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工业服务 Industrial Services

www.tuv.com



德国莱茵TÜV，您值得信赖的合作伙伴

TÜV Rheinland is your reliable partner



德国莱茵TÜV工业服务在全球范围内为您提供技术检验、检测、认证等服务，增强客户对产品的信心。目前，我们主要针对石油天然气、化工、能源与电力、机械制造业以及港口机械等产业。无论是法定、自愿，或是客户提出的特殊要求，我们的专家能提供相应的一站式解决方案，帮助确保产品和设备质量及性能符合市场相关要求，协助更多中国企业顺利进入国际市场。

The industrial services division of TÜV Rheinland is equipped with the global technology necessary to provide you with inspection, testing and certification services that inspire customers with confidence in your products. Currently, we mainly focus on industries such as oil and gas, chemical, power and utilities, manufacturing and port machinery. Whether your customers impose statutory, voluntary or specific requirements, our experts can offer the complete service portfolio to ensure that your products or equipment are in line with the quality and performance requirements of all applications.

- 德国莱茵TÜV工业服务拥有强大的专家团队，包括机械工程师、电气工程师、材料工程师、无损检测工程师、焊接工程师、工厂审核师以及工厂设施和设备组件专家
 - 凭借卓越的技术实力和全球化信息网络，德国莱茵TÜV能够在第一时间掌握世界各地最新的贸易和产品标准
 - 从检测技术方面着手，我们能及时为国内客户提供相应的服务项目，从而帮助企业在国际贸易中有效降低风险、跨越贸易壁垒，顺利获得进入国际市场的通行证
 - 凭借从全球超过61个国家的国际项目中所获得的丰富经验，我们会是您的最佳伙伴，帮助并支持您开展全球业务
 - 凭借综合的服务能力和专业技术，为您在全球贸易挑战中提供量身定制的解决方案
- TÜV Rheinland industrial services employ a range of expert professionals, including mechanical engineers, electrical engineers, material engineers, non-destructive examination (NDE) engineers, welding engineers, factory auditors, and plant facility and equipment experts
 - Our superior technology and global information network allows TÜV Rheinland to master the latest international trade and product standards and testing technology to respond to Chinese customers with appropriate services faster than its competitors
 - We help to boost the international trade of Chinese enterprises by reducing the risk of trade barriers, thereby allowing a smooth pathway to international markets
 - Due to our extensive experience gained in overall global projects in more than 61 countries, we are your right partner to support and assist you in your global business
 - With our large portfolio of services and know how, we deliver tailored solutions for your business challenges

工业品供应链控制服务

Industrial supply chain control services

工业品制造商如要提供最好的产品以及具有竞争力的价格，就需要原材料和零部件具有最佳性价比，对加强供应链控制的需求不断增长。德国莱茵TÜV提供一系列供应链服务，帮助客户控制整个供应链过程。借助于覆盖全球的网络，我们能够在几小时或几天内锁定全球范围的供应商，并跟踪整条供应链。

Industrial producers must provide the best products and most competitive prices, which requires raw materials and spare parts that represent the best value for money. There is thus growing demand to strengthen supply chain control. TÜV Rheinland provides a broad range of supply chain services to industrial product manufacturers to help them to control the entire supply chain process. Thanks to the global coverage of our network, we can assess suppliers worldwide and track the entire supply chain in a matter of just hours or a few days.

服务范围

Service scope



供应商评估

德国莱茵TÜV在供应商选择、生产、运输和安装各个阶段提供的服务都能为您在整个供应链中增值。同时，我们帮助您选择有资质、有能力的供应商，确保材料与部件的质量，从而避免交货延误。

Vendor assessment

No matter in which segment you operate - TÜV Rheinland's services during Vendor Selection, Production, Shipment and Installation, can add value along the entire supply chain. We also help you to select qualified and capable suppliers, to assure the quality of materials and components and to avoid delays in delivery.

生产

Production

我们的服务包括原材料入厂的检验和检测，生产过程的质量控制和管理，生产完成后的最终产品验收。

Our services include inspection and testing of the incoming materials, quality control and management during the production, final acceptance inspection after the production.

- 检验(目视、尺寸、焊接、涂层、涂漆)
 - 见证质量测试
 - 催交服务
 - 无损测试
 - 文件审查
 - FAT (工厂验收测试)
 - PSI (装船前检验)
- Inspections (visual, dimensional, welding, coating, painting)
 - Witnessing of quality tests
 - Expediting
 - NDT
 - Documentation review
 - FAT (Factory acceptance test)
 - PSI (Pre-shipment inspection)

装运 Shipment

我们在全球范围的港口监督正确安全地装载、运输和卸货，帮助保障您收到的产品未损坏。

We assure safe and correct loading, shipment and discharge at any harbour worldwide to assure you receive proper and undamaged products.

- 装货监督
- 卸货监督
- Supervision of loading
- Supervision of discharge

安装 Installation

我们监督和监测施工现场活动。一旦材料或部件到达，帮助保障所有经批准的程序和规范要求都得以实现。

We supervise and monitor all construction site activities. Once the materials or components arrive, we assure that all approved procedures are followed and specifications are met.

- 来料检验
- 架设/安装阶段的步骤监理
- 目视检查，包括损伤检验
- Verification of incoming material
- Surveillance of defined steps during erection / installation
- Visual inspection including damages

产品范围

Product scope



- 锅炉和压力容器
- 涡轮机和泵
- 钢结构
- 预制管件
- 在线管道和管类材料
- 阀门
- 电气设备
- 风能设备
- 建筑产品
- 机器
- 大宗原料
- Boilers and pressure vessels
- Turbines and pumps
- Steel structures
- Prefabricated pipings
- Line pipe and other tubular goods
- Valves
- Heavy electrical goods
- Wind power equipment
- Construction products
- Machinery
- Bulk materials

产品认证服务

Product certification services

承压设备及材料工程

Pressure equipment and materials engineering

- CE标记认证——承压设备指令 PED97/23/EC
- CE标记认证——简单压力容器指令SPVD 87/404/EEC
- CE标记认证——建筑产品指令 CPD 89/106/EEC
- TT标记认证——移动式承压设备指令 TPED 99/36/EC
- 依据德国压力容器法规AD 2000-W0对于材料制造商所做的认证
- 依据德国压力容器法规AD 2000-HP0对于压力设备制造商所做的认证
- API工业阀门的耐火测试及认证
- 印度IBR锅炉压力容器认证
- 代表日本劳工部MHLW对输往日本市场压力设备的认证
- 新加坡市场台塑认证（工厂产品控制） FPC
- 新加坡MOM认证
- 马来西亚DOSH认证
- CE approval according to european pressure equipment directive (PED 97/23/EC)
- CE approval according to european simple pressure vessels directive (SPVD 87/404/EEC)
- CE approval according to european construction product directive (CPD 89/106/EEC)
- TT approval according to european transportable pressure equipment directive (TPED 99/36/EC)
- AD 2000-W0 approval for material manufacturers according to the german pressure vessel code
- AD 2000-HP0 approval for pressure equipment manufacturers according to the german pressure vessel code
- API 607 fire safety testing and certification for industrial valves
- India boiler regulation (IBR)
- Certification of pressure equipment to the Japanese market, on behalf of MHLW, Japan
- (Factory production control) Certification for singapore market
- Ministry of manpower singapore (MOM)
- DOSH malaysia



焊接及材料技术

Welding and materials technology

焊接相关测试

- 基于德国国家法（Ü型标识）或CPD的产品测试
- 根据DIN EN 15085对轨道车辆及其部件的铁路应用焊接
- 根据DIN EN ISO 3834对金属材料熔化焊的质量要求
- 非破坏性材料测试

Welding-related testing

- Product testing based on german national law (Ü-Mark) or CPD
- DIN EN 15085 railway applications: welding of railway vehicles and components
- DIN EN ISO 3834 quality requirements for fusion welding of metallic materials
- Non-destructive materials testing



焊接相关认证服务

Welding-related certification services

- | | |
|--|---|
| <ul style="list-style-type: none">■ CPD CE、DB联邦铁路、Vd TÜV 1135焊接材料的认证■ 根据德国DIN 6700系列标准对轨道车辆和车辆部件焊接企业的认证■ 焊工资质、焊接工艺及无损检测人员■ DIN 18800-7钢，DIN 18800ff焊接钢结构■ DIN 4113铝结构■ DIN 4099焊接钢筋混凝土杆 | <ul style="list-style-type: none">■ CPD CE and/or DB (German railway) and/or Vd TÜV 1135 approval of various welding consumables■ DIN 6700 approval for welding facilities in welded railway vehicles and railway vehicle parts■ Qualification of welders, welding processes and NDT personnel■ Steel work under DIN 18800-7; welded steel structures under DIN 18800ff■ Aluminium structures under DIN 4113■ Welding concrete reinforcing rods under DIN 4099 |
|--|---|

ASME授权检验服务

ASME authorised inspection services



TÜV Rheinland AIA Services, LLC是全球领先的检验服务供应商，是经美国机械工程师协会（ASME）认可的授权检验机构。美国机械工程师协会成立于1880年，是一个专门从事发展机械工程及其有关领域的科学技术团体。我们协助客户申请ASME锅炉和压力容器规范取证或换证以及钢印产品的授权检验服务。

TÜV Rheinland AIA Services, LLC is a leading provider of inspection services worldwide. As an ASME accredited authorized inspection agency—the American Society of Mechanical Engineers (ASME), founded in 1880, is a professional body in the field of mechanical engineering. We assist you in the application of ASME certification, renewal of certificates and inspection on code stamped boilers and pressure vessels in accordance with various ASME and National Board Inspection Code requirements.

服务范围

Service scope

- | | |
|---|--|
| <ul style="list-style-type: none">■ 介绍ASME法规及取证程序■ 审查工厂ASME手册及程序文件■ 审查设计图纸及计算书■ 审核焊接文件■ 审核无损探伤文件■ 示范产品制造过程中的检验■ 联检前的预审■ 参加ASME联检 | <ul style="list-style-type: none">■ Introduce ASME code and accreditation procedure■ Review Manufacturer's QC manual and procedures■ Review design drawing and calculation sheet■ Review WPS, PQR, WPQ and WOPQ■ Review NDT documentation■ Inspection during fabrication of demo vessels■ Pre-audits of QC systems■ ASME joint review |
|---|--|

检验标识

Inspection marks

- | | |
|--|---|
| <ul style="list-style-type: none">■ 加热锅炉ASME H钢印■ 蒸汽锅炉ASME S钢印■ 压力锅炉ASME U钢印■ 高压锅炉ASME U2钢印 | <ul style="list-style-type: none">■ H ASME stamp for heating boilers■ S ASME stamp for steam boilers■ U ASME stamp for pressure vessels■ U2 ASME stamp for high-pressure vessels |
|--|---|

DIN EN 10204-3.2材料检验服务

DIN EN 10204-3.2 material inspection services

EN10204-3.2证书是向客户证明其产品符合欧洲材料规范的有效证书。对于出口的大型设备、压力设备等产品，其原材料供应商需提供EN10204-3.2证书来证明设备上所采用的原材料符合欧洲规范。EN10204证书适用于任何金属材料，如钢材、焊接件等产品。

EN10204-3.2的签发机构必须是欧盟授权机构。经过对工厂的买家所购的产品类型进行相关测试后，该机构以第三方的身份向工厂的买家声名检验结果与订单相符合。证书上同样必须体现客户名称和生产工厂名称。

EN10204-3.2 certificate is a valid certificate for clients to prove their products comply with European material standard, usually for exort of large equipments, pressure equipments, etc. The raw material suppliers are required to provide EN10204-3.2 certificate to prove that the raw materials used is in line with European norms and specifications. EN10204 is applied for metal materials, such as steel, welding parts, etc.

EN10204-3.2 certificate issuing body must be authorized by EU institutions. After the buyers proceed with related tests to type of products, the issuing authority will act as a third party for inspecting and testing to make sure the results are in accordance with the purchase order. The name of client and manufacturer also must be shown on the certificate.

无损检测服务

Non-destructive testing services

无损检测也被称为非破坏性检查或评估（NDE）或者非破坏性检验（NDI），包括若干对材料、部件和连接进行检查的方法，用这些方法鉴定内部的缺陷和劣化及其数量。该检测目的是在材料造成缺陷之前对材料的特性进行评估，即根据公认的材料判别标准或者多年形成的劣化形状确保投入生产后的产品质量和性能以及确保工程结构的安全使用。

无论在管道生产、管线安装以及厂房建设，如：化工厂、石化厂、船厂和核电厂，我们的无损检测（NDT）服务为您提供质量保证和过程安全。常用的检测技术包括射线、超声波、着色渗透和磁粉检查等。

我们拥有强大的专家团队包括GB, ASNT, PCN二级、三级技术人员，凭借深厚的理论基础和丰富的实践经验为国内外的客户提供常规无损检测的服务和咨询。

Non-destructive Testing (NDT), also called Non-destructive Examination (NDE) and Non-destructive Inspection (NDI), is a testing method that does not destroy the test object. The purpose of NDT is to identify defects in the material properties of products or obtain information on the shape of degradation in multiple materials-in accordance with accepted standards-to ensure post-production quality and performance and to ensure the safe use of engineering structures.

Our NDT services provide quality assurance and guarantee process safety in fabrication, pipe manufacturing, pipelines, plant construction, chemicals, petrochemical plants, shipyards, the offshore industry, and conventional and nuclear power plants.

The technical experts of TÜV Rheinland and our GB, ASNT, and PCN Level 2 and 3 inspectors have advanced knowledge and abundant practical experience.

服务范围

Service scope



- 目视检验
- 超声波检验
- 磁粉检验
- 渗透检验
- 射线检验
- 见证测试
- VT positive material identification
- UT ultrasonic testing
- MT magnetic particle testing
- PT dye penetrant testing
- RT radiographic testing
- Witness testing

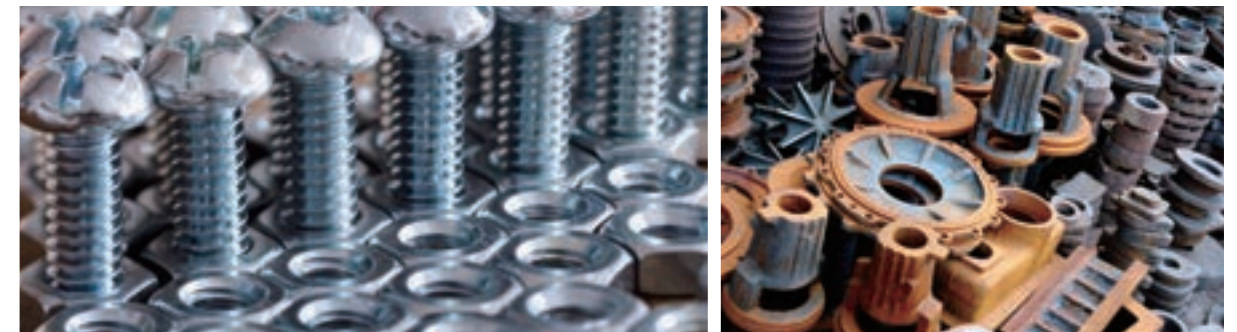
金属材料测试服务

Metal materials testing services

服务范围

Service scope

- 材质分析
 - 直读光谱法
 - 氧氮测试仪
 - 碳硫测试仪
 - X-ray成分定性仪
- 机械性能
 - 拉伸
 - 弯曲
 - 压缩
 - 剪切
 - 夏比冲击
 - 硬度（洛氏、布氏、维氏、显微维氏）
 - 其他
- 腐蚀试验
 - 盐雾腐蚀
 - 晶间腐蚀
 - 其他
- Chemical composition analysis
 - Optional emission spectrometry
 - Nitrogen oxygen analysis
 - Carbon sulphur analysis
 - X-ray analysis
- Mechanical properties testing
 - Tensile
 - Bending
 - Compression
 - Shear
 - Charpy impact
 - Hardness (HR, HB, HV and Micro HV)
 - Others
- Corrosion testing
 - Salt spray test
 - Inter-granular corrosion
 - Others
- 金相分析
 - 微观组织分析
 - 宏观组织分析
 - 非金属夹杂物分析
 - 晶粒度
 - 镀层厚度
 - 断口分析
 - 其他
- Metallographic analysis
 - Microstructure analysis
 - Macrostructure analysis
 - Determination of content of non-metallic components
 - Grain size
 - Coating thickness
 - Fracture analysis
 - Others
- 无损探伤
 - 目检
 - 超声波探伤
 - 磁粉探伤
 - 着色探伤
 - 射线探伤
 - 其他
- NDT testing
 - VT
 - UT
 - MT
 - PT
 - RT
 - Others
- 焊接工艺评定、焊工考试测试
- WPQ and PQR testing



产品范围

Product scope

- | 测试材料 | Testing materials | 测试产品 | Testing products |
|---------|-------------------------|--------|---------------------|
| - 碳钢 | - Carbon steel | - 板带 | - Plates and strips |
| - 不锈钢 | - Stainless steel | - 管材 | - Pipes |
| - 高速工具钢 | - High-speed tool steel | - 型材 | - Profiles |
| - 铸铁 | - Cast iron | - 铸件 | - Castings |
| - 纯铜及合金 | - Pure copper and alloy | - 锻件 | - Forgings |
| - 铝合金 | - Aluminium alloy | - 五金件 | - Hardware |
| - 钛合金 | - Titanium alloy | - 紧固件 | - Fasteners |
| - 锌合金 | - Zinc alloy | - 焊接试板 | - Welded specimens |
| - 其他 | - Others | - 其他 | - Others |

风能服务

Wind power services



- 设计评估阶段
 - 设计鉴定
 - 业主代表
 - 投标支持
 - 技术咨询
 - 健康/安全/环境
- 风机及基础设计
 - 设计鉴定
 - 叶片测试
 - 质量审核及供应商评定
 - 业主代表
 - CE认证
 - 技术咨询
 - 健康/安全/环境
- 制造阶段检查
 - 制造工艺审核
 - 叶片测试
 - 无损检测
 - 监控
 - 催交
 - 工艺流程质量审核
 - 质量控制系统的管理和检验
- 运输安装检查
 - 监造
 - 监装及卸载监控质量检验
 - 最终吊装检验
 - 海运担保鉴定
- 试运行检查
 - 功能及安全测试
 - 试车见证
 - 验收
 - 健康/安全/环境
- 风机在役检查
 - 状态监控
 - 失效分析
 - 质保期末的检验服务
 - 运转性能鉴定
 - 风场维护管理
 - 油品分析
 - 齿轮箱检验
 - 叶片检验及无损检测
 - 涂层检验
 - 震动测试
 - 健康/安全/环境
- Site assessment/design basis
 - Design verification
 - Owner's representative
 - Tender support
 - Technical consultancy
 - HSE
- Site specific design of Wind turbines and foundations
 - Design verification
 - Rotor blade testing
 - Quality audit and vendor rating
 - Owner's representative
 - CE certification
 - Technical consultancy
 - HSE
- Manufacturing survey
 - Manufacturing survey
 - Rotor blade testing
 - NDT
 - Supervision
 - Expediting
 - Process quality audit
 - QA/QC management and inspection
- Transport and installation survey
 - Construction supervision
 - Quality inspection
 - Final installation inspection
 - Marine warranty survey
- Commissioning survey
 - Functional and safety test
 - Witnessing of commissioning
 - Final acceptance inspection
 - HSE
- In-service inspection
 - Condition monitoring
 - Failure analysis
 - End-of-warranty inspection
 - Verification of performance
 - Maintenance management
 - Oil analysis
 - Gear box inspection
 - Blade inspection and NDT
 - Coating inspection
 - Smear testing
 - HSE

能效咨询服务

Energy efficiency consultancy services

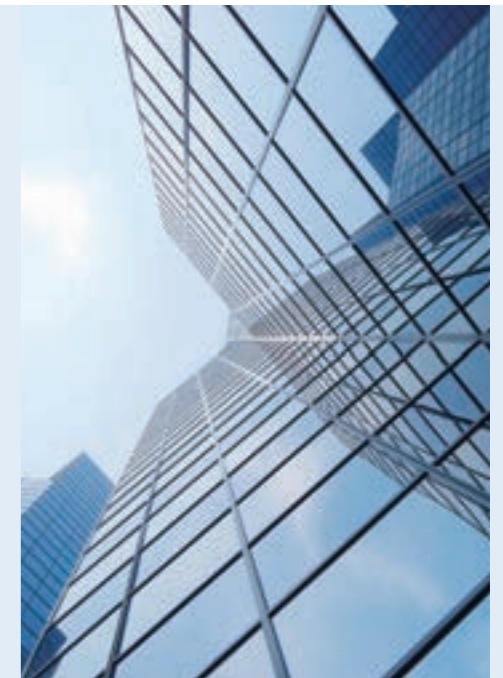
- 能效检测及验证
- 节能系统检测
- 能耗状况评估
- 节能技术咨询
- 能源管理体系培训
- Measurement and verification
- Energy saving system testing
- Energy audit
- Energy saving technology
- Energy management system training

服务范围

Service scope

包括工业厂房、商业办公楼、公用建筑等建筑的下列系统
Industrial workshops, commercial buildings and institutional buildings

- 供热/通风/空调系统
- 照明系统
- 电力供应、输送系统
- 锅炉及蒸汽输送管网系统
- 冷却及冷冻系统
- 水及废水处理系统
- 空压机及其管网系统
- 工艺系统优化节能项目
- 节能产品、设备的检验
- 节能技改项目实施过程中的监督服务，确保技改项目保质保量完成
- 运行测试
- HVAC systems
- Lightning systems
- Power supply and conveying systems
- Boilers and steam piping systems
- Cooler and chiller systems
- Plumbing and water treatment
- Air compressors
- Process optimisation and energy saving
- Supervision and testing of energy saving products and facilities
- Supervision during energy saving processes to ensure target is achieved
- Test run



关于德国莱茵TÜV集团

About TÜV Rheinland Group

总部位于德国科隆的德国莱茵TÜV集团拥有140多年的经验。德国莱茵TÜV集团是国际上领先的技术服务供应商，它在全球65个国家设有500家分支机构，拥有超过17,000名员工，服务涵盖工业服务、交通服务、产品服务、生命科学、培训与咨询服务以及体系认证服务。

TÜV Rheinland Group has more than 140 years of experience and is headquartered in Cologne. TÜV Rheinland Group is a leading group for the provision of technical services worldwide. It has 500 locations in 65 countries with a workforce of over 17,000. The business scope covers Industrial Services, Mobility, Products, Life Care, Training and Consulting, Systems.