

Ways to avoid rejected footwear

Investigating the most common causes of footwear rejects and steps to help minimise these problems.

by Phil Shaw



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It is estimated that profit valued at several billion UK pounds is lost to the global footwear industry each year due to faulty products. This means footwear that is either identified as substandard during manufacturing, or where the fault becomes apparent after the shoes have left the factory and are with the distribution organisation or the final customer.

Unlike industrial sectors such as aerospace or pharmaceuticals, making shoes has never been an activity that consistently achieves zero defects. As a fashion industry, there is a tacit acceptance that in order to meet the demands of the market, it is inevitable that occasionally there will be some products that are either incorrectly made or are found to underperform in wear.

The general attitude within the footwear industry is that as long as the level of rejects is kept at a manageable level, the cost can be absorbed into the eventual selling price, and any customers who complain can be offered either replacement shoes or a refund.

The traditionally accepted industry assumption is that around 2 per cent of footwear products are faulty in some way. This is due to such factors as factory rejects, incorrectly delivered products, or items rejected on arrival or returned to the retailer as unwearable. This figure is almost certainly an underestimate.

Faulty footwear is a continuing problem within the footwear supply chain. While accepting that it is both impractical and not cost effective to eliminate all rejects, it should be possible to identify the main causes of any products which are not up to standard, ensure that the cause is rectified, and prevent any future occurrence.

SATRA's research and ongoing testing has concluded that there is no one dominant cause of faulty footwear. It is generally a combination of causes, such as i) poor product design, ii) incorrect or misunderstood product specification, iii) a lack of shoemaking knowledge or manufacturing skill, iv) a lack of correct inspection or an adequate quality programme, v) incorrect storage or transportation, vi) misleading or confusing product labelling, and vii) poor retail skills and knowledge leading to footwear sold which is unsuitable for purpose.



Faulty footwear is often the result of several factors

The effects of these causes can also vary, but are likely to include the following:

- reduced income from replacement shoes and lost sales
- damage to the product brand and company reputation

- late delivery of volume orders – often the entire consignment of footwear can be delayed until all the pairs have been completed. A few rejected shoes can, therefore, cause major problems with delivery dates
- excess production costs – usually due to inefficiencies caused by low volume of replacements. The smaller the quantity of footwear, the less cost-effective it can be to manufacture
- shortage of materials and components for volume production caused by manufacturing additional shoes as replacements
- the potential for final customer dissatisfaction and possible litigation.

Managing the problem of reject footwear is made difficult, because the supply chain is often fragmented. It is spread across a number of different countries and time zones, and involves personnel from design, development, manufacturing and distribution companies. This means that there is no one person who has the opportunity or authority to carry out the various actions to address the causes. In addition, business practices – such as charging the cost back to the manufacturer for recorded customer problems, or the retailer deciding which complaints are justified – together with a general lack of detailed information about the real nature of problem footwear, means that there is little reliable data to be analysed.

However, the scale of the problem, together with the significant cost, means that some action should be taken. Since the estimated level of rejected shoes runs into the millions of pairs each year, the environmental impact is a major consideration. Disposal of faulty footwear is often by incineration, with the risk of dioxin release or into landfill sites, which are increasingly expensive. The financial and environmental costs, that are already considerable, will continue to rise unless alternatives are found. There are some possibilities of recycling footwear, as well as relocation to secondary markets, but it is surely better to eliminate the manufacture and distribution of any faulty products at source.

Any meaningful activity to eradicate the level of rejects (or more likely reduce it) will require a number of different actions need to be undertaken by many people throughout the supply chain. Ideally, these actions should comprise an overall quality approach and can be a major part of a quality assurance programme. Typically, these will include the following actions.

Quality control programmes

Many of the rejects are not identified due to inadequate inspection and reporting procedures. The cost of employing personnel for quality control can be high. In some cases, the quality control personnel are equivalent to 8 per cent of the total direct labour cost. However, this can be significantly less than the likely cost of the rejects, so it is essential that this function is as cost effective as possible. This means establishing optimum and realistic levels, frequencies and locations of inspection, as well as efficient reporting. It is also important to target the inspection resources at products that are new or have a history of quality problems, rather than a uniform level of inspection for all products.



A final quality check

Regular audits and data analysis

Audits should be carried out periodically, with the aim of identifying the true level and causes of any quality problems. The information recorded should be analysed into clear and specific categories, rather than under generic or overall headings. As the information is built up, it will be possible to produce a recommended programme of implementation for the solutions. These should then be monitored to ensure that the level of rejects does actually diminish, and that the cost of any action taken is not prohibitive.

Review of product specification

The analysis of rejects should be contrasted with the existing product information in order to identify any incorrect, inadequate or misleading information in the specification. It may be that the details in the specification are out of date (for example, materials may have been changed, requiring amended process control information) or the product could have been sourced from a number of different sub-contractors who have variations in their manufacturing practices and equipment.

Product engineering and risk assessment

Many of the problems that lead to faulty footwear can be identified at the sample stage, using a structured, disciplined evaluation. This can be a combination of risk assessment and product engineering, with the aim of identifying any potential weakness in the product design and manufacturing operations that require special or unusual equipment and skills. This action, together with the review of the product specification mentioned previously, is where it is possible to design out quality problems before production begins.

Testing

Having established an appropriate programme of testing (based on product risk assessment and analysis of previous quality problems), the actual testing should be carried out either in-house or sub-contracted to a recognised and reliable test house. The level and frequency of the testing will form part of the overall product information, and should be designed to be flexible enough to respond to changing conditions and feedback.

Lean manufacturing

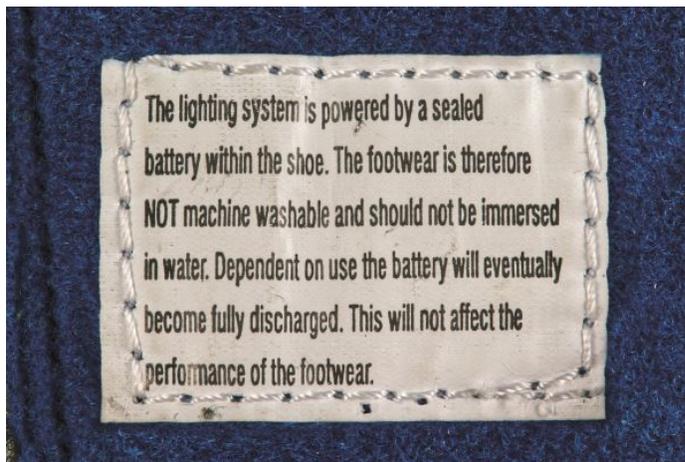
There is growing evidence that some aspects of lean manufacturing, such as using small teams and working on minimal levels of work in progress, can significantly reduce quality problems. Members of the workforce have a more direct relationship with individual pairs of shoes, as opposed to large production batches. Because everyone is expected to inspect (as well as process) the footwear, any quality problem should be identified and addressed more quickly and not allowed to build up until it affects a large part of the overall production. A lean manufacturing culture should not allow substandard work to be passed from one operator to the next.

Distribution

The product information should include specific instructions covering the transportation and storage of the footwear, so that it will arrive without damage. This information will detail the wrapping and boxes used to protect the product. It will also include any special requirements needed to maintain the level of product quality during transportation, where both humidity and temperature can vary significantly.

Product labelling and retail training

Analysis of many customer complaints about product quality and performance indicates that these are often caused by misunderstandings at the point of sale. Ideally, the customer's perception and expectations of the product should be discussed at the retail stage. However, since so much of footwear is now sold through self-service outlets and over the internet (where customers are actually making their own judgement of the products' fitness for purpose), this increases the pressure to ensure that any labelling or product information is both clear and does not oversell the properties that the customer can expect. In addition, research suggests that in western Europe, many footwear sales take place on Saturdays (and increasingly on Sundays), when part-time staff supplement the main retail personnel. The result is that when customers are offered advice, it may be based on a lower level of knowledge as a result of reduced training.



Correct product labelling can minimise inappropriate choices and promote realistic performance expectations

The steps outlined above, if implemented rigorously and consistently, will help companies throughout the supply chain to minimise the level of faulty products. These actions are essential if the industry is to meet rising customer demand for products that are both fashionable and comfortable and, of course, fit for purpose.

Investment in quality management is not only essential – it is a sensible part of running a modern footwear business and is no more than customers are entitled to expect. It is also a prudent measure to manage costs in a difficult trading environment. After all, on average these rejects are costing the industry at least £0.57 (\$0.74) per pair.

How can we help?

Please email us at footwear@satra.com for further information on minimising the number of shoes that are rejected.

Publishing Data

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Other articles from this issue »