Revision of the EN 407 standard
I am pleased to introduce this new season of CTC International newsletter. CTC for more than 100 years is the specialist quality assurance and product development for footwear, leather goods and garment. We support our customers to deliver products that meet the expectations of their customers and regulations.

While the global consumption of footwear and leather goods products remains generally positive, consumer and regulatory expectations are changing strongly. The USA China economic relations and the evolution of the price level mean that some sourcing is transferred to other countries. To remain competitive, Chinese companies must optimize their productivity and improve their quality. Buyers or brands transferring their purchases must ensure that they maintain the same level of quality and service to their customers.

The need for information and transparency on the part of end consumers is very important. Companies must master the different links in their supply chain (regulation’s conformity, quality, environmental, social, ..) and the traceability of their materials and products (leather and textile origin, ..).

The environmental expectations and safety (innocuousness) are also strong, the product delivered must be perfectly healthy (no harmful chemical substances) and integrate more and more an eco-designed approach (recyclability and environmental impact). In the leather shoe, the chrome vi is one of the most prominent substances.

CTC accompanies you on these different topics. You will find in this newsletter information on:

The standard EN 407 Revision including household oven gloves which are now covered by this regulation.

An article on GB news information, strong stakes for end consumers and our industry to deliver their products in China.

The implementation of a new Iso standard for Leather pre-aging method, to anticipate and prevent the appearance of CRVI.

Finally a rapex synthesis which shows the main withdrawal products.

We remain at your disposal to assist you in your developments and prevent these different risks.
CTC France

William Gelas arrives at CTC France as CTC Groupe laboratory project manager from June 11, 2019.

William Gelas has experiences as head of the “footwear” laboratory activity and supplier laboratory audits; he had previously been head of the physical testing laboratory at CTC France. Back to CTC, William Gelas will bring his know-how project manager and his physical testing skills with the aim of securing and developing files mainly in Physical testing and PPE. He will also take part of CTC Group’s “laboratory and audit” offer (France – Hong Kong – Shanghai & offices).

CTC Vietnam

In March 2019 we welcomed Ms. Pham Minh Huong, as sales and operations manager of CTC Vietnam under the responsibility of Mr. Pierre Beaupoil. Holder of a double degree in Management & Finance from Bentley University (Boston, Massachusetts – USA), Ms. Huong has been working in management positions in Vietnam for more than 16 years. The international exposure, the knowledge of the Vietnamese industrial fabric and the dual skills in management and in the textile field of Ms. Pham Minh Huong must benefit the deployment of CTC Vietnam and meet the needs of our customers in this dynamic region.

NEW Shanghai Office

Our offices and laboratories in Shanghai have changed since this summer. We moved from “Pudong Avenue” to a new borough called Jing’an, Gongxinwenchuang building, 3F, No. 3400 Gongxin Road, Jing’an, Shanghai. These new location & facilities will support our development and client project of Shanghai and China. We have now doubled the surface and all the new location was renovated for the pleasure of our team and customers.

CTC propose, on October 3, 2019, a webinar on
THE REGULATION AND THE RESPONSIBILITY FOR PLACING ON THE MARKET "FOOTWEAR, LEATHER GOODS, GLOVE AND LEATHER FASHION" PRODUCTS

In particular, we will focus about changes in REACh regulations, risks, responsibilities and the construction of specifications for suppliers.

Access to the webinar will be by reservation. Registration via email: ctclyon@ctcgroupe.com until September 30 midnight

Location: on your computer. 11.30 am (Paris time). Duration: 30 minutes.
We will send you a confirmation with a link to access the webinar.
Revision of the EN 407 standard

Standard EN 407 'Protective gloves against thermal risks (heat and/or fire)' was published in 2004 and is still used today. It confers presumption of conformity to the essential requirements of Council Directive 89/686/EEC, which regulated the marketing of personal protective equipment (PPE) and was repealed by Regulation (EU) 2016/425 on 21 April 2018.

The differences between these two legislative acts are few. However, one difference in particular affects EN 407. Regulation (EU) 2016/425 specifically covers oven gloves, which are classified as Category II PPE (intermediate risk) and must bear the CE mark after being assessed by a notified body.

As EN 407:2004 does not provide for the assessment of oven gloves, the European Commission asked the European Committee for Standardization (CEN) to quickly revise the standard so that it would also cover household gloves that protect against thermal risks.

The ‘glove’ working group (known as CEN/TC 162/WG8) began work on revising EN 407 in 2017. Standardisation has considerably changed since 2004. Before, it was almost exclusively a European phenomenon (EN standards). Now, it is overwhelmingly international (ISO standards). However, to save time, the working group immediately opted to limit the revision of EN 407 to the European market.

One year onward, the draft version of the revised EN 407 standard is ready to be put to a formal vote, which is the last stage prior to publication.

KEY CHANGES
The entire standard has been revised, in particular to include new test methods published since 2004 as well as to implement practices currently used by notified bodies. It now covers the hands and arms and all industrial-grade and household gloves.

In general
Standard EN 420 (which will be replaced by EN ISO 21420) remains obligatory. Care instructions (e.g., washing) are specifically taken into account. If they are provided, the relevant tests must be carried out before and after the gloves are cleaned as instructed. The assigned performance levels correspond to the lowest values obtained.

In terms of glove size, the only new requirement is on the minimum length of gloves worn to protect against splashes of molten metal.

To clear up any ambiguity in the previous standard, gloves with elevated performance levels (i.e., 3 or 4) must be easily removable in emergencies. Glove donning and removal times must be determined in accordance with EN 659:2008.

Protection against thermal risks
NEW: The revised standard provides examples of gloves that protect against thermal risks and lists the relevant assessment tests (see Table 1).

> Burning behaviour
ISO 6941 has been withdrawn. Method A of ISO 15025 is now to be used. A new test setup system for the testing machine has been defined to prevent glove shrinkage when the ignition flame is applied. After the flame is applied for 10 seconds, the afterflame time and afterglow are the test results. Three gloves must be tested. The lowest result (HTI24) gives the performance level (out of four possible levels).

<table>
<thead>
<tr>
<th>EXAMPLES OF GLOVES AND THE RELEVANT TESTS</th>
<th>BURNING BEHAVIOUR</th>
<th>CONTACT HEAT</th>
<th>CONVECTIVE HEAT</th>
<th>RADIANT HEAT</th>
<th>SMALL SPLASHES OF MOLTEN METAL</th>
<th>LARGE SPLASHES OF MOLTEN METAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAND PROTECTION — POThOLDERs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OVEN GLOVES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BBQ GLOVES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INDUSTRY-GRdE GLOVES: FOUNDRY/CASTING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INDUSTRY-GRdE GLOVES FOR HOT ENVIRONMENTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

○ OPTIONAL  ◦ RECOMMENDED  / RISK NOT COVERED BY THIS PPE
> Contact heat
EN 702 has been withdrawn. The test method described in EN ISO 12127-1 is to be used.
The entire glove (palm, fingers, etc.) and all its component materials must be tested. Three specimens must be tested. The lowest result gives the performance level (out of four possible levels).

> Convective heat
EN 367 has been withdrawn. The test method described in ISO 9151 is to be used. Three 140 × 140 mm specimens taken from the palm of a glove must be tested. The lowest result gives the performance level (out of four possible levels). If a glove consists of multiple layers, a specimen consisting of all the layers must be tested.

> Radiant heat
Test method B of EN ISO 6942 (at a heat flux density of 20 kW/m²) continues to apply. Three 80 × 170 mm specimens taken from the back of a glove must be tested. The lowest result gives the performance level (out of four possible levels). If a glove consists of multiple layers, a specimen consisting of all the layers must be tested.

> Small splashes of molten metal
No changes have been made to this property. EN 348 continues to apply.

> Large splashes of molten metal
EN 373 has been withdrawn. The test method described in ISO 9185 is to be used. Three 260 × 100 mm specimens of material, including any seams where necessary, must be tested. The lowest result gives the performance level (out of four possible levels).

Marking
A key change is the creation of a new pictogram.
The previous pictogram (see 1) is still used but it has the serious drawback of consisting of a flame. New household gloves will primarily be resistant to contact heat but will not be non-flammable. A flame pictogram therefore cannot be used to warn the general public. Hence a new pictogram (see 2).
Other than this new pictogram, the marking methods for gloves that comply with EN 407 remain unchanged.

Information supplied by the manufacturer
This section has been overhauled and supplemented. The aim of the standardisation group is to remove ambiguities, avoid user misunderstanding, and prevent misuse.

PUBLICATION
Work has been halted by the creation of the new pictogram, which must be officially registered before it may be used. This registration will take anywhere from 6 months to a year. At the time of writing, formal voting should start between now and late 2018 and the new EN 407 standard is slated to be published in the first half of 2019.

Dr Jean-Claude Cannot,
Technical and Standardisation Director
cannot@ctcgroupe.com
What’s new about the GB Footwear and Leather goods standards in China?

18-March-2019:
2019 PRODUCT QUALITY NATIONAL SUPERVISION AND INSPECTION PLAN
The General Administration of Market Supervision combines the existing financial special fund scale, current standards and testing and testing technical capabilities, fully adopts the opinions of all parties, and incorporates all products with high public concern into the national supervision and spot check plan, highlighting human health and personal and property safety. The products, important industrial products affecting the national economy and the people’s livelihood, as well as key products that consumers and relevant organizations have reflected on quality problems, organized the “National Supervision and Inspection Plan for Product Quality in 2019”.

The Plan includes total of 267 types of products. Among them, there are 43 kinds of daily consumer goods and textiles. The main products are: children’s shoes, leather shoes, sneakers, rain boots, snow boots, handbags / backpacks, travelling cases, and various textile products

19-April-2019:
THE SAC/TC 305 NATIONAL SHOE INSPECTION CENTER EXPERTS VISITED CTC DG FOR GUIDANCE AND EXCHANGE WORK.
During the meeting, the two parties conducted research and discussion on the technical parameters related to the standard samples of footwear, and communicated the technical parameters on the two major tests: the Abrasion resistance and the Slip resistance of the sole.

CTC will participate more actively in China’s national standards and fully assist the National Shoe Inspection Center to promote relevant technical work in line with international standards.

04-April-2019:
TWO CHINESE NATIONAL MANDATORY STANDARDS WOULD BE DRAFTED AND RELEASED WITHIN 2 YEARS

<table>
<thead>
<tr>
<th>PLAN#</th>
<th>STANDARDS</th>
<th>MANDATORY OR OPTIONAL</th>
<th>CREATED OR UPDATED</th>
<th>TO REPLACE THE OLD STANDARDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>20190055-Q-339</td>
<td>Technical specifications for general shoes</td>
<td>Mandatory</td>
<td>To be updated</td>
<td>GB 21536-2008 GB 25037-2010 GB 25038-2010</td>
</tr>
<tr>
<td>20190056-Q-339</td>
<td>Technical specifications for Children shoes</td>
<td>Mandatory</td>
<td>To be updated</td>
<td>GB 25036-2010 GB 30585-2014</td>
</tr>
</tbody>
</table>

Use GB/T 36935-2018 “Footwear size Comparison Table” to convert the shoe numbers (World Shoe Number, European Shoe Number, British Shoe Number, Japanese Shoe Number, American Shoe Number, etc.) between the systems, which is convenient for producers, dealers and consumers. GB/T 36936-2018 ” Footwear - size Terminology” defines a general term for measuring the foot and the shoe last and determining the shoe size, so that the company correctly marks the shoe number based on the same concept. Both of these standards are equivalent to the ISO standard, thus ensuring consistency between domestic and international standards.

A NEW STANDARD TO BE DRAFTED FOR CHILDREN HANDBAG AND LUGGAGE:

The <Children’s Luggage Safety Technical Specification> is mainly used to guide the production and circulation of luggage products used by children under the age of 14 to avoid the occurrence of various foreseeable hazards. To ensure the scientificity, rationality and applicability of the standards, the Technical Committee is currently collecting 30 to 40 sets of children’s luggage products (including children’s backpacks and children’s travel bags) for trial verification.

NEW STANDARDS UNDER DRAFTING AT SAC/TC 305

<table>
<thead>
<tr>
<th>STANDARD CODE</th>
<th>STANDARD NAME</th>
<th>RELATED ISO STANDARD</th>
<th>IMPLEMENT DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>GB/T 36975-2018</td>
<td>Footwear - General Technical requirements</td>
<td>-</td>
<td>July-01-2019</td>
</tr>
</tbody>
</table>

A NEW STANDARD TO BE DRAFTED FOR CHILDREN HANDBAG AND LUGGAGE:

The <Children’s Luggage Safety Technical Specification> is mainly used to guide the production and circulation of luggage products used by children under the age of 14 to avoid the occurrence of various foreseeable hazards. To ensure the scientificity, rationality and applicability of the standards, the Technical Committee is currently collecting 30 to 40 sets of children’s luggage products (including children’s backpacks and children’s travel bags) for trial verification.

NEW STANDARDS UNDER DRAFTING AT SAC/TC 305

<table>
<thead>
<tr>
<th>STANDARD NAME</th>
<th>STANDARD TYPE</th>
<th>REPLACED STANDARD</th>
<th>STAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Footwear-Determination of phenol in footwear material</td>
<td>National Standard</td>
<td>-</td>
<td>Draft</td>
</tr>
<tr>
<td>Footwear-Test method for the bond ability of stiffeners and toe puffs</td>
<td>National Standard</td>
<td>GB/T 3903.26-2008</td>
<td>Draft</td>
</tr>
<tr>
<td>Footwear-Test method for the dimensional stability of outsole</td>
<td>National Standard</td>
<td>GB/T 3903.13-2005</td>
<td>Draft</td>
</tr>
<tr>
<td>Shanks for footwear</td>
<td>National Standard</td>
<td>GB/T 28011-2011</td>
<td>Draft</td>
</tr>
<tr>
<td>Upstream shoes</td>
<td>Industrial standard</td>
<td>-</td>
<td>Draft</td>
</tr>
<tr>
<td>Slippers</td>
<td>Industrial standard</td>
<td>QB/T 4552-2013</td>
<td>Draft</td>
</tr>
<tr>
<td>Stiffeners and toe puffs for footwear</td>
<td>Industrial standard</td>
<td>QB/T 2676-2013</td>
<td>Draft</td>
</tr>
<tr>
<td>Footwear-Test method for the abrasion resistance of outsole</td>
<td>Industrial standard</td>
<td>QB/T 2884-2007</td>
<td>Draft</td>
</tr>
<tr>
<td>Footwear-Determination of phthalates in footwear</td>
<td>International standard</td>
<td>ISO/TS 16181:2011</td>
<td>NP</td>
</tr>
<tr>
<td>Footwear-Test method for qualitative evaluation of antifungal properties</td>
<td>International standard</td>
<td>-</td>
<td>WD</td>
</tr>
<tr>
<td>Footwear-Determination of N-nitrosamines in footwear material</td>
<td>International standard</td>
<td>-</td>
<td>DIS</td>
</tr>
<tr>
<td>Footwear-The defect Terminology</td>
<td>International standard</td>
<td>-</td>
<td>CD</td>
</tr>
<tr>
<td>Footwear-Chemical test: General principles for sample preparation</td>
<td>International standard</td>
<td>-</td>
<td>WD</td>
</tr>
</tbody>
</table>
Two new ISO methods for leather ageing and for the determination of Chromium (VI) in leather

Chromium (VI) presence in leather articles is the first cause of recall for the clothing/fashion retail sector in the European Union (according to the RAPEX data). Because this substance is constantly in the radar of the sanitary authorities, there is always a need for the actors of the supply chain who are importing leather goods inside the EU to demonstrate with the best possible accuracy the compliance of their leather to the regulation at any time. Consequently in 2017 & 2018, the Chemical Test Commission of the International Union of Leather Technologists and Chemists Societies (IULTCS) in collaboration with the European Committee for Standardization (CEN) published 2 new international ISO standards related to the thermal ageing process of leather (ISO 10195: 2018) and the chromatographic determination of the Chromium (VI) amount in chromium tanned leather (ISO 17075-2: 2017). These two standards are made to give better normative tools to support leather industries in demonstrating their leather compliance.

ISO 10195: 2018 A SUITABLE PRE-AGEING TEST PROCEDURE

The difficulty for leather industries is that the content of Chromium (VI) in leather may fluctuate in time & under the influence of some environmental factors. For this reason, some stake holders used artificial ageing protocols in order to predict the tendency of leather’s Chromium (III) to turn into traces of Chromium (VI). However, there was no consensus on what are the conditions to induce the formation of Chromium (VI) in leather while considering also the natural conditions that the leather is subjected to during its life.

Further experiences finally suggested that a high temperature and a dry surrounding atmosphere favour the formation of Chromium (VI), these are the main factors retained by the technical committee to prepare the standard ISO 10915.

> This standard proposes two types of thermal ageing

> Method (A1) conditions retained for leather manufactured for leather goods, gloves and garment application:
- Temperature: 60°C;
- Relative humidity: Less than 20%;
- Time duration of ageing protocol: 24 hours.

> Method (A2) conditions retained for leather manufactured for footwear, upholstery and automobile application*:
- Temperature: 80°C;
- Relative humidity: Less than 10%;
- Time duration of ageing protocol: 24 hours.
*The method A2 is the most severe protocol comparatively because drier the ambient air is, higher is the risk for the leather to develop Chromium (VI).

The amount of Chromium (VI) in aged leather is further determined using available quantification techniques. The result gives useful information on the leather’s stability after being exposed to such oxidative conditions.

IN CONCLUSION

The standard ISO 10195: 2018 is a simple and standardised procedure for ageing leather artificially. However there is no regulation threshold for aged leather currently; the results of Chromium (VI) obtained in aged leather are just an indication of the tendency of chrome tanned leather to develop Chromium (VI).
ISO 17075: 2017 PART 1 & 2. METHODS TO DETERMINE TOTAL CHROMIUM (VI) CONTENT IN LEATHER

The 2007 standard was cancelled and replaced by a new version (ISO 17075: 2017) which itself includes 2 different methods (part 1 & part 2).

The first method (part 1) also called “Colorimetric method” is almost identical to the method described in the 2007 version. The Chromium (VI) leached from leather reacts with a colour indicator to give a red/violet complex with colour intensity proportional to the Chromium (VI) concentration. The intensity of the colouration is then compared with the colour intensity of a range of artificially prepared solutions for which the concentration in Chromium (VI) is well known. By extrapolation, the Chromium (VI) content in the tested leather is deduced. One technical limit of this method is its selectivity. In fact, during the extraction procedure, some interfering substances may have been co-extracted with the Chromium (VI) and will be likely to affect the colour reaction between the Chromium (VI) and the colour indicator (it is particularly the case for some heavily dyed leather). As a result, the quantification of Chromium VI may be affected by such interferences leading to possible “false positive” cases.

The second method (part 2) called “Chromatographic method” was specially introduced to answer this technical limitation. Although the step of extraction is common with the part 1, the innovation here consists in separating chromatographically the Chromium (VI) element from the other compounds leached from leather thus reducing their influence on the Chromium (VI) quantification result. This procedure is conducted with help of an ionic exchange column that has a particular affinity with Chromium (VI) but very less with other compounds. After the initial extraction of leather, the extract is injected in the column; the compounds of lower affinity will pass through the column rapidly while the Chromium (VI) will migrate slowly through the column for a particular time (called “retention time”). The colour indicator is then injected continuously to the flow of extract that is coming out of the column and will react with the Chromium (VI) when it will come out. The red/violet characteristic complex will be then detected by a photometer branched at the end of the system. The response of the detector or “chromatogram” presented in Figure 1 shows a peak of colour detected at 3.755min that correspond to the Chromium (VI). It is the combination of retention time and colour intensity of the solution that allows detecting very precisely and without ambiguity the Chromium (VI) when it comes out of the separation column. The area of the peak is equally proportional to the amount of Chromium (VI) in the solution and so will be used to deduce the exact amount of Chromium (VI) in the leather.

IN CONCLUSION

The advantage of the second method (part 2) is that there is no interference from the colour of the extract (the chromatographic technique is more “selective”). The second method is also more complex and much likely to be operated by professional laboratories while the Colorimetric method can be handle by industrial routine laboratories.

Pierre-Marie Plouhinec, Chemical Laboratory Manager CTC Asia
pmplouhinec@ctcgroupe.com
Follow-up of RAPEX notifications in 2018 for nonconformities in the leather industry

Dr Jean-Claude Cannot,
Technical and Standardisation Director
jccannot@ctcgroupe.com

Lyon, the 31st of January of 2019

In order to better understand European market surveillance practices and to inform the industry, CTC carries out a weekly monitoring of chemical alerts in RAPEX targeting shoe, leather goods, glove, clothing, jewellery and other fashion items. PPE personal protective equipment: most critical chemicals, notifying countries ... Chemical hazard notifications in toys are not included in CTC monitoring.

RAPEX is the European alert system aimed at ensuring a rapid exchange of information between the Member States and the Commission on measures taken in the Member States. It makes it possible to notify the presence of dangerous products to have them withdrawn from the market by the national authorities.

In 2018, the notifications were all related to restrictions nonconformities defined in European REACh (Annex XVII) and POP (Persistent Organic Pollutants) regulations.

<table>
<thead>
<tr>
<th>SUBSTANCE JUSTIFYING THE NOTIFICATION IN RAPEX</th>
<th>FOOTWEAR</th>
<th>LEATHER GOODS</th>
<th>GLOVE</th>
<th>PPE GLOVE</th>
<th>GARMENT</th>
<th>JEWEL</th>
<th>ACCESSORY</th>
<th>PPE</th>
<th>COUNTRY NOTIFYING</th>
</tr>
</thead>
<tbody>
<tr>
<td>CADMIUM (TOTAL)</td>
<td>1</td>
<td></td>
<td>1</td>
<td>5</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>Germany, Finland, Ireland, Norway, Sweden</td>
</tr>
<tr>
<td>AROMATIC AMINES</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>France, Bulgaria, Finland, Netherlands</td>
</tr>
<tr>
<td>HEXAVALENT CHROMIUM</td>
<td>8</td>
<td>5</td>
<td>6</td>
<td>4</td>
<td>9</td>
<td>1</td>
<td>2</td>
<td></td>
<td>Germany, Spain, Finland, Estonia, France, Hungary, UK</td>
</tr>
<tr>
<td>PHTHALATES</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td>Germany, Spain, Luxembourg, Romania</td>
</tr>
<tr>
<td>POLYCYCLIC AROMATIC HYDROCARBONS PAHS</td>
<td>3</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Germany, Finland</td>
</tr>
<tr>
<td>NICKEL (RELEASED)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Germany, Greece, Ireland, Slovakia</td>
</tr>
<tr>
<td>CHLOROALKANES IN C10-C13</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td>Norway, Sweden, Finland</td>
</tr>
<tr>
<td>LEAD (TOTAL)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hungary, Ireland, Slovakia, Sweden, Spain, Bulgaria</td>
</tr>
<tr>
<td>PHYSICAL TESTS</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spain, Bulgaria</td>
</tr>
</tbody>
</table>

Link to notifications
SUMMARY OF NOTIFICATIONS FOR THE YEAR 2018

The graphs below present the statistics computed by CTC from the data published in the RAPEX database for the whole of 2018 year, on more than 100 notifications for chemical risk in the articles.

“Top four” on the year 2018:

- **SUBSTANCE:**
  hexavalent chromium (VI) 37% / lead 11% / nickel 10% SCCP 10%

- **TYPE OF ITEM:**
  Clothing 22% / jewellery 20% / footwear 19% / leather goods 14%

- **COUNTRIES NOTIFYING:**
  Germany 32% / Sweden 10% / Norway 9% / Finland 8% (France: 4%).

- **COUNTRY OF PRODUCTION:**
  China 66% / India 7% / Turkey 6%

In the year 2018, the recalls notified by the French authorities concern the following substances: hexavalent chromium, and carcinogenic aromatic amines (released by azo dyes).
The shoe last is the central element that determines the fitting volume of a shoe and affects all its components. We have developed a software that enables to correct parameters which undermine shoes’ fitting quality and comfort.

Shoe Last Analysis

- Last Engineers’ software provides 20 structural metrics selected for their direct influence on comfort, which are combined into an overall fitting score.
- The software recommends the size at which the last fits best.
- The interactive 3D visualization shows the position of the various measurements on the last.
- One gains an immediate understanding of the last’s qualities and defects by area thanks to a colour map.
- All analysis results are then conveniently exported to a PDF file.

Last Engineers not only optimizes your lasts but also ensures that the technology translates into a perfect final product.