

GDH Plot4# Project 云港城项目 4#地块
Escalator Tender Specification 扶梯招标技术文件

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ESCALATORS 自动扶梯

PART 1 - GENERAL 总体说明

1.1 SUMMARY 概述

- A. Six (6) Linear escalator(s) as follows:
六台（6）直线型自动扶梯
- Escalator Width: 1000mm wide step
自动扶梯宽度：1000mm 梯级宽度
 - Escalator Balustrade: 304 Stainless Steel with 1000mm Balustrade Height
自动扶梯栏杆：304 不锈钢，栏杆高度 1000mm

1.2 DEFINITIONS 定义

- A. Terms used are defined in GB16899-2011.
使用的术语定义参见 GB16899-2011。
- B. Provisions of this specification are applicable to all escalators unless identified otherwise.
除非另有说明，本说明书条款适用于所有自动扶梯。

1.3 PERFORMANCE REQUIREMENTS 性能要求

- A. Regulatory Requirements: Comply with GB16899-2011.
监管要求：符合 GB16899-2011。
- B. Accessibility Requirements: Comply with GB50763-2012
无障碍要求：符合《无障碍设计规范》GB50763-2012

1.4 SUBMITTALS 交付件

- A. Product Data: Include capacities, sizes, performances, operations, safety features, finishes, and similar information. Include product data for car enclosures, hoistway entrances, and operation, control, and signal systems. Include product data for signal fixtures, lights, graphics, Braille plates, and details of mounting provisions.
产品资料：包括载重、尺寸、性能、运行、安全特性、饰面和类似信息。包括轿厢壁、井道入口以及运行、控制和信号系统的产品资料。包括信号装置、灯具、图形、盲文牌的产品资料以及安装预留的细节。
- B. Shop Drawings: 施工图
- Include plans, elevations, sections, and large-scale details indicating openings at each landing, machine room equipment space layout, coordination with building structure, relationships with other construction, and locations of equipment.
包括平面图、立面图、剖面图和局部放大图，说明各层开口，机房设备的空间布局，建筑结构协调，与其他构筑物的关系及设备位置。
 - Indicate maximum dynamic and static loads imposed on building structure at points of support and maximum and average power demands.
标明施加于建筑结构支撑点上的最大动静荷载，及最大及平均用电需求

3. Power Confirmation Information: Include motor output power, starting current, full-load running current, and demand factor. Provide maximum and average power consumption.
功率确认信息：包括电源输出功率、启动电流、满载运行电流以及供电因数。提供最大耗电量及平均耗电量。
 - C. Samples for Initial Selection: For finishes involving surface treatment, paint or color selection.
初始选择样品：用于表面处理饰面、油漆或颜色的选择。
 - D. Operation and Maintenance Data
运行及维护数据：
 1. To include in emergency, operation, and maintenance manuals.
包括应急、运行及维护手册。
 2. In addition to items specified, include diagnostic and repair information available to Manufacturer's and Installer's maintenance personnel.
除规定的项目外，还应包括可供生产商及安装单位维护人员使用的诊断检查及维修信息。
 - E. Inspection and Acceptance Certificates and Operating Permits: As required by authorities having jurisdiction for normal, unrestricted escalator use.
检查和验收认证以及运行许可：根据相关政府部门要求，确保正常自由的使用扶梯。
- 1.5 QUALITY ASSURANCE 质量保证
- A. Compliance with Regulatory Agencies: Comply with most stringent applicable provisions of following codes, laws, and/or authorities, including revisions and changes in effect:
符合监管机构要求：符合下列规范、法律和/或政府要求的最严格的适用规定，包括生效的修订和变更版本
 1. Escalator Code GB16899-2011.
扶梯法规 GB16899-2011
 2. Local Code for Acceptance of Installation Quality of Escalators.
当地对于扶梯安装的验收规范
 3. Local Code for Accessibility Design.
当地的无障碍规范
 4. Local Fire Department
当地消防局的要求
- 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING 产品交付、储存和处理
- A. Deliver material in Contractor's original unopened protective packaging.
采用承包商原有的未开封的保护性包装交付材料。
 - B. Store material in original protective packaging. Prevent soiling, physical damage, or moisture damage.
用原有的保护性包装储存材料。防止污渍、物理损坏或受潮。
 - C. Protect equipment and exposed finishes from damage and stains during transportation and construction
在运输和施工期间要防止设备和外露饰面损坏或沾染污渍。
- 1.7 WARRANTY 质保
- A. Manufacturer's Warranty: Manufacturer agrees to repair, restore, or replace escalator work that fails in materials or workmanship within specified warranty period.
厂商保修：厂商同意在规定的保修期内维修、修复或更换材料或工艺有问题的扶梯设备。

- B. Failures include, but are not limited to: operation or control system failure, including excessive malfunctions; performances below specified ratings; excessive wear; unusual deterioration or aging of materials or finishes; unsafe conditions; need for excessive maintenance; abnormal noise or vibration; and similar unusual, unexpected, and unsatisfactory conditions.
故障包括但不限于：运行或控制系统故障，包括故障过多；性能未达到规定等级；过度磨损；材料或饰面的不正常退化或老化；不安全情形；过多维护需求；不正常噪音或振动；及其他类似的不寻常、意料之外及不符合要求的情形。
- C. Warranty Period: Two years from date of Substantial Completion(after the formal inspection and acceptance by Special Equipment Inspection Institute and from the date of Substantial Completion of the whole project).
保修期：两年，从实质性竣工之日算起（需要首先取得质量监督局验收合格证之后，并要求保修期是从整个项目的实质性竣工之日算起）。

PART 2 - PRODUCTS 产品

2.1 ESCALATORS 自动扶梯

- A. Escalator System, General: Manufacturer's standard escalators systems. Unless otherwise indicated, manufacturer's standard components shall be used, as included in standard escalator systems and as required for complete system.

自动扶梯系统，综述：生产商的标准自动扶梯系统。除非另有说明，生产商的标准部件应用于标准自动扶梯系统及整个系统。

B. Summary 综述

1. Escalator Identification: T1-FT01~FT02; T2-FT01~FT02; T6-FT01~FT02
扶梯编号：T1-FT01~FT02; T2-FT01~FT02; T6-FT01~FT02
2. Type:
类型：
 - a. Escalators T1-FT01~FT02: Outdoor
扶梯 T1-FT01~FT02: 室外型
 - b. Escalators T2-FT01~FT02: Indoor
扶梯 T2-FT01~FT02: 室内型
 - c. Escalators T6-FT01~FT02: Outdoor
扶梯 T6-FT01~FT02: 室外型
3. Size: All Escalators with 1000mm wide steps.
尺寸：所有扶梯都是 1000mm 梯级宽度
4. Speed: 0.5 m/s
速度：0.5 m/s
5. Rise:
提升高度：
 - a. Escalators T1-FT01~FT02: 5185mm
扶梯 T1-FT01~FT02: 5185mm
 - b. Escalators T2-FT01~FT02: 5000mm
扶梯 T2-FT01~FT02: 5000mm
 - c. Escalators T6-FT01~FT02: 4950mm
扶梯 T6-FT01~FT02: 4950mm
6. Floors Served
停靠楼层：
 - a. Escalators T1-FT01~FT02: 1F(-0.2)~2F(+4.985)
扶梯 T1-FT01~FT02: 1 层（标高-0.2）至 2 层（标高+4.985）
 - b. Escalators T2-FT01~FT02: 1F~2F(0.0)~2F(+5.0)
扶梯 T2-FT01~FT02: 1 层（标高 0.0）至 2 层（标高+5.0）
 - c. Escalators T6-FT01~FT02: 1F(-0.1)~2F(+4.85)
扶梯 T6-FT01~FT02: 1 层（标高-0.1）至 2 层（标高+4.85）
7. Configuration: Linear
构造：直线型
8. Arrangement: Parallel Adjacent
布置：互相平行
9. Angle of Inclination: 30°
倾斜角度：30°
10. Operation: Reversible
运行：可逆
11. Four-pole motor with variable frequency
四极电机，可变频

12. Drive Motor Gear Box: Worm, Planetary Or Helical
驱动马达齿轮箱：蜗杆传动、行星式或螺旋式
13. Balustrades: Vertical to deck
扶手装置：垂直于盖板
14. Balustrade Finish: Glass
栏杆饰面：玻璃
15. Deck Finish: 304 Stainless steel
盖板饰面：304 不锈钢
16. Molding and Trim: Match deck finish
嵌线及饰边：与盖板饰面相匹配
17. Skirt Panels: Match deck material and finish with low friction application
围裙板：低摩擦盖板材料及饰面相匹配
18. Handrail Color: Black or per Architect's design
扶手颜色：黑色或者按照建筑师的设计
19. Step Tread and Riser: Cleated and meshed with adjacent step with tread demarcation inserts, tread sides and rear. Demarcation Color: Yellow
梯级踏板及踢板：防滑的，相邻之间互相啮合，踏板的侧面和后面有边条。边条颜色：黄色
20. Power Supply: 380 Volts, 3 Phase, 50 Hertz
电源：380 伏特，3 相，50 赫兹
21. Additional Features:
附加特性：
 - a. Running Direction Indicator
运行方向指示器
 - b. Slow running during no loading
空载时慢速运行
 - c. Emergency stop buttons
紧急停止按钮
 - d. Escalator Remote Monitor System
电脑式自动扶梯监控系统
 - e. Truss extensions to suit structural support locations
桁架可延长，以适应结构支撑位置
 - f. Galvanized steel truss, All Escalator
镀锌钢桁架，所有自动扶梯
 - g. Exterior weather proofing, Escalators T1-FT01~FT02, T6-FT01~FT02
外部抗风雨，自动扶梯 T1-FT01~FT02, T6-FT01~FT02
 - h. WITHOUT Intermediate Support
不带中间支撑

2.2 MATERIALS 材料

A. Steel 钢:

1. Sheet Steel (Furniture Steel for Exposed Work): Stretcher-leveled, cold-rolled, commercial quality carbon steel, complying with ASTM A366 or equivalent, matte finish.
钢板(用于暴露在外的装饰钢板)：拉伸至水平,冷轧,商业等级碳素钢,符合 ASTM A366 或同等材料标准,喷砂面。
2. Sheet Steel (for Unexposed Work): Hot-rolled, commercial quality carbon steel, pickled and oiled, complying with ASTM A568/A568M-03 or equivalent.
钢板(用于不暴露在外的部分)：热轧,商业等级碳素钢,经酸洗和涂油,符合 ASTM A568 / A568M-03 或同等材料标准。与试验学会 (ASTM) A568/A568M-03 的要求。
3. Structural Steel Shapes and Plates: ASTM A36 or equivalent.
结构钢类型和板材：符合 ASTM A36 或同等级标准。

- B. Stainless Steel: Type 304 complying with ASTM A240 or equivalent, with standard tempers and hardness required for fabrication, strength and durability. Apply mechanical finish on fabricated work in the locations shown or specified, with texture and reflectivity required to match Architect's sample. Protect with adhesive paper covering. Average 1.2mm mean depth for its steel raw material.
 不锈钢:304 型号,符合 ASTM A240 或同等材料标准,具备制造、强度和耐久性所需的标准淬火和硬度。显示或指定位置焊接工艺上应用机械表面处理, 根据需要纹理和反射率符合建筑师的样品要求。用胶粘纸覆盖保护。其钢材原材料的平均的板材厚度需为 1.2mm。
- C. Aluminum: Extrusions per ASTM B221 or equivalent; sheet and plate per ASTM B209 or equivalent.
 铝材: 挤压制品按 ASTM B221 或同等材料要求; 板材和金属板按 ASTM B209 或同等材料要求。
- D. Paint: Clean exposed metal parts and assemblies of oil, grease, scale, and other foreign matter and factory paint one shop coat of standard rust-resistant primer. Galvanized metal need not be painted. After installation provide one finish coat of industrial enamel paint.
 油漆: 清除外露金属部件及装配的油渍、油污、毛刺及其他异物, 在工厂涂刷一层标准防锈底漆。制作完成之后, 涂刷一层工业搪瓷漆作为饰面。镀锌金属表面无需涂漆。
- E. Prime Finish: Clean all metal surfaces receiving a baked enamel paint finish of oil, grease, and scale. Apply one coat of rust-resistant primer followed by a filler coat over uneven surfaces. Sand smooth and apply final coat of primer.
 底漆面层: 清洁所有需涂刷烤漆的金属表面的油渍、油污及毛刺。涂一层防锈底漆, 之后在不平整单位表面涂刷一层填充层。将表面打磨光滑, 涂刷最后一层底漆。
- F. Baked Enamel Finish: Prime finish per above. Unless specified "prime finish" only, apply and bake three additional coats of enamel in the selected solid color.
 烤漆饰面: 按照以上步骤涂刷底漆。除非另有规定仅“涂刷底漆”, 还需另外涂刷三层选定的纯色烤漆。

2.3 PERFORMANCE 性能

- A. Step Speed: Unit shall be capable of operating at contract speed under any loading condition in either direction of travel.
 梯级速度: 在任何运行方向及任何荷载条件下, 装置都应能够按照约定速度运转。
- B. Handrail Speed: Consistent with step speed.
 扶手速度: 与梯级速度一致。
- C. Noise and Vibration Control: Provide sound isolation within truss as required to limit noise levels relating to escalator equipment and its operation to no more than 55 dBA, measured 1m above escalator at any point of its length.
 噪音及振动控制: 按照要求, 在桁架内提供隔音装置, 以限制自动扶梯设备的噪音等级。在自动扶梯上方 1 米处直线上任何位置测量时, 其运行噪音不得超过 55 dBA。

2.4 OPERATION 运行

- A. Each unit shall be capable of operating smoothly and quietly at rated speed with synchronized step and handrail operation and speed in either direction of travel.
 每个单元都应能以额定速度平稳、安静的运转, 任何行进方向的梯级、扶手运作及速度保持同步。

2.5 MACHINE ROOM EQUIPMENT 机房设备

- A. **Driving Machine:** Worm geared, planetary, or helical spur gear reduction unit coupled directly to AC induction or drive motor. Handrail drive shall be directly coupled to drive machine.
 驱动机：蜗杆传动、行星式或斜齿圆柱齿轮减速器，直接连入交流感应马达或驱动马达。扶手驱动装置应与驱动机直接耦合。
- B. **Drive Motor:** Three-phase, operating at no greater than 1800 rpm. Motors shall be designed to operate in confined unvented spaces. Motor insulation class "F" or greater.
 驱动马达：三相，运行速度不得超过 1800 转/分。马达设计应保证马达可在狭窄的不通风空间内运行。马达绝缘等级为 "F" 级或更高级。
- C. **Brake:** Electromechanical brake to safely decelerate, stop, and hold rated load. Brake shall stop escalator operating in the down direction at a relatively constant rate not greater than 1 meter/second².
 制动：采用机电制动器，确保安全减速、停止及保持额定负荷。制动器应能够以不超过 1 米/秒²的相对恒定速率往下行方向停止自动扶梯。
- D. **Controller:**
 控制柜：
1. **Compartment:** Securely mount all assemblies, power supplies, chassis switches, relays, etc., in a substantial steel cabinet, removable from machine space for ease of access to controls and wiring. Include mainline circuit breaker, phase, and overload protection.
 柜体：将所有装配、电源供给、底盘开关、继电器等牢固安装在钢柜中，可从机房移除，以方便检修控制装置及布线。包括主线断路器、相位及过载保护。
 2. **Microprocessor-Related Hardware:**
 微处理器相关硬件：
 - a. Provide built-in noise suppression devices which provide a high level of noise immunity on all solid-state hardware and devices.
 提供嵌入式噪音抑制装置，减少所有固体硬件及装置的噪音。
 - b. Provide power supplies with noise suppression devices.
 提供含噪音抑制装置的电源供应器。
 - c. Isolate inputs from external devices, such as safety switches, with opto-isolation modules.
 采用光隔离模块隔离外部装置的输入电路，如安全开关。
 - d. Design control circuits with one leg of power supply grounded.
 设计控制电路，保证一路电源接地。
 - e. Safety circuits shall not be affected by accidental grounding of any part of the system.
 安全电路不得受到该系统任何部件意外接地的影响。
 - f. System fault log memory shall be retained in the event of power failure or activation of any safety device.
 在停电或任何安全装置启动时，应留有系统故障记录。
 - g. Equipment shall be provided with Electro Magnetic Interference (EMI) shielding within 3C guidelines.
 所有设备都应按照 3C 认证配置电磁干扰保护装置。
 3. **Wiring:** China Standard labeled copper for factory wiring. Neatly route all wiring interconnections and securely attach wiring connections to studs or terminals.
 布线：出厂布线采用标有中国标准的铜线。整齐布置所有线路连接，线路接头应牢牢固定在双头螺栓或接线端子上。
 4. **Permanently mark components (relays, fuses, PC boards, etc.) with symbols shown on wiring diagrams.**
 布线图中应有永久性标志部件（继电器、保险丝及印刷电路板等）符号。

5. **Monitoring System Interface:** Provide controller with serial data link through RJ 45 Ethernet connection and install all devices necessary to monitor items. Escalator Contractor responsible to connect monitoring system interface to machine room monitoring compartment and LAN.

Wiring from LAN to the machine room monitoring compartment by others.

监控系统界面：通过 RJ 45 以太网连接为控制装置提供串行数据连接，安装监视的所有必要装置。自动扶梯承包商负责将监视系统界面与机房监视隔间及局域网连接起来。局域网至机房监视隔间的布线由其他单位负责。

6. **Remote Monitoring and Diagnostics:** Equip each controller with standard ports, interface boards, and drivers to accept maintenance, data logging, fault finding diagnostic, and monitoring system computers, keyboards, modems, and programming tools. The system shall be capable of driving remote color CRT monitor(s) which continually scan and display the status of each escalator.

远程监控及诊断：每个控制装置配置标准端口、界面板及驱动器，以方便进行维护、数据记录、故障诊断，还应配置监控系统电脑、键盘、调制解调器及编程工具。系统应能够驱动远程彩色 CRT 监视器，使之不断扫描及显示每部自动扶梯的状态。

- E. **Step Drive Assembly:** Direct or indirect drive. Machine sprockets at each side over which step chains, step chain rollers, or steel cord reinforced polyurethane cog belt shall pass and transmit motion from machine to steps. If indirect chain drive is used between machine and drive sprocket, provide emergency brake on drive assembly to automatically set if drive chain fails. Provide roller-type sealed bearings.

梯级驱动总掣柜：直接或间接驱动。梯级链、梯级链滚轮或钢丝绳线加固聚氨酯齿形带上方每边的曳引机链轮应将机器动能传至梯级。如果机器及曳引机链轮间采用的是间接链条驱动，则应为驱动装配提供紧急制动器，在驱动链条出现故障时，自动制动。须设置辊式密封轴承。

2.6 WELLWAY EQUIPMENT 井道设备

- A. **Truss:** Steel truss to safely carry entire load of escalator, including all components, full-capacity load and weight of exterior truss and balustrade covering material. Provide required factor of safety. Provide clearly identified exterior cladding support attachment locations on exposed sides and bottom of the entire length of truss. Provide structural truss reinforcement as required for support to eliminate need for intermediate building supports.

桁架：钢桁架能够安全承载整部扶梯荷载，包括所有的部件，全容量荷载，以及桁架和栏杆面材的重量。外部维护材料需符合设计。按照要求提供足够的安全系数。在桁架的所有外露侧面和底部清晰标注外包层支撑附件的位置。按照要求提供必要的桁架支撑加固方式，避免在建筑物中间安装中间支撑。

- B. **Intermediate Supports:** WITHOUT.

中间支撑：不配置

- C. **Drip Pans:** Oil-tight, steel pans with sufficient strength to withstand weight of workmen entire width and length of truss.

集水盘：不透油钢制集水盘，足够承受工人的体重和整个桁架。

- D. **Step Tracks:** Construct from steel. Tracks shall be bolted sections including transitions to facilitate maintenance and replacement if required. Track sections, including transitions, shall be factory installed and aligned to insure smooth, quiet operation of running gear under all conditions. The individual track section, together with transition section, lower reversing station tension carriage, main drive shaft, and handrail drive shaft shall form a fully independent assembly.
梯级轨道：钢制材料。导轨各段由螺栓连接，包括方便在必要时进行维护和更换的过渡件。导轨段，包括过渡件，应为出厂安装和校准，确保驱动装置在各种情况下运行流畅、安静。单个导轨段以及过渡段，底部逆转站张紧托架，主驱动轴和扶手驱动轴应构成完全独立的组件。
- E. **Step Chain:** Roller chain constructed of steel links with hardened pins or cast links connecting adjacent steps and engaging step drive assembly. Provide synthetic composition roller assemblies with sealed bearings. Escalator design shall permit step band inspection and operation while unit is running with steps removed.
梯级链：由带硬化销的钢环或铸钢环的滚子链构成，连接周边梯级，并带动梯级驱动组件。须设置带密封轴承的合成滚轴组件。扶梯设计应方便在机器和梯级运行时进行梯级链检查和操作。
- F. **Step Guidance System:** Provide a step guidance system to control the horizontal and vertical movement of the steps.
梯级导向系统：提供梯级导向系统，以便控制梯级水平和竖向运动。
- G. **Lower Reversing Station Tension Carriage:** Fully independent, floating track system with spring tensioning device to maintain constant step band tension.
底部逆转站张紧托架：须为完全独立的浮动导轨系统，配有弹簧张紧装置，保持恒定的梯级链张紧状态。
- H. **Step Assembly:** Single piece die-cast aluminum, fastened to the step band. Step rollers shall have sealed bearings and be tired with synthetic composition material. Treads and riser shall be cleated. Steps shall be covered on the underside with sound-deadening material. Steps shall be removable from unit without disassembly of balustrade.
梯级组件：安装在梯级链上的整块压铸铝。梯级滚轴应具备密封轴承，并同合成材料相连。踏板和踢板应安装夹板。踏板下表面采用隔音材料。梯级可在不拆除栏杆的情况下拆除。
- I. **Safety Devices:** Provide step and handrail safety devices:
安全装置：提供梯级和扶手带安全装置：
1. Broken drive train/step chain
传动轨道/梯级链断链保护装置
 2. Broken drive chain/drive belt
驱动链/驱动带断开保护装置
 3. Skirt obstruction
围裙板接触保护装置
 4. Reversal stop
逆转停止装置
 5. Step up-thrust
梯级上冲安全装置
 6. Handrail speed
扶手带速度滞后感应装置
 7. Missing step
梯级缺失保护装置

8. Step level
梯级塌陷保护装置
9. Handrail entry
扶手带入口保护装置
10. Combplate impact
梳齿板安全保护装置
11. Step Demarcation Lights
梯级边界警戒灯
12. Stop Button
急停按钮

J. Electrical Wiring:
电气布线:

1. Conductors: Copper throughout with individual wires coded and all connections identified on studs or terminal blocks. Type SO cable may be utilized for wiring conducting 30 volts or less, per.
导线: 纯铜导线, 各电线标注代码, 螺柱和端子排上所有接口提供标注。30 伏特及以下的电线可采用 SO 型电缆。
2. Conductors: 31 Volt RMS or greater. Provide conduit, junction boxes, connections, and mounting means. Provide painted or galvanized steel or aluminum conduit, conduit size.
导线: 输出功率不低于 31 伏。导线、接线盒、接头以及安装方式。提供上漆、镀锌或铝导线。

2.7 HANDRAIL 扶手带

- A. Construction: Reinforced rubber running on metal guides. Handrail shall be spliced and vulcanized with smooth joint. Handrail shall be driven at the same speed as the steps. Provide tensioning device and slack-tension switch.
施工: 金属导轨包覆加固橡胶。扶手应利用平接头进行叠接及硫化。扶手速度应与梯级速度保持一致。提供张紧装置及松弛-张紧开关。

2.8 BALUSTRADE 扶手栏杆

- A. Interior Panel: Reinforced metal.
内侧面板: 加固的金属。
- B. Skirt Panels: Reinforced metal, if required by Contractor's own design. Install to maintain loaded step gap clearance per code. Provide panels with skirt brushes. Extend skirt panel beyond combplates and wrap around base of newel
围裙板: 如果承包商自身有设计要求, 采用加固的金属。安装时注意保持规范规定的承载梯级的对缝间隙。面板应配置裙板刷。围裙板应延伸至超出梳齿板之外, 并环绕楼梯中柱的底部。
- C. Deck Boards: Reinforced metal. All deck section joints shall abut to provide a smooth surface to surface connection with transition, top and bottom, horizontal to incline sections.
盖板: 加固的金属。所有盖板横接缝应相互毗邻, 构成一个完整的表面连接, 将桁架转弯段、上段、下端、水平段和倾斜段。
- D. Trim and Moldings: Match deck finish
饰边及嵌线: 与盖板饰面相匹配。

2.9 LANDINGS 停层

- A. Flat Steps: Provide upper and lower landings with three flat steps
水平梯级：在扶梯的上下停层处设置三个水平梯级。
- B. Step Demarcation Lighting: Provide minimum of two green fluorescent step demarcation lights within the step band at upper and lower landings.
梯级边界警戒灯：至少在上下平台的台阶中设置两个绿色荧光梯级分隔条灯。
- C. Combplates: Aluminum or other alloy provided with non-slip surface. Provide removable comb sections.
梳齿板：采用铝制或其它合金材料及防滑表面。设置可拆卸的梳齿板。
- D. Landing Plates: Aluminum or other alloy with non-slip surface. Plate shall extend from combplates to equipment access plates at upper and lower ends. Plates shall extend full width of truss.
停层盖板：采用铝制或其它合金材料及防滑表面。平台板应从梳齿板延伸至上下端的设备检修板。平台板应和桁架等宽。

2.10 SIGNAL AND CONTROL FIXTURES 信号及控制装置

- A. Operating Panels: Match deck finish. Function and operating positions of switches and buttons shall be identified with engraved characters which are readily visible from a standing position. Each panel shall contain the following:
操作面板：与扶梯的围裙板/盖板的饰面相匹配。应在开关及按钮的功能和操作位置设置刻花字，确保可从站立位置清楚看到。每个操作面板应包含以下内容：
1. Red "emergency stop" button. The button shall be covered with a transparent cover which can be readily lifted or pushed aside. When the cover is moved, an audible warning signal shall be activated. The signal shall have a minimum sound intensity of 80 dBA at the button location. The cover shall be engraved "EMERGENCY STOP"; "MOVE COVER" or equivalent legend; and "PUSH BUTTON." "EMERGENCY STOP" shall be in letters not less than 13mm high. Other required wording shall be in letters not less than 4.8mm high. The cover shall be self-resetting.
红色“紧急停止”按钮。应为按钮设置透明盖板，可轻易从一侧抬起或推开。在移除该盖板后，声音警报信号应被激活。按钮位置信号的声音强度应最低为 80 分贝。盖板应刻有“紧急停止”、“移除盖板”或同等字样；此外，“按钮”“紧急停止”等字体的高度应不小于 13 毫米。其它字体高度应不小于 4.8 毫米。盖板应能够自动复位。
 2. Key switch to "start" unit.
按键开关“开启”装置。
 3. Key directional control switch.
定向控制按键开关。
- B. Fault Indicator: Provide upper and lower end of truss with fault indicator to display source of fault without removal of equipment access plate. Locate indicator in handrail inlet box or deck board visible from landing plate
故障指示灯：为桁架上下端设置故障指示灯，无需移除设备检修板即可显示故障来源。将指示灯设置在扶手带入口装置或盖板内，确保在楼层盖板处可见。

2.11 SIGNS 标志

- A. Landing Signs: Provide caution signs at top and bottom landings.
停层标志：在扶梯的上下停层设置警示标志。

PART 3 - EXECUTION 实施

3.1 EXAMINATION 检查

- A. Prior to beginning installation of equipment examine wellway and machine room areas. Verify no irregularities exist that affect execution of work specified.
在开始安装设备前，检查井道和机房区域。确保无影响指定工程实施的违规现象。
- B. Do not proceed with installation until work in place conforms to project requirements.
在完成的工作符合项目要求前，请勿进行安装。

3.2 INSTALLATION 安装

- A. Install all equipment in accordance with Contractor's instructions, referenced codes, specification, and approved submittals.
按照承包商的说明、参考规范、技术说明书及批准交付件的要求，安装所有设备。
- B. Install all equipment so it may be easily removed for maintenance and repair.
安装所有设备，确保可方便移除进行维护和修理。
- C. Install all equipment to afford maximum accessibility, safety, and continuity of operation.
安装所有设备，确保最大可达性、安全性及操作的连续性。
- D. Remove oil, grease, scale, and other foreign matter from the following equipment and apply one coat of field-applied machinery enamel.
去除以下设备上的油污、油脂、剥落物及其他异物，并现场涂覆一层机械用漆。
- E. Clean all architectural finishes and replace or restore any surfaces damaged during construction to like new condition.
对所有建筑饰面进行清理，并替换或修复在施工期间损坏的表面以使其犹如新的一般。

3.3 FIELD QUALITY CONTROL 现场质量控制

- A. Acceptance Testing: On completion of escalator installation and before permitting escalator use, perform acceptance tests as required and recommended by escalator code requirements and by governing regulations and agencies.
验收测试：在自动扶梯安装竣工后，允许在使用扶梯之前按照相关扶梯规范、管理规定和相关机构的要求和建议进行验收测试。
- B. Operating Test: Load escalator to rated capacity and operate continuously for 30 minutes over full travel distance. Record temperature rise of escalator machine during 30-minute test period. Record failure to perform as required.
运行测试：将自动扶梯加载额定荷载，全程持续运行 30 分钟。记录 30 分钟测试期内扶梯机器温度上升数据。记录运行中产生的问题。
- C. Advise Owner, Architect, and authorities having jurisdiction in advance of dates and times that tests are to be performed on escalators
在自动扶梯测试日期和时间前，向业主、建筑师和有关部门提出建议。

3.4 ADJUSTING 调整

- A. Track Alignment: Re-align factory installed tracks if required to ensure continuous 4-point contact with step and chain rollers. Secure joints without gaps and file any irregularities to a smooth surface.
导轨校准：如有要求，重新校准工厂安装的导轨，以确保 4 个点连续接触梯级和滚子链。确保连接处无缝隙，将任何不规则之处挫平整。
- B. Lubricate all equipment in accordance with Contractor's instructions.
按照承包商说明书润滑所有的设备。
- C. Adjust motors, brakes, controllers, stopping switches, and safety devices to achieve required performance levels.
校准电机、制动装置、控制器、停止开关和安全装置，直至达到要求的性能水平。
- D. Adjust brakes and controlled descent devices to stop escalator with variable load. Drive machine brakes shall stop the down running escalator at a rate no greater than one meter/second²
校准制动装置和下行控制装置，以便在可变荷载下停止扶梯运行。制动驱动应能够以不高于 1 米/秒² 的速度停止扶梯下行。
- E. Adjust handrail speed to coincide with step speed.
调整扶手速度，使之同梯级速度同步。
- 3.5 CLEANING 清洁
- A. Keep work areas orderly and free from debris during progress of project. Remove packaging materials on a daily basis.
在项目施工过程中保持工作区整洁无杂物。每日清除包装材料。
- B. Remove all loose materials and filings resulting from work.
清除所有施工产生的松散材料和残屑。
- C. Clean machine room equipment and floor.
清扫机房空间的设备和地板
- D. Clean balustrades, deck boards, skirt panels, operating and signal fixtures, and trim.
清洗扶手装置、盖板、围裙板、操作和信号装置以及饰条。
- 3.6 TEST RESULTS: 测试结果:
- A. Review procedure shall apply for individual escalators, portions of groups of escalators, and completed groups of escalators accepted on an interim basis or escalators and groups of escalators completed, accepted, and placed into operation.
检查流程应适用于临时验收的单个扶梯、扶梯组中的部分扶梯、以及完整的扶梯组，或者已竣工、验收并投入运行的扶梯和扶梯组。
- B. Contractor shall perform review and evaluation of all aspects of its work prior to requesting Consultant's final review. Work shall be considered ready for Consultant's final contract compliance review when all Contractor's tests are complete and all elements of work or a designated portion thereof are in place and escalator or groups of escalators are deemed ready for service as intended.
承包商须在要求顾问公司最终检查前，检查和评估其各项工作。工程应准备就绪，供顾问在完成所有的测试，工程的所有部分或指定部分安装到位且扶梯或扶梯组投入使用前进行最终的合同合规性审查。

- C. Furnish labor, materials, and equipment necessary for Consultant's review. Notify Consultant a minimum of five working days in advance when ready for final review of escalator or group.
提供必要的员工、材料和设备信息，供顾问审查。扶梯或扶梯组准备就绪后至少提前五天通知顾问公司进行最终检查。
- D. Equipment and Instruments: Furnish equipment and instruments to perform required tests. The following instruments may be necessary to complete the tests:
设备和工具：提供进行测试所需的设备和工具。完成测试可能需要用到以下工具：
1. Multi meter
万用表
 2. 500 Volt Megger
500 伏特高阻表
 3. Alternating-current voltmeter and ammeter
交流电压计和电流计
 4. Celsius-calibrated thermometers (two minimum)
摄氏刻度的温度计（至少两个）
 5. Precision tachometer
高精度转速计
 6. Decibel meter for noise test
用于噪音测试的分贝表

3.7 PURCHASER'S INFORMATION 买方信息

- A. Provide three sets of neatly bound written information necessary for proper maintenance and adjustment of equipment within 30 days following final acceptance. Final retention will be withheld until data is received by Purchaser and reviewed by Consultant. Include the following as minimums:
在最终验收后 30 天内，提交三套装订整齐的、有关设备适当维护和校准的文件。在买方收到数据且顾问审阅之后才能够最终保留文件。至少提交以下文件：
1. Straight-line wiring diagrams of "as-installed" escalator circuits with index of location and function of components. Provide one set reproducible master. Mount one set wiring diagrams on panels, racked, or similarly protected, in escalator machine room space. Provide remaining set rolled and in a protective drawing tube. Maintain all drawing sets with addition of all subsequent changes. These diagrams are Purchaser's property.
扶梯电路安装直线布线图，包括部件的位置和功能索引。提供一套可复制的原件。其中一套线路图粘贴在扶梯机房内带机架或类似保护措施的控制面板上。剩余文件卷起来放入保护性图纸管中。保留所有后来变动的图纸。这些图纸归买方所有。
 2. Written Maintenance Control Program specifically designed for the equipment included under this contract. Include any unique or product specific procedures or methods required to inspect or test the equipment.
针对本合同项下设备而设计的书面维护控制方案，包括所有设备检查和测试的特殊或具体流程和方式。
 3. Lubrication instructions, including recommended grade of lubricants.
润滑说明书，包括润滑等级建议。
 4. Parts catalogs for all replaceable parts including ordering forms and instructions.
所有可替换零件列表，包括订购单和说明书。
 5. Four sets of keys for all switches and control features properly tagged and marked.
所有具备适当标签和标记的开关及控制装置的四套钥匙

END OF SECTION

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