

Due diligence in footwear production

No matter how well managed a company is, it is almost impossible to ensure that its products will never be defective. However, a robust 'due diligence' policy may help to prevent prosecution. **MARK SOUTHAM** considers the process.

Publicly-advertised product recalls for consumer goods show how important it is to make sure that goods are safe before they go on sale. Footwear is no exception – in recent years, there have been a number of recalls of footwear – see box 1 for some examples.

Supplying substandard products can have disastrous consequences. These can range from loss of business to damage to finances or reputation, fines, or even imprisonment if a serious safety offence has been committed. There have been several instances of customers successfully claiming compensation through the courts as a result of injury caused by faulty footwear. For instance, a woman in the USA who broke an ankle when she fell after the high heel on one of her shoes gave way was awarded \$120,000 in damages

from the footwear company. This case also received widespread publicity.

If an unsafe product is found on the marketplace, the retail outlet that directly supplied the goods is liable. The retailer and, in many cases, the distributor or importer (often all three), will bear the brunt of any investigation and subsequent enforcement action. If the manufacturer is also located in an area in which the enforcement authority has jurisdiction, it too could be investigated.

Retailers and distributors of consumer products must be sure that what they are selling satisfies relevant legislation. In many cases, suppliers are required to provide verification of this. Nevertheless, this does not release the retailer from its legal responsibilities and contractual obligations to its customers.

Due diligence

For most safety legislation that prohibits the placing of unsafe products on the market, it is irrelevant whether unsafe products are supplied deliberately or because an individual or company is

Box 1: Examples of recent footwear product recalls

- a safety boot was found to have toe caps which failed to meet the requirements for impact and compression resistance
- rivets attaching buckles to a children's shoe were found to have sharp edges
- a fashion shoe had a decorative metal emblem on the upper. However, the emblem had sharp edges, which could cause laceration injuries to the wearer or bystanders
- a women's court shoe (pump) was found to have a poor quality backpart construction. This made the heels unstable, allowing the wearer's foot to 'roll over'
- the upper of a children's shoe incorporated metallic threads. These threads had loose ends which poked through the lining, thus presenting a sharp point which could have punctured the wearer's foot
- an industrial safety boot was sold as having a penetration-resistant midsole, but the protective steel midsole was missing
- the plastic on a moulded snowshoe fractured easily, making the shoe unstable and also presenting sharp edges.



Footwear has been recalled in recent years due to a variety of problems



A quality assurance system will involve documented procedures and established goods inwards control policies

Box 2: What does due diligence mean in practice?

- Assessment of the risk.** To assess and identify risk, it will be necessary to anticipate how a product will be used and maintained. Manufacturers must design products that substantially reduce any risk, and a pre-production assessment is vital. The control system used must relate to the nature of the business and its products.
- Verification of the performance.** Reasonable steps should be identified and then taken to verify product standards for each stage of manufacture and supply. These steps form the basis of the control system.
- Documentation of the system.** The control system needs to ensure that all steps taken are documented. All information regarding products – including their materials and construction – should be noted to provide technical supporting evidence.
- Operation of the system.** Checks will be needed to confirm that the system is operational. It is a continuous activity with monitoring throughout manufacture and supply.
- Reviews of the system.** The system should be regularly reviewed and updated. Complaints should be monitored and returns examined to audit performance. Also, random check sample testing of product on the market is an appropriate step to demonstrate that product standards are consistent.

unaware of the legal requirements. The fact that the law has been contravened is sufficient to allow a court to convict.

However, one recognised defence to this type of ‘strict liability’ offence is ‘due diligence’, whereby the law may consider the efforts made by businesses to comply with its demands in mitigation. Box 2 gives a brief summary of the key features of a due diligence process.

To use this defence, it must be shown that all reasonable precautions were addressed and all steps were taken to avoid committing the offence. If this can be done, the court can acquit the defendant. Whether or not a defence will be successful depends on the circumstances surrounding each case. What amounts to a successful due diligence defence has exercised the minds of judges over many years. Such a defence has resulted in a number of appeal cases which help us to understand more clearly what companies must do to avoid prosecution.

The size of the business, the amount of risk and the impact of failure associated with the product are some of the factors that the court will take into account to help determine what constitutes ‘all reasonable precautions’. What is considered reasonable for a small company may be considered inadequate for a larger one.

Reasonable precautions

Companies should examine each activity or process within their organisation to assess areas of vulnerability, and determine the likelihood of a problem occurring that could result in faulty footwear being placed on the market. Appropriate safeguards should then be put in place and regularly monitored to ensure compliance. The aim should be to control all risks by taking as many precautions as considered necessary to eliminate any chance of something going wrong, or to detect errors early and put them right before too much damage is done. There is no general formula for creating a due diligence system, because each business is different. Companies need to use their own judgement in deciding what is necessary and feasible, taking into account accepted industry standards and legal requirements.

The system must be appropriate to the size of the business and associated risk. Where the risk of a problem occurring is high, more effort will be expected in terms of control measures. The larger the company, the more the law will expect to be done if a due diligence defence is to be successful.

Traceability is essential

A total and public recall of a product may be necessary if a company cannot identify or trace individual non-compliant batches. Although many manufacturers may have formal procedures for assessing initial designs and prototypes before full-scale production, and then carry out some form of ongoing production conformity check, it is important to be able to link these checks to each shipment made to the retailer.

Established and effective procedures that ensure actual shipment products can be shown to be 'quality assured', when coupled with an effective recall system if a problem does occur, can help with a due diligence defence. This may satisfy a court that the supplier took all reasonable steps to prevent an inappropriate product from being placed on the market.

Quality assurance

So, how can retailers and distributors implement realistic ongoing conformity procedures? Typically, quality assurance systems, quality control inspection and testing are the key considerations. However, the best way to minimise potential problems is to work with reputable manufacturers who build good quality into their products in the first place, rather than trying to inspect out poor quality. Proactivity is better than reactivity.

Control of imported products can be difficult, particularly for smaller organisations that find it impractical to have full-time onsite representation at the manufacturing premises. Again, using reputable suppliers can remove many of the headaches. Using manufacturers with ISO 9001:2015 accreditation from a recognised certification body can provide confidence. A typical quality assurance system will have documented procedures and established goods inwards control, coupled with in-



Sole bond failures are a major reason for complaints and, potentially, accidents

process testing, inspection and a final product check. The system should be regularly audited and reviewed, and implement corrective and preventative actions where appropriate.

Inspection and testing

The inspection of products is a key quality control process for many organisations. Even those with quality management systems such as ISO 9001:2015 have some form of raw material, in-process or final product inspection. For companies without a formal quality management system, inspection and testing may be the only means of confirming product quality. This is often a contractual obligation.

Regular testing is often associated with quality control and quality assurance systems, and it is generally accepted that testing forms a fundamental part of the production process. It is essential that when an item is designed and first manufactured, the product as a whole – and its

individual components – are thoroughly tested to ensure that it is safe and fit for purpose before it first goes on the market. This initial testing programme should be as comprehensive as possible. It will need to assess all properties relevant to that product – for example, aspects relating to durability, as well as safety-related issues and any special claims with which the product may be marketed (for instance, water resistance or comfort).

Many manufacturers and retailers have their own testing specifications, which set a minimum set of standards against which the test results are assessed. These standards may well be based around the retailer's or manufacturer's own experiences, including rates of returns, price point and customer expectations. However, standards must not be set so low that safety issues are compromised. SATRA's performance guidelines for testing, construction and fitting are internationally recognised as providing



Testing for heel attachment and strength is essential to avoid possible failure during wear

a sound basis for assessing footwear and footwear components for 'fitness for purpose'. Indeed, they have been used in court as the basis for assessing footwear.

However, product testing should not be confined to pre-production. Throughout the production life of a shoe, there is every chance that changes to the materials or manufacturing methods used could have a significant effect on the quality of the product. There are various reasons that this might happen:

- inconsistency between or even within batches of one or more components
- change of supplier of one or more components
- change in production methods.

To ensure that products continue to comply, they should be tested regularly – perhaps for limited key properties and

backed up by a periodic full test. How often to sample and test is a fundamental question. The key factor is 'being confident that testing is completely representative of the batch'. SATRA is not aware of any international rules that detail sampling requirements specifically for footwear. Testing once per season, per style or per colour is commonplace for some properties but, for safety-related issues, this is unlikely to be good enough. A daily or batch-testing regime is better. A number of specifications require a set of test results every 1,000 pairs. Sampling batches in accordance with statistical sampling procedures such as ISO 2859-1:1999/Amd:2011 is a common requirement of some retailers.

At all stages, full documentation of testing must be kept. Essentially, this becomes the product's 'technical file'. It should include details of the product, its source, test results and any action that

was taken after test results indicated potential issues.

It is most important that any testing is carried out on examples of the actual shipment to the importer, with full documented traceability. No matter how many test reports a company has, they are of little value if they cannot be traced back to the actual batch of products supplied to individual distributors and retailers. Reports from an independent test house such as SATRA add credibility, and samples can be selected from any part of the supply chain if required.

Which tests are important will depend on the individual product, and the decision will be based around the results of a risk assessment (explained later in this article). SATRA has developed many test methods for assessing footwear, and these are in common use globally, either directly as 'SATRA TMs' or embodied within retailer and brand owner specifications.

It is important to note that there are a number of international and national standards in place for safety footwear. As a minimum, the following should be addressed.

Slip resistance. Slipping, tripping and falling remain the most likely cause of accidents associated with footwear. Although these incidents will never be totally eliminated, they can be significantly reduced by using soles designed and manufactured to minimise the potential for slip. SATRA TM144:2011 – 'Friction (slip resistance) of footwear and floorings' is the SATRA-recommended test for slip resistance, and it has been widely accepted as the industry standard. Testing is generally carried out on a reference clay tile surface in wet and dry conditions, although this can often be supplemented with other floorings, including carpet, wood and vinyl.

Sole bond strength. Sole bond failures are also a major reason for complaints and, potentially, accidents. We know of a number of cases where the wearer has tripped because a sole has become loose. Peel tests can be conducted to ensure that bonding systems are correct – that is, the upper, adhesive and sole are compatible. Regular batch testing should be carried out to ensure that bonding processes are consistent and correct. Strength of

the bond at the toe (toe load) using SATRA TM404:1992 – ‘Rapid sole adhesion test – for complete footwear’ is a simple spot-check test that can be done in the factory without the need for sophisticated laboratory equipment.

Heel attachment and heel strength (impact and fatigue resistance). Heel failure – either detachment or breaking – can cause serious accidents. SATRA is aware of several incidents of heels coming off while the wearer was climbing or descending stairs. Testing is therefore essential.

Strap and fastening strength. Although many straps are purely decorative, most are functional and perform a number of roles, such as securing the shoe to the foot, optimising fit and providing stability. Therefore, any type of strap failure could lead to the wearer stumbling and falling, so potentially resulting in injury. Straps, as well as buckle attachments, elastics and touch-and-close fasteners need, therefore, to be tested to ensure that they are fit for purpose.

Special consideration should also be given to children’s footwear. Tests need to be used which not only assess the more common properties (for example, those listed above), but also anticipate other foreseeable hazards which might be likely. For instance, young children tend to suck on and chew their shoes, so any attachments – such as decorative trims and buckles – must be assessed to ensure that they cannot be pulled off and thereafter present a choking hazard (see the article on page 34 of this issue).

Restricted chemicals

The use of chemicals in consumer products (including footwear) has come under scrutiny during recent years. An increasing number of countries are placing those chemicals that are considered hazardous on ‘restricted substances lists’, which in many cases effectively prohibit their use in that country. It is therefore important that suppliers are aware of the listed substances and the types of goods that may contain them, for the countries in which they operate.

Risk assessments

It must be remembered, however, that testing in order to comply with a standard or guideline does not

necessarily mean that a product is safe. There may be other risks associated with a particular product which the standard or guideline does not cover. A risk assessment must therefore be an intrinsic part of assessing a product’s safety, in addition to carrying out ‘routine’ tests.

Although not footwear related, the use of risk assessment is best illustrated by a significant test case in the UK courts. There were a number of incidents where children playing on a particular brand of ride-on toy tipper truck fell forward and injured their heads on a plastic catch at the front of the toy. The defence relied on a test report showing that the toy had undergone and passed the toy standards in place at the time. However, the court ruled that in addition, a thorough risk assessment would have revealed the potential for such injuries, but there was no evidence that this had been done. In other words, although the product met the relevant toy standards, it was still not intrinsically safe for the user.

The same principle also applies to footwear. For example, children’s boots with decorative pom-poms on the ends of cords attached to the front of the upper have been popular over recent autumn/winter seasons. The attachment strength of the pom-poms is an obvious test to be carried out – particularly in infant’s sizes, where choking hazards must be considered. However, a correctly-conducted risk assessment would also consider the possibility of the cords on the left and right boots getting tangled together during normal walking, or becoming entangled in, for instance, bicycle chains or escalators. We are aware of at least one product recall where this was found to be a problem with a style where the cords were too long.

A number of fundamental questions therefore need to be answered:

- 1 What similarities does this product have with others that have historically led to problems, and have steps been taken to overcome this?
- 2 Is the product reasonably safe for the intended user?
- 3 What could the end user do with the product that should be considered ‘unsafe’ in a foreseeable manner, but not through misuse?



Footwear suppliers must be aware of the chemicals restricted in particular markets

- 4 What could be seen as ‘extreme’ applications for the product – including climatic or environmental?
- 5 What testing of components and final design should be conducted?

In summary

Regardless of how it is carried out, most consumer protection legislation lays the responsibility for ensuring that the product is safe with the person or organisation directly supplying the goods to the consumer. For strict liability safety offences, a robust due diligence defence may prevent prosecution. However, it is far better to have processes and systems in place that minimise the possibility of an offence being committed in the first place.

How can we help?

Please contact SATRA’s footwear testing team for assistance with due diligence testing of finished footwear or footwear components.



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