



MATERIAL PROPERTIES AND RELIABILITY TESTING FOR ELECTRICAL & ELECTRONIC PRODUCTS

MATERIAL PROPERTIES AND RELIABILITY TESTING SERVICES

The quality of electrical & electronic products relies heavily on the performance of the materials and reliability. High stability, durability, and low failure rates can reduce maintenance costs, allowing a company to keep its efficient processes in operation for longer. For customers, it means longer service life and reduced prices.

Whether you are a manufacturer, supplier or retailer, SGS testing service for the material properties and reliability of electrical & electronic products will help you develop better products that fully comply with market requirements.

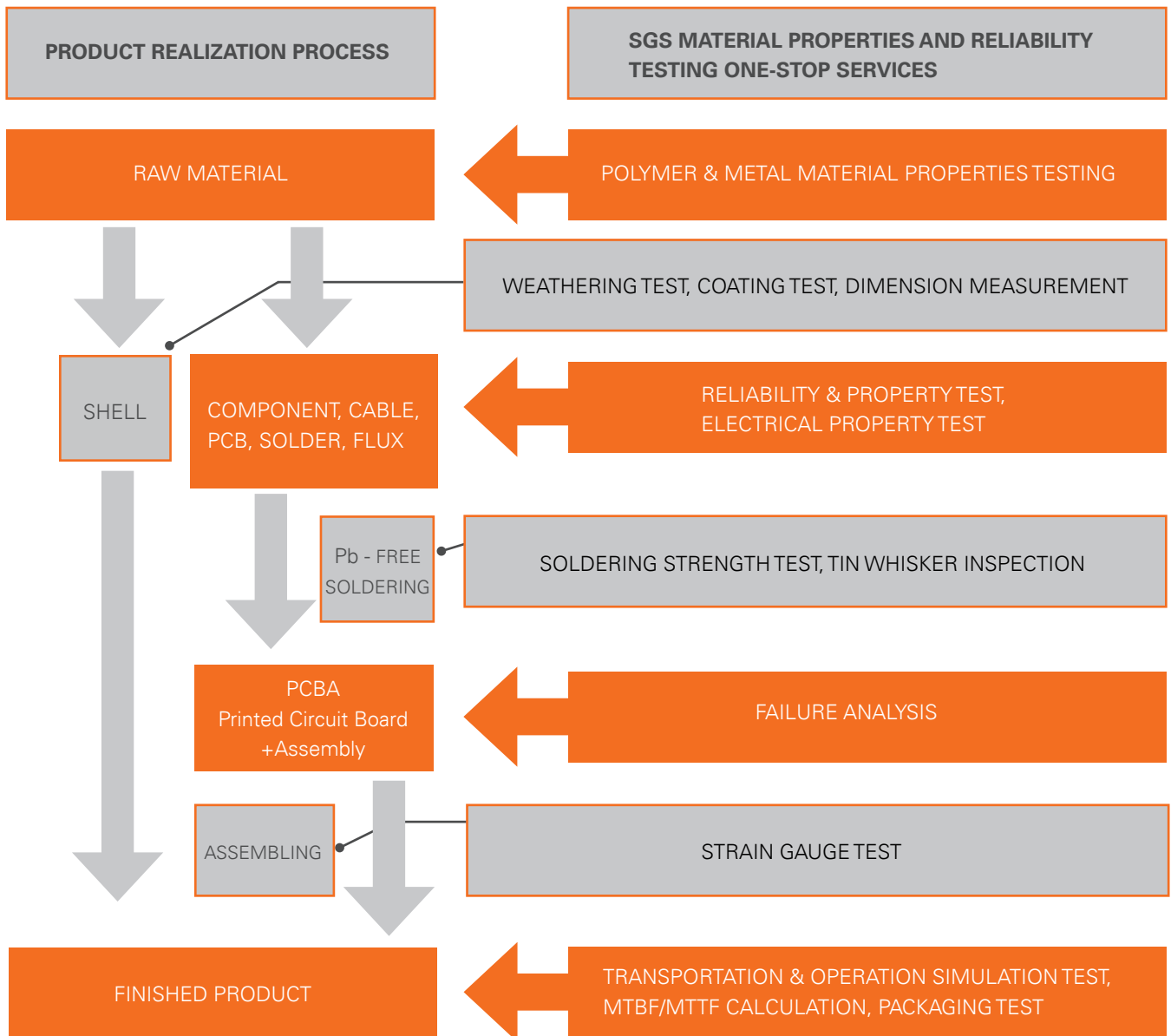
Clients use our services to test raw materials, electrical & electronic components, finished products, etc. As a world leader in testing, we provide the broadest range of standard options for our clients, including GB, IEC, ISO, ASTM, EN, and JIS.

Our testing services can be divided into three parts:



SGS MATERIAL PROPERTIES AND RELIABILITY TESTING ONE-STOP SOLUTIONS

With unmatched technical knowhow and a global service network, SGS provides one-stop solutions for property and reliability testing. We cover the whole process from research and development, through trial production, to formal production – raw material to finished product. Our experts can assist with design, application and analysis of the quality and reliability assessment, product analysis and assessment, technical consultation, cooperation and training. Working together, we can help you perfect and promote your product's competitiveness.



POLYMER MATERIAL TESTING

TEST OBJECTS

Plastics, rubbers, coatings and inks, adhesives and adhesive tapes, cables, composites etc.

TESTING ITEMS

Our consulting service helps organizations identify high-risk processes and control points during manufacturing, analyzing reasons for non-compliance and thereby helps to reduce the risk of future non-conformities.

- Physical properties – tensile/bend/ impact properties at high or low temperature, peeling/flexural/ compressive strength, surface tension, contact angle, density, etc.
- Thermal properties - static and kinetic dynamic mechanical properties, thermal conductivity, coefficient of linear thermal expansion, heat deflection temperature(HDT), vicat softening temperature (VST), glass transition temperature(Tg), melting point(Tm), etc.
- Optical properties - transparency, haze, gloss, colour difference, etc.
- Electrical properties - dielectric constant and strength, resistivity, dielectric breakdown voltage, PTI/CTI
- Flammability properties - vertical and horizontal burning, limiting oxygen index, glow-wire test, needle-flame test, HAI/HWI
- Weathering resistance - artificial accelerated UV exposure, artificial accelerated xenon arc exposure, artificial ozone aging, damp & heat resistance accelerated carbon arc exposure,
- Material analysis - composition comprehensive analysis, qualitative and quantitative analysis, failure analysis
- Material lifetime - polymer material lifetime prediction



- Non-destructive testing - ultrasonic testing, radiographic testing
- Aging testing - damp & heat resistance, salt spray testing
- Metallography testing - grain size, determination of content of non-metallic components, macrostructure inspection, fractures testing
- Chemical composition analysis - optical emission spectrometric, inductively coupled plasma/atom absorb spectrometric, carbon sulfur analyzer, SEM/EDS
- Dimension measurement
- Failure analysis

METAL MATERIAL TESTING

TEST OBJECTS

Ferrous metals and non-ferrous metals

TESTING ITEMS

- Mechanical properties
 - Raw materials and product materials testing: tensile test, impact test, bending test, compression test, hardness test
 - Fasteners testing: tension test, assurance loading test, torsion test
 - Steel wire testing: tension fracture loading, stress relaxation test, coating zinc mass test, adherence test
- Plating & coating testing - plating thickness, plating composition analysis, coating microstructure appearance

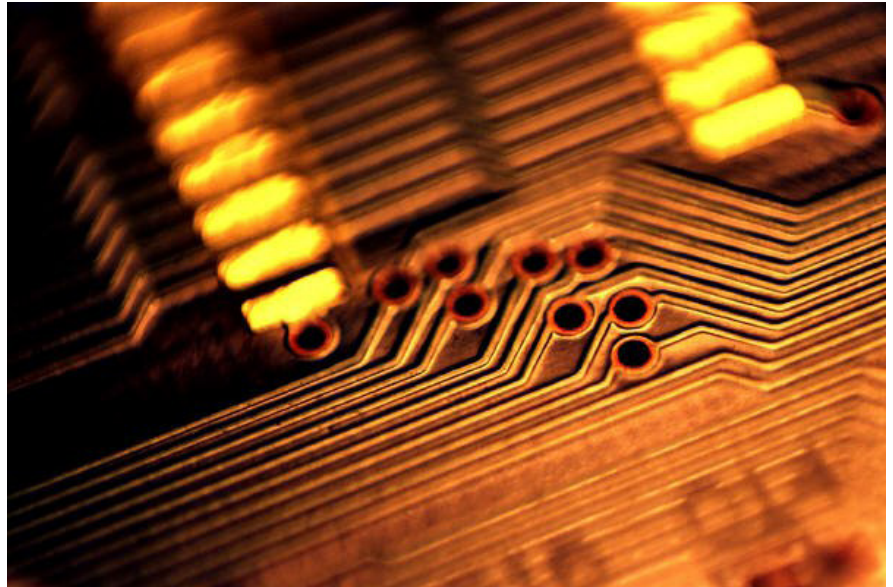
RELIABILITY TESTING

TEST OBJECTS

Electronic components, connectors, products, and PCB & PCBA

TESTING ITEMS

- Climate simulation test - temperature and humidity test, thermal shock test, rapid change of temperature test, salt spray test, gas corrosion, water & dust proof test
- Mechanical property test - vibration test, temperature and humidity & vibration test, mechanical shock test, bump test, free drop test, compress test
- Fatigue test - keystroke weariness and service life test, mating/un-mating weariness and service life, mating and unmating force test
- Electrical performance test - moisture and insulation resistance voltage resistance, dielectric withstanding voltage, CAF test, resistivity / conductivity, temperature rise, grounding resistance test, resistance to electrochemical migration
- Regular FA test - micro-sectioning, X-Ray, C-SAM, SEM/EDS, dye & pry, thermal conductivity, solderability test



WHY SGS?

SGS operates a dedicated team of experts in substance analysis, supply chain management and (eco-) toxicology, all backed by a global network of laboratories. From high quality testing to industry consultancy, SGS provides a convenient one-stop solution for operators in electrical and electronic supply chains.

For more information, visit

www.sgs.com/ee.

ABOUT SGS

SGS is the world's leading inspection, verification, testing and certification company. SGS is recognized as the global benchmark for quality and integrity. With more than 89,000 employees, SGS operates a network of over 2,600 offices and laboratories around the world.



Drill. *Tested.*

WHEN YOU NEED TO BE SURE

SGS