Product Integrity Engineering

HOW TO AVOID LEARNING THE HARD WAY

SGS

The General Product Safety Regulations (GB) and General Product Safety Regulation (EU) requires products placed on the market to present little or no risk to consumers, regardless of the product's compliance with existing directives.

What is product integrity engineering

AND HOW CAN IT HELP PROTECT YOUR BRAND

Just because your brand is legally compliant does not mean it is safe.
How do you know when legal compliance is enough?
How can you be sure that your product is really safe?

PRODUCT INTEGRITY ENGINEERING

Enables you to address product failure before it happens. As your partner, SGS gets involved during the product design phase to ascertain the feasibility of your product and to assess the risks your product faces at every phase of production.

ECONOMIC

Involvement during product development results in significant cost savings by ensuring quality and safety are built into the product early - reducing complaints, product returns, injuries and lawsuits down the road.

SPEED AND FLEXIBILITY

Designing in quality and safety also yields faster time to market by eliminating costly redesigns or rework once production has already started. We understand that product failure is not an option. The flexibility of our service allows you to choose only those services that complement your business process.

PROTECTION MEANS ASSURANCE

Brand Protection starts with you and your team. Legal compliance, quality, performance and consumer satisfaction are imperative to your brand's reputation. This brochure belongs in the hands of your legal counsel, design, production and quality assurance teams.

Together, we will ensure the safety of your product, helping to protect your brand and provide piece of mind.

> Over 70 percent of product recalls in the United States occur on products that either conform to legal standards or do not have standards defined.

Risk assessment services

GET IT RIGHT IN THE BEGINNING

SGS uses a formal risk assessment process applying Design Failure Modes Effect Analysis (DFMEA), Data Analysis, Foreseeable Use Analysis, and Hazards Identification and Analysis as the primary research tools. Potential hazards are classified based on their risk characteristics to generate design recommendations to reduce the product's overall risk to a consumer.

The following services focus on specific risk assessment services. While best used on custom designed products early in the design phase, these services can be used at any stage of development or while sourcing products.

FEASIBILITY REVIEW

A Feasibility Review is a preliminary appraisal on a concept or idea to determine the feasibility of a product design. A feasibility review should take place at the earliest opportunity before capital and resources are invested in developing the product. The initial review can be conducted on a conceptual drawing, a technical drawing, an existing prototype or an actual product to identify potential defects and detail a test protocol.

PRODUCT RISK ASSESSMENT

A Product Risk Assessment is a detailed examination of a product to identify potential hazards and explore other areas of concern. The product is evaluated early in the product development process against legal standards, available voluntary or industry standards, and customer specific standards to determine if the product meets minimum requirements.

The product is then evaluated using the Risk Assessment process to identify potential quality and safety concerns that could lead to recalls or serious injuries. SGS works with the customer or supplier to make design changes and find solutions to the potential concerns to produce a better product.

PRODUCT LINE REVIEW

A Product Line Review is a screening type process that provides a high-level review of multiple products the customer may be considering for development or purchase. This review would provide an understanding of which products in the product line might have serious safety concerns or potential quality issues. The review will also provide a basic understanding of which tests may be required for each product type to better understand potential costs during final development or production.

GENERAL PRODUCT SAFETY REGULATION ARTICLE 9.2 RISK ASSESSMENTS

For products which fall into the scope of Article 9.2, SGS can offer a product safety assessment service which will allow the producer to meet the requirements of the article.

SGS can provide strategic support for a customer's product integrity processes. The following services outline options that can be used to build and maintain quality and safety processes that complement our customer's business process.

Strategic services

YOU'RE FREE TO DO WHAT YOU DO BEST

TEST PROTOCOLS

SGS can create custom Test Protocols based on legal standards or risk assessment principles. Test protocols are detailed descriptions of test methods or procedures that can be used to document specialized test requirements.

These test requirements can be created based on legal standards, risk assessment guidelines or customer defined specifications.

SAFETY MANUAL

SGS can develop a Safety Manual based on legal standards or risk assessment principles. A Safety Manual can include basic legal guidelines, risk assessment guidelines and requirements, product specifications (for specific product categories), quality or performance requirements, labelling specifications and guidelines, country regulatory requirements, packaging requirements and other topics as needed by the customer.

SGS can create a new safety manual for a customer based on their product line, review and update existing manuals or provide ongoing support to keep safety manuals current with today's everchanging legal requirements.

SAFETY COMMITTEE PARTICIPATION

SGS can support a customer's Safety Committee as part of a risk management strategy. A Safety Committee is an empowered group within the company capable of making decisions on behalf of the company, which is a vital component of any risk management strategy. The purpose of the Safety Committee is primarily strategic in nature (i.e. establishing the vision and direction the company should follow) but can also be used to provide tactical support (e.g. reviewing final products, deciding on policies, approving standards, etc.). Depending on your needs, SGS can support the creation of a Safety Committee, participate as an active member or provide information to an existing group.

Training services

DON'T LEARN THE HARD WAY

Training is the key to quality. SGS can help you, your staff and your suppliers build skill sets that translate into improved product safety and quality, quicker time to market and reduced manufacturing costs. Related to Product Integrity Engineering, SGS offers a series of training courses on the Risk Assessment process.

RISK ASSESSMENT TRAINING

Risk Assessment Training provides information on how Risk Assessment strategies can be applied to a product development process. Participants are taught through practical, real-life examples which not only improve learning, but facilitate the application of risk assessment techniques.

SGS provides training courses in Risk Assessment, at three different levels:

BASIC RISK ASSESSMENT TRAINING

Basic Safety Training is provided at an entry level and is intended for high level managers (non-technical) and new employees. The goal of the training is to provide a general overview of safety principles, insight into key safety issues and an introduction to the risk assessment process.

INTERMEDIATE RISK ASSESSMENT TRAINING

Intermediate Safety Training is intended for creative designers, engineers, production managers, technologists, selectors and buyers.

The overall goal of Intermediate Safety Training is to provide a mid-level exposure to the risk assessment safety process and minor hands-on training resulting in a broad understanding of key product-safety issues.

ADVANCED RISK ASSESSMENT TRAINING

Advanced Safety Training is provided at a very detailed level and is intended for high level technical staff involved in making safety decisions and managing product-related risk issues (i.e., product legal teams, safety engineers, product developers, technologists and quality assurance managers.)

All Risk Assessment Training courses can be customized to meet the specific needs of your company and staff to ensure the best learning environment.

Additional engineering services

ADDITIONAL ENGINEERING SERVICES ARE AVAILABLE TO SUPPORT YOUR PRODUCT DEVELOPMENT PROCESSES.

FAILURE ANALYSIS

A Failure Analysis can be conducted on any product that has failed to meet expectations defined by the customer. A failure analysis can be used to examine products that have failed during manufacturing, products that have been returned from the field or even products that have been involved in alleged injuries. Failure Analysis is useful to fully understand the root cause of the failure and reduce the possibility of it happening again. This analysis can also be conducted on pre-production samples to determine where potential quality issues may develop during production. The tools used in conducting failure analyses can include visual inspection, mechanical testing, microscopic inspection or chemical analysis of material. Additional samples from the production lot or similar samples may be necessary to conduct comparison testing to better understand the root cause of the failure.

TEST TO FAILURE

Test to Failure is a statistical testing procedure that can be used to provide more quantitative information about the quality and safety of a product. Test to Failure stresses a sampling of products to failure recording the maximum load achieved and failure mode. Using statistical techniques, the capability and variability of the product is then measured resulting in statistical value that represents the overall performance of the product. This value can then be compared against industry accepted quality standards to determine the overall quality of the product. Test to Failure can be conducted on preproduction samples to qualify a design and ensure the design is robust enough to meet final testing requirements. Test to Failure can also be used during production to ensure the product and manufacturing processes used to make the product are properly maintained.

BENCHMARK / PERFORMANCE TESTING

Benchmark Testing can be performed on existing products or engineering prototypes to understand how the product compares with similar products in the market. The testing can be performed against industry standard tests or custom tests defined by SGS and the customer. Performance Testing can be conducted using custom test protocols to understand how the product performs over time or under a series of use and abuse conditions the product may encounter.

Core services

ALLOWING YOU TO DO WHAT YOU DO BEST

SGS can leverage our existing expertise in the core service areas of testing, inspection and auditing in addition to the Product Integrity Engineering services to provide a complete solution for your products or processes.

AUDITING

SGS has a network of auditors located around the world available to offer expertise in the auditing of factories. Audits are performed against preplanned criteria compiled from your own criteria with the experienced involvement of SGS, or against industry defined standards as applicable. Audits can include factory quality audits, social accountability / code of conduct audits or C-TPAT security audits.

TESTING

SGS provides a first class service throughout its worldwide network of accredited laboratories. Extensively trained laboratory staff backed up by experienced technical support means excellence is guaranteed. This extensive network and knowledge will ensure that you will comply with all safety standards. SGS will conduct the testing and report back in a time efficient and informative manner, no matter where in the world your manufacturing facilities are located.

INSPECTION

SGS has at its disposal inspectors located around the world that are available to offer their expertise in the inspection of manufactured goods. The strategic locations include Asia, the Indian subcontinent, Eastern Europe, USA, as well as many other locations around the world. The inspections are completed by executing a pre-prepared inspection plan compiled from your own inspection criteria with the expert involvement of SGS. Inspections can be done at preproduction, initial production, during production, final random inspection and at container loading.
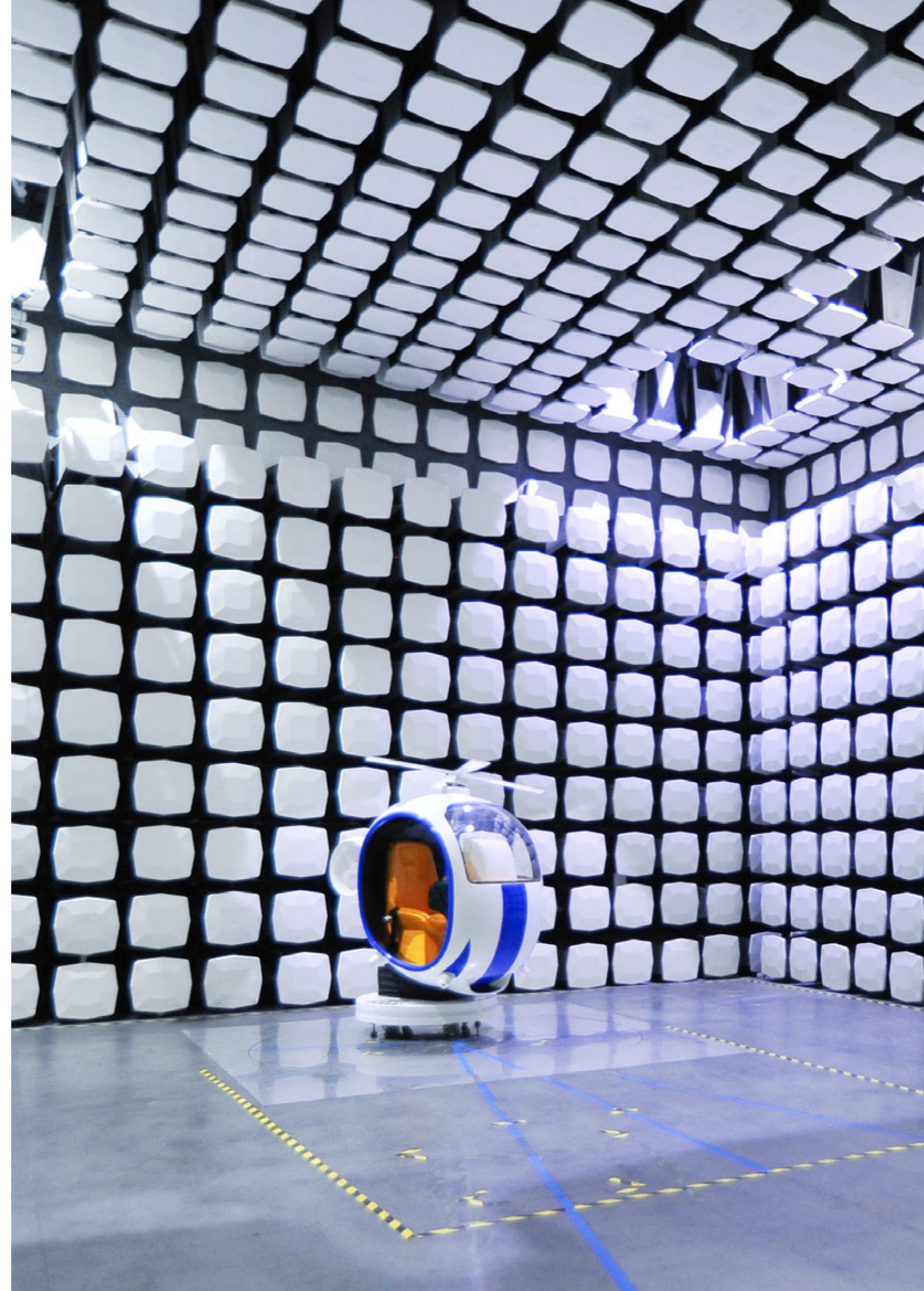
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