Footwear -- Test methods for uppers -- Tensile strength and elongation
18.	ISO 17707:2005	Footwear -- Test methods for outsoles -- Flex resistance
19.	ISO 17708:2003	Footwear -- Test methods for whole shoe -- Upper sole adhesion
20.	ISO 17709:2004	Footwear -- Sampling location, preparation and duration of conditioning of samples and test pieces

21.	ISO 18454:2001	Footwear -- Standard atmospheres for conditioning and testing of footwear and components for footwear
22.	ISO 18895:2006	Footwear -- Test methods for shanks -- Fatigue resistance
23.	ISO 18896:2006	Footwear -- Test methods for shanks -- Longitudinal stiffness
24.	ISO 19952:2005	Footwear -- Vocabulary
25.	ISO 19953:2004	Footwear -- Test methods for heels -- Resistance to lateral impact
26.	ISO 19954:2003	Footwear -- Test methods for whole shoe -- Washability in a domestic washing machine
27.	ISO 19956:2004	Footwear -- Test methods for heels -- Fatigue resistance
28.	ISO 19957:2004	Footwear -- Test methods for heels -- Heel pin holding strength
29.	ISO 19958:2004	Footwear -- Test methods for heels and top pieces -- Top piece retention strength
30.	ISO 20863:2004	Footwear -- Test methods for stiffeners and toepuffs -- Bondability
31.	ISO 20864:2004	Footwear -- Test methods for stiffeners and toepuffs -- Mechanical characteristics
32.	ISO 20865:2002	Footwear -- Test methods for outsoles -- Compression energy
33.	ISO 20866:2001	Footwear -- Test methods for insoles -- Delamination resistance
34.	ISO 20867:2001	Footwear -- Test methods for insoles -- Heel pin holding strength
35.	ISO 20868:2001	Footwear -- Test methods for insoles -- Abrasion resistance
36.	ISO 20869:2001	Footwear -- Test methods for outsoles, insoles, lining and insoles -- Water soluble content
37.	ISO 20870:2001	Footwear -- Ageing conditioning
38.	ISO 20871:2001	Footwear -- Test methods for outsoles -- Abrasion resistance
39.	ISO 20872:2001	Footwear -- Test methods for outsoles -- Tear strength
40.	ISO 20873:2001	Footwear -- Test methods for outsoles -- Dimensional stability
41.	ISO 20874:2001	Footwear -- Test methods for outsoles -- Needle tear strength
42.	ISO 20875:2001	Footwear -- Test methods for outsoles -- Determination of split tear strength and delamination resistance
43.	ISO 20876:2001	Footwear -- Test methods for insoles -- Resistance to stitch tear
44.	ISO 20877:2001	Footwear -- Test methods for whole shoe -- Thermal insulation
45.	ISO 22649:2003	Footwear -- Test methods for insoles and insoles -- Water absorption and desorption
46.	ISO 22650:2002	Footwear -- Test methods for whole shoe -- Heel attachment
47.	ISO 22651:2002	Footwear -- Test methods for insoles -- Dimensional stability
48.	ISO 22652:2002	Footwear -- Test methods for insoles, lining and insoles -- Perspiration resistance
49.	ISO 22653:2003	Footwear -- Test methods for lining and insoles -- Static friction
50.	ISO 22654:2002	Footwear -- Test methods for outsoles -- Tensile strength and elongation
51.	ISO 22774:2004	Footwear -- Test methods for accessories: shoe laces -- Abrasion resistance
52.	ISO 22775:2004	Footwear -- Test methods for accessories: Metallic accessories -- Corrosion resistance
53.	ISO 22776:2004	Footwear -- Test methods for accessories: Touch and close fasteners -- Shear strength before and after repeated closing
54.	ISO 22777:2004	Footwear -- Test methods for accessories: Touch and close fasteners -- Peel strength before and after repeated closing

¹³ http://www.iso.org/iso/en/prods-services/otherpubs/pdf/iso/brief_2006-en.pdf

¹⁴ <http://www.iso.org/iso/en/aboutiso/introduction/index.html>

¹⁵ <http://www.iso.org/iso/en/CatalogueListPage.CatalogueList?ICS1=61&ICS2=060&ICS3=&scopelist=>

4.2 European Committee for Standardization

European Committee for Standardization (Comité Européen de Normalisation, CEN) was founded in 1961 by the national standards bodies in the European Economic Community and EFTA countries. Now CEN is contributing to the objectives of the European Union and European Economic Area with voluntary technical standards which promote free trade, the safety of workers and consumers, interoperability of networks, environmental protection, exploitation of research and development programmes, and public procurement¹⁶.

The test methods for footwear published by CEN¹⁷ are provided below:

Table 51

Sl.	Reference number	Document title	CEN publication date
1.	EN 12044:2005	Footwear, leather and imitation leather goods manufacturing machines - Cutting and punching machines - Safety requirements	2005-08-24
2.	EN 12222:1997	Footwear - Standard atmospheres for conditioning and testing of footwear and components for footwear	1997-06-18
3.	EN 12387:2005	Footwear, leather and imitation leather goods manufacturing machines - Modular shoe repair equipment - Safety requirements	2005-02-09
4.	EN 12653:1999	Footwear, leather and imitation leather manufacturing machines - Nailing machines - Safety requirements	1999-10-20
5.	EN 12743:1999	Footwear - Test methods for outsoles - Compression energy	1999-09-22
6.	EN 12744:1999	Footwear - Test methods for insoles - Delamination resistance	1999-09-22
7.	EN 12745:1999	Footwear - Test methods for insoles - Heel pin holding strength	1999-09-22
8.	EN 12746:2000	Footwear - Test methods for insoles and insoles - Water absorption and desorption	2000-03-22
9.	EN 12747:1999	Footwear - Test methods for insoles - Abrasion resistance	1999-09-22
10.	EN 12748:1999	Footwear - Test methods for outsoles, insoles, lining and insoles - Water soluble content	1999-09-22
11.	EN 12749:1999	Footwear - Ageing conditioning	1999-09-22
12.	EN 12770:1999	Footwear - Test methods for outsoles - Abrasion resistance	1999-12-08
13.	EN 12771:1999	Footwear - Test methods for outsoles - Tear strength	1999-12-08
14.	EN 12772:1999	Footwear - Test methods for outsoles - Dimensional stability	1999-11-17
15.	EN 12773:1999	Footwear - Test methods for outsoles - Needle tear strength	1999-11-17
16.	EN 12774:1999	Footwear - Test methods for outsoles - Determination of split tear strength and delamination resistance	1999-12-08
17.	EN 12782:1999	Footwear - Test methods for insoles - Resistance to stitch tear	1999-12-08
18.	EN 12784:1999	Footwear - Test methods for whole shoe - Thermal insulation	1999-12-08
19.	EN 12785:2000	Footwear - Test methods for whole shoe - Heel attachment	2000-02-16

¹⁶ <http://www.cenorm.be/CENORM/aboutus/index.asp>

¹⁷ <http://www.cenorm.be/catweb/61.060.htm> and <http://www.cenorm.be/CENORM/BusinessDomains/TechnicalCommitteesWorkshops/CENTechnicalCommittees/Standards.asp?param=6290&title=CEN%2FTC+309>

20.	EN 12800:2000	Footwear - Test methods for insoles - Dimensional stability	2000-02-16
21.	EN 12801:2000	Footwear - Test methods for insoles, lining and insoles - Perspiration resistance	2000-02-16
22.	EN 12803:2000	Footwear - Test methods for outsoles - Tensile strength and elongation	2000-02-16
23.	EN 12826:2000	Footwear - Test methods for lining and insoles - Static friction	2000-03-22
24.	EN 12940:2004	Footwear manufacturing wastes - Waste classification and management	2004-08-18
25.	EN 12958:2000	Footwear - Test methods for shanks - Fatigue resistance	2000-02-16
26.	EN 12959:2000	Footwear - Test methods for shanks - Longitudinal stiffness	2000-02-16
27.	EN 13073:2001	Footwear - Test methods for whole shoe - Water resistance	2001-01-24
28.	EN 13400:2001	Footwear - Sampling location, preparation and duration of conditioning of samples and test pieces	2001-11-14
29.	EN 13457:2004	Footwear, leather and imitation leather goods manufacturing machines - Splitting, skiving, cutting, cementing and cement drying machines - Safety requirements	2004-10-06
30.	EN 13512:2001	Footwear - Test methods for uppers and lining - Flex resistance	2001-11-21
31.	EN 13514:2001	Footwear - Test methods for uppers - Delamination resistance	2001-11-21
32.	EN 13515:2001	Footwear - Test methods for uppers and lining - Water vapour permeability and absorption	2001-12-12
33.	EN 13517:2001	Footwear - Test methods for uppers, lining and insoles - Colour migration	2001-11-21
34.	EN 13518:2001	Footwear - Test methods for uppers - Water resistance	2001-12-12
35.	EN 13519:2001	Footwear - Test methods for uppers - High temperature behaviour	2001-11-21
36.	EN 13520:2001	Footwear - Test methods for uppers, lining and insoles - Abrasion resistance	2001-12-12
37.	EN 13521:2001	Footwear - Test methods for uppers, lining and insoles - Thermal insulation	2001-11-21
38.	EN 13522:2001	Footwear - Test methods for uppers - Tensile strength and elongation	2001-12-12
39.	EN 13571:2001	Footwear - Test methods for uppers, lining and insoles - Tear strength	2001-11-21
40.	EN 13572:2001	Footwear - Test methods for uppers, lining and insoles - Seam strength	2001-11-21
41.	EN 1391:1998	Adhesives for leather and footwear materials - A method for evaluating the bondability of materials - Minimum requirements and material classification	1998-02-18
42.	EN 1392:2006	Adhesives for leather and footwear materials - Solvent-based and dispersion adhesives - Testing of bond strength under specified conditions	2006-05-17
43.	EN 14602:2004	Footwear - Test methods for the assessment of ecological criteria	2004-11-03

44.	EN 1845:1998	Footwear manufacturing machines - Footwear moulding machines - Safety requirements	1998-07-22
45.	EN 522:1998	Adhesives for leather and footwear materials - Bond strength - Minimum requirements and adhesive classification	1998-02-18
46.	EN 930:1997	Footwear, leather and imitation leather goods manufacturing machines - Roughing, scouring, polishing and trimming machines - Safety requirements	1997-08-20
47.	EN 931:1997	Footwear manufacturing machines - Lasting machines - Safety requirements	1997-08-20
48.	EN ISO 17693:2005	Footwear - Test methods for uppers - Resistance to damage on lasting (ISO 17693:2004)	2005-09-28
49.	EN ISO 17695:2005	Footwear - Test methods for uppers - Deformability (ISO 17695:2004)	2005-09-28
50.	EN ISO 17700:2005	Footwear - Test methods for uppers, linings and insoles - Colour fastness to rubbing (ISO 17700:2004)	2005-09-28
51.	EN ISO 17707:2005	Footwear - Test methods for outsoles - Flex resistance (ISO 17707:2005)	2005-07-01
52.	EN ISO 17708:2003	Footwear - Test methods for whole shoe - Upper sole adhesion (ISO 17708:2003)	2003-07-01
53.	EN ISO 19952:2005	Footwear - Vocabulary (ISO 19952:2005)	2005-06-01
54.	EN ISO 19953:2004	Footwear - Test methods for heels - Resistance to lateral impact (ISO 19953:2004)	2004-07-15
55.	EN ISO 19954:2003	Footwear - Test methods for whole shoe - Washability in a domestic washing machine (ISO 19954:2003)	2003-10-01
56.	EN ISO 19956:2004	Footwear - Test methods for heels - Fatigue resistance (ISO 19956:2004)	2004-09-15
57.	EN ISO 19957:2004	Footwear - Test methods for heels - Heel pin holding strength (ISO 19957:2004)	2004-09-15
58.	EN ISO 19958:2004	Footwear - Test methods for heels and top pieces - Top piece retention strength (ISO 19958:2004)	2004-09-15
59.	EN ISO 20863:2004	Footwear - Test method for stiffeners and toepuffs - Bondability (ISO 20863:2004)	2004-12-01
60.	EN ISO 20864:2004	Footwear - Test methods for stiffeners and toepuffs - Mechanical characteristics (ISO 20864:2004)	2004-12-01
61.	EN ISO 22774:2004	Footwear - Test methods for accessories: shoe laces - Abrasion resistance (ISO 22774:2004)	2004-12-01
62.	EN ISO 22775:2004	Footwear - Test methods for accessories: Metallic accessories - Corrosion resistance (ISO 22775:2004)	2004-12-01
63.	EN ISO 22776:2004	Footwear - Test methods for accessories: Touch and close fasteners - Shear strength before and after repeated closing (ISO 22776:2004)	2004-12-15
64.	EN ISO 22777:2004	Footwear - Test methods for accessories: touch and close fasteners - Peel strength before and after repeated closing (ISO 22777:2004)	2004-12-15

The test method for leather published by CEN¹⁸ is EN 14327:2003
Leather - Physical and mechanical tests - Determination of abrasion resistance of automotive leather published on 2003-12-17.

¹⁸ <http://www.cenorm.be/catweb/59.140.35.htm>

4.3 IULTCS methods

The International Union of Leather Technologists and Chemists Societies (IULTCS), apart from providing a major forum for scientific debate on the leather industry worldwide, through the IULTCS Testing Commissions, provides properly formulated test methods that are totally relevant to leather manufacture and leather usage. Without the work of the IU Commissions which develop these test methods, the leather industry would be open to spurious test methods devised by outside manufacturers trying to force performance standards on leather which bear no relationship to the reality of working with leather.

The IULTCS test methods are recognised by the International Organisation for Standardization (ISO) and many of the IU methods are adopted by the ISO as international standards. Equally, the European Committee for Standardisation (Comite Europeen de Normalisation - CEN) has adopted many of the IU methods in parallel agreement with the ISO. These CEN test methods are mandatory in EU member countries. Consequently, the work of the IU Commissions has led to leather test methods that are now adopted as international, European and national standards. End users of leather are continually being persuaded that only official leather test methods (IU/ISO/CEN) can be used to judge the standards, characteristics and performance of leather.

Complete list of the IULTCS Official Methods together with the reference numbers for the equivalent ISO and European Norm (EN) methods is provided in the following tables. The procedures are available for price with an application from IULTCS¹⁹.

4.3.1. IULTCS - Chemical test methods

Table 52

IU No.	Method Name	ISO No.	EN No.
IUC 1	General comments	-	-
IUC 2	Sampling	-	-
IUC 3	Preparation of test material by grinding	ISO 4044:1998	EN ISO 4044
IUC 4	Determination of substances (fats and other solubles) soluble in Dichloromethane.	ISO 4048:1998	EN ISO 4048
IUC 5	Determination of volatile matter.	ISO PWI 4684	prEN ISO 14676
IUC 6	Determination of water soluble matter, water soluble inorganic matter and water soluble organic matter.	ISO PWI 4098	prEN ISO 14657
IUC 7	Determination of sulphated total ash and sulphated water insoluble ash	ISO 4047:1998	EN ISO 4047
Draft IUC 8	Determination of chromic oxide Part 1 Det. by titration Part 2 Det. by photometry Part 3 Det. by atomic absorption Part 4 Det. by inductively coupled plasma	ISO PWI 5398	prEN ISO 13633
IUC 9	Determination of water soluble magnesium salts	ISO 5399:1998	EN ISO 5399
IUC 10	Determination of Nitrogen and hide substance	ISO 5397:1984	-
IUC 11	Determination of pH and difference figure	ISO 4045:1998	EN ISO 4045
IUC 13	Determination of zirconium	-	-
IUC 15	Determination of Phosphorus	-	-
IUC 16	Determination of Aluminium	ISO 3380:1975	-
IUC 17	Determination of hydroxyproline in materials containing collagen	-	-

¹⁹ http://www.iultcs.org/iultcs_methods.asp

IUC 18	Photometric Determination of chromium (VI) using 1, 5 - Diphenylcarbazine	-	CEN TS 14495:2003
IUC 19	Determination of formaldehyde content of leather	ISO TS 17226:2003	CEN ISO TS 17226
IUC 20	Method for the detection of certain azocolourants in dyed leather	ISO TS 17234:2003	CEN ISO TS 17234
IUC 21	Method for the detection of certain azo colourants in dyestuff mixtures.	-	-
IUC 22	Determination of aluminium oxide content of aluminium tanning agents	-	-
IUC 24	Determination of basicity of aluminium tanning agents.	-	-
IUC 25	Determination of pentachlorophenol content	-	CEN TS 14494:2003

4.3.2. IULTCS - Physical test methods

Table 53

IU No.	Method name	ISO No.	EN No.
IUP 1	General remarks	ISO 2419:2002	EN ISO 2419
IUP 2	Sampling	ISO 2418:2002	EN ISO 2418
IUP 3	Conditioning	ISO 2419:2002	EN ISO 2419
IUP 4	Measurement of thickness	ISO 2598:2002	EN ISO 2589
IUP 5	Measurement of apparent density	ISO 2420:2002	EN ISO 2420
IUP 6	Measurement of tensile strength and percentage elongation	ISO 3376:2002	EN ISO 3376
IUP 7	Measurement of static absorption of water	ISO 2417:2002	EN ISO 2417
IUP 8	Measurement of tear load - Double edge tear	ISO 3377 (2): 2002	EN ISO 3377-2
IUP 9	Measurement of distension and strength of grain by the Ball Burst Test	ISO 3379:1976	-
IUP 10	Water resistance of flexible leather	ISO 5403:2002	EN ISO 5403
IUP 11	Measurement of water resistance of heavy leather	ISO 5404:2002	EN ISO 5404
IUP 12	Measurement of resistance to grain cracking and the grain crack index	ISO 3378:2002	EN ISO 3378
IUP 13	Measurement of two dimensional extension	-	-
IUP 14	Measurement of how water proof gloving leathers are	-	-
IUP 15	Measurement of water vapour permeability	ISO 14268:2002	EN ISO 14268
IUP 16	Measurement of shrinkage temperature up to 100°C	ISO 3380:2002	EN ISO 3380
IUP 17	Assessment of the resistance of air dry insole leathers to heat	-	-
IUP 18	Resistance of air dry lining leathers to heat	-	-
IUP 19	Resistance of air dry upper leather to heat	-	-

IUP 20	Measurement of flex resistance by flexometer method	ISO 5402:2002	EN ISO 5402
IUP 21	Measurement of set in lasting	-	-
IUP 22	Assessment of scuff damage by use of the viewing box	-	-
IUP 23	Measurement of scuff damage	-	-
IUP 24	Measurement of surface shrinkage by immersion in boiling water	-	-
IUP 26	Measurement of resistance to abrasion of heavy leather	-	-
IUP 28	Measurement of the resistance to bending of heavy leather	-	-
IUP 29	Measurement of cold crack temperature of surface coatings	ISO 17233:2002	EN ISO 17233
IUP 30	Measurement of water vapour absorption and desorption (See IUP 42)	-	-
IUP 32	Measurement of area	ISO 11646:1993	EN ISO 11646
IUP 35	Measurement of dry heat resistance of leather	ISO 17227:2002	EN ISO 17227
IUP 36	Measurement of leather softness	ISO 17235:2002	EN ISO 17235
IUP 37	Measurement of water repellency of garment leather	ISO PWI 17231	prEN14340
IUP 38	Measurement of heat resistance of patent leather	-	EN 13540:2002
IUP 39	Measurement of flex resistance by the vamp flex method	-	EN 13335:2002
IUP 40	Measurement of tear load - Single edge tear	ISO 3377 (1):2002	EN ISO 3377-1
IUP 41	Measurement of surface coating thickness	ISO 17186:2002	EN ISO 17186
IUP 42	Measurement of water vapour absorption	ISO 17229:2002	EN ISO 17229
IUP 43	Measurement of extension set	ISO 17236:2002	EN ISO 17236
IUP 44	Measurement of stitch tear resistance	-	-
IUP 45	Measurement of water penetration pressure	ISO PWI 17320	prEN 14289
IUP 46	Measurement of fogging characteristics	-	prEN 14288
IUP 47	Measurement of resistance to horizontal spread of flame	-	prEN 14326
IUP 48	Measurement of abrasion resistance of upholstery leather	-	prEN 14327
Draft IUP 49	Measurement of bagginess	-	prEN 14689
Draft IUP 50	Measurement of soiling	-	prEN 14690
IUP 51	Measurement of Surface Friction	-	-
IUP 52	Measurement of Compressibility	-	-
Draft IUP 53	Determination of soiling for automotive leather	To be issued	To be issued

4.3.3. IULTCS – Fastness test methods

Table 54

IU No.	Method name	ISO No.	EN No.
IUF 105	Numbering code for fastness tests	-	-
IUF 120	General principles of colour fastness testing of leather	*ISO 105-A01	*EN ISO 105-A01
IUF 131	Grey scale for assessing change in colour	*ISO 105-A02	*EN ISO 105-A02
IUF 132	Grey scale for assessing staining	*ISO 105-A03	*EN ISO 105-A03
IUF 151	Preparation of storable standard chrome grain leather for dyeing	-	-
IUF 201	Approximate determination of the solubility of leather dyes	-	-
IUF 202	Fastness to acid of dye solutions	-	-
IUF 203	Stability to acid of dye solutions	-	-
IUF 205	Stability to hardness of dye solutions	-	-
IUF 401	Colour fastness of leather to light: Daylight	*ISO 105-B01	*EN ISO 105-B01
IUF 402	Colour fastness of leather to light: Xenon lamp	*ISO 105-B02	*EN ISO 105-B02
IUF 412	Leather - Fastness tests - Change of colour with accelerated ageing.	ISO 17228:2005	EN ISO 17228
IUF 420	Colour fastness of leather to water spotting	ISO 15700:1998	EN ISO 15700
IUF 421	Colour fastness of leather to water	ISO 11642:1998	EN ISO 11642
IUF 423	Leather - Fastness tests - Mild washing	ISO 15703:1998	EN ISO 15703
IUF 426	Colour fastness of leather to perspiration	ISO 11641:1993	EN ISO 11641
IUF 434	Leather - Fastness tests - Colour fastness of small samples to dry-cleaning solutions	ISO 11643:1993	EN ISO 11643
IUF 435	Leather - Fastness tests - Machine washing	ISO 15702:1998	EN ISO 15702
IUF 441	Colour fastness in respect of staining raw crepe rubber	-	-
IUF 442	Colour fastness in respect of staining plasticised poly vinyl chloride	ISO 15701:1998	EN ISO 15701
IUF 450	Colour fastness of leather to rubbing	ISO 11640:1993	EN ISO 11640
IUF 452	Leather - Tests for colour fastness - Colour fastness to crocking	ISO 20433:2005	-
IUF 454	Fastness to buffing of dyed leather	-	-
IUF 458	Colour fastness of leather to ironing	-	-
IUF 470	Leather - Test for adhesion of finish	ISO 11644:1998	EN ISO 11644

* Nearest equivalent textile test method

5.1 Business for Social Responsibility

Business for Social Responsibility (BSR) is a global organization that helps member companies achieve success in ways that respect ethical values, people, communities and the environment. BSR provides information, tools, training and advisory services to make Corporate Social Responsibility an integral part of business operations and strategies. A non-profit organization, BSR promotes cross-sector collaboration and contributes to global efforts to advance the field of corporate social responsibility.

The BSR regularly updates the Restricted Substances List (RSL). The most recent document may be seen at www.bsr.org/rsl.

5.1.1 Requirements with respect to product specifications - Voluntary schemes

"Eco-Labeling" is a voluntary method of environmental performance certification and labelling that is practiced around the world. An "eco-label" is a label which identifies overall environmental preference of a product or service within a specific product/service category based on life cycle considerations. In contrast to "green" symbols or claim statements developed by manufacturers and service providers, an ecolabel is awarded by an impartial third-party in relation to certain products or services that are independently determined to meet environmental leadership criteria. Eco-Labels are either product specific, or both product and process specific.

5.2 International standards for Eco - Labelling schemes

1. In EC, there is a regulation EC No.1980/2000 of the European Parliament and of the Council of 17 July 2000 to govern the award of European Community Eco-Label.
2. ISO has developed four standards for environmental labels and declarations. The environmental labels and declarations are defined simply as claims which indicate the environmental aspects of a product or service.

The standard ISO 14020 comprises general principles for environmental declarations, formulated as a series of statements with matching "specific considerations".

ISO 14024, 14021, and 14025 define, and set norms for, three different types of environmental declarations:

Type I (ISO 14024)

An independent third party formulates environmental requirements for a group of goods or services and awards a label, a symbol or something similar, provided that the product in question complies with the requirements laid down. Compliance has to be verified by an independent third party. The classic eco-labelling schemes (Nos. 2, 4, 5, 6, 7, 9, 10, 11 and 12 in Table 12) belong to this category. (Strictly speaking, schemes Nos. 3 and 8 are not environmental declarations, but relate solely to consumer safety).

Type II (ISO 14021)

Self-declaration of environmental assertions put forward by the supplier of the product without third-party verification. The claims must be substantiated and consequently applied if commercial customers or consumers are to trust them. The ICT Eco-Tox scheme (No. 1 in table 12) is an example of this type of declaration.

Type III (ISO 14025)

Declaration, verified by an independent third party, for a product, within categories of parameters determined in advance and based on life-cycle assessments according to the ISO 14040 series of standards. The declaration may also contain additional environmental information. This type of declaration involves procuring a large volume of data and is normally too complicated for small and medium enterprises.

Even in Scandinavian countries, the EU and the Nordic Swan labels will continue to prevail for the time being, since type III declarations are considered too complicated for general use.

International standardisation of eco-labelling schemes according to ISO standards is important if the creation of technical barriers to trade is to be avoided. Moreover, the aim should be to co-ordinate eco-labelling schemes for individual product groups at the international level, and to phase out those schemes that are only valid at the local or national levels.

For further information and elaboration on eco-labelling strategies, issues and practices, consult the following references: <http://www.gen.gr.jp/publications.html>

Apart from the above legislations many voluntary eco-labelling schemes have been developed by organizations in many developed as well as developing countries. In the recent years there have been rapid developments. International Organization for Standardization (ISO) has developed standards for environmental labels and declarations. Twelve eco-labelling schemes relating to leather and/or leather products are given in Table 12. Of these, three entered into force in 1999 and a further five in 2000. More schemes are under preparation.

Table 55: Eco-Labelling schemes for Leather and Leather products

Sl.	Country	Organization	Name	Most recent version	Products
1.	International	International Council of Tanners	Eco-Tox Label	1996	Leather
2.	Indonesia	BAPEDAL (Indonesian EPA)		1996	Sheep and goat skin, garment leather
3.	Germany	¹⁾	SG (Schadstoffgeprüft)	1997	Leather, fur and leather board
4.	Germany	Lederinstitut Gerberschule Reutlingen	Test Mark for Leather	1997	Leather and leather products
5.	International	European Union	Community Eco-label to Footwear	1999	Footwear
6.	Netherlands	Stichting Milieukeur	Certification Schedule Footwear	1999	Footwear
7.	Netherlands	Stichting Milieukeur	Certification Schedule Furniture	1999	Furniture
8.	International	TESTEX ²⁾	Öko-Tex Standard 100	2000	Leather and leather products
9.	Austria	Bundesministerium für umwelt, Jugend und Familie	Österreichisches Umweltzeichen	2000	Office furniture
10.	Brazil	Associação Brasileira de Normas Técnicas	Marca ABNT - Qualidade Ambiental	2000	Footwear
11.	Catalonia	Departament de Medi Ambient	Distintiu de garantia de qualitat ambiental ³⁾	2000	Leather products
12.	India	Central Pollution Control Board	Eco-mark Criteria for Finished Leather	2000	Leather

¹⁾ Prüf- und Schuhforschungsinstitut Pirmasens; TÜV Rheinland Sicherheit und Umweltschutz GmbH; Institut Fresenius

²⁾ International Association for Research and Testing in the Field of Textile Ecology

³⁾ Emblem of guarantee of environmental quality

5.2.1 Requirements of Eco-Labeling schemes

The scheme ICT Eco-Tox Label is based exclusively on self-declaration; all others involve certification by an independent third party. Three schemes aim at leather properties alone, whereas the remaining schemes also take into account into the ecological consequences of leather production, either by using specific criteria or by stating that production must comply with national environmental regulations - or by a combination of both. Functional requirements are included in eight schemes.

Table 56: Requirements of Eco-Labeling schemes

Sl.	Scheme	Leather properties	Requirement on Ecological consequences		Functional properties	Other requirements
			Presence of restricted substances	Compliance with national environmental regulations		
1.	Eco-Tox Label	No	Yes	Yes	No	Nil
2.	Indonesian Eco-label	Yes, along with test certificate	Yes, along with test certificate	Yes, along with test certificate	Yes, along with test certificate	Nil
3.	SG (Schadstoffplatt)	No	No	Yes	No	Nil (a limit free gluteraldehyde)
4.	Test Mark for Leather (LGR)	No.	Yes (testing in LGR)	Yes (testing in LGR)	Yes, (testing in LGR)	Nil
5.	Community Eco-label to Footwear	Yes	Yes	Yes	Yes	
6.	Certification Schedule Footwear	Yes (preferably third party testing)	Yes (preferably third party testing)	Yes (preferably third party testing)	Yes (preferably third party testing)	1. Fur and leather made specifically for footwear should not be used 2. Limit on energy consumption
7.	Certification Schedule Furniture	Yes (preferably third party testing)	No	Yes (preferably third party testing)	Yes (preferably third party testing)	
8.	Öko-Tex Standard 100	No	No	Yes	No	
9.	Österreichische Umweltzeichen			Yes		
10.	Ecomark Criteria for Finished Leather	No.	Yes	Yes	No.	

5.2.2 Concentration limits set in Eco-Labeling schemes for restricted substances

The concentration limits prescribed by the Eco-Labeling schemes for restricted substances is given in the table below.

Table 57: Concentration limits set in Eco-Labeling schemes for the restricted substances (All limits are expressed in mg/kg)

Sl.	Name	PCP	Certain arylamines from azo dyesuffs	Chrome VI	Formaldehyde	Cadmium, Cd
1.	ICT Eco-Tox Label	5	50	5	-	50
2.	SG	0.5	- ²	- ²	150/50 ¹	0.1
3.	LGR	5	- ²	- ²	200	-
4.	EU Ecolabel for footwear Öko-Tex	5 0.5 /	30 20	10 0.5	150 -	10 0.1
5.	Standard 100	0.05 ¹	30			
6.	Brazil, ABNT	5	30	3	300/75 ³ /20 ¹	-
7.	Catalonia	5	30	5	150	-
8.	India, Ecomark	5		3	200	

¹ For infants or children

² Below detection limit

³ For direct skin contact

Despite a great deal of publicity and literature on eco labels, this concept has not yet caught the fancy of the consumers at large. As a result, no significant premium is available to an eco-labelled product. No doubt in some highly environment conscious markets such as Denmark, there may be a little premium but overall the concept of eco-label is as yet before its time.

5.2.3 Test methods for the restricted substances

Specific test protocols have been prescribed for testing consumer goods for the presence of various restricted or banned items. A brief summary is provided in the table below.

Table 58: Test methods for the restricted substances

Sl.	Restricted substance	Detection limit	CEN reference (proposal)	ISO reference	IULTCS reference (Proposal)
1.	PCP	0.5 ppm	CEN TS 14494:2003	TS 14494	IUC 25
2.	Certain Azodyes	30 ppm per forbidden amines	CEN ISO TS 17234	ISO TS 17234 : 2003	IUC 20
3.	Formaldehyde	10 ppm	CEN ISO TS 17226	ISO TS 17226	IUC 19
4.	Chromium VI	3 ppm	CEN TS 14495:2003	TS 14495	IUC 18
5.	Nickel		EN 1811		

Sl.	Restricted substance	Detection limit	CEN reference (proposal)	ISO reference	IULTCS reference (Proposal)
6.	Arsenic, Cadmium and Lead	100 ppm for each metal	CEN TC 309 WI 065-4.3 (proposal)		
7.	Organotin compounds	Ethanol extraction and GC-MS or LC-MS			
8.	Specific flame retardants	Solvent extraction and analysis by GC-MS or LC-MS ²⁰			
9.	Phthalates	GC-MS or HPLC-DAD			

Note:

CEN: The European Committee for Standardization, was founded in 1961 by the national standards bodies in the European Economic Community and EFTA countries. Now CEN is contributing to the objectives of the European Union and European Economic Area with voluntary technical standards which promote free trade, the safety of workers and consumers, interoperability of networks, environmental protection, exploitation of research and development programmes and public procurement (source: www.cenorm.be)

ISO: International Organization for Standards (ISO), www.iso.org.

IULTCS: International Union of Leather Technologists, Chemists Societies, www.iultcs.org.

5.2.4 Azo dyes

The currently available analytical test method involves reductive cleavage of the azo bonds and identification of the primary aromatic amines formed. To be in compliance, testing of the article must not produce one or more of the listed aromatic amines in detectable concentrations, i.e. above 30 ppm of a listed amine in the article or the dyed parts thereof.

5.3 Social Standards And Trade

The entry of social accountability in the global trade lexicon has been greeted with enthusiasm by the developed countries and with concern by the developing countries. To begin with, many developing countries feared that the introduction of social accountability will eventually emerge as a "non-tariff" barrier. There are at the same time claims, from the buyers' side, that enhanced corporate social responsibility goes hand in hand with improved productivity and product quality, and thus leads to benefits for entrepreneurs, workers, the community at large and the environment. Irrespective of what view one subscribes to, in buyer-seller transactions, the buyer always has the upper hand.

²⁰ Business for social responsibility – May 2004

5.3.1 Mandatory requirements regarding social standards

In India, the social accountability, particularly towards workers, has been covered under various laws. The main laws and rules (www.lawmin.nic.in) and the particular aspect of social accountability dealt with by them may be seen in the table below.

Table 59: Laws relating to social accountability in industrial establishments

Sl.	Subject law/rules	Aspect of social accountability covered
1.	State Level Industrial Establishments Acts	These acts, applicable in different states, deal with the working conditions - number of hours of work, weekly holidays and other service related facilities to be provided to workers
2.	The Child Labour (Regulation and Prohibition) Act 1986	This law deals with the prohibition of employing children below specified age in industrial establishments and punishment for violation.
3.	Industrial Disputes Act, 1947	This law deals with basic rights of workers for joint action, procedures for negotiation between management and workers, dealing with situations when strikes/lockouts are declared, etc.
4.	The EPF and Miscellaneous Provisions Act, 1952	This law deals with contribution of employee/employer and government towards employees provident fund and its management.
5.	Minimum Wages Act, 1948	This law gives authority to state governments to fix minimum wages for different categories of workers and revision from time to time.
6.	The Maternity Benefit Act, 1961	This law deals with specific rights of women employees during maternity.
7.	Payment of Bonus Act, 1965	This law defines the compulsory minimum bonus to be given to the workers by industrial establishments.
8.	Payment of Gratuity Act, 1972	This law defines the gratuity eligible to an employee/worker and the rights of workers in this regard.
9.	Payment of Wages Act, 1972	The rights of workers relating to claiming of wages and penalties for violation are dealt with by this law.
10.	Factories Act, 1923	One of the oldest laws, it deals with the work environment to be maintained in a factory, occupational safety and health of workers.

11.	ESI Act, 1948	Employees State Insurance Act deals with insurance and medical facilities to be provided to employees towards a small contribution by them, the remainder being contributed by the employer and the state. Employees get treated in ESI hospitals set up in all major industrial clusters and cities.
12.	Contract Labour (Regulation & Abolition) Central Rules, 1971	These rules specifically deal with the working conditions of contract labour employed for specific work/projects.
13.	Industrial Disputes (Central) Rules, 1957	These rules specify the procedures for settlement of industrial disputes, it flows from the Industrial Disputes Act.
14.	Minimum Wages (Central) Rules, 1950	This flows from the Minimum Wages Act, prescribes the procedures for enforcement of minimum wages.
15.	Payment of Bonus Rules, 1975	These rules, flowing from the Payment of Bonus Act, prescribe the procedures for payment of bonus and penalty for defaulters.

5.3.2 Additional requirements on social conditions enforced by importers of branded products/departmental chains

The importers are satisfied if the supplier fully complies with all legal requirements of the supplier's country. However, owing to pressure from different stakeholders, many leading importers of particularly branded products or of large departmental chains demand that their suppliers conform not only to the local standards but also to their own codes of conduct.

As an example, the Marks & Spencer set up "Environmental, Chemical and Factory Minimum Standards for Dyeing, Printing and Finishing - Clothing and Textiles, September 2005" which is applicable to tanneries as well as textile units.
(http://www2.marksandspencer.com/thecompany/ourcommitmenttosociety/csr_reports/environmental_code_dyeing.pdf)

5.3.3 SA 8000 - Fundamental scope

SA 8000 is an international standard for improving working conditions around the world. It is based on the principles of thirteen international human rights conventions, ten of which are conventions of the International Labour Organisation (ILO). SA 8000 also draws from the Universal Declaration of Human Rights; the UN Convention on the Rights of the Child; and the UN Convention to Eliminate All Forms of Discrimination Against Women.

SA 8000 is voluntary in nature. However, all suppliers to leading brands/large departmental stores have to conform to SA 8000 to be able to easily get into their supplier list.

The SA 8000 standard is intended to help apply these norms to practical work-life situations. SA 8000 expands on the eight conventions of the ILO's Declaration of Fundamental Principles of Rights at Work - which covers child labour, forced labour, discrimination and free association and collective bargaining - to include standards on health and safety, working hours, wages and discipline. These eight core elements of SA 8000 are essential to enabling auditors to cross-check and verify compliance. All eight elements are interrelated and, to varying degrees, compliance with one is dependent on compliance with another. Finally, the management system requirements of SA 8000 move beyond a check list approach, encouraging managers to make sustainable

systemic changes in how they run their business²¹. The ILO's website: www.ilo.org gives latest updates on such similar international standards

5.3.4 Typical requirements and criteria of Codes of Conduct and Social Standards

Till date, there is no common standard code of conduct that fits every organisation or industrial sector's needs. But most codes contain about 85-90% of the same fundamental requirements. Based on an estimate of the Carl-Duisberg Gesellschaft, Germany (2000), there are more than 1000 codes of conduct in existence today.

The SA-8000 comes closest to being considered an international common standard intended to satisfy all types of organisations. SA8000 is a voluntary international standard for social accountability developed and supported by around 17 organisations, including amongst others Otto-Versand (Germany), Reebok International (USA), SGS-International Certification Services (Switzerland).

Table 60: Main aspects covered by SA 8000

Aspect	Criteria
Child labour	No engagement or the use of child labour; a minimum of 15 years (or 14 years under certain conditions) is to be followed unless the law stipulates higher age or mandatory schooling of young workers.
Forced labour	No engagement of forced labour whatsoever and no lodging of deposits or identity papers upon employment.
Health and safety	Safe and healthy working environment; risk prevention by minimising hazards, health and safety training, sanitary facilities, access to drinkable water, and access to emergency and accident facilities.
Freedom of association and the right of collective bargaining	The right to form and join trade unions, no discrimination of union members; free access for union representatives to their members at the workplace. Right to engage in collective bargaining, if deemed necessary, to agree or settle personnel issues fairly
Discrimination	No discrimination in hiring, compensation, access to training, promotion, termination or retirement based on: race, caste, national origin, religion, disability, gender, sexual orientation, union membership, or political affiliation. No sexual harassment.
Disciplinary practices Working hours	No corporal punishment, mental or physical coercion and verbal abuse. Maximum 48 hours per week, with 1 day-off every 7 days, and overtime work should not exceed 12 hours per week. Overtime work is an exception and always paid at a premium rate.
Compensation	Wages shall be at least at the legal minimum requirements or at industry standards. No deductions for disciplinary purposes. Wages and benefits must be detailed clearly and regularly. Full legal compliance regarding appropriate compensation law. Compensation must be in monetary form (as cash or cheque). No labour-only contracting arrangements or false apprenticeship to by-pass legal requirements.

Source: SA-8000 – Corporate Social Accountability Management Handbook, Ellipson

²¹ Guidance Document for Social Accountability 8000, Social Accountability International

To ensure that these requirements are in place and respected, SA - 8000 asks for the implementation of a "Social Management System". In addition, some companies specific "Code of Conduct" also includes additional requirements with regard to environmental management, waste management, and/or other aspects. When closely looking at these different criteria, it will be noticed that these social labels often do not demand anything else than what is anyway required by the respective national legal framework

5.3.5 Conformance with Codes of Conduct and Standards

The validation procedures may include a combination of:

- " On-site surveys,
- " Document reviews,
- " Management and worker interviews.

Conformance is attested through social/environmental reports and/or issuance of certificates, labels etc. Most of the large corporate customers of Indian leather and leather products have developed their own Code of Conduct or subscribe to a global social and/or environmental standard (e.g. SA8000, ISO14001). Instead of maintaining in-house auditing department, many of these companies have contracted out the validation process to independent auditors. As far as SA8000 standard is concerned, only few agencies have been accredited as certifying agencies in India.

A list of consultants/agencies that are providing services to the individual enterprises in conforming to SA 8000 and for complying with various environment management schemes such as ISO 14000 series is given in Annex 3.

ANNEXURE

ANNEX I: LIMIT VALUES AND FASTNESS FOR CERTIFICATION UNDER ÖKO-TEX STANDARD 100 ²²

Product Class	I Baby	II in direct contact with skin	III with no direct contact with skin	IV decoration material
pH value ¹				
	4.0 - 7.5	4.0 - 7.5	4.0 - 9.0	4.0 - 9.0
Formaldehyde [ppm]				
Law 112	n.d. ²	75	300	300
Extractable heavy metals [ppm]				
Sb (Antimony)	30.0	30.0	30.0	
As (Arsenic) ³	0.2	1.0	1.0	1.0
Pb (Lead) ⁴	0.2	1.0 ⁵	1.0 ⁵	1.0 ⁵
Cd (Cadmium)	0.1	0.1	0.1	0.1
Cr (Chromium)	1.0	2.0	2.0	2.0
Cr (VI)	under detection limit ⁶	under detection limit ⁶	under detection limit ⁶	under detection limit ⁶
Co (Cobalt)	1.0	4.0	4.0	4.0
Cu (Copper)	25.0 ⁵	50.0 ⁵	50.0 ⁵	50.0 ⁵
Ni (Nickel) ⁷	1.0	4.0	4.0	4.0
Hg (Mercury) ⁸	0.02	0.02	0.02	0.02
Pesticides [ppm] ⁸				
Sum (incl. PCP/TeCP) ⁹	0.5	1.0	1.0	1.0
Chlorinated phenols [ppm]	0.05	0.5	0.5	0.5
Pentachlorophenol (PCP) 2,3,5,6-Tetrachlorophenol (TeCP)	0.05	0.5	0.5	0.5
Phthalate [%] ¹⁰				

²² <http://www.oeko-tex.com/chemlist/limit.html#9>

DINP, DNOP, DEHP, DIDP,	0.1			
BBP, DBP				
Sum 9				
Organic tin compounds [ppm]				
TBT	0.5	1.0	1.0	1.0
DBT	1.0			
Other chemical residues [ppm]	50.0	100.0	100.0	100.0
Orthophenylphenol (OPP)				
Dyes	Dyes	Dyes	Dyes	Dyes
Cleavable arylamines ⁹	not used ⁶	not used ⁶	not used ⁶	not used ⁶
Carcinogens ⁹	not used	not used	not used	not used
Allergens ⁹	not used ⁶	not used ⁶	not used ⁶	not used ⁶
Others ⁹	not used ⁶	not used ⁶	not used ⁶	not used ⁶
Chlorinated benzenes and toluenes [ppm] ⁹				
	1.0	1.0	1.0	1.0
Biological active products				
	none ¹¹	none ¹¹	none ¹¹	
Flame retardant products ⁹				
General	none ¹¹	none ¹¹	none ¹¹	
PBB, TRIS, TEPA, pentaBDE, octaBDE	not used	not used	not used	not used
Colour fastness (staining)				
to water	3	3	3	3
to acidic perspiration	3 - 4	3 - 4	3 - 4	3 - 4
to alkaline perspiration	3 - 4	3 - 4	3 - 4	3 - 4
to rubbing, dry ^{12,13}	4	4	4	4
to saliva and perspiration	resistant			
Emission of volatiles [mg/m3] ¹⁴				
Formaldehyde	0.1	0.1	0.1	0.1
Toluol	0.1	0.1	0.1	0.1
Styrol	0.005	0.005	0.005	0.005
Vinylcyclohexen	0.002	0.002	0.002	0.002
4-Phenylcyclohexen	0.03	0.03	0.03	0.03
Butadien	0.002	0.002	0.002	0.002

Vinylchlorid	0.002	0.002	0.002	0.002
Aromatic hydrocarbons	0.3	0.3	0.3	0.3
Organic volatiles	0.5	0.5	0.5	0.5
Determination of odours				
General	no abnormal odour ¹⁵	no abnormal odour ¹⁵	no abnormal odour ¹⁵	no abnormal odour ¹⁵
SNV 195 651 ¹⁴ (modified)	3	3	3	3

Note:

- [1] Those products which must be treated wet during further processing can have a pH value within 4.0 - 10.5; those leather products, coated or laminated, in product class IV a pH value within 3.5 and 9.0 is accepted
- [2] n.d. corresponds according to Japanese Law 112"test method with an absorbance unit less than 0.05 resp. <20ppm
- [3] For natural materials (inclusive wood) and metallic accessories only
- [4] The use of lead and lead alloys is forbidden
- [5] No requirement accessories made from inorganic materials
- [6] Quantification limits: for Cr(VI) 0.5 ppm, for arylamines 20 ppm, for allergenous dyestuffs 50 ppm
- [7] Including the requirement by EC-Directive 94/27/EC
- [8] For natural fibres only
- [9] The individual substances are listed in addendum.
- [10] For coated articles, plastisol prints, flexible foams and accessories made from plastics
- [11] With exception of treatments accepted by Oeko-Tex (see actual list on <http://www.oeko-tex.com>)
- [12] No requirements for 'wash-out' - articles
- [13] For pigment, vat or sulphurous colorants a minimum grade of colour fastness to rubbing of 3 (dry) is acceptable
- [14] For textile carpets, mattresses as well as foams and large coated articles not being used for clothing
- [15] No odour from mould, high boiling fraction of petrol, fish, aromatic hydrocarbons or perfume

Addendum
Compilation of the individual substances
Pesticides

Name	CAS number
2,4,5-T	93-76-5
2,4-D	94-75-7
Azinophosmethyl	86-50-0
Azinophosethyl	2642-71-9
Aldrine	309-00-2
Bromophos-ethyl	4824-78-6
Captafol	2425-06-1
Carbaryl	63-25-2
Chlordane	57-74-9
Chlordimeform	1970-95-9
Chlorfenvinphos	470-90-6
Coumaphos	56-72-4
Cyfluthrin	68359-37-5
Cyhalothrin	91465-08-6
Cypermethrin	52315-07-8
DEF	78-48-8
Deltamethrin	52918-63-5
DDD	53-19-0, 72-54-8
DDE	3424-82-6, 72-55-9
DDT	50-29-3, 789-02-6
Diazinon	333-41-5
Dichlorprop	120-36-2
Dicrotophos	141-66-2
Dieldrine	60-57-1
Dimethoate	60-51-5
Dinoseb and salts	88-85-7
Endosulfan, -	115-29-7
Endosulfan, -	33213-65-9
Endrine	72-20-8
Esfenvalerate	66230-04-4
Fenvalerate	51630-58-1
Heptachlor	76-44-8
Heptachloroepoxide	1024-57-3

Hexachlorobenzene	118-74-1
Hexachlorcyclohexane,	319-84-6
Hexachlorcyclohexane,	319-85-7
Hexachlorcyclohexane,	319-86-8
Lindane	58-89-9
Malathion	121-75-5
MCPA	94-74-6
MCPB	94-81-5
Mecoprop	93-65-2
Metamidophos	10265-92-6
Methoxychlor	72-43-5
Mirex	2385-85-5
Monocrotophos	6923-22-4
Parathion	56-38-2
Parathion-methyl	298-00-0
Phosdrin/Mevinphos	7786-34-7
Propethamphos	31218-83-4
Profenophos	41198-08-7
Quinalphos	13593-03-8
Toxaphene	8001-35-2
Trifluralin	1582-09-8

Arylamines that are not allowed to be split off from dyes under reductive conditions

Name	CAS number
MAK III, category 1	
4-Aminobiphenyl	92-67-1
Benzidine	92-87-5
4-Chloro-o-toluidine	95-69-2
2-Naphthylamine	91-59-8
MAK III, category 2	
o-Aminoazotoluene	97-56-3
2-Amino-4-nitrotoluene	99-55-8

p-Chloroaniline	106-47-8
2,4-Diaminoanisole	615-05-4
4,4'-Diaminobiphenylmethane	101-77-9
3,3'-Dichlorobenzidine	91-94-1
3,3'-Dimethoxybenzidine	119-90-4
3,3'-Dimethylbenzidine	119-93-7
3,3'-Dimethyl-4,4'-diaminobiphenylmethane	838-88-0
p-Cresidine	120-71-8
4,4'-Methylene-bis-(2-chloroaniline)	101-14-4
4,4'-Oxydianiline	101-80-4
4,4'-Thiodianiline	139-65-1
o-Toluidine	95-53-4
2,4-Toluyldiamine	95-80-7
2,4,5-Trimethylaniline	137-17-7
o-Anisidine	90-04-0
2,4-Xylidine	95-68-1
2,6-Xylidine	87-62-7
4-Aminoazobenzene	60-09-3

Dyestuffs classified to be carcinogenic

C.I. Generic Name	C.I. Structure number	CAS number
C.I. Acid Red 26	C.I. 16 150	3761-53-3
C.I. Basic Red 9	C.I. 42 500	569-61-9
C.I. Basic Violet 14	C.I. 42 510	632-99-5
C.I. Direct Black 38	C.I. 30 235	1937-37-7
C.I. Direct Blue 6	C.I. 22 610	2602-46-2
C.I. Direct Red 28	C.I. 22 120	573-58-0
C.I. Disperse Blue 1	C.I. 64 500	2475-45-8
C.I. Disperse Orange 11	C.I. 60 700	82-28-0
C.I. Disperse Yellow 3	C.I. 11 855	2832-40-8

Dyestuffs classified to be allergenous

C.I. Structure number	CAS-Nr.
C.I. 64 500	2475-45-8
C.I. 61 505	2475-46-9
C.I. 62 500	3179-90-6
C.I. 63 305	12222-75-2
	12222-97-8
	12223-01-7
	61951-51-7
	23355-64-8
C.I. 11 080	2581-69-3
C.I. 11 005	730-40-5
C.I. 11 132	
C.I. 11 132	
C.I. 11 110	2872-52-8
C.I. 62 015	2872-48-2
C.I. 11 210	3179-89-3
C.I. 10 345	119-15-3
C.I. 11 855	2832-40-8
C.I. 10 375	6373-73-5

Other banned dyestuffs

C.I. Structure number	CAS number
C.I. 26 070	6250-23-3

Chlorinated benzenes and toluenes

- Dichlorobenzenes
- Trichlorobenzenes
- Tetrachlorobenzenes
- Pentachlorobenzenes
- Hexachlorobenzene
- Chlorotoluenes
- Dichlorotoluenes
- Trichlorotoluenes
- Tetrachlorotoluenes
- Pentachlorotoluene

Forbidden flame retardant substances

Name	CAS number	
Polybrominated biphenyles	59536-65-1	PBB
Tri-(2,3-dibromopropyl)-phosphate	126-72-7	TRIS
Tris-(aziridiny)-phosphinoxide	5455-55-1	TEPA
Pentabromodiphenylether	32534-81-9	pentaBDE
Octabromodiphenylether	32536-52-0	octaBDE

Phtalates

Name	CAS number	
Di-iso-nonylphthalate	28553-12-0	DINP
Di-n-octylphthalate	117-84-0	DNOP
Di(2-ethylhexyl)-phthalate	117-81-7	DEHP
Diisodecylphthalate	26761-40-0	DIDP
Butylbenzylphthalate	85-68-7	BBP
Dibutylphthalate	84-74-2	DBP

ANNEX II : LABORATORIES FOR TESTING

In the past, for more than a decade, a number of laboratories have been established/strengthened throughout the country with the capacity to conduct necessary tests as prescribed for various restricted substances. A list of such laboratories is provided in the table below.

SI.	Laboratory	Tests made
1.	Central Leather Research Institute Sardar Patel Road Adyar, Chennai - 600 020 India Ph: +91-44-2491 0897 / 2491 0846 Fax: +91-44-2491 2150 E-mail : clrim@vsnl.com Website: www.clri.org	All

2.	CLRI Regional Centre Leather Complex, Kapurthala Road Jalandhar - 144 021 Tel/Fax: +91-181-2651306 E-mail: clircj@vsnl.com	PCP, azo dyes, Cr (VI) and formaldehyde
3.	CLRI Regional Centre 3/1C, Mathewartola Road Kolkata - 700 046 Tel: +91-33-23292381 Fax: +91-33-23296046	PCP, azo dyes, Cr (VI) and formaldehyde
4.	Footwear Design and Development Institute A - 10 / A, Sector - 24 NOIDA - 201 301 Gautam Budh Nagar Uttar Pradesh, India Ph: +91-120-2412456, 2412534, 2412557 Fax: +91-120-2412556, 2411301 Website: www.fddiindia.com	All
5.	Central Institute for Research on Cotton Technology (Indian Council of Agricultural Research) Adenwala Road, Matunga, Mumbai - 400 019 Ph: +91-22-2412 7273 / 76 Fax: +91-22-2413 0835 / 2415 7239 E-mail: circot@vsnl.com, director@circot.res.in	PCP, azo dyes, toxic heavy metals banned pesticides, formaldehyde
6.	Facility for Ecological and Analytical Testing (FEAT) IIT Kanpur - 208 016 Website: http://www.iitk.ac.in Laboratories of Textiles Committee (Ministry of Textiles, Government of India) http://textilescommittee.nic.in/mapaddr.htm	Azo dyes, PCP, heavy metals, formaldehyde
7.	Laboratories of Textiles Committee (Ministry of Textiles, Government of India)	All
8.	SGS India Pvt. Ltd. Consumer Testing Services, 250, Udyog Vihar,	All

	Phase IV, Gurgaon. India. Ph: +91-124-239 9990 Fax: +91-124-239 9764 E-mail: Sanjeev_Arora@sgs.com Website: www.sgs.com	All
9.	SGS India Pvt Ltd 1/509A, Old Mahabalipuram Road Thoraipakkam Chennai - 600 096 Ph: +91-44-2496 3844 / 2822 Fax: +91-44-2496 3075	All
10.	UL India Pvt Ltd. 1st Floor, Titanium, # 135, Airport Road, Bangalore - 560 017 Ph: +91-80-4138 4500 Fax: +91-80-2520 4407 E-mail: customerservice.in@in.ul.com Website: www.ul.co.in	Heavy metals and substances covered under RoHS directive (RoHS directive is applicable for electrical and electronic items)

**ANNEX III : LIST OF CONSULTANTS/AGENCIES FOR GUIDING
ENTERPRISES FOR SA 8000/ISO 14000 SERIES
Consultants for SA 8000**

S.No.	Consultant
1.	Lakshy Management Consultant Pvt. Ltd. B-31/01, Kendriya Vihar, Sector 11, Kharghar, Navi Mumbai Maharashtra, India Ph: +91-22-3099 5241
2.	CONSTRARCH-MANSYS Mailing Address: A - 1/40, Mansarovar Colony, Delhi Road Moradabad (U.P.) India Ph: +91-591-248 0413, 310 2876; Mobile: +91- 94121 47586, 98371 46632 Fax: +91-591-248 0413 E-mail: indramohan@sify.com
3.	Link Ethical Trade Consulting Pvt. Ltd. Mailing Address: B-3/32, SFS (117), Yelahanka, New Town Bangalore-560064, India Ph: +9 1-80-2856 6259 Fax: +91-80-2846 1803 E-mail: linkftg@vsnl.net
4.	Servensolve Mailing Address: 26, Gr. Fl, Madhu Industrial Estate Pandurang Budhkar Marg, Worli, Mumbai 400 026, India Ph: +91-22-5660 5578 Fax: +91-22-2492 2526 E-mail: servensolve@hathway.com / servensolve@vsnl.net Website: www.servensolve.com
5.	Indian Leather Industry Foundation G1, Hayagreeva No.85, Velachery Road Guindy, Chennai - 600 032. Tel/fax: +91-44-2235 5464 / 5468 E-mail: ilifo@vsnl.com Website: www.ilifo.org

Consultants for ISO 9000 and ISO 14000

Sl.	Consultant
1.	Lakshy Management Consultant Pvt. Ltd. B-31/01, Kendriya Vihar, Sector 11, Khargar, Navi Mumbai Maharashtra, India Ph: +91-22-3099 5241
2.	Synergy Solution 1161 Sector 8, Faridabad 121006, Haryana, India Ph: +91-129-501 7063
3.	Allied Boston Consultants (I) Pvt. Ltd. A-2/60, 2nd Floor, Shiv Arcade, Acharya Niketan, Mayur Vihar, Phase-I New Delhi 110091, India Ph: +91-11-2279 2467 Mobile: +919811 412761 Fax: +91-11-2275 3084 Website: www.abcipl.co.in
4.	Effikazy Consulting Sec-16A/2001, Vasundhara Ghaziabad 201012 Uttar Pradesh, India Ph: +91-120-288 2375, 288 5517 Mobile: +919810 912214 Fax: +91-120-288 5517 Website: www.effikazy.com
5.	Young Advisory Engg. & Services Pvt. Ltd. 1-B, Dinu Master Lane Howrah 711103 West Bengal, India Ph: +91-33-3958 5881 Mobile: +919831 038002 Website: www.yeaconsultancy.com

6.	PJR Certification Pvt. Ltd. No. 25, 1st Floor, Kaveriappa Layout Miller Tank Bund Road Near Cunningham Road Bangalore 560052, Karnataka, India Ph: +91-80-4132 9000/02 Mobile: +919880 220918 Fax: +91-80-4132 9004 Website: www.pji.com, www.pjr.com
7.	Quality Control Countrywide Associates 2165, Sector-D, Pocket-2, Vasant Kunj New Delhi 110070 India Ph: +91-11-2689 2356 Mobile: +919811 194154 Fax: +91-11-2613 5299 Website: www.qcca-india.com
8.	Organisation Development Consultants Bhavya's Anandam, Flat No. 308 Block 'G', Nizampet Road, Opp. Intu Kukatpally Hyderabad 500072 Andhra Pradesh, India Ph: +91-40-2389 3242 Mobile: +919849 082520 Fax: +91-40-2306 9419 / 2389 3242 Website: www.odchyd.com
9.	Amit Pvt. Ltd. 2, Arcadia 195, Nariman Point Mumbai 400028 Maharashtra, India Ph: +91-22-2464 4485
10.	Bureau Veritas 217-219, 2nd Floor Race Course Tower Race Course, Vadodara 390007 Gujarat, India Ph: +91-265-232 5052 / 552 5053 Fax: +91-265-231 3136 Website: www.bureauveritas.com

11.	Comprehensive Quality Solutions Lendi Baug 84, Jalvayu Vihar Kukatpally, Hyderabad 500072 Andhra Pradesh, India Ph: +91-40-23054516
12.	DSCL-ESCO 3057, Kucha Raja Sohan Lal Bazar Sita Ram New Delhi 110006, India Fax: +91-11-23273628`
13.	Elixir Incorporation Shop No.2, Sairam Building Opp. Chandra Baugha Hotel Bharati Vidayapeet Katraj, Pune 411046 Maharashtra, India Mobile: +9198606 11919
14.	Essen Energy Technologies Pvt. Ltd. 109 DH, IDA Scheme 74-C Indore 452010 Madhya Pradesh, India Ph: +91-731-255 3286 / 255 1721 Fax: +91-731-255 1721
15.	Ganatra Overseas Pvt. Ltd. Suite No. 94, "Chitrakoot", 230A, A.J.C. Bose Road Kolkata 700020 West Bengal, India Ph: +91-33-3052 9000 / 99 Mobile: +9198311 55139 Website: www.ganatragroup.net
16.	Global Logic 59, Parasmani Society, Rannapark Ahmedabad 380061 India Tel: +91-079-2741 1041 / 2741 3030 Fax: +91-079-2741 1041 E-mail: response@globalisoindia.com

17.	Grand Quality Services 204, Silvercoin, Nr. Shrenik Park Cross Road Akota, Vadodara 390020, Gujarat, India Ph: +91-265-554 2654 Mobile: +9198254 20117 Fax: +91-265-232 3801
18.	ICL Certifications Limited A-303, Rajkamal, CST Road Kalina, Opp. University Campus Mumbai 400 098 Maharashtra, India Ph: +91-22-2666 2133 / 2665 6224 / 2666 7645 Fax: +91-22-2665 5644
19.	Innovative Management Consultants 4/561, Sri Krishna Nagar Extension Opp. Vivekanandha School Dharapuram Road Tirupur. - 641 608. Ph : +91-98432 18398 E-Mail : mdpandi@rediffmail.com, Contact Person: Mr.Dhanapandi (Mobile: +919843018398)
20.	Karan Associates 958/B, Kameshwer's Pole Raipur Chakla, Raipur Ahmedabad 380001 Gujarat, India Ph: +91-79-2216 3245 Fax: +91-79-2216 3245 Website: www.sameermodi.com
21.	Master Consultancy & Productivity Pvt. Ltd. 7, Tirumala Complex, Paradise, S.D. Road Hyderabad 500003 Andhra Pradesh, India Ph: 91-40-2781 8831 / 2784 2445 Fax: 91-40-2784 2445

22.	Millennium consultants 1, Praneetha Apartments Street No. 9, Tarnaka Hyderabad 500017 Andhra Pradesh, India Ph: +91-40-2701 8023
23.	Nucleus Consultants Old No. 4, New No. 7 Guruvappa Street, Chinthadripet Chennai 600002 Tamil Nadu, India Ph: +91-44-3096 2467 Website: www.nucleus-india.com
24.	Professional Quality Management Centre 2-4, Chaitannya Puri, Dil Sukh Nagar Hyderabad 500060 Andhra Pradesh, India Ph: +91-40-2405 7917 Fax: +91-40-2405 7917
25.	Qsys Esolutions Pvt. Ltd. A-33, FF Complex Okhla Phase-3 New Delhi 110020, India Ph: +91-11-4180 2144 Ph: +91-11-2692 3570 Website: www.qsys.co.in
26.	Quality Plus Consultancy Services AC-34, Tagore Garden New Delhi 110027, India Ph: +91-11-2544 9239 Fax: +91-11-2597 1715
27.	Quatec International 5, Fancy Lane, 3rd Floor Room No. 3C Kolkata 700 001 West Bengal, India Ph: +91-33-2243 0978 Mobile: +9194330 98380

28.	Raj Quality Consultant B-3/66, Mahatma Phule Society Shiv-Srushti, Kurla (East) Mumbai 400024 Maharashtra, India Mobile: +9193239 33633 Website: www.rajmanagement.com
29.	SDQ Flat No.403, Balaji Villa A.S. Raju Nagar, Kukatpally Hyderabad 500072 Andhra Pradesh, India Ph: 91-40-5529 1053
30.	Stellar Management Consultants (P) Ltd., "SPRING DALE", #506 2nd Floor, 1st Cross, 8th Block Koramangala Layout Bangalore - 560 095, India Tel/Fax: +91-080-2571 0755 / 427 E-mail: mail@stellar.co.in Website: www.stellar.co.in
31.	Swiso (India) Pvt. Ltd. 507, Pragati Tower, 26, Rajendra Place New Delhi 110008, India 91-11-41539720, 91-11-41539721 Website: www.swisoindia.com
32.	Sujiths Consultancy Services, Room No.6, A.R.P.Complex, Asher Nagar No.21, Avinashi Road Tirupur. - 641601 Ph: +91-0421-22 38 832 E-mail: sriwidh@eth.net
33.	Textiles Committee P. Balu Road Off Veer Savarkar Road Prabhadevi Chowk, Prabhadevi Mumbai - 400 025 Tel: +91-22-6652 7507 / 7500 Fax: +91-22-6652 7509 E-mail: secy@giasbm01.vsnl.net.in

34.	Totstat Quality Consultants (P) Ltd. 31/125 A, Junior Janatha Road Vytila, Cochin - 682019 Tel/Fax: +91-484-230 7894
35.	UL India Private Limited 135, 1st Floor, Titanium Airport Road, Kodihalli Bangalore 560017 Karnataka, India Ph: +91-80-2520 4400-6 Fax: +91-80-2520 4407 Website: www.ul.com
36.	URs Productively, 10th Avenue, Prasanth Castle Chennai 600083, Tamil Nadu Tel: +91-44-2371 3258 / 2489 4938
37.	Way Marker Consultants No. 56, M.P. Colony, H.M. Sector-14 Udaipur 313002 Rajasthan, India Ph: +91-294-3100 332 / 241 8439
38.	Indian Bureau of Industrial Services Pvt Ltd. 338, Sixth Floor Fountain Plaza Pantheon Road, Egmore Chennai - 600 008. Ph: +91-44-4214 6925 Fax: +91-44-2824 2044 Email: ibis@vsnl.net Website: www.ibisplc.org

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LIST OF ABBREVIATIONS / SYMBOLS USED

AAS	Atomic-Absorption Spectroscopy
ASTM	Americal
BAGA	Besluit Aanwijzing Gevaarlijke Afvalstoffen, Dangerous Substances Designation Decision of Netherlands
CAS	Chemical Abstract Services
CEN	Comité Européen de Normalisation
CLRI	Central Leather Research Institute
COD	Chemical Oxygen Demand
DIN	Deutsches Institut für Normung e. V., The German Institute for Standardization
DL	Detection Limit
EC	European Commission
EFTA	European Free Trade Association
EU	European Union
g	Grams
GC-MS	Gas Chromatography - Mass Spectrometry
HPLC-DAD	High Performance Liquid Chromatography- Diode Array Detector
HS	Harmonized System of International Convention on the Harmonized System (HS Convention)
ICP	Inductively Coupled Plasma
ISO	International Organization for Standardization
IUC	Chemical test methods of IULTCS
IUF	Fastness test methods of IULTCS
IULTCS	International Union of Leather Technologists and Chemists Societies
IUP	Physical test methods of IULTCS
kg	Kilograms
LGR	Lederinstitut Gerberschule Reutlingen
LMBG	Lebensmittel- und Bedarfsgegenstaendegesetz, German Food and Utility Articles Act
MDI	Modified diphenylmethane diisocyanate
MJ	Mega joule
mm	Millimeters
mg	Milligrams
N	Newtons
SME	Small and Medium Enterprises
PCP	Pentachlorophenol
ppm	Parts per million
PVC	Poly vinyl chloride
PUR	Polyurethane
RSL	Residual Substances Limits
TDI	Toluene diisocyanate
UAE	United Arab Emirates
USA	United States of America
USEPA	United States Environmental Protection Agency
µg	Micrograms
VOC	Volatile Organic Chemicals
VOS	Volatile Organic Substances

Publisher

Federation of Indian Micro and Small & Medium Enterprises (FISME)

Federation of Indian Micro and Small and Medium Enterprises (FISME) is one of the chief representative bodies of SMEs in India. It reaches out to a large number of SMEs through State level and sectoral associations. FISME is widely regarded as progressive face of SMEs.

FISME visualizes that no industry can survive today without having international vision. It realizes that the biggest challenge for SMEs is and will be their understanding of the new world trading environment and its implications and that SMEs will have to initiate collective initiatives to address them. FISME's activities revolve chiefly around these key areas with its mission being: "To assist SMEs build capabilities to respond to changing external economic environment and exploit emerging opportunities by becoming Marketing Centric".

It works in close cooperation with major multilateral and bilateral agencies in areas of SME development. It also has presence in 22 countries through partner SME associations. It regularly conducts and commissions research and studies and publishes reports in areas such as competitiveness, WTO and trade issues and business environment among others.

An NGO, headquartered in New Delhi, FISME is a network of more than 1,00,000 SMEs through state level SME associations and sectoral associations. For more information, kindly visit us at: <http://www.fisme.org.in>

Project Partners

Agra Footwear Manufacturers and Exporters Chamber (AFMEC)

Agra Footwear Manufacturers and Exporters Chamber more popularly known as AFMEC is registered under the Indian Societies Act and was formed 10 years ago. It is administered by a body of Elected Members. At present it has about 70 Members out of which there are about 55 Footwear Exporters who are manufacturing a wide range of Gents, Ladies and Children footwear of finest quality and latest Trends.

AADHAR

"AADHAR" registered in 1987, is a Society registered under Rule 21 of the Society Registration Act of 1860. It is being managed with the expertise of the Scientists, Technologists and Activists from the fields of Management. This is a platform of people with strong grit and determination to spread scientific temper in the society to develop and upgrade the skills of artisans and the youths with appropriate science and technological inputs. AADHAR from the very beginning worked on self-sufficiency principle. All the centres and subsidiaries of AADHAR are self-sustaining and we seek funds for only new development projects and programmes.

Banther Industrial Pollution Control Company (BIPCC)

Banther Industrial Pollution Control Company (BIPCC) Banther Industrial Pollution Control Company (BIPCC) is a section 25 (not-for-profit) company constituted for the main objective of prevention and control of pollution in the leather processing sector and its allied industries by setting up ETP's / CETP's in various industrial clusters. To promulgate the sustainable industrial development with environment friendly technologies of tanning process, BIPCC runs training programmes, specifically designed for working managers, supervisors and entrepreneurs of leather processing sector and also for the new generation students who are willing to work in the leather tanneries or in the related fields of prevention and control of pollution