



Time for testing to have one voice

Testing body SGS wants to bring a new initiative called Tiered Testing to the leather and footwear sector. It insists that suppliers' necessity to comply with regulations and restricted substance lists (RSLs) is only going to intensify in years to come. As there is nowhere to hide, it wants companies at all stages of the supply chain to share the compliance burden.

Inspection, verification, testing and certification company SGS has said it wants to help companies in the footwear and leather sectors make the cost of compliance "more sustainable". It began looking at this question a year ago and started raising it in public during the course of 2015.

It organised a series of seminars, with events taking place so far in China, the UK, US, France, India, Vietnam and Indonesia to examine the issue. It said after these events that it had received a positive response from the representatives of leading footwear brands and retailers who took part.

It then asked companies to contribute to an industry-wide chemical testing protocol it wants to establish but has made clear it accepts the need to recognise the tests, standards, certificates and approvals of rival organisations in its efforts to convince partners operating at different points in the supply chain to share the burden and cost of compliance.

Knowledge share

For Paul Bridge, business development manager of SGS's footwear and leather division, who led the series of seminars, the main benefit of having footwear professionals take part in events like these is to be able to share with them his knowledge of the footwear and leather supply chain.

Something of a veteran of the UK and (later) global shoe and leather industry, Mr Bridge started his career at Sanders & Sanders in Rushden and went on to become production manager of Northampton-based manufacturer John White before continuing his career for almost a decade at British United Shoe Machinery and, afterwards, moving into leather production at Pittards and Ecco. "I love the industry," he says, "and all I want is to share my knowledge of it and support it."

He says the footwear industry's need for knowledge and support is great and about to become considerably greater, and

Leather needs to pass both brands' and regulatory requirements CREDIT: SGS/ISTOCK





Testing offerings

- SGS offers tannery training as a one-day course. It explains manufacturing from raw material to finished product, the chemistry of leather manufacturing, aesthetic and performance possibilities and limitations of different leathers, industry requirements from a performance and restricted substance viewpoint and industry challenges.
- For footwear manufacturers and retailers, services include footwear defect analysis, Ecosecure certification for components and Ecosecure Product Mark. Mould and chromium VI prevention are newer services specifically aimed at the footwear and leather industry.
- SGS Global Softlines has a network of 40 laboratories, with the most recent openings in Turkey and Indonesia. The lab in Turkey provides a full range of physical and chemical testing services for footwear and leathergoods. The Indonesia lab is located in Jakarta and builds on the country's footwear testing services, offered since 2011.
- The group can also help brands to understand national requirements in new markets.



SGS footwear and leather division business development manager, Paul Bridge, speaking at one of the seminars the company has set up to introduce Tiered Testing to the industry. CREDIT: SGS

all because of the demand for materials and finished products to comply with increasingly complex product safety criteria.

Extended REACH

He fears many leather and footwear manufacturers have been too reluctant to move forward in terms of providing the reassurance their customers and end consumers need with regard to testing and product safety. "Yes, it's in the interests of SGS and other testing houses for companies to do this well," he says, "but that's not why I am saying it. I have been in my current role at SGS for two years now, but that's after 33 years on the other side of the fence. The requirements of customers regarding compliance are a problem for the industry and too many people have opted to stick their heads in the sand, hoping this problem will go away. It won't go away; I think it will get worse."

"There are currently 163 products on the candidate list of substances of very high concern under REACH regulations. In five years there will be 500, and in ten years there will be 2,500."

SGS's main tool for helping to make it more sustainable, more economically viable, for companies to invest in the testing of materials is a new initiative the organisation is calling Tiered Testing. Retailers are worried about compliance, Mr Bridge explains, for the simple reason that if products they sell harm consumers, it's the retailers' names that will make the news. Big retail groups who, in many markets, bring almost all of their shoes in from other countries, are asking importers to make sure shoes are compliant before they reach the shelves of the shops.

In other markets, shoe manufacturers are being asked to bear a similar burden. Tiered Testing is a method of pushing responsibility for compliance testing further upstream, as we are seeing with manufacturing restricted substance lists (MRSLs), but with companies in each tier sharing the cost of testing the materials and components they are responsible for. If retailers in the scenario above are tier one, the manufacturers (or distributors) of the finished shoes are tier two and the

suppliers of leather, other upper materials, toe-puffs, soling components and materials, heels and so on are tier three.

The layers of supply chain complexity continue upstream all the way to raw materials, but Mr Bridge says that the Tiered Testing for leather and footwear that SGS is introducing will concentrate, initially at least, on these last three tiers: retailers, finished product suppliers and component suppliers (including tanners).

Before going public with its idea, SGS ran a trial with Northamptonshire-based Goldline, a sourcing partner that brings more than five million pairs of shoes into the UK each year from overseas manufacturers and distributes them to retail clients. It worked alongside Paul Bridge and his colleagues to see if they could convince suppliers to make sure their products were compliant before going into a shoe; all parties were pleased with the progress they made.

Mr Bridge gives the example of tanners testing finished leather for the presence of hexavalent chromium (chrome VI) before shipping it to a footwear manufacturer. This continues to be a thorny issue.

There are two forms of chromium compounds that leather and footwear companies need to know about. The first is found in the materials that are used for tanning most hides. Here the chromium is in the trivalent state and is harmless. In the second form, the chromium is in the hexavalent state, which is toxic to humans and animals.

Leather chemicals manufacturers insist that they manage all their processes under very strict conditions to make sure chromium-based tanning products are chrome VI-free, but they acknowledge that it is possible for chromium compounds to convert from the trivalent state to the hexavalent state under extreme temperatures and oxidative conditions, even if all good tanners know how to avoid the formation of hexavalent chromium.

These are the facts, but no one can deny that there is still widespread confusion about chrome and a clear need for chemical manufacturers to be able to reassure tanners, for



Steps towards preventing product recalls

For retailer and brands, it is imperative that the products they put on shelves are safe and free from restricted substances, but the issue is complex. A relatively simple shoe or boot can have 20 types of components, and each carries its own risk.

SGS's technical manager for footwear and leather, Andrew Hudson, says one thing he's learned is that concerns change. "Twenty years ago, one thing we were always concerned about was performance of leather, such as colour fastness, but restricted substances, chemicals and the environment is a top concern for retailers now."

The good news is that product recalls are falling, as once an issue is identified, producers work towards eliminating it. In 2014, independent testing body RAPEX recorded 70 recalls across all softlines (which includes textiles) compared with 160 cases in 2010 – a decline of 56%. Most of these fails were in Germany, Spain and France, which Dr Hudson explains is indicative of how much testing they do rather than more defective products. About 90% of the failures originated from China, with India making up most of the rest.

Restricted substances can be found in finished products for a number of reasons: variations in how products are manufactured, they can be added to aid or speed up part of the process – to emulsify products, to help penetration of dyestuffs – or to add performance.

There are instances where some chemicals are impurities, some chemicals break down to release a restricted substance, or certain restricted substances that are not restricted in absolute terms.

"Chrome VI is a big concern," says Dr Hudson; "78% of recalls in 2014 were due to chrome VI. If you were only going to test for one substance, it would be chrome VI."

With around 80%-85% of the world's leather tanned with chrome III (which is harmless, but can convert into harmful chrome VI under certain conditions), it seems the problem is hard to sidestep. "Of the leathers we test, depending on the region, we have a failure rate of between 5% and 10%," he says.

One of the biggest issues is that chrome VI forms *in situ* so the leather or finished product can pass the test in one continent but fail once it arrives at its destination. "You can imagine the arguments that go on in the supply chain."

Dr Hudson recommends that manufacturers and brands work closely with suppliers – "a lot of people don't have visibility back to the tannery" – look at transport issues and talk to suppliers about changing certain chemicals. "Chrome VI is fairly unique because it cannot be prevented just by monitoring your chemicals. You needed to build up the environment within the



SGS's technical manager for footwear and leather, Dr Andrew Hudson. CREDIT: ASBCI

leather so the chrome III does not want to oxidise to chrome VI. You have to surround it by friendly chemicals, and that can be done. It can be prevented."

Recommendations for tanners include:

- Minimise soluble chrome III
- Fix at pH of 3.5-4.0 using formic acid
- Carry out a washing step at the end of the wet processes
- Use veg tans where possible
- If not possible, use alternative anti-oxidant systems
- Take care in the selection of the fatliquor system
- Avoid ammonia, especially in pre-dyeing
- Avoid chromate-based pigments

"If you are not testing your leather, you are likely to have an issue," Dr Hudson concludes. "It does depend on your supply chain, I don't want to lump all tanneries together, but if you're sourcing products from China or India there's a very high relative rate of failure. Should we be concerned? Yes, but no more than we've ever been concerned. Concerns change, but they should drive us to action, we should use them to protect and minimise the risk we have in our supply chains."

tanners to reassure footwear brands and for footwear brands to reassure retailers and consumers that their products are sound. Where chrome VI is concerned, this is proving difficult.

Too big, too fragmented?

"The point is that there needs to be clarity throughout the supply chain," Mr Bridge continues. "It's true that some companies have told us they have doubts

that Tiered Testing can work in this industry because it's too large and too fragmented, but it's been working in automotive for 30 years and each car can have between 60,000 and 200,000 different components. Automotive companies know everything about every one of those components because they have to. Footwear companies could do this, too, but they have to take their heads out of the sand first."

Fresh voices

SGS will facilitate the Tiered Testing initiative but insists it wants the industry to run it. It has sent newsletters to all the companies that have taken part in the seminars and is helping them set up a voluntary industry experts' panel, which has representation from major footwear brands and retail groups. Representatives of the panel will be elected in future, with fresh voices always coming in. ☺