

Testing? **Treo.**

ACCREDITED TEST LABORATORIES

Environmental simulation · Material testing · Electrical safety · EMC

Testing? Treo.



ON THE SAFE SIDE WITH TREO!

As an accredited testing laboratory, we test the quality, dependability and safety of your products, devices and components. Our testing engineers use standards-compliant test programmes to ensure that your products meet the regulations for product approval. Your benefit: regardless of what you want us to test – at TREO you get everything from one single source!

Before a device or component receives approval for market launch, it must be tested for compliance with standard regulations. In our perfect equipped laboratory, we can carry out these tests.

Have you developed a product and want to launch it on the market? We can provide the support you need to ensure your product receives approval. We can tell you which requirements your product needs to meet, and we'll help you to successfully pass the final hurdles before launching. Our tests ensure your components or devices are fit for approval. Compliance testing is our core competence!

In our state-of-the-art laboratories, we carry out tests in four areas: environmental simulation, material testing, electrical safety and electromagnetic compatibility (EMC). In several stations (vibration testing on a shaker, extreme temperature changes in a climate chamber) the test components undergo special test programmes. If the component fails to meet a standard, our experienced engineers will help to solve the problem.

Treo has particular expertise in the shipbuilding, aerospace, rail, military and renewable energy sectors. We also test e-bikes and their components for reliability and EMC. No matter what product from which industry you want to bring to market: you're on the safe side with Treo!

**Get in touch with us.
Testing? Treo.**



INDUSTRIES

IEC 62262 DIN EN 61000-3-X
 DIN EN 55016-2-X DIN EN 61000-4-X
 DIN EN 61010-2-030 DIN EN 55014-X
 DIN EN 61010-1 DIN EN 55024
 ISO 20653 DIN EN 55032
 DIN EN 60529 DIN EN 61326-1
 DIN EN 50102 ETSI EN 301 489-1
 DIN EN ISO 9227 DIN EN ISO 4892-2
 DIN EN 60068-2-X DIN EN 61000-6-X
 DIN EN 55015



**GENERAL
INDUSTRY**

DIN EN ISO 9227
 DIN EN 60068-2-X
 EN 15194
 DIN SPEC 79009
 DIN EN 17404



BIKE

ISO 16750-X
 ISO 20653
 LV 124



AUTOMOTIVE

Testing?
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DIN EN 50155
 DIN EN 50121-3-2
 DIN EN 50121-4
 DIN EN 61373
 DB REGELUNG
 NR. EMV 06



RAIL

VG 96916 VG 95370 VG 95373
 MIL-STD 1275E BV 0430
 MIL-STD 810 AECTP 300
 MIL-STD 461 AECTP 400
 MIL-STD 167 AECTP 500



DEFENCE

DIN EN 60068-2-X
 FGW TR09



**RENEWABLE
ENERGY**

BUREAU VERITAS
 IEC 60533 DIN EN 60945 RINA
 IEC 60092-504 LLOYD'S REGISTER
 MEPC.107(49) DNV
 IACS E10 CCS
 USCG ABS



SHIPBUILDING

ABD0100 D6-16050-5
 RTCA DO-160 RTCA DO-313
 D6-36440 RTCA DO-357



AVIATION



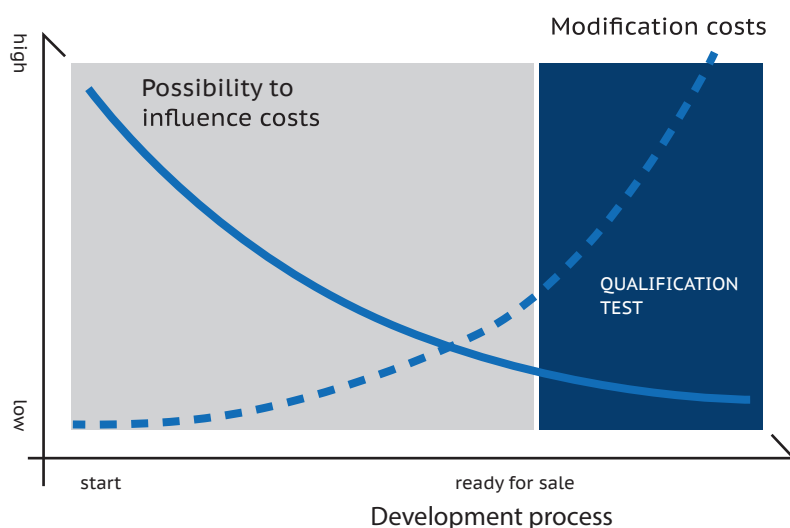
ON THE RIGHT TRACK – AT HIGH SPEED

Do you want to get your product on the market fast? And do you want to find and fix any disturbance early on? Then you need our SPRINT test!

With our Sprint service we step up to the starting line with you. We support you during the product development process. What makes our Sprint service special is that unlike the qualification tests for product approval we do not perform the complete test programme. Instead, we carry out an initial product check before the product is finalised. We work with you to identify weaknesses, filter them out and perform an in-depth check of the product's relevant features. This way you can be sure that the product meets the requirements – or can rework any critical features.

THE BENEFITS ARE CLEAR:

- quick results in a short time
- cost savings through early elimination of weak points
- higher chance of passing approval tests the first time
- quick market entry and optimum utilisation of the product life cycle
- a strong, experienced partner at your side



We promise that after our SPRINT test, you will know any weak points and can further optimise your product. If required, we will continue to support you in the development process as a partner until your product is ready for the market. This has advantages for both of us: you get to know the testing requirements at an early stage and can include them in your development process; at the same time, we get to know your product, which simplifies the processes in the laboratory. In addition, this enables both sides to plan a smooth final qualification.

ELECTROMAGNETIC COMPATIBILITY



Electromagnetic interference

Electromagnetic fields occur when electric equipment is used. This radiation influences the surroundings of the equipment, and the surroundings also have an effect on the equipment. For example, the electromagnetic fields emitted by a smartphone could unintentionally affect the motor of an e-bike or the other way round. We test the electromagnetic compatibility (EMC) of electric equipment and thus guarantee safety for people and equipment.

Interference emission and interference susceptibility: these terms describe the electromagnetic interaction of devices with their environment and vice versa. Interference signals can be transmitted through cables and radiation. Our services include standardised testing for conducted and radiated emissions/susceptibility, compass safe distances, electrostatic discharge (ESD) and electromagnetic fields.

Our highly qualified test engineers can carry out complex and demanding EMC tests in our modern laboratory and develop the necessary test programmes. For any product from any market, Treo is your competent partner for all aspects of device and component testing.

Get in touch and let us know what your needs are: we look forward to hearing from you and presenting our solutions!

Find more information on our website: www.treo.de



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Treo - Labor für Umweltsimulation GmbH | Hamburg | Neumünster
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ENVIRONMENTAL SIMULATION



External influences

All products and components are exposed to a range of natural or artificial stresses during their service life. These can include temperature changes, vibrations, pressure variation or even inclination. We perform standard-compliant tests to find out how your products withstand these environmental influences.

We simulate environmental influences in our excellently equipped laboratories. We test your products and components in compliance with legal specifications in a range of situations, from everyday to extreme. This allows us to determine whether the condition and function of your products is guaranteed at all times. Our environmental simulation tests include mechanical shock, acoustics, vibration, thermal shock, inclination, altitude, decompression or overpressure, humidity, water and dust. If your products pass our rigorous stress tests, we can guarantee that they will meet all the requirements for approval.

Does your product have to work reliably at all times? Get in touch!
Treo is your competent partner for all questions about environmental testing under extraordinary conditions!

Find more information on our website: www.treo.de



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ELECTRICAL SAFETY



Safety first

Short circuits, overheating, electric shock – electrical equipment always poses a certain risk. To ensure safe operation, strict international guidelines and standards apply to the development of new products. Our tests help you to meet these standards – and give your products higher quality and greater safety.

EN 61010-1, EN 62368-1 or EN 60598-1 or others; the standards electrical devices have to meet are wide-ranging.

With our three test packages S, M and L, we find the right solution for every requirement profile. We make sure safety comes first.

Test bundles for electrical safety	Option:	S	M	L
Marking and instructions	☐	☒	☒	
Hazardous radiations	☐	☐	☒	
Heating under normal operating conditions	☐	☐	☒	
Constructional requirements with regard to the protection against electric shock	☐	☒	☒	
Insulation requirements (Leakage current, high voltage, insulation resistance, PE resistance)	☒	☒	☒	
Fault conditions	☐	☐	☒	
Stability and mechanical hazards	☐	☒	☒	
Clearances and creepage distances	☐	☒	☒	
Components validation	☐	☒	☒	
Terminals	☐	☒	☒	
Mains power cord	☐	☒	☒	
Resistance to fire (Ball pressure, needle flame, glow wire)	☐	☐	☒	
Minimum number of samples required		1	1	4

☒ test included in package ☐ test NOT included in package

Find more information on our website: www.treo.de

MATERIAL TESTING



The appropriate choice of material

Materials are exposed to a wide variety of stresses in their service lives, depending on where they are installed. And on top of that, every material reacts differently to external influences. We find out how your materials behave – from normal operating conditions to the most extreme loads.

We develop and carry out customised test series designed to meet your exact requirements and wishes. We test a wide range of materials such as plastics, metals, coating systems or paints for all industries. In our state-of-the-art laboratories, our experienced engineers test your product material for chemical resistance, corrosion behaviour as a result of salt spray, weathering with solar radiation and rain as well as other influences. Subsequent, the stressed samples can be evaluated with different test methods according to your requirements or international standards. This includes the determination of colour fastness or hardness, tensile and compression tests or peel tests. After the standard-compliant tests you know exactly whether and how your product will react to potential influences.

Do you have a device, component or part whose material properties need to be tested? Get in touch: we will help you to ensure that your product meets all the requirements for approval. Treo – your competent partner for all aspects of product testing.

Find more information on our website: www.treo.de



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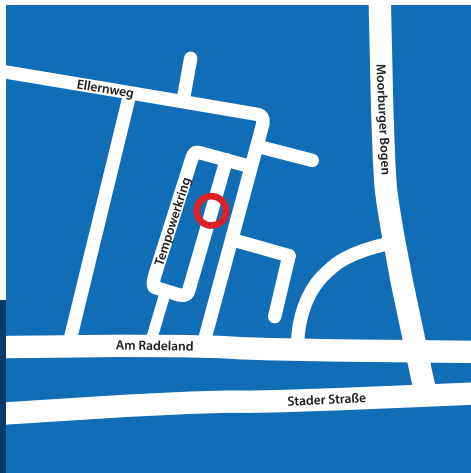
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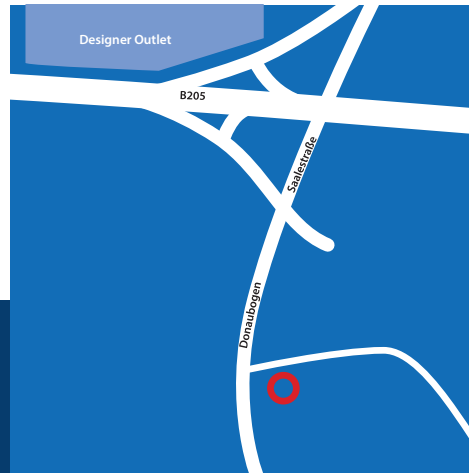
SITE HAMBURG



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