Ensure a safer ride
让您的骑行获得更多安全保障

Add value.
Inspire trust.

Your challenges

Cycling has become an important mode of sustainable transport nowadays. Especially the world-wide demand for E-bike is growing rapidly as consumers see E-bikes as eco-friendly solution for commutes, and as a sustainability solution, government bodies in varies countries or cities have undertaken initiatives to build bicycle highways lanes for e-bikes.

As a global bicycle production base, China produced two of every three bikes made worldwide. Meanwhile, the electric bike and e-scooter, which uses an electric motor, is a burgeoning market segment with most of the production taking place in China.

Bicycles are high risk products , bicycle products were frequently reported in dangerous product information exchange system of several countries/regions such as EU Safety Gate and US CPSC Recall system, meanwhile, along with the surge growing of popular micromobility products—including e-scooters, selfbalancing scooters, e-bicycles, and e-unicycles, in recent years there has been a rise in fires and other thermal reported in varies countries, CPSC has sent a warning letter to supply chain and asked for the manufactured products to compliance with stringent standard's requirement, while EU is also developing more and more stringent regulation and standards(for example New Machinery regulation(EU) 2023/1230 and New Battery Regulatory framework.

How can we help you?

As a reliable partner of the bicycle industry, TÜV SÜD provides safety and quality solutions. We ensure that the non-power and power components used in bicycles and electric bikes receive unparalleled market acceptance and support from regulatory authorities. We provide testing and certification which can benefit the whole industry to ensure compliance in the quality and safety aspects, and attain global market acceptance.
Our services increase our customers' competitive edge globally.

您面临的挑战

当今世界，骑行已经成为一种重要的可持续的交通方式。特别是世界范围内对于电动自行车的需求增长非常迅速。因为消费者将电动自行车视为通勤方式中对生态环境友好的一种工具，以及可持续发展的一种解决方案。很多国家和城市的政府机构也推出了很多建设城市电动自行车的高速通道的行动以推动使用该类产品。

作为全球的自行车生产基地，中国生产了世界上近2/3的自行车。同时，使用电动马达协助骑行的电动自行车和轻便两轮车市场也在迅速增长，相当大部分的电动自行车都产自中国。

自行车是高风险产品，自行车产品经常在欧盟安全门和美国消费品安全委员会召回系统等多个国家/地区的危险产品信息交换系统中被通报。同时，随着流行的微型移动产品（包括电动滑板车，自平衡滑板车，电动自行车和电动独轮车）的激增，近年来不同国家的火灾及事故报告有所增加， 美国消费品安全委员会已向供应链发出警告信，要求供应市场的产品符合严格标准的要求，同时欧盟也在制定越来越严格的法规及标准（比如新的机械法规 (EU) 2023/1230 以及新的电池法规框架等），以确保用户的安全。这些法规及标准提出对于电池安全、机械安全、电气和电子安全和性能、控制系统的功能安全等的更严格要求。这对该行业的制造商来说是一个巨大的挑战。

我们如何帮助您?

作为为自行车产业提供安全及质量保障措施的可靠合作伙伴，TÜV南德意志集团能够确保自行车和电动自行车上的非动力和动力部件获得无可比拟的市场认可度和监管当局的支持，我们提供的测试和认证服务能够帮助产业链在确保质量和安全基础上获得非常好的市场认可。

通过这种方式，我们在全球范围内帮助我们的客户提高竞争力。

Our services

Chemical analysis
- Lead paint / lead metal analysis
- Phalate toxicity analysis
- PAHS analysis
- Asbestos analysis
- Hazardous substances in batteries
- ROHS test and certification

Physical and performance testing
- Strength test
- Design assessment
- Design assessment
- Braking performance test
- Component durability test
- Adaptability test
- Tailor-made program test

Electromagnetic compatibility testing
- Emission
- Immunity
- Battery charger (EN 55014-1, EN 55014-2, EN 61000-3-2, EN 61000-3-3)

Electronic and electrical safety
- Electric circuit
- Batteries safety test (EN 50604, UL 2271, EN 62133)
- Battery charger (EN 60335-2-29)
- Electric cables and connections (EN 60335-1, IEC 60364-5-52:2001)
- Power cables and conduits
- Moisture resistance (IPX4)
- Power management
- Maximum speed for which the electric motor gives assistance
- Maximum power measurement (EN 60034-1)

And UL 2849, UL 2272 outlined various safety requirement of electrical system for powered bicycles and powered mobility device for North American market.

我们的服务

化学分析
- 铅涂料 / 铅金属分析
- 增塑剂毒性分析
- PAHS多环芳香烃含量分析
- 石棉含量分析
- 电池有毒物质
- ROHS指令测试和认证

物理和性能测试
- 强度测试
- 设计评估
- 道路性能测试
- 刹车性能测试
- 部件耐久性测试
- 适配性测试
- 定制的程序测试

电磁兼容性测试
- 辐射干扰
- 抗扰度
- 电池充电器（EN 55014-1, EN 55014-2, EN 61000-3-2, EN 61000-3-3）

电子电气安全
- 电气电路
- 电池安全测试（EN 50604, UL 2271, EN 62133）
- 电池充电器（EN 60335-2-29）
- 电线和连接件（EN 60335-1, IEC 60364-5-52:2001）
- 电源线和导电管
- 防水测试（IPX4）
- 动力管控
- 辅助动力最大速度
- 最大动力输出功率（EN 60034-1）

而UL 2849及UL 2272提出了对于电动两轮车辆及电动移动设备的电气安全要求及电气部件规范

Applicable regulation or technical standards for bicycles, bicycles for young children or electrically powered bicycles, powered mobility device, light two-wheel powered vehicle and cargo cycles.

Europe
- EN ISO 4210-2:2023 Cycles - Safety requirements for bicycles - Part 2:Requirements for city and trekking, young adult, mountain and racing bicycles
- EN ISO 8098:2023 Safety requirements for bicycles for young children
- EN 16054:2012 BMX bicycles - Safety requirements and test methods
- EN 17404:2022 Electrically power assisted cycles-EPAC Mountain Bike
- EN 15194:2017+A1:2023 Electrically power assisted cycles –EPAC Bicycles
- DIN 79010:2020 Cycles - Transportation bikes and cargo bikes - Requirements and test methods for single-and multi-track cycles
- pr EN 17860 Series for carrier cycle
- EN 17128:2020 Personal light electric vehicles (PLEV) -Requirements and test methods
- Regulation (EU) No. 168/2013 The Europe type approval and market surveillance of two- or three-wheel vehicles and quadricycles

America
- 16 CFR 1512 Requirements for bicycles
- ANSI Z 315.1:2012 Tricycles Safety Requirements
- ASTM F2641-08(2015) Standard Consumer Safety Specification for Recreational Powered Scooters and Pocket Bikes
- UL 2849 ANSI/CAN/UL Standard For Electrical Systems For EBikes
- UL 2272 ANSI/CAN/UL Standard For Electrical Systems For Personal E-Mobility Devices

Australia
- AS/NZS 1927:2010+A1:2014 Pedal bicycles - Safety requirements
- AS 15194:2016 Electrically power assisted cycles - EPAC Bicycles

Others
- GB 3565.2-2022 Safety requirements for bicycles—Part 2: Requirements for city and trekking, young adult, mountain and racing bicycles
- GB 14746-2006Safety requirements for children's bicycles
- GB 14747-2006 Safety requirements for children's tricycles
- SO 4210-2:2023 Cycles - Safety requirements for bicycles—Part 2: Requirements for city and trekking, young adult, mountain and racing bicycles
- ISO 8098:2023 Safety requirements for bicycles for young children

自行车、童车或电动自行车、电动移动设备、轻便两轮车和轻型载人载货车的适用法规或技术标准

欧洲
- EN ISO 4210-2:2023 自行车安全测试要求——城市及远足自行车、青少年自行车、山地自行车、赛车测试要求
- EN ISO 8098:2023儿童自行车的安全要求
- EN 16054:2012 BMX 自行车安全要求和测试方法
- EN 17404:2022 电动助力自行车-山地车
- EN 15194:2017+A1:2023 电动助力自行车
- DIN 79010:2020 自行车-运输及载货自行车
- pr EN 17860 运输自行车的标准系列
- EN 17128:2020 个人轻型电动车辆-要求及测试方法
- Regulation (EU) No. 168/2013 欧盟型式认证和市场监督——两轮、三轮车和四轮机动车

美国
- 16 CFR 1512 美国联邦法规第十六部分自行车标准
- ANSI Z 315.1:2012 三轮自行车的安全标准
- ASTM F2641-08(2015) 休闲电动踏板车和袖珍自行车标准消费者安全规范
- UL 2849 ANSI/CAN/UL 电动自行车电气系统标准
- UL 2272 ANSI/CAN/UL 电动移动设备电气系统标准

澳大利亚
- AS/NZS 1927:2010+A1:2014 踏板自行车安全要求
- AS 15194:2016 电动助力自行车

其他
- GB 3565.2-2022 自行车安全要求第二部分-城市及远足自行车、青少年自行车、山地自行车、竞赛自行车测试要求
- GB 14746-2006 儿童自行车安全要求
- GB 14747-2006 儿童三轮车安全要求
- ISO 4210-2:2023 自行车安全测试要求——城市及远足自行车、青少年自行车、山地自行车、竞赛自行车测试要求
- ISO 8098:2023 儿童自行车的安全要求

Accessories

EU
- EN ISO 11243:2023 Cycles - Luggage carriers for bicycles - Requirements and test methods
- EN 14344:2022 Child use and care articles - Child seats for cycles - Safety requirements and test methods
- EN 15918:2011+A2:2017 Cycles - Cycle trailer - Safety requirements and test methods

American
- ASTM F1625:2000 (2018) Standard specification and test method for rear mounted bicycle child carriers
- ASTM F2843-19 - bicycle frame for condition 0
- ASTM F2802-19 - bicycle frame for condition 1
- ASTM F2868-19 - bicycle frame for condition 2
- ASTM F2614-19 - bicycle frame for condition 3
- ASTM F2899-11(2016) - front fork for condition 1
- ASTM F2274-11(2016) - front fork for condition 3

Australia
- AS 4287:2016 Child use and care articles - Child seats for cycles - Safety requirements and test methods

Others
- ISO 11243:2023 Cycles - Luggage carriers for bicycles - Requirements and test methods
- ISO 9633:2001 cycle chain - characteristics and test methods
- ISO 14878:2015 Cycles - Audible warning devices - Technical specification and test methods
- ISO 5775-1:2023 Bicycle tyres and rims - Part 1:Tyre designations and dimensions
- ISO 5775-2:2021 Bicycle tyres and rims - Part 2: specification for bicycle rims
- GB/T 22790:2023 Cycle - luggage carrier
- GB/T 23160:2008 Safety requirements and test methods of child seats on cycle for import and export
- GB/T 42703-2023 Cycles - Audible warning devices

Lighting equipment and reflective devices
- ISO 6742-1:2015 Cycles - Lighting and retroreflective devices - Part 1:Lighting and light signalling devices
- ISO 6742-2:2015 Cycles - Lighting and retroreflective devices - Part 2:Retro-reflective devices
- BS 6102-2:1982 British Standard Cycles Part 2.Specification for photometric and physical requirements of reflective devices
- BS 6102-3:1986 British Standard Cycles Part 3.Specification for photometric and physical requirements of light equipment
- 16 CFR 1512.16 Requirements for bicycle reflector
- AS 2142-1978 Australian Standard Reflectors for pedal bicycles
- GB/T 31887.1-2019 cycles- Lighting and light signaling devices
- GB/T 31887.2-2019 cycles- Retro reflective devices

自行车配件及附件

欧盟
- EN ISO 11243:2023自行车行李架——测试要求和测试方法
- EN 14344:2022 儿童使用和护理用品——自行车用儿童座椅安全要求和试验方法
- EN 15918:2011+A2:2017 自行车拖车安全要求和测试方法

美国
- ASTM F1625:2000 (2018)——自行车后置儿童座椅的规格和试验方法
- ASTM F2843-19 —— 0 类自行车车架安全规范
- ASTM F2802-19 —— 1 类自行车车架安全规范
- ASTM F2868-19 —— 2 类自行车车架安全规范
- ASTM F2614-19 —— 3 类自行车车架安全规范
- ASTM F2899-11(2016) —— 1 类自行车前叉安全规范
- ASTM F2274-11(2016) —— 3 类自行车前叉安全规范

澳大利亚
- AS 4287:2016儿童使用和护理用品——自行车用儿童座椅安全要求和试验方法

其他
- ISO 11243:2023自行车行李架——测试要求和测试方法
- ISO 9633:2001 自行车链条特性和测试方法
- ISO 14878:2015 车辆 ——声音报警装置——技术规范和测试方法
- ISO 5775-1:2023 自行车轮胎和轮辋——第一部分轮胎规格代号和尺寸
- ISO 5775-2:2021 自行车轮胎和轮辋——第二部分自行车轮辋规范
- GB/T 22790:2023 自行车货架
- GB/T 23160:2008 进出口自行车儿童座椅安全要求及测试方法
- GB/T 42703-2023 自行车鸣号装置

车灯设备和反光装置
- ISO 6742-1:2015 自行车——车灯和反射装置第1部分：车灯和车灯信号装置
- ISO 6742-2:2015 自行车——车灯和反射装置第2部分：反射装置
- BS 6102-3:1986 英国自行车第3部分——车灯设备光学和物理特性规范
- BS 6102-2:1982 英国自行车第2部分——反射装置光学和物理特性规范
- 16 CFR 1512.16 自行车反射器要求
- AS 2142-1978 澳大利亚标准脚踏自行车反射器
- GB/T 31887.1-2019 自行车车灯及车灯信号装置
- GB/T 31887.2-2019 自行车反射装置

Your business benefits

As a leading global technical service provider, TÜV SÜD is committed to provide one stop solution to the bicycle industry worldwide.

- Brand improvement
- GS mark and TÜV SÜD Certification Mark
- Testing service and technical support
- Security across the whole supply chain

Add value. Inspire trust.

TÜV SÜD is a trusted partner of choice for safety, security and sustainability solutions. It specialises in testing, certification, auditing and advisory services. Through more than 26,000 employees across over 1,000 locations, the company adds value to customers and partners by enabling market access and managing risks. By anticipating technological developments and facilitating change, TÜV SÜD inspires trust in a physical and digital world to create a safer and more sustainable future.

您的企业收益

作为全球领先专业技术服务提供商，TÜV南德意志集团致力于为全球自行车行业客户提供一站式解决方案。

- 品牌提升
- GS标志和TÜV SÜD标志
- 测试服务和技术支持
- 覆盖整个供应链的安全保障

创享价值，激发信任

TÜV南德意志集团是值得信赖的合作伙伴，可提供安全、可靠及可持续发展相关的解决方案。我们专注于提供测试、认证、审核及知识服务。集团在全球设立了1,000多个分支机构，并拥有超过26,000名员工，通过实现市场准入和风险管理，为客户和合作伙伴创享价值。TÜV南德意志集团通过预测技术发展和促进变革，激发人们对物理和数字世界的信任，以创造一个更安全、更可持续发展的未来。

TÜV SÜD China Headquarter 3-13F, No. 151 Heng Tong Road 200070, Shanghai China
TÜV南德意志集团中国总部 上海市恒通路151号3-13层，200070，
+86 21 6141 0123 info.cn@tuvsud.com tuvsud.cn