



Add value.  
Inspire trust.

## Testing and certification for wearable tech, smart shoes and apparel

Achieve a real competitive edge in a rapidly growing industry.

### Your challenges

Wearable technologies are opening up new horizons. In the next five years, the global market is expected to grow at a compound annual rate of 35 per cent, reaching 148 million units shipped annually in 2019, up from 33 million units shipped in 2014\*. To capitalise on this rapid growth, wearable device manufacturers need to address a wide range of factors that affect the quality, performance and safety of their products. Due to size and form factor limitations, the battery life of wearable devices depends not on increasing battery size but rather on the optimisation of function and operating use time as well as reduced battery rigidity. Wireless connection technologies such as Bluetooth and near field communication (NFC) will affect battery power consumption and the rate of data transfer to other devices and the cloud. To ensure user safety, manufacturers must identify and eliminate hazardous chemicals in skin contact wearables as well as lithium hazards in batteries. Other important concerns include radio frequency (RF) exposure levels, regulatory requirements for electrical safety,

and data security and privacy of apps. To minimise the risk of their products, manufacturers must think beyond compliance to safety regulations.

### What services does TÜV SÜD provide for wearable footwear and apparel technologies?

Our solutions for wearable footwear and apparel technologies include battery lifecycle testing, RF wireless equipment testing, Specific Absorption Rate (SAR) testing, functionality testing, chemical testing, mobile application testing, and various national and international certifications and schemes.

### How can we help you?

Our services assure end users of the safety and quality of your products, giving you a competitive edge in a new and rapidly growing industry. We support manufacturers of smart shoes and apparel with a personalised one-stop solution to fit all their requirements and market standards. We are appointed to issue various national and international certifications for wearable technologies.

## Our testing and certification services

- **Battery lifecycle testing**  
TÜV SÜD offers lifecycle testing, environmental cycle testing and calendar life testing for batteries of wearable devices.
- **Radio Frequency (RF) wireless equipment testing**  
We test your products to compliance with RF, EMC, safety and SAR so that you can meet requirements for the EU, the U.S., Canada, Australia and other international specifications. In the EU, we also have a notification service for non-harmonised radio bands.
- **Connectivity**  
For shoes with technologies like e-ink, we provide functionality / connectivity testing services.
- **Specific Absorption Rate (SAR) testing**  
Our UKAS-accredited laboratory has a depth and range of knowledge and experience gained through many years of providing SAR testing services.
- **Mobile application testing**  
Our experts test applications for functionality based on ISO 25051, usability based on EN ISO 9241, and data security based on legal requirements (German Data Protection Act, Telemedia Act) and BSI recommendations (IT-Grandschutz).
- **TÜV SÜD Footwear Fit Mark / Footwear Mark**  
The TÜV SÜD octagon serves as a sure sign of quality when consumers are choosing which products to buy.
- **National and international approvals and certifications**  
We assist you to obtain CE Marking and demonstration of compliance with the European R&TTE and EMC Directives, grants for radio and telecoms equipment from the Federal Communication Commission (FCC), Industry Canada Type Acceptance Certificates, testing for CB Test Report and CB Certificate, and Nationally Recognized Test Laboratory (NRTL) Certification for the U.S. and Canada. We also certify compliance to the RoHS, REACH and WEEE Directives.
- **Chemical testing**  
Our global network of accredited laboratories can test your products to assure compliance with the requirements of California Proposition 65, the U.S. CPSIA, and other applicable national and international regulations and standards.
- **Quality and performance testing**  
TÜV SÜD offers a number of tests including slip resistance, tensile, tear and seam strength, whole shoe bonding, whole shoe flexing and much more.

## Your business benefits

- **Minimise risk** – by working with TÜV SÜD to avert hazards and defects that could result in expensive recalls and reputation damage.
- **Save time and money** – with our expert advice on the latest directives and requirements so that you can take corrective actions and improvements early in the product lifecycle, thus avoiding costly and time-consuming rework.
- **Gain a competitive edge** – with the globally recognised TÜV SÜD octagon, a universal sign of quality and trustworthiness.
- **Access complete solutions** – by working with a partner to make sense of complicated legislation and find routes to compliance at every step of the production cycle.

## Why choose TÜV SÜD?

TÜV SÜD has an international reputation as a leading testing and certification body for smart shoes and apparel. We offer a wide range of services for product and software testing and international approvals. Our experts have the multidisciplinary expertise to help you with quality and safety issues across your entire product development cycle.

## Add value. Inspire trust.

TÜV SÜD is a premium quality, safety and sustainability solutions provider that specialises in testing, inspection, auditing, certification, training and knowledge services. Represented in over 800 locations worldwide, we hold accreditations in Europe, the Americas, the Middle East, Asia and Africa. By delivering objective solutions to our customers, we add tangible value to businesses, consumers and the environment.

## Related services

TÜV SÜD provides the following related services:

- Domestic Market of China testing
- Chemical testing for consumer products
- Social compliance standards: Business Social Compliance Initiative (BSCI), Ethical Trade Initiative Audit (ETI), SA8000®, Worldwide Responsible Accredited Production (WRAP)

\* The Wearable Computing Market Report, BI Intelligence 2014