



Choose certainty.
Add value.

Airport infrastructure services 机场基础设施服务

Ensure safety and convenience
for airport users.
确保机场使用者的安全和便利

Your challenges

In the competitive and challenging airport business, airport authorities, developers, operators and equipment manufacturers are faced with changing regulations and industry standards. A wide range of specifications and laws govern all aspects of the airport lifecycle, from construction to operation. Stakeholders require expertise in these regulations and standards to ensure their compliance. To minimise the risk of delay, all stakeholder work in airport construction and operation should be integrated.

What considerations are important in airport construction and operation?

Issues of sustainability such as energy consumption, quality of use, availability, and general operating and administration costs are becoming increasingly important in airport design, construction and operation. You also need reliable systems for safety and security in order to minimise the probability of disturbances and damage. In addition, the convenience and satisfaction of passengers and airlines depends upon the quality and dependability of infrastructure.

您的挑战

在充满竞争和挑战的机场业务中，机场管理部门、开发商、运营商和设备开发商需要面对不断变化的法规和行业标准。大量的行业规范和法律适用于机场服务寿命期的各个方面，包括从机场建设到机场运营等。利益相关者需要关于这些法规和标准的专业知识，以确保其合规。为了最大程度减少延误的风险，机场建设和运营工作中的所有利益相关者，都应该整合其工作。

机场建设和运营需要考虑哪些重要因素？

能耗、使用质量、可用性、总体运营和行政管理费用等可持续性问题，对于机场的设计、建设和运营越来越重要。您在安全和保障方面还需要建立多种可靠制度，旨在最大程度地降低发生干扰和损害的可能。另外，旅客和航空公司的便利性和满意度也取决于基础设施的质量和可依赖性。



How can we support you?

TÜV SÜD's services help to reduce the risks associated with complex systems in airports. With a broad range of experience pertaining to regulatory compliance and industry standards, our experts are well versed in developing individual solutions for the needs of our airport clients.

We provide impartial and in-depth assessments that help to increase operational availability, boost cost effectiveness and provide legal certainty. Our experts offer comprehensive services for airport safety and security by evaluating risks involved in all technical installations and systems, evaluating all measures to be implemented, and providing recommendations and certification of relevant technical systems. This holistic approach provides you with the confidence and assurance for a safe, profitable venture.

Our airport infrastructure solutions

TÜV SÜD provides end-to-end solutions that address the entire lifecycle of the airport, from planning, construction and acceptance through to operation. Our services cover all buildings and accessible areas equipped with the following infrastructure:

■ Mechanical, electrical and plumbing (MEP) systems

- General and emergency power supply
- Airfield and building lighting systems
- Signalling systems and airfield marking
- HVAC systems
- Radio systems for authorities and organisations with safety tasks
- Building services automation systems
- Lightning and surge protection systems

我们将会为您提供哪些支持?

TÜV南德意志集团的服务将会帮助您减少与机场各项复杂制度相关的风险。我们的专家具有与规管合规和行业标准相关的广泛经验，非常擅长制定具体解决方案并满足我们的机场客户。

我们将提供公平、深入的评估，帮助增加操作可用度，提高成本效率，提供法律确定性。我们的专家可以通过评估所有与技术安装及系统有关的风险和将要实施的各种措施，提供相关技术系统的建议和认证，为机场安全和保障提供全面的服务。这一整体方式可以帮助您增强信心，并为您的投资安全和利润提供保障。

我们的机场基础设施服务

TÜV南德意志集团可以提供端到端的解决方案，用于应对从规划、建设、验收直至运营等整个机场使用寿命期内的各个问题。我们的服务涵盖以下基础设施的所有建筑和可接触区域：

■ 机械、电力和管道 (MEP) 系统

- 一般与紧急供电
- 机场和建筑照明系统
- 信号系统和机场标识
- 暖通空调系统
- 承担安全任务的管理部门和组织的无线电系统
- 建筑服务自动化系统
- 照明和过载保护系统

■ Lifts and hoisting machines

- Lifts, escalators and moving walkways
- Passenger boarding bridges
- Suspended access equipment
- Cranes and hoisting equipment
- Power-driven doors and gates
- Car parking systems

■ Fire and security

- Fire safety, and smoke and heat extraction systems
- Fire extinguishing systems
- Fire shutters, fire barriers, fire-resistant compartments
- Area security monitoring systems
- Fire alarm and CO alarm systems
- Evacuation concepts, evacuation plans, emergency action plans
- Safety and escape lighting, emergency power supply

■ Equipment and engineering structures

- Tunnels
- Terminals and towers (including roofing systems)
- Hangars and equipment
- Baggage conveyor systems
- Luggage x-ray machines
- Airfield refuelling facilities
- Cathodic corrosion protection
- Test benches
- De-icing systems

Our services during planning and design

■ Tendering support and design review

TÜV SÜD conducts feasibility studies and provides administrative approval and planning management support for airport authorities and developers during the planning stage. We review tender documentation and design plans for the building and its technical installations, and produce FEM and CFD simulations of airport buildings, hangars and equipment.

■ Risk management

We offer IT security solutions, risk analyses and disaster recovery of information. This includes safety and security assessment of air traffic control systems, air traffic density, air crash frequencies, landing and start frequencies, and renovation and expansion projects.

■ Environmental and sustainability services

TÜV SÜD provides comprehensive services addressing the sustainability of all aspects of airport infrastructure. We provide expert reports on environmental impact assessments and CO₂ emissions, as well as solutions for meeting environmental legal requirements. Our suite of energy efficiency services includes consulting, energy consumption assessment, energy modelling and simulation.

■ 电梯和起重机械

- 电梯、扶梯和电动人行道
- 旅客登机桥
- 悬挂式入口设备
- 起重机和起重设备
- 电动门
- 泊车系统

■ 防火和安保

- 防火安全及除烟、除热系统
- 灭火系统
- 防火卷帘、防火屏障、防火隔间
- 区域安保监控系统
- 火警和一氧化碳报警系统
- 疏散概念、疏散计划、紧急行动计划
- 安全和逃生照明, 紧急供电

■ 设备和工程结构

- 地道
- 候机楼和塔楼 (包括屋顶系统)
- 机库和设备
- 行李传输系统
- 行李X光机
- 机场加油设施
- 阴极腐蚀保护
- 测试台
- 除冰系统

我们在规划和设计期间的服务

■ 招标支持和设计审核

TÜV南德意志集团可在规划阶段进行可行性研究, 并为机场管理部门和开发商提供行政许可和规管管理支持。我们还可以针对建筑物及其技术安装, 审核招标文件和设计计划; 针对机场建筑物、机库和设备进行FEM和CFD模拟。

■ 风险管理

我们可以提供信息技术安全解决方案、风险分析和信息灾难恢复。其中包括针对航空交通管制系统、交通密度、飞机失事频率、着陆和起飞频率以及重修及扩建项目的安全性评估。

■ 环境和可持续性服务

TÜV南德意志集团可以提供一系列综合服务, 应对机场基础设施各个方面的可持续性问题。我们可以针对环境影响评估、二氧化碳排放提供专家报告, 并为满足环保法律要求提供解决方案。我们一系列关于能效的服务中, 包括咨询、能耗评估、能源建模和模拟。

Our services during construction and completion 我们在施工和竣工过程中提供的服务

■ Construction monitoring

Our engineering experts provide on-site consultancy during the construction of airports and the fitting of their interior building systems and equipment, including construction monitoring, quality assurance, safety analyses and assessments, and construction site safety.

■ Technical audit of installed systems

TÜV SÜD performs independent technical audits to ensure the installations comply with design specifications and industry best practices. We review design drawings, provide test parameters, review testing and commissioning documentation, and perform tests and on-site inspections for quality assurance. Our expert reports address design and technical compliance, as well as any identified deficiencies and recommendations.

■ Testing and inspection of technical installations

We conduct safety analysis and assessment of all mechanical, electrical and plumbing installations, and work with you to optimise the design of all technical systems. TÜV SÜD also provides services for lab testing, type testing and final acceptance testing of technical installations and components, and lifecycle functional safety assessment. We test several products and equipment in accordance with international directives and standards.

■ Green building services

Our services cover energy rating certification, as well as facilitation for green building certification based on international sustainability rating systems (e.g. BREEAM and LEED).

■ 施工监控

我们的工程专家将在机场建设和室内建筑系统以及设备的安装过程中提供现场咨询，其中包括施工监控、质量保证、安全分析和评估以及施工场地的安全。

■ 安装系统的技术审核

TÜV南德意志集团可以实施独立技术审核，确保各项安装工程符合设计规范和最佳行业实践。我们可以审核设计项目，提供测试参数，审核测试和调试文件，针对质量保障开展测试和现场检验。我们的专家报告可以解决设计和技术合规问题以及所有在检测中发现的缺陷。

■ 技术安装工程的测试和检验

我们可以针对所有机械、电力和管道安装开展安全分析和评估，并与您共同合作，优化各种技术系统的设计。TÜV南德意志集团还可以为技术安装工程和部件开展实验室测试、类型测试和最终验收测试，并且可以进行生命周期功能安全评估。我们可以依据国际指令和标准检测多种产品和设备。

■ 绿色建筑服务

我们的服务基于国际可持续性评级系统（例如BREEAM和LEED），涵盖能源评级认证及加速绿色生态建筑认证。

Our services during operation and maintenance

■ Operation and maintenance support

Our experts offer periodic inspection and testing for the effectiveness and operational safety of building services and installation equipment. Beyond conducting health and safety training for your team of airport personnel, we can provide you with a fire safety coordinator and a pollution control officer.

■ Certification and validation

TÜV SÜD is accredited to certify your airport operations to several international management systems and provide systems evaluation for LBA (Luftfahrt-Bundesamt) and EASA (European Aviation Safety Agency) certification.

我们在运营和维护过程中提供的服务

■ 运营和维护支持

我们的专家可以为建筑设备和安装设备的有效性和操作安全性提供周期性的检验和测试。除了为您的机场人员团队提供健康和安全教育，我们还可以为您委派一名防火安全协调员和污染控制员。

■ 检验和认证

TÜV南德意志集团已经获得相关认可，可以依据多项国际管理制度为您的机场运营提供认证，同时可以针对联邦航空局（Luftfahrt-Bundesamt）和欧洲航空安全局（EASA）认证提供系统评价。



Examples of directives and standards that we test, inspect and certify to:
我们测试、检验和认证的指令和标准示例：

TESTING AND INSPECTION OF TECHNICAL INSTALLATIONS 技术安装的测试和检验	
Machinery Directive 2006/42/EC 机械指令2006/42/EC	<ul style="list-style-type: none"> ▪ Auxiliary equipment and ground facilities 附属设备和地面设施
ATEX 99/92/EC	<ul style="list-style-type: none"> ▪ Assembly, installation and operation of equipment in areas with explosive risks 在易爆区域的设备装配、安装和操作
PED 97/23/EC	<ul style="list-style-type: none"> ▪ Ground equipment under pressure 承压地面设备
95/16/EC; 2006/42/EC EN81; EN115; ASME A17.1 /CSA B44; (et al.)	<ul style="list-style-type: none"> ▪ Inspection and certification of lifts, escalators and moving walkways 电梯、扶梯和电动布道的检验和认证
EN ISO 717-1 指令 2002/49/EC DM 31/10/1997	<ul style="list-style-type: none"> ▪ Noise insulation measurement and evaluation 噪音隔离措施和评价
EN 13816	<ul style="list-style-type: none"> ▪ Passenger transport service quality 旅客运输服务质量

MANAGEMENT SYSTEMS CERTIFICATION
管理系统认证

ISO 9001, AS/EN 9100, 9110, 9120	<ul style="list-style-type: none"> Quality management 质量管理
ISO 14001	<ul style="list-style-type: none"> Environmental management 环境管理
EMAR EEC 1836/93	<ul style="list-style-type: none"> Eco-management and audit 生态管理和审核
ISO 50001	<ul style="list-style-type: none"> Energy management 能源管理
ISO 27001	<ul style="list-style-type: none"> Information security management 信息安全管理
ISO/IEC 20000	<ul style="list-style-type: none"> IT service management 信息技术服务管理
OHSAS 18001	<ul style="list-style-type: none"> Occupational health and safety management 职业健康和安全管理
SCC / BS 8800	<ul style="list-style-type: none"> Safety management 安全管理
HSSE	<ul style="list-style-type: none"> Health, safety, security and the environment management 健康、安全、保障和环境管理

SYSTEMS EVALUATION FOR LBA/EASA CERTIFICATION
LBA/EASA 认证的系统评价

EU OPS / EASA	<ul style="list-style-type: none"> Systems for operation of commercial air transport 商业航空运输运营系统
JAR-FCL / EASA	<ul style="list-style-type: none"> Systems for flight schools 飞行学校系统
JAR-145 / EASA	<ul style="list-style-type: none"> Systems for technical aviation companies 技术性航空公司系统



Your business benefits

- **Gain assurance of airport security** – by avoiding disturbances and damage, thereby maintaining your airport's reputation for safety and security.
- **Ensure systems availability and quality** – with our expertise in early recognition of weak spots. By avoiding faults and breakdowns, you contribute to satisfied passengers and airlines, and good public opinion.
- **Avoid legal risks** – through our in-depth knowledge of technical directives, rules and regulations, and standards.
- **Improve cost effectiveness** – by using our engineers' customised solutions for increased efficiency and cost savings.
- **Reduce your administration costs** – by using eDocX, our innovative web-based logbook to store electronic test certificates, thereby meeting legal compliance for documentation and providing ease of access.

Why choose TÜV SÜD?

TÜV SÜD is a trusted, independent third-party solutions provider for your airport infrastructure. The strong reputation of the TÜV SÜD brand ensures that our reports and certificates meet with a high level of acceptance around the world.

Our experts are actively involved in the development of many European and international standards, making them completely familiar with state-of-the-art technology and statutory regulations. We have long-standing experience with airport infrastructure, having been engaged on a number of high-profile projects at airports in Germany, Switzerland, Italy, the United Arab Emirates, Georgia, South Africa and India. Our industry expertise keeps us up to speed with the latest developments in international regulations and standards.

您的企业收益

- **获得机场安全保证** — 避免干扰和破坏，由此可以为您的机场维护安全，保障声誉。
- **确保系统可用性和质量** — 我们具有早期发现薄弱环节的专业技术。通过避免缺陷和故障，您可以提高乘客和航空公司的满意度，获得良好的社会舆论评价。
- **避免法律风险** — 我们对于技术指令、规则、法规及标准具有深刻了解。
- **改善成本效益** — 利用我们工程师定制的解决方案，提高效率并节约成本。
- **减少您的行政管理费用** — 通过采用eDocX，我们的创新网络日志可以储存电子测试证书，以此满足文件的法律合规要求，提供准入便利。

为什么选择TÜV南德意志集团？

TÜV南德意志集团在机场基础设施方面是一家值得信赖的独立第三方解决方案提供商。在世界各地，TÜV南德意志集团品牌的良好声誉可以确保我们的报告和证书满足高水平的验收。

我们的专家积极参与了很多欧洲和国际标准的制定过程，这使他们对于最新技术和法定规范非常了解。我们在机场基础设施方面具有长期经验，曾经参与了德国、瑞士、意大利、阿联酋、格鲁吉亚、南非和印度等国家机场的很多重要工程。我们的行业专业技术可以帮助我们时刻与国际法规和标准的最新发展保持同步。

Choose certainty. Add value.

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:

- Civil and structural engineering services
- Mechanical, electrical and plumbing (MEP) services
- Lift and escalator services

权威认证, 创享价值

TÜV南德意志集团是一家优质、安全和可持续性解决方案提供商, 专门从事测试、检验、审核、认证、培训和知识服务。我们在世界各地有800多个分支机构, 并在欧洲、美洲、中东和亚洲持有认证资质。通过为客户提供客观的解决方案, 我们可以为企业、客户和环境创造有形价值。

相关服务

TÜV南德意志集团提供以下相关服务:

- 土木及结构工程服务
- 机械、电气和管道 (MEP) 服务
- 电梯和扶梯服务

* Some of the services listed are provided due to local regulations only and may not be available in other regions. Please contact us for further details.

* 上述部分服务可能由于当地法规的原因而无法在您的地区提供。欢迎您与我们联系咨询。

Our branches in Greater China:

我们在大中华区的分支机构:

Shanghai	上海	Tel.: +86 21 6141 0123	Suzhou	苏州	Tel.: +86 512 6809 5318	Changchun	长春	Tel.: +86 431 8462 9833
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Industry Material Testing Lab	上海工业材料实验室	Tel.: +86 21 6014 9880	Hangzhou	杭州	Tel.: +86 571 8111 0758	Guangzhou	广州	Tel.: +86 20 3832 0668
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Hong Kong Lab	香港元朗实验室	Tel.: +852 2443 3774	Chongqing	重庆	Tel.: +86 23 8980 9513	Dongguan	东莞	Tel.: +86 769 2168 7092
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