



Choose certainty.  
Add value.

## Civil and structural engineering services 土木和结构工程 服务

Achieve structural quality assurance with third-party inspections and project management consultancy. 通过第三方检验和项目管理咨询获得结构质量保证

### Your challenges

Managing cost is crucial to ensure the profitability of construction projects. For example, with the rate of return in the construction industry averaging between one and three per cent per development, the two per cent estimated cost of rectifying defects can often wipe out any potential returns on investment. Construction defects can also lead to legal disputes and project delays, resulting in considerable financial losses for developers and investors.

Every building construction requires meticulous planning and multidisciplinary technical know-how to fulfil the various technical, financial and legal requirements of the construction industry. Companies also need objective expertise during dispute cases and support for bill of quantities documentation.

### Why is third-party expertise important for construction projects?

Objective third-party expertise can help ensure that a

### 您的挑战

成本管理对于确保建筑项目的获利能力至关重要。例如，建筑行业每开发一项新的工程，发生返工的概率在百分之一到百分之三之间，而弥补缺陷需要百分之二的预估成本，由此会毁掉任何潜在的投资回报。建筑缺陷还可能导致法律纠纷及项目延期，为开发商和投资者带来相当大的经济损失。

每一项建筑工程都需要精心规划和多学科技术来满足建筑行业在技术、经济和法律方面的不同要求。公司还需要能够应对争议案例的客观专业技术，以及工程量清单的支持。

### 为什么第三方专业技术对于建筑项目非常重要？

客观的第三方专业技术可以帮助您确保一栋建筑能够经

building stands the test of time, weather and utilisation. A multitude of standards for construction and building projects have emerged over the past few decades covering areas such as structural stability, structural safety, fire protection, as well as a building's technical installations. These standards can help developers create safer and more reliable structures and environments for their occupants. Third-party testing and analyses according to these standards can also minimise damage rectification costs, extend the life of a structure and increase its value.

### How can we help you?

TÜV SÜD's comprehensive civil engineering and construction services extend from single activities to end-to-end support of your construction projects, whether you are developing a new structure or refurbishing and modernising an existing one. We can support your team throughout the building's lifecycle with technical consultations, quality assessments and certifications, and project management. In addition to structural and construction services, we also provide a full suite of mechanical and electrical engineering services including consulting and third-party inspections for your building's mechanical, electrical and plumbing (MEP) systems. Our one-stop on-site solutions help to ensure a project's compliance to prevailing national and international regulations, whether it is a residential, commercial or industrial building.

### Our civil and structural engineering services

We provide the following services to ensure the structural stability and safety of your assets.

#### ▪ Project management consultancy

TÜV SÜD helps streamline your construction processes and keeps the project on schedule, from initial planning and analysis to final acceptance. We help optimise the work processes of individual stakeholders and provide consultancy on design reviews and approvals, bill of quantities and contract management, construction monitoring, and construction site safety management.

#### ▪ Third-party quality assurance and quality control

Regular third-party quality assurance and quality control (QA/QC) inspections by TÜV SÜD throughout the construction period will protect your investment by verifying that a project is being executed according to your plans and construction specifications. Our experts are able to recommend the most financially and

受住时间、天气和使用的考验。过去几十年里，针对建筑施工和建筑项目出台了多种标准，涉及的领域包括结构稳定性、结构安全性、防火保护以及建筑物的技术构成等。这些标准可以帮助开发商为居住者创造更加安全和可靠的结构和环境。依据上述标准开展的第三方测试和分析还可以最大程度地减少损害补救成本，延长结构寿命及增加其价值。

### 我们可以为您提供哪些帮助?

TÜV南德意志集团全面的土木工程和建筑服务可以在您的建筑项目中从单一活动一直延伸至端到端支持。无论您是在开发一项新的结构还是在重修及现代化改造现有结构，我们都可以在建筑物的服务寿命期内从始至终地为您的团队提供支持，包括技术咨询、质量评估和认证及项目管理。除了结构和建筑服务，我们还可以提供一系列机械和电气工程服务，包括针对您建筑物的机械、电气和管道系统提供的咨询和第三方检验。我们的一站式现场解决方案将帮助确保每一个项目都能符合现行国家和国际法规，无论建筑物是属于居住、商业还是工业性质。

### 我们的土木和结构工程服务

我们可以提供以下服务，确保您的资产具有结构稳定性和安全性。

#### ▪ 项目管理咨询

TÜV南德意志集团可以帮助您优化施工过程，从前期规划到最终验收分析，确保项目符合计划进度。我们还可以优化个体利益相关者的工作流程，为设计复查和审批、工程量清单和合同管理、施工监控和建筑场地管理提供咨询。

#### ▪ 第三方质量保证和质量控制

TÜV南德意志集团可以在整个施工期间委派常规第三方质量保证和质量控制检验人员，验证项目是否按照您的计划和施工规范进行，从而保障您的投资安全。我们的专家可以给您推荐在经济和技术方面最适当的解决方案，确保您的流程和最终产品符合各种安全和质量要求。我们关于建筑物理学的失效



technically fit solutions to ensure that your processes and end product comply with all safety and quality requirements. Our failure analyses and consulting services on building physics contribute towards more successful projects. We also offer expert reports for insurance claims and court proceedings, construction damages, noise protection, heat insulation and damp proofing.

#### ■ **Structural controlling**

Our structural controlling services help address structural safety and stability during construction and the ensuing warranty period. These assessments cover a variety of tests and failure analyses based on TÜV SÜD's internationally recognised expertise in building physics and civil engineering, including construction cost control and TÜV SÜD Sustainable Certification of Real Estate (SCoRE) property certifications.

TÜV SÜD's structural controlling services include special inspections after flood or fire tests as well as the structural review of load-bearing capacities. Our experts will conduct chemical and physical analyses of the concrete and steel used in the building along with destructive and non-destructive testing. If our experts do find structural issues, they will also provide you with restoration and repair recommendations together with cost estimates.

分析和咨询服务为项目的成功提供良好保证。我们还可以提供关于保险索赔和法院诉讼、建筑损坏、噪音保护、隔热及防潮方面的专家报告。

#### ■ **结构控制**

我们的结构控制服务可以在建筑以及整个保修期间帮助解决结构安全和稳定性问题。基于TÜV南德意志集团在建筑物理学和土木工程方面国际公认的专业技术，这些评估涵盖多种测试和故障分析，其中包括建筑成本控制和TÜV南德意志集团房地产可持续性认证（SCoRE）。

TÜV南德意志集团的结构控制服务包括洪水或者火灾检测之后的特别检验，以及承重能力的结构审核。我们的专家将针对建筑物中使用的混凝土和钢材开展化学和物理分析，同时可以开展破坏性及无损检测。如果我们的专家发现了结构问题，还将为您提供修复和维修建议以及费用估算。



#### ■ Fire safety

A building's fire safety strategy should be considered as early as the design stage, as it requires the optimum coordination of all sub-projects. TÜV SÜD's in-depth understanding of structural and organisational fire safety can help you develop comprehensive escape, rescue and fire-fighting plans. We provide consulting services on smoke extraction strategies and simulations, escape, rescue and fire-fighting plans, extinguishing water supply, and containment and evacuation simulations.

#### ■ Sound proofing and building acoustics

Residential property owners consider sound insulation and room acoustics a top priority after fire safety. TÜV SÜD's experts can help you develop plans for building quieter, more conducive rooms. We assist architects, planning officers and building developers around the world to develop plans for building and room acoustics, and offer expert reports on speech intelligibility within rooms.

#### ■ Refurbishment and modernisation support

TÜV SÜD's expert tests and analyses can help you design cost-effective permanent damage remediation strategies for refurbishing older structures. Our refurbishment proposals and repair recommendations include damage assessment reports, construction materials analyses, bills of quantities and acceptance documentation.

TÜV SÜD's expert analyses also cover concrete and facade refurbishment, including recommending solutions for removing asbestos and other building pollutants.

#### ■ 防火安全

一栋建筑物的防火安全策略应在设计阶段尽早规划，因为这一策略将要求所有子项目的优化协调。TÜV南德意志集团对于结构和组织防火安全的深刻了解可以帮助您制定全面的逃生、营救和灭火计划。我们可以针对排烟策略及模拟、营救和灭火计划、消防水源供应以及遏制和疏散模拟等提供咨询服务。

#### ■ 隔音和建筑声学

居民楼的业主会将隔音和房间的声响效果视为仅次于防火安全重中之重。TÜV南德意志集团的专家可以帮助您制定计划，使建筑物更安静，使房间更舒适。我们可以协助世界各地的建筑师、规划人员以及建筑开发商，制定建筑和房间声学效果计划，提供关于房间内声音清晰度的专家报告。

#### ■ 重修和现代化改造报告

当您翻新老旧建筑时，TÜV南德意志集团的专家测试和分析可以帮助您制订价格合理的永久性损害弥补策略。我们的重修方案和维修建议包括损害评估报告、建筑材料分析、工程量清单和验收文件。

TÜV南德意志集团的专家分析还可以涉及混凝土和外立面的翻新，其中包括推荐用于清除石棉和其他建筑污染物的解决方案。

### ▪ **Mediation support services**

With strong expertise in civil engineering and building physics, our experts are often engaged to conduct comprehensive third-party building surveys and due diligence reviews to investigate building defects and damages in dispute cases. We provide arbitration and mediation support services by securing evidence through expert analyses, producing investigation reports on building materials and defects, and auditing of the financial accounting for construction projects.

## Your business benefits

- **Save cost** – by engaging TÜV SÜD’s cost-effective integrated project management solutions.
- **Minimise risk** – by identifying quality problems early on and reducing the risk of expensive reworking delays and legal liabilities that can damage your reputation.
- **Improve quality control** – with our interdisciplinary support, which gives you efficient single-source control that allows you to keep your project on schedule, improve the quality of the final product and enhance user satisfaction.
- **Enhance efficiency** – with our complete one-stop solutions that can accommodate all your technical, project management and quality needs.
- **Gain a competitive edge** – by partnering with a globally renowned third-party service provider that has a strong reputation for quality, safety and sustainability.

## Why choose TÜV SÜD?

With a wide range of services and multidisciplinary engineering capabilities, TÜV SÜD can help you resolve many of today’s most complex building and construction challenges. We will design customised assessment and testing programmes tailored to your building’s needs, providing you with a reliable basis for making informed decisions before your project even begins.

TÜV SÜD’s reputation as an independent third-party consulting and technical service provider ensures certainty in planning and reliability for your construction project. Our internationally acclaimed experts regularly participate in building standards development committees, giving us foresight knowledge that allows us to offer best-in-class advisory to help you manage your risks and liabilities.

Our international presence in all major markets means that we have a deep understanding of both global and local building regulations. Over the years, our experts

### ▪ **调节支持服务**

我们的专家在土木工程和建筑物理学方面具有良好的专业技术，他们经常参与执行全面的第三方建筑勘测和尽职调查审核，在争议案例中调查建筑物缺陷和损坏。我们可以通过专家分析获得证据，编制关于建筑材料和缺陷的调查报告，审核关于建筑项目的财务状况，以此提供仲裁和调节支持服务。

## 您的企业收益

- **节约成本** — 利用TÜV南德意志集团价格合理的整合项目，管理解决方案。
- **最大程度地降低风险** — 及早地识别质量风险，减少返工延误和法律责任风险及由此产生的大量经济损失和声誉损失。
- **提高质量控制** — 利用我们的跨学科支持，给予您高效的单一来源控制，帮助您保证自己的项目进度，提高最终产品质量，增强用户满意度。
- **提高效率** — 我们的一站式解决方案，能够帮助您解决各种技术、项目管理和质量方面的问题。
- **获得竞争优势** — 与全球著名的第三方服务提供商建立合作伙伴关系，并从中获得质量、安全和可持续性的良好声誉。

## 为什么选择TÜV南德意志集团?

TÜV南德意志集团可以提供广泛服务并具有多学科工程能力，可以帮助您解决当下大量复杂的建筑和施工难题。我们将依据您的建筑需求设计定制评估和测试计划，在项目开始之前，帮助您做出明智的决定，建立可靠的基础。

TÜV南德意志集团作为一家独立第三方咨询和技术服务提供商享誉全球，可以帮助您确保建筑项目规划的确定性及可靠性。我们具有国际声誉的专家经常参与标准制定委员会，由此使我们对知识有着超前的理解，从而可以提供最好的建议，帮助您管理风险和责任。

我们活跃在世界各地的主要市场，这意味着我们可以深入了解全球不同的地方性建筑法规。多年来，我们的专家在世界各地参与了几百项公共、私营和联合行



have worked on hundreds of public, private and joint-sector projects around the world, and can speak the language of your local teams on-site wherever you do business.

### 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 and Asia. By delivering objective solutions to our customers, we add tangible value to businesses, consumers and the environment.

业项目，无论您在哪里开展业务，他们都可以在现场利用当地团队的语言进行交流。

### 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。

#### Related services

TÜV SÜD provides the following related services:

- Construction materials and products inspection, testing and certification
- Lift and escalator services
- Mechanical, electrical and plumbing (MEP) services
- ISO 9001 – Quality management system certification
- OHSAS 18001 – Occupational health and safety management system certification

#### 相关服务

TÜV南德意志集团提供以下相关服务：

- 建筑材料和产品检验、测试和认证
- 电梯和扶梯服务
- 机械、电气和管道服务
- ISO 9001 – 质量管理体系认证
- OHSAS 18001 – 职业健康和安全管理体系认证

\* 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
Shanghai Testing Center	上海测试中心	Tel.: +86 21 6037 6300	Chengdu	成都	Tel.: +86 28 8952 0656	Shenzhen	深圳	Tel.: +86 755 8828 6998
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
Hong Kong	香港	Tel.: +852 2776 1323	Changzhou	常州	Tel.: +86 519 8123 9872	Xiamen	厦门	Tel.: +86 592 7706 188
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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