ESP Series Escalator/Travelator

XJ Schindler

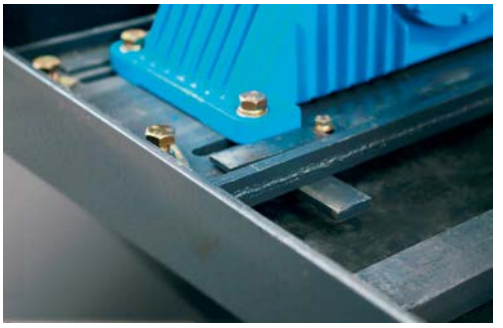
High Stability

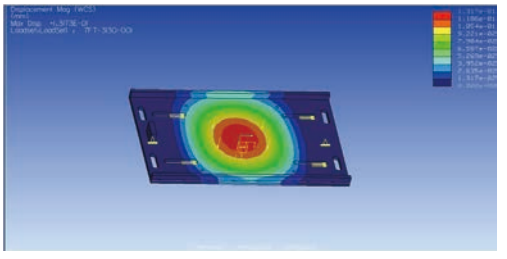
Safe

Transport 900 million people daily

Protection Against Retrogradation

The sprocket in our traction machine can detect retrogradation instantly. Even in times when the operation chain breaks off, the sprocket will still be able to detect retrogradation at the very first second.





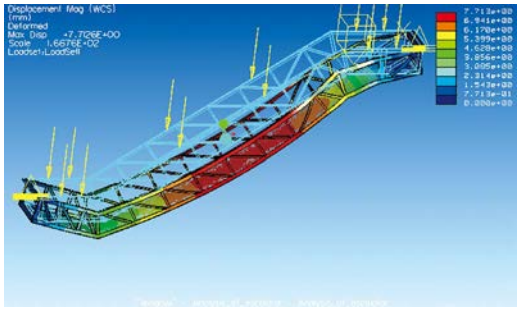
High-power traction socket prevents displacement.

We have incorporated a series of innovations to develop a traction machine that is suitable for long working hours through scientific calculation of the mechanics, thickening of metal board, increasing stress-resistance and anchoring at multiple spots. To further stabilize our traction machine, we selected a more durable type of bolt which is cut-resistant, less prone to loosening and reduces strain on the traction machine. With our two-prong approach to stabilize the position of the traction machine, shifting in position is highly unlikely, bringing about a smoother and safer operation of the escalator.

Anti-Reversal Brake

Under special circumstances, the anti-reversal brake will prevent retrogradation of escalators which is akin to the ABS system in conventional vehicle. This ensures the safety of our passengers.

Sturdy Brackets



Higher rigidity with larger bracket design

Our brackets have higher rigidity and are able to minimize distortion level to 1/1500 when fully loaded. This is above the national standard of 1/750.

Even distribution of pressure along truss

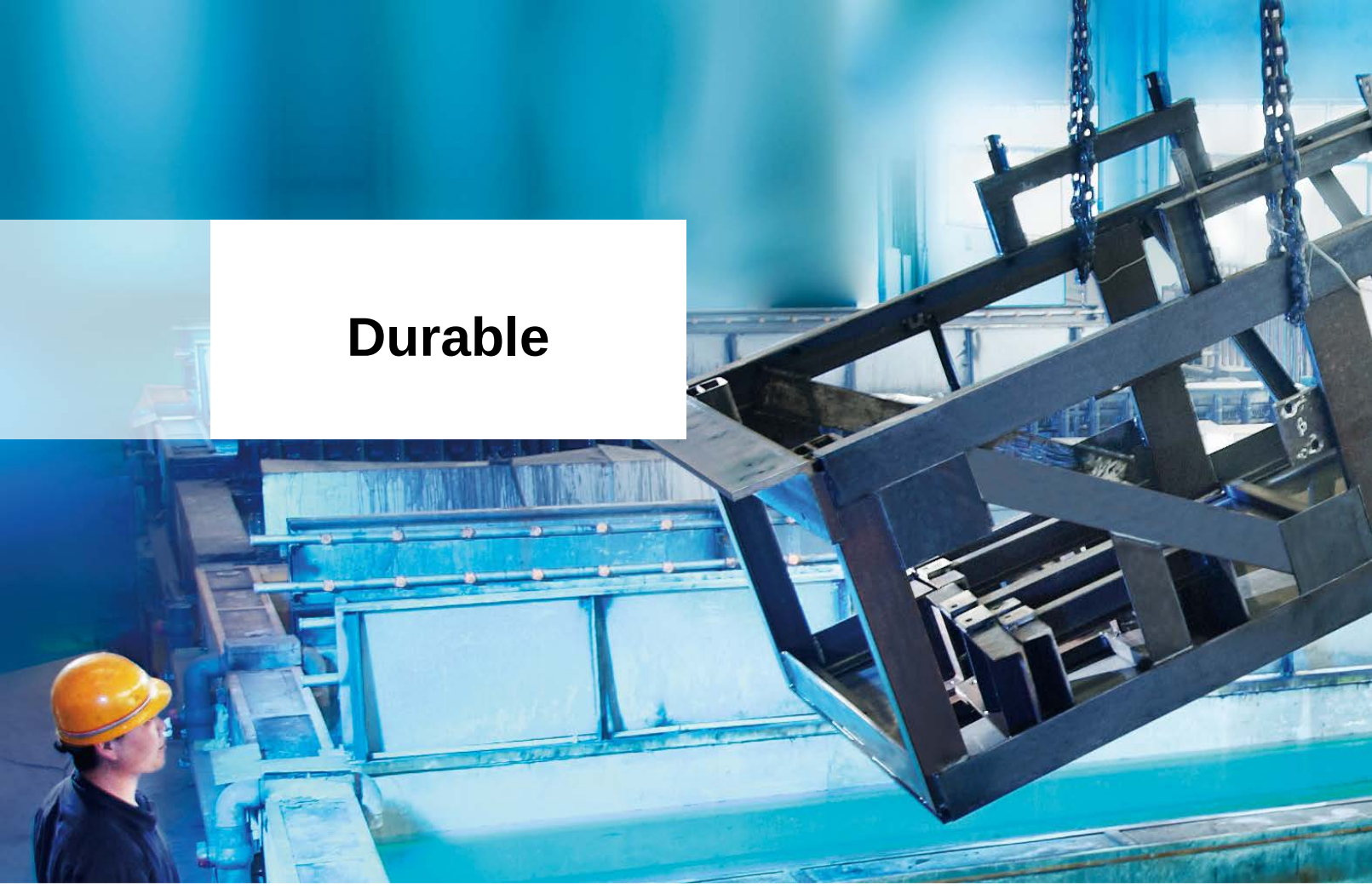
With the connection/linking of the truss and brackets, pressure can be evenly distributed which effectively reduce distortion on the truss and brackets.

Bigger support for better pressure management

Based on scientific analysis, we have designed a large spanning support to ease pressure on the escalator. This will enhance the stability of the truss and hence smoother operation of the escalator.

Anti-seismic technology

As we are all vulnerable to inevitable natural disasters such as earthquakes, we understand the importance of taking precautionary measures. With our anti-seismic technology, passengers will not have to worry about their safety in times when disasters such as earthquakes occur.



Durable

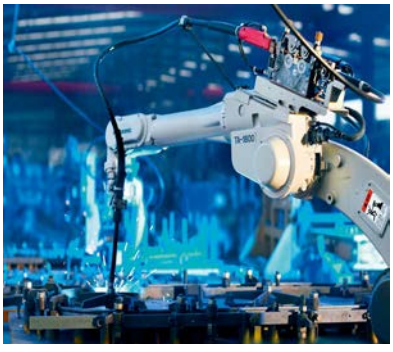
Our truss is a world-class handcraft that has a life span of up to 30 years.

Using the coating line from Germany's Dürr Company, this raised the standard for escalator pre-treatment and electrophoresis process. As the corrosiveness of escalator plays a pivotal role in deciding the quality, we are dedicated to produce escalators that are corrosion resistant.

Electrophoresis Base Coat + Epoxy micaceous iron + Anticorrosion Paint

Triple Protection

Our electrophoresis pool has an area of 192m^2 which can accommodate the entire truss and the thickness of the coating can reach a maximum of 100um with an adhesion power of 0.1. After the coating treatment, the truss will be able to withstand 1500 hours of corrosion test.



High precision welding

Our custom-made welding machine can accurately connect the different parts of the elevators together producing durable products.

Weld seam inspection

This inspection ensures that the joints are impeccably connected with no cracks, air bubbles, white spots and etc to confirm that only quality products flow into the market.

High precision thickness measurement device

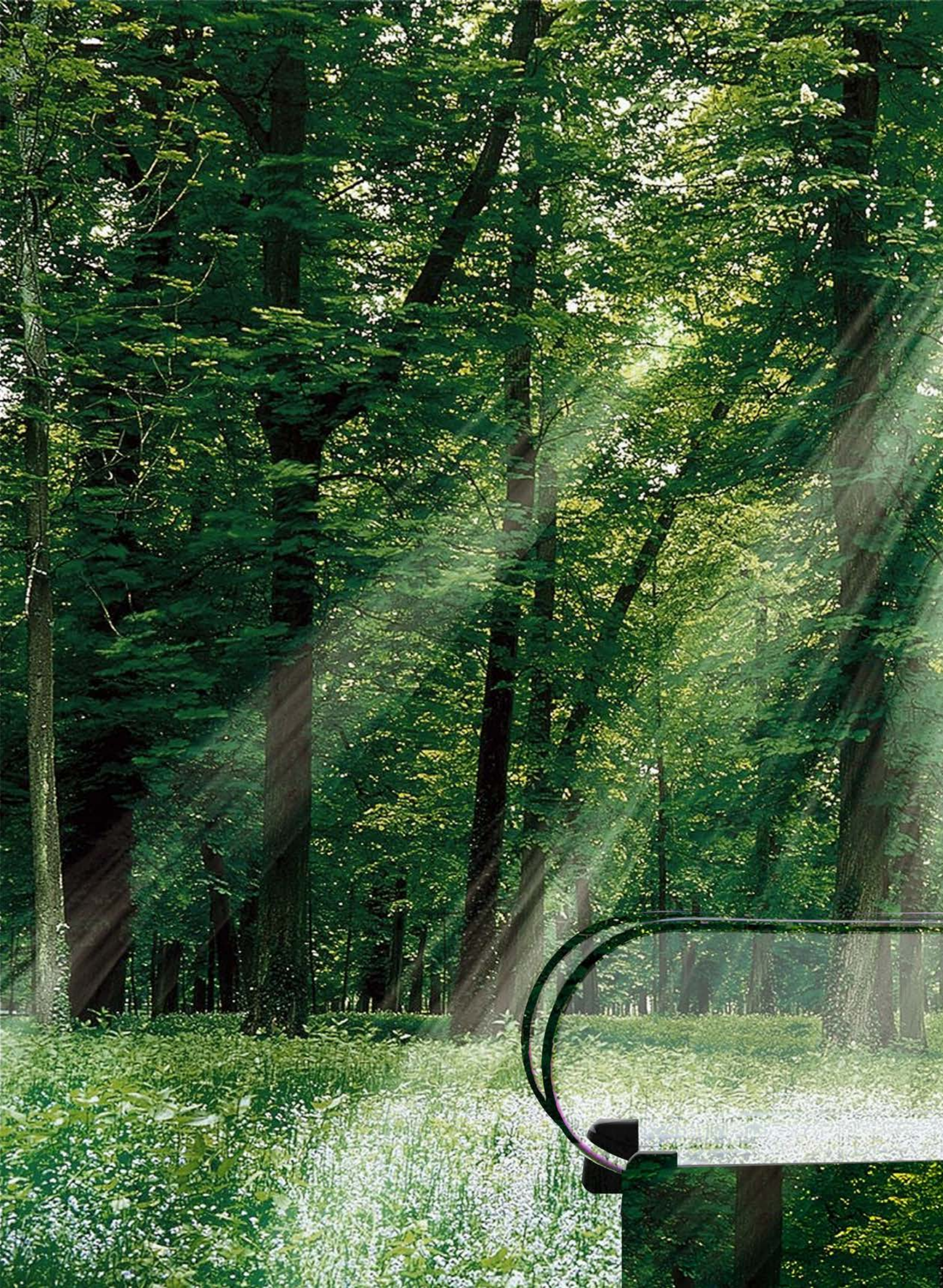
Accurately measures the thickness paint coat and identify the type of coating automatically.

8000 Hours Heat and Humidity Test

Strict adhesiveness assessment of paint coat under high temperature and humid conditions to ensure that our escalators are well shielded from corrosion.

1500 Hours Corrosion Test

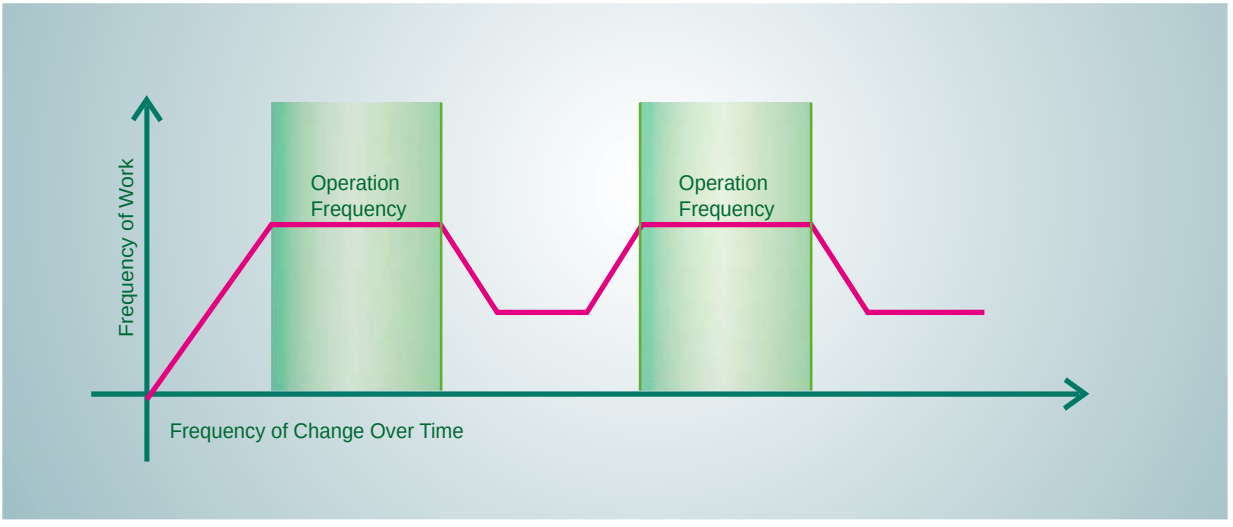
This assessment is necessary to confirm that our escalators are suitable for any environment.



Environmentally Friendly

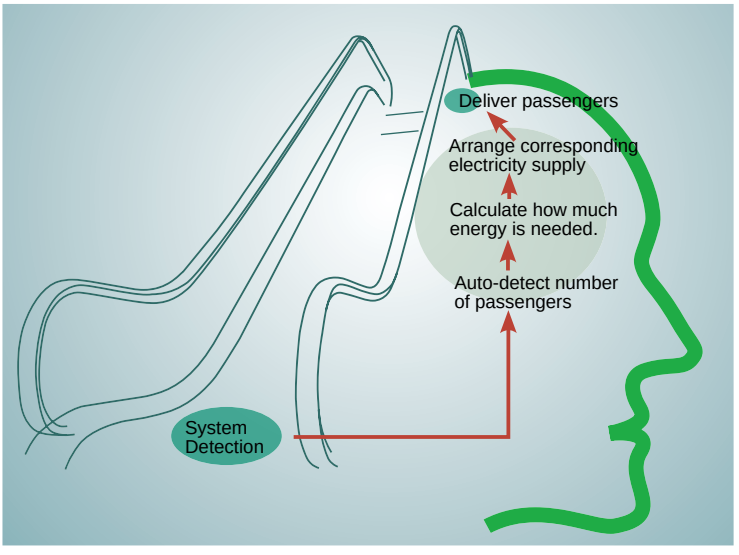
Energy-saving inverter technology

The escalators are powered by the 50Hz power supply under normal operation mode. However, when the escalator is left unused after a designated period of time, the inverter will be activated in place of the 50Hz power supply and the escalator will decelerate. When human movement is detected, the inverter will accelerate the escalator until the preset speed and be powered by 50Hz power supply subsequently. The installation of inverter in our escalator aims not only to reduce energy consumption but also to minimize noise level and wear and tear of escalator parts.



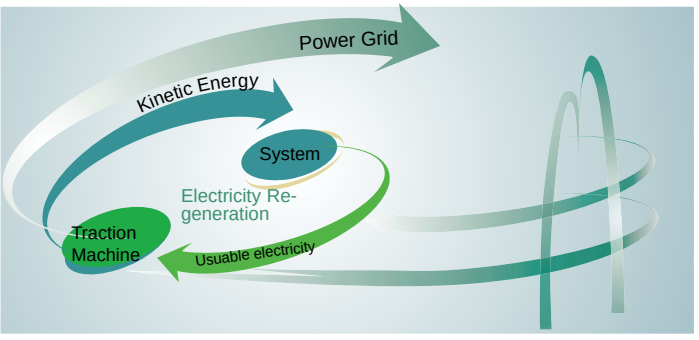
Loading Force Auto Adjustment

Our ESP Series escalator is able to acquire the loading information automatically and generate sufficient force to propel the escalator. This minimizes power wastage which will lead to an overall reduction in the cost of power supply.



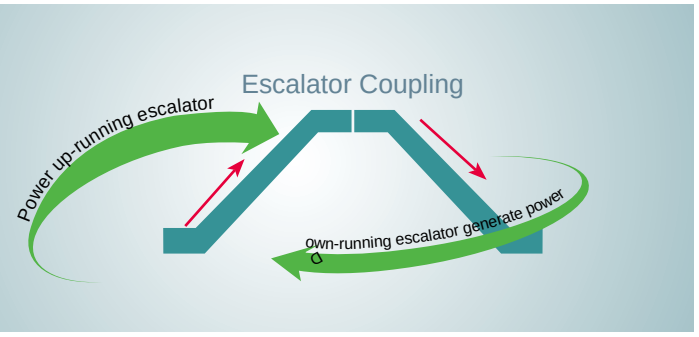
Energy Renewal
Energy Renewal Device

When the escalator is fully loaded during descend and partially loaded during ascend, the dual PWM inverter will be able to adjust the speed of the escalator and convert it to usable energy for future uses. The potential energy lost during the descending of the elevator can be converted into power supply by passing the DC power supply through a rectifier. This conversion will equalize the voltage between the 2 sources and the resulting energy will return to the main power supply which can be used to power energy-operated equipment.



Parallel Energy Coupling

In the case of parallel escalator arrangement, the down-running escalator's regenerated electricity can be directed to supply the up-running complementary escalator reducing the overall power consumption.



Hibernate/Wake Function

To reduce energy wastage when escalator is not being used, radar scanners were installed at the exit/entrance of the escalator which detects motion using ultrasound. When movement is detected, the escalator will be in “wake” mode, otherwise, the escalator will be in “hibernate” mode to conserve energy.

Hibernate Mode

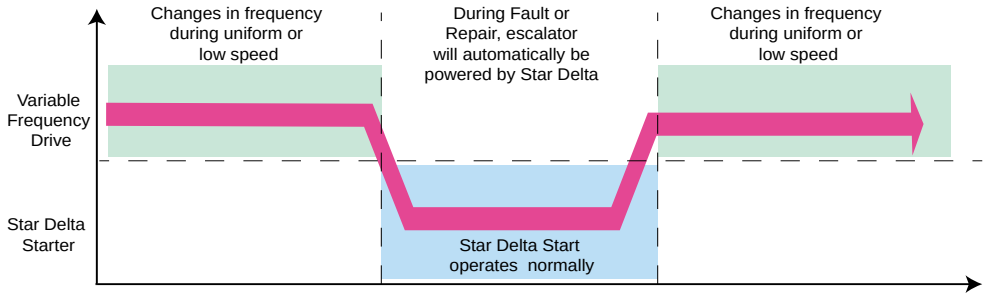
When the escalator is not being utilized for more than the designated duration (eg. 15 minutes), the escalator will stop operating and go into “hibernate” mode. If the passengers are entrance of the escalator, the escalator will start-up and operate as per normal. However, if the passengers are boarding the escalator from the exit, the escalator will either operate at lower speed or stop completely to remind the passengers that they are at the wrong direction.

Wake Mode

The radar scanner at the entrance/exit of the escalator will be able to detect passengers’ movement. The smart display will indicate the direction in which a particular escalator is traveling towards.

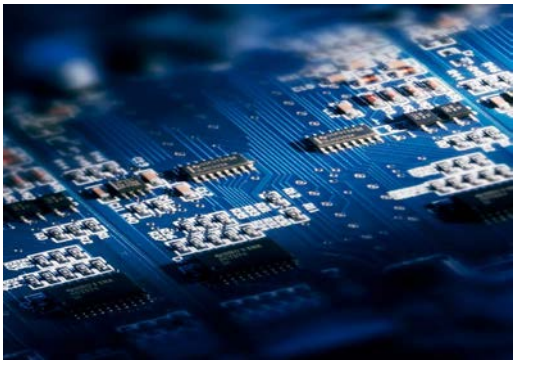
Dual Motor

Usage of escalators are well-received in shopping malls, supermarkets, airports and other places where there is high human traffic. As a result, the frequency of inverter malfunctioning is also higher. In times when the inverter malfunctions or is under inspection, the escalator will be powered by Star Delta Starter to ensure smooth operation of escalator.



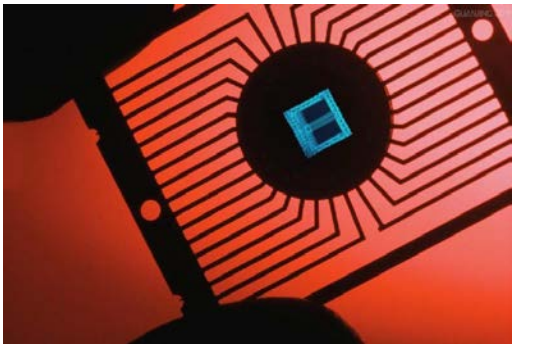
Dual 32-bit System

In our military standard dual 32-bit CPU chip, each individual chip has independent operator to manage the data and information. With the CPU chips operating independently from one another, it completely isolates the input and output information, hence effectively reduces interruption.



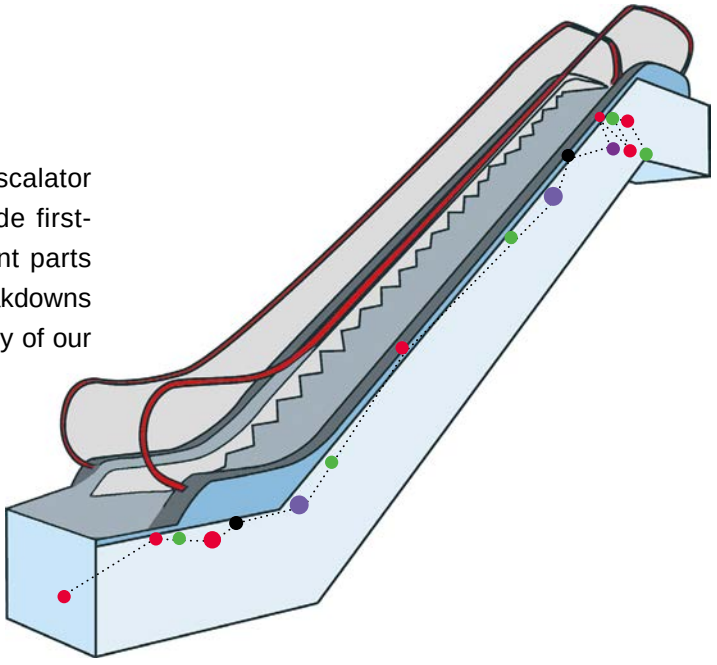
Large Black Box Capacity

Our black box has the capacity to store 100000 pieces of information recording all breakdown details and combine breakdown analysis and troubleshooting. It also has remarkable trackback ability making reference of past information more efficient.



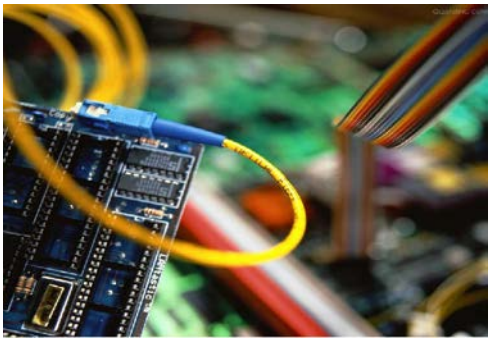
Neural Safety Platform Simulation

Checkpoints spanning the length of the escalator simulate human nervous system to provide first-hand feedback on health status of different parts of the escalator. This greatly prevents breakdowns from happening thus safeguarding the safety of our passengers.



Powerful Communication

Our escalators have isolated internal communication system that is free from interference. In addition, the communication capacity and speed are increased by 5 folds, further affirming the safety and reliability of escalators.



Efficient Monitoring

Real time online monitoring of the states of escalators/ travelators enables detection of problems before they actualise.

Public Escalator Standard Specification

Parameters	Standards
Maximum Rise	25m
Preset Transportation Speed	V=0.5m/s
Step Width	1000mm
Horizontal Rungs	3 levels
Inclination Angle	30°/23.2°/27.3°
Maximum Transport Capacity	6000 people/h
Transportation Conditions	24hours per day, 365 days per year
Frame Deflection	≤1/1500
Traction machine	Helical Gear
Brake	Yes

Common Escalator Standard Specification

Parameters	Standards
Maximum Rise	8m
Preset Transportation Speed	V=0.5m/s
Step Width	600/800/1000mm
Horizontal Rungs	2 levels (6m above 3 levels)
Inclination Angle	30°/ 35°
Maximum Transport Capacity	6000 people/h / 4800 people/h / 3600 people/h
Transportation Conditions	24hours per day, 365 days per year
Frame Deflection	≤1/1000
Traction machine	Worm Gear
Brake	No

Travelator Standard Specification

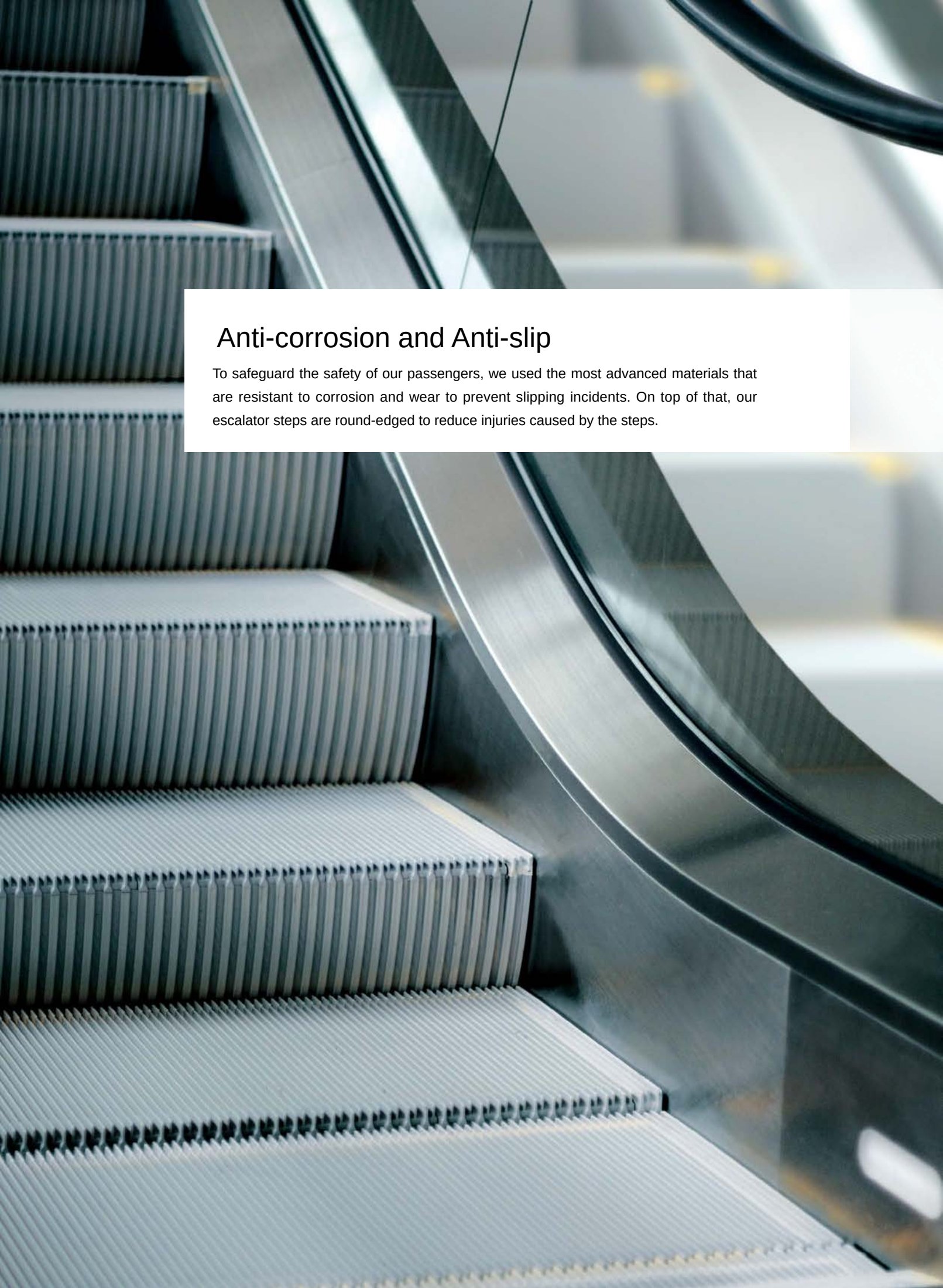
Parameters	Standards
Maximum Rise	150m (Inclination angle=0°)
Preset Transportation Speed	V=0.5m/s 0.65m/s
Step Width	600/800/1000mm
Inclination Angle	10°/ 11°/ 12 °/ 0°
Maximum Transport Capacity	6000 people/h / 4800people/h / 3600people/h
Transportation Conditions	24hours per day, 365 days per year
Frame Deflection	≤1/1500

High-performance asynchronous host

Insignificant friction factor for ease of hydrodynamic oil film formation and high transmission efficiency to reduce energy wastage.
The traction machine for escalator uses a speed reducer that is wear-resistant and has high power transmission efficiency. Reliable and easily adjustible brake shoe fixed between the motor and speed reducer ensures high braking performance, low noise and smooth operation.

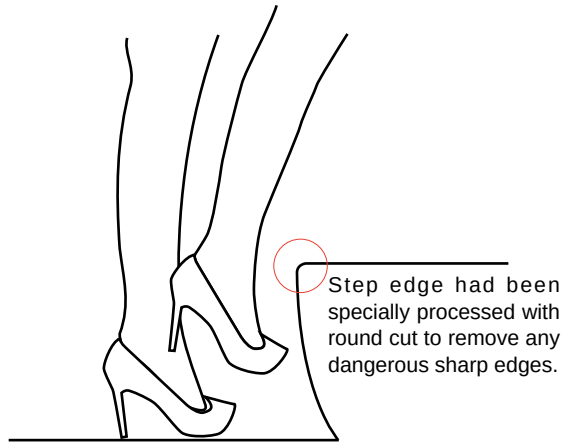
Host Driver (According to actual elevation)

With abundant power,maximum rise can reach up to 25m. Host power can easily optimize the combination of a variety of host operating status , adjustment of status based on the load status of the host running. According to circumstances, both host can simultaneously regulate close to their rated load. This elongates the life span of the host,reduces energy wastage effectively,ensuring smooth and reliable operation of escalator.

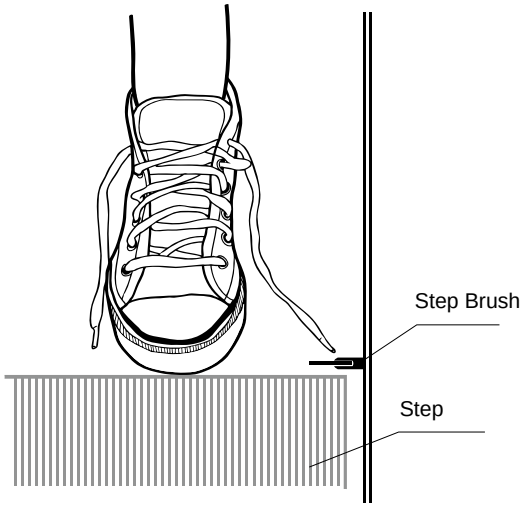


Anti-corrosion and Anti-slip

To safeguard the safety of our passengers, we used the most advanced materials that are resistant to corrosion and wear to prevent slipping incidents. On top of that, our escalator steps are round-edged to reduce injuries caused by the steps.



Round edges to prevent injuries



Step Brush (Optional)

Step brush keeps passengers away from the skirt panel to prevent objects adorned on passengers to get stuck and cause injuries.

Skirt Guide Light (Optional)

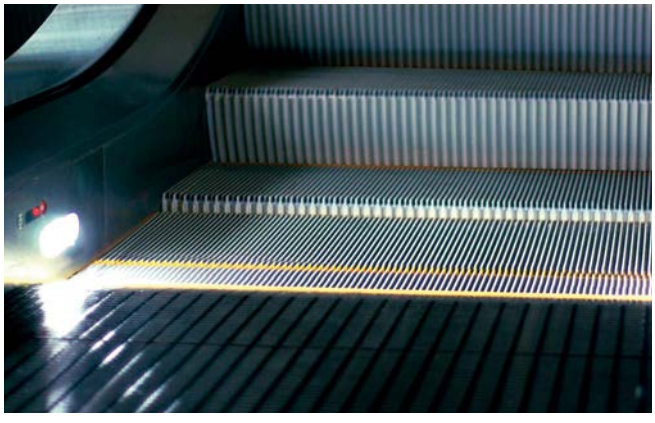
Skirt guide light not only ensures the safety of the passengers but also enhances the overall appearance of the escalator.

Automatic Lubrication Device (Optional)

Scheduled lubrication ensures smooth movement of escalators and prolongs the life span of escalators.

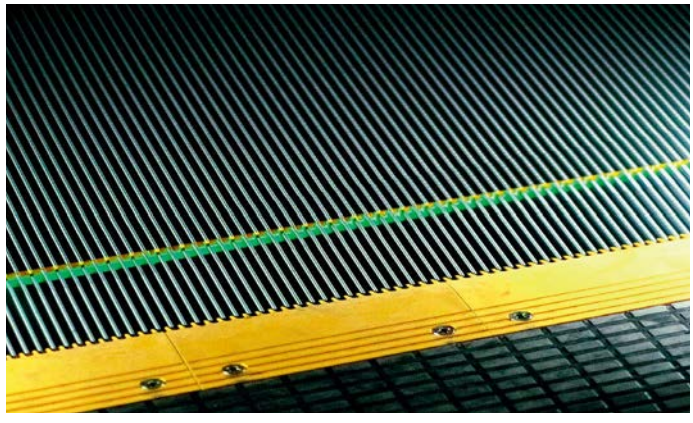
Handrail Light (Optional)

Comfortable lighting for the passengers and enhances overall appearance of elevator.



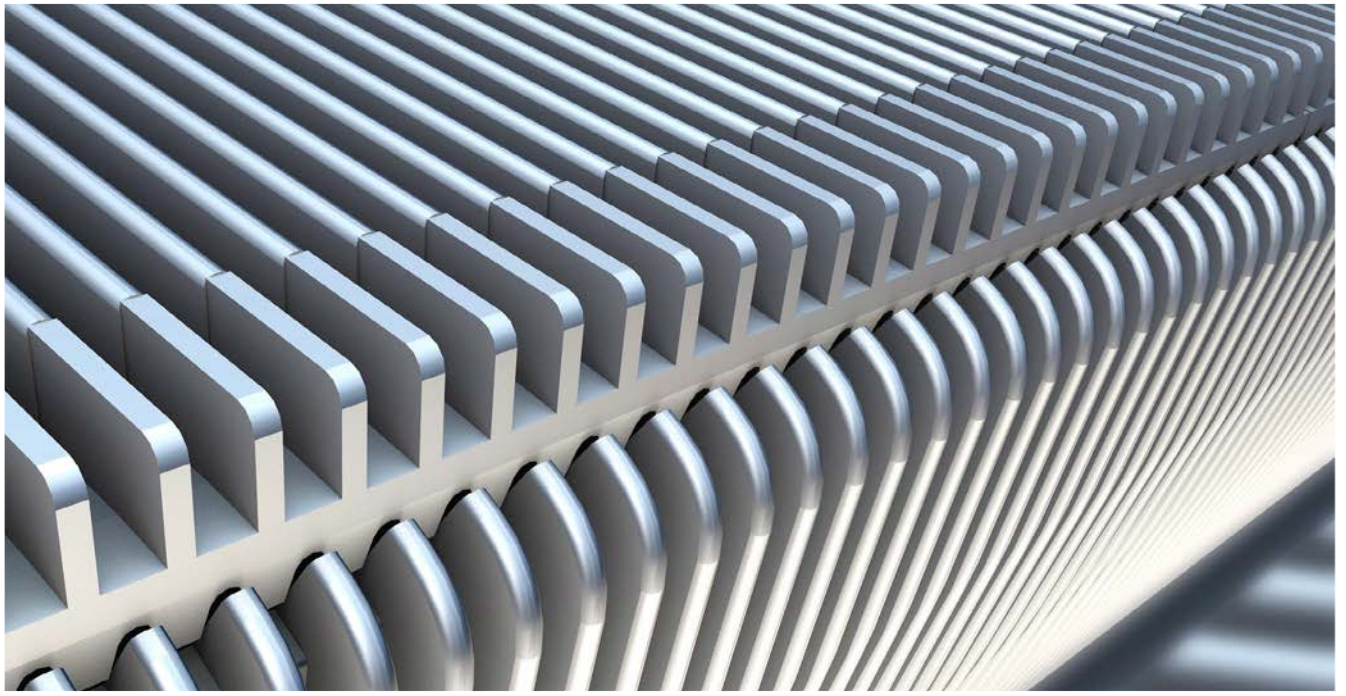
Entrance Light (Optional)

Increase visibility of escalator entrance.



Courtesy Light

Reminds passengers to stand away from the yellow line.



Aluminium Step

Oxidised surface that is wear-resistant and less susceptible to corrosion. This is especially suitable for outdoor escalators/travelators.

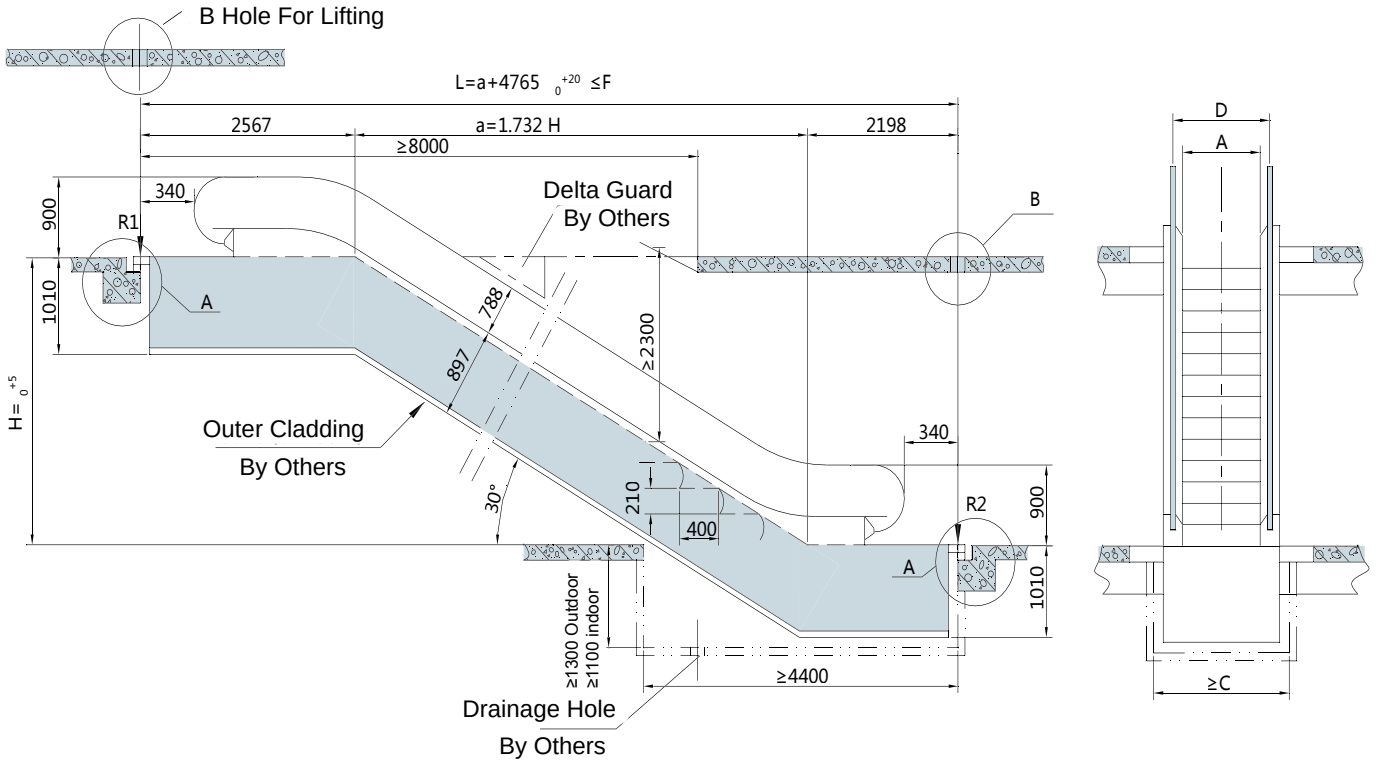
Aluminium Comb Plate (Optional)

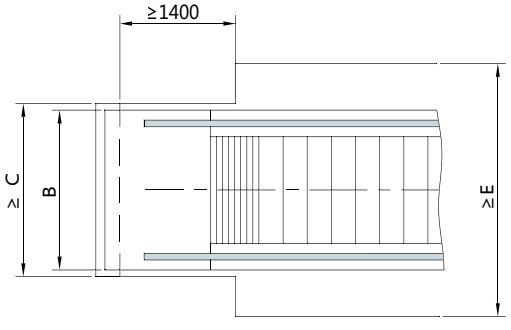
Anti-slip surface that is wear resistant and less susceptible to corrosion, boosting the life span of comb plate.

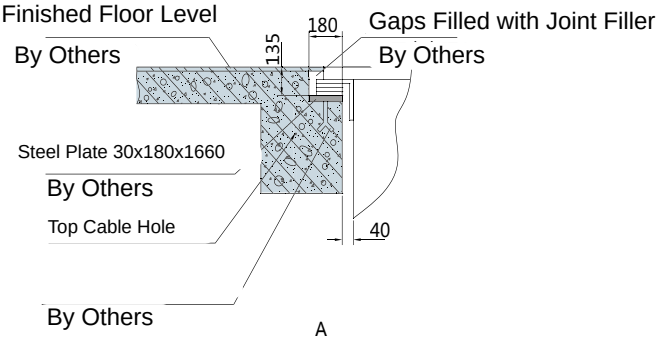
Nylon Comb Plate

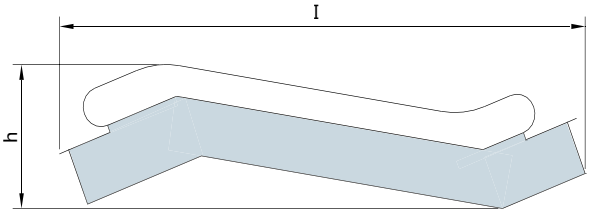
Escalator FTPN30

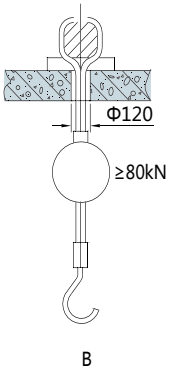
Max Rise 6m Inclination 30°











Escalator FTPN30 Specification

Model	Rise mm	Net Weight/ kN	Reaction R1/kN	Reaction R2/ kN	Motor/ kW	Transport Dimensions (H)	Transport Dimensions (L)
FTPN30 4500 people/h Speed=0.5m/s Step Width= 600	3000	58	47	42	5.5	2750	10840
	3500	61	50	45		2780	11830
	4000	65	53	48		2810	12820
	4500	69	57	51		2830	13810
	5000	72	60	54		2840	14800
	5500	76	63	57	7.5	2860	15800
	6000	80	66	60		2870	16790
FTPN30 6750 people/h Speed=0.5m/s Step Width=800	3000	60	53	48	5.5	2750	10840
	3500	64	57	51		2780	11830
	4000	68	61	55		2810	12820
	4500	72	65	58	7.5	2830	13810
	5000	75	69	61		2840	14800
	5500	83	75	67		2860	15800
	6000	87	79	70	11	2870	16790
FTPN30 9000 people/h Speed=0.5m/s Step Width=1000	3000	64	60	54	7.5	2750	10840
	3500	68	65	58		2780	11830
	4000	72	69	62		2810	12820
	4500	76	74	66		2830	13810
	5000	84	80	72	11	2840	14800
	5500	88	85	76		2860	15800
	6000	93	89	80		2870	16790

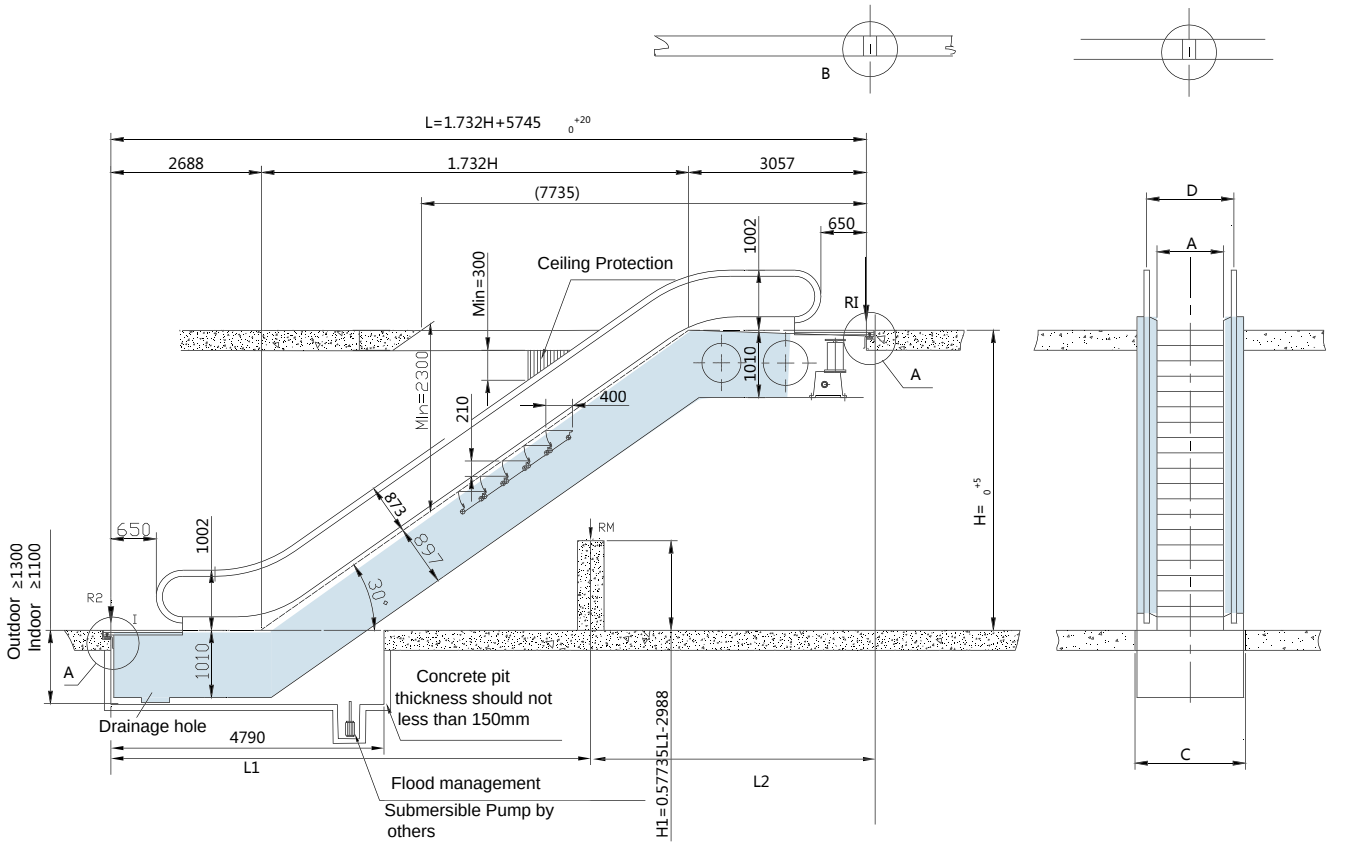
	FTPN30	FTPN30	FTPN30
A(Step Width)	600	800	1000
B	1200	1400	1600
C	1260	1460	1660
D	838	1038	1238
E	1910	2110	2310
F	17000	16100	15200

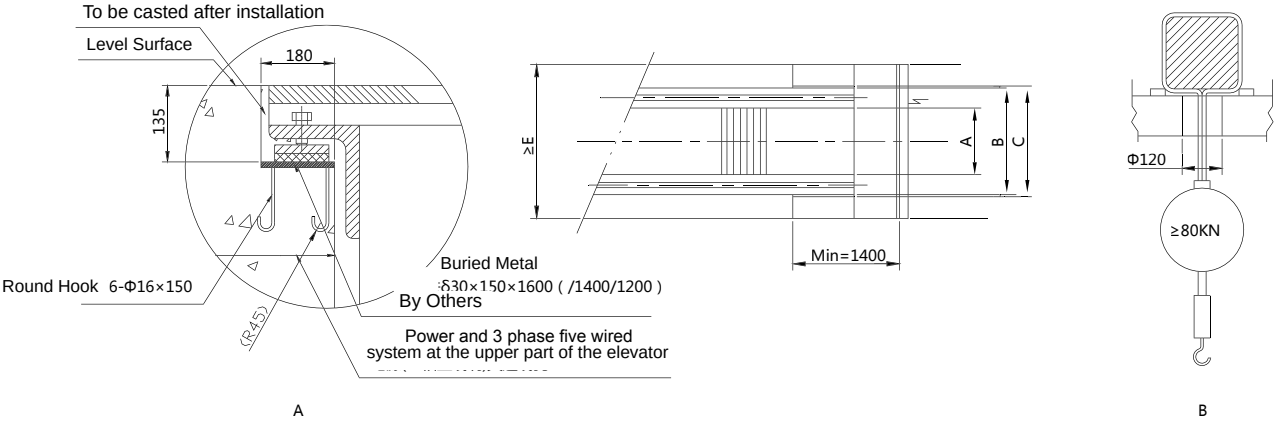
Note:

1. Suitable for single escalator with rise that is less than 6m and 30^{o} inclination.
2. When installation involves more than 1 storey, pit construction will be cancelled
3. 3-phase 5 wire power supply
4. Distance between handrail and any obstructions should not be less than 500cm.
5. Lighting voltage: 3kVA, motor voltage: AC380V, 50Hz
6. Customers to provide a grounding device with resistance less than 4Ω.
7. 3-phase 5 wire power supply
8. Intermediate support required when L>F
9. When step width is 600mm, L should increase to 417mm
10. Should the above mentioned conditions cannot be fulfilled, contact our company directly.

Escalator of 3 levels FTPN30

Max Rise 8.0m Inclination Angle 30°

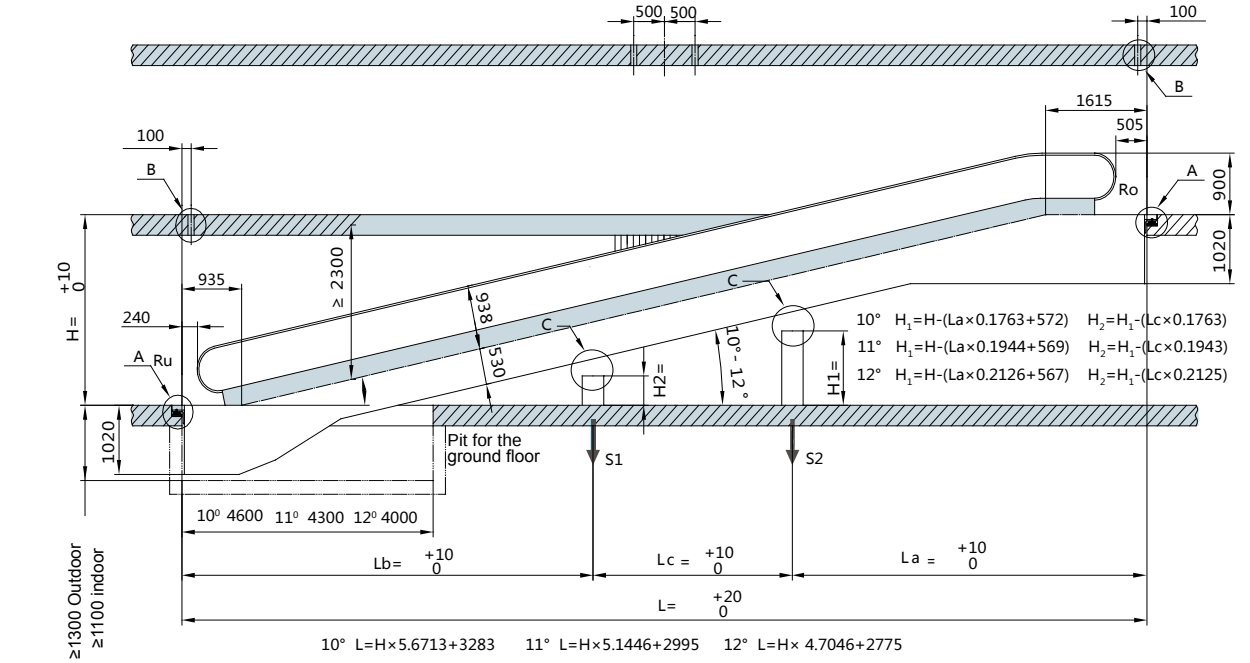


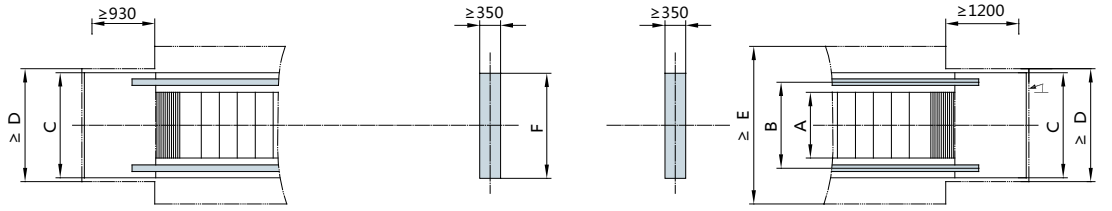


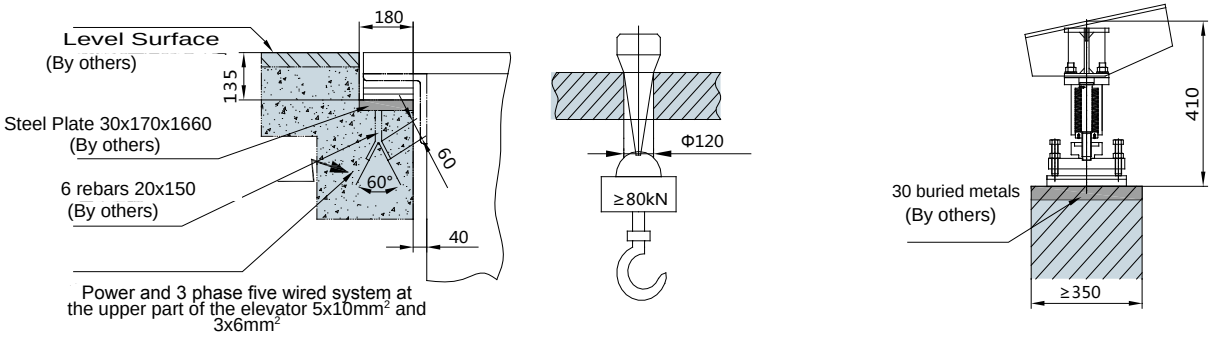
A	600	800	1000	Remarks
R1(kN)	3.4XL2+15.5	3.75XL2+17	4.2XL2+18.5	L,L1,L2 measured in m
R2(kN)	3.4XL1+10	3.75XL1+11	4.2XL1+11.5	
R3(kN)	3.5XL+9.5	3.85XL+10.5	4.3XL+10.5	
Power/kW	Max Rise (600 step width)	Max Rise (800 step width)	Max Rise (1000 step width)	
7.5	5500	5000	4500	
11	8000	7000	6000	
15	--	8000	8000	

Travellator RTPN10/11/12

Max Length 120m Inclination Angle10°11°12°





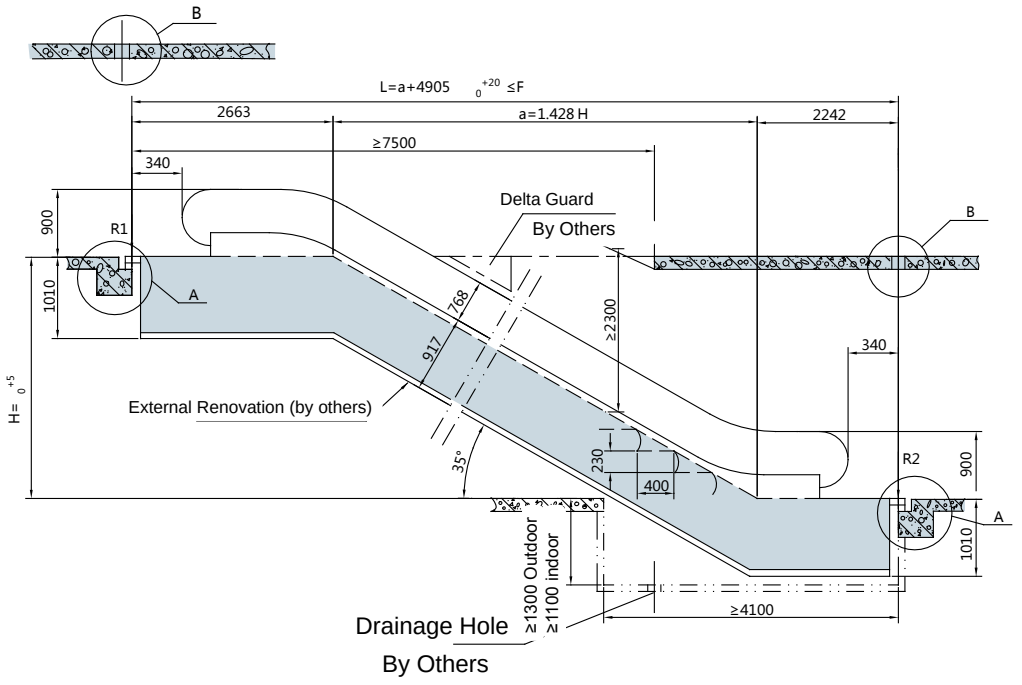


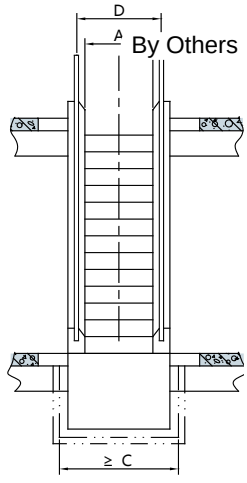
A B C

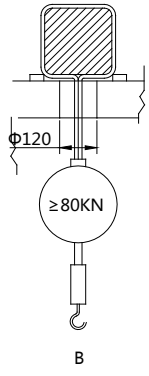
Landing Plate Width	R u	Ro	S1	S2	
800mm	3.9Lb+4.5	3.9La+9.5	5.07(La+Lc)	5.07(Lb+Lc)	
1000mm	4.5Lb+5	4.5La+11	5.85(La+Lc)	5.85(Lb+Lc)	
A (Step Width)	B	C	D	E	F
800mm	1038	1400	1460	2000	1300
1000mm	1238	1600	1660	2200	1500

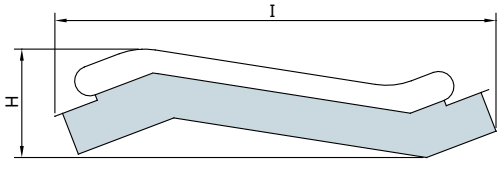
Escalator FTPN35

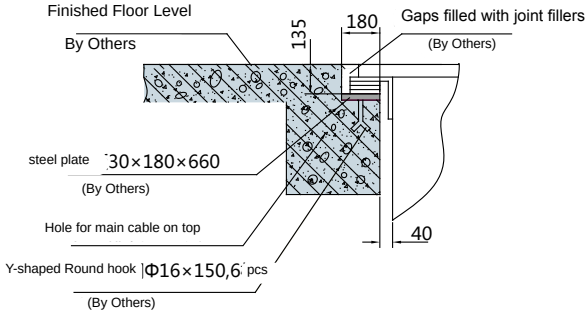
Max Rise 6m Inclination Angle 35°











A

Escalator FTPN35 Specification

Model	Rise mm	Net Weight/kN	Reaction R1/ kN	Reaction R2/ kN	Power/kW	Transport Dimensions (H)	Transport Dimensions (L)
FTPN35 4500 people/h Speed=0.5m/s Step Width=600	3000	55	44	40	5.5	2850	10120
	3500	58	47	42		2890	10980
	4000	61	50	45		2920	11830
	4500	65	53	47		2940	12690
	5000	68	55	50		2970	13550
	5500	71	58	52		2980	14410
	6000	74	61	55	7.5	3000	15280
FTPN35 6750 people/h Speed=0.5m/s Step Width=800	3000	57	50	45	5.5	2850	10120
	3500	61	53	48		2890	10980
	4000	64	57	51		2920	11830
	4500	67	60	54		2940	12690
	5000	71	63	57	7.5	2970	13550
	5500	74	66	60		2980	14410
	6000	77	70	62		3000	15280
FTPN35 9000 people/h Speed=0.5m/s Step Width=1000	3000	61	57	51	5.5	2850	10120
	3500	65	61	54		2890	10980
	4000	68	65	58	7.5	2920	11830
	4500	72	68	61		2940	12690
	5000	75	72	65		2970	13550
	5500	83	78	70	11	2980	14410
	6000	86	82	73		3000	15280

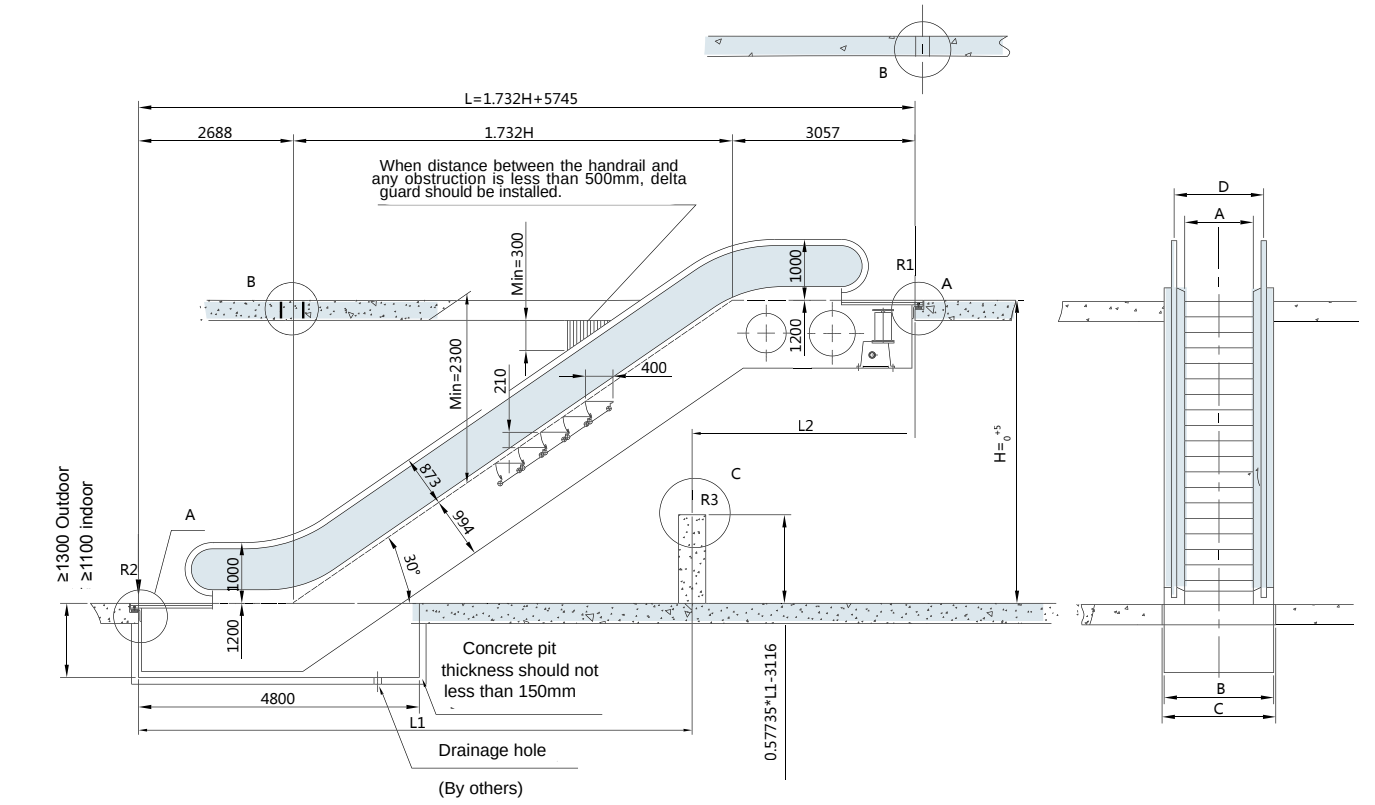
	FTPN35	FTPN35	FTPN35
A(Step Width)	600	800	1000
B	1200	1400	1600
C	1260	1460	1660
D	838	1038	1238
E	1910	2110	2310
F	1700	16100	15200

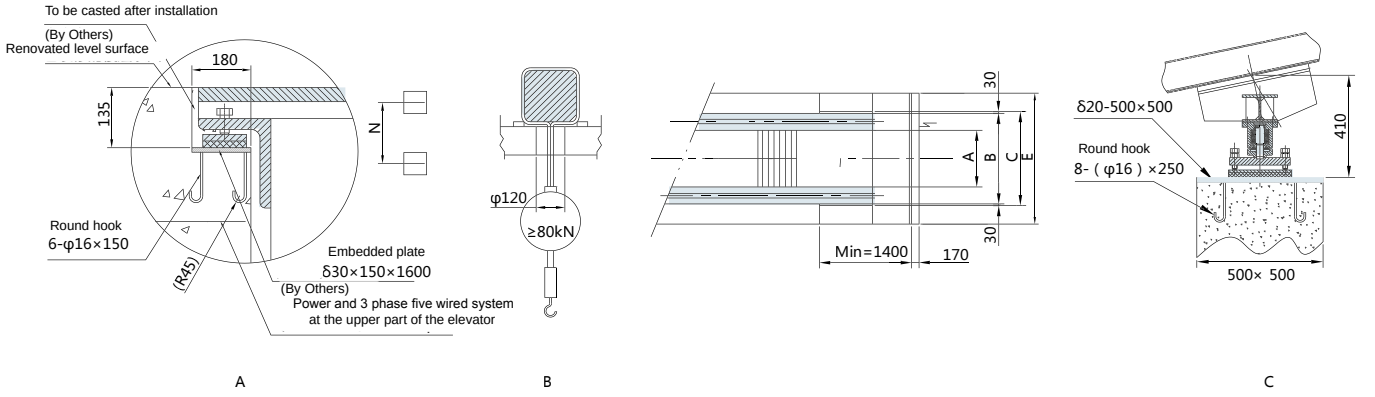
Note:

1. Suitable for single escalator with rise that is less than 6m and 30° inclination.
2. When installation involves more than 1 storey, pit construction will be cancelled
3. 3-phase 5 wire power supply
4. Distance between handrail and any obstructions should not be less than 500cm.
5. Lighting voltage: 3kVA, motor voltage: AC380V, 50Hz
6. Customers to provide a grounding device with resistance less than 4Ω.
7. 3-phase 5 wire power supply
8. Intermediate supportrequired when L>F
9. When step width is 600mm, L should increase to 417mm
10. Should the above mentioned conditions cannot be fulfilled, contact our company directly.

Public Escalator FTGN30

Max Rise 13m Inclination Angle 30°

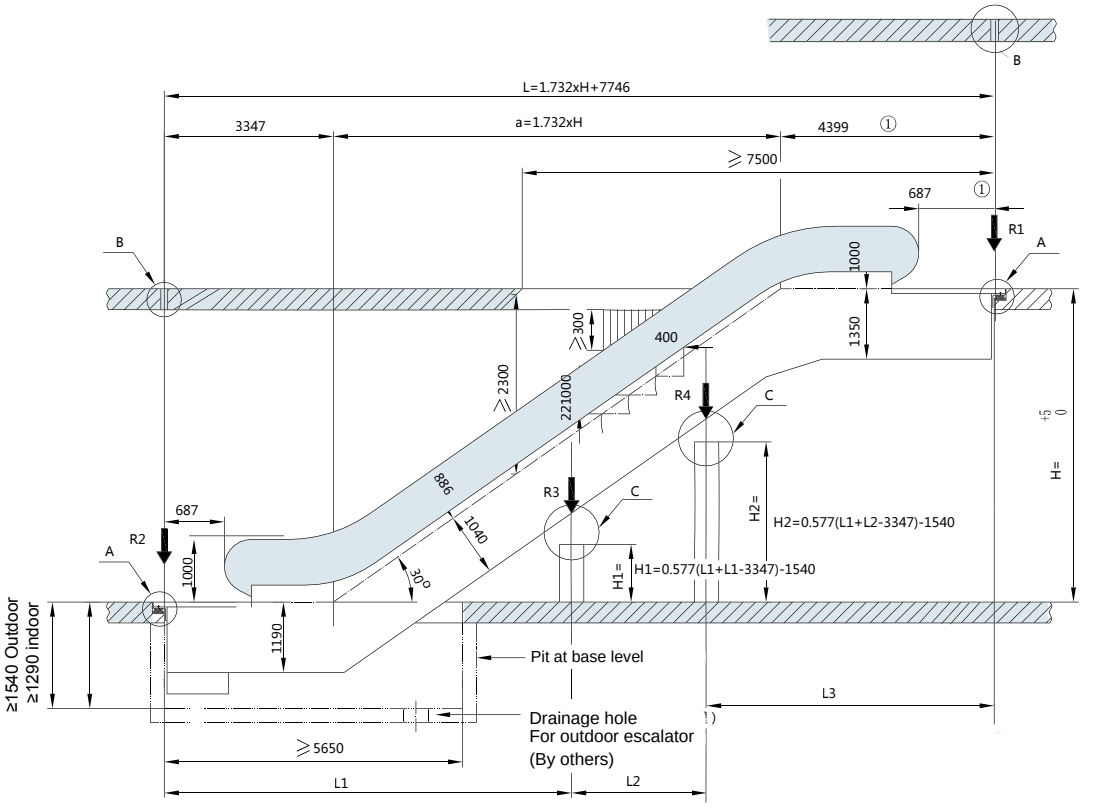


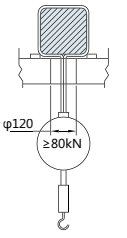


A B C

A	800	1000	Remarks
R1(kN)	4.5XL2+16.1	5.2XL2+17.5	L,L1,L2 measured in m
R2(kN)	4.5XL1+7.8	5.2XL1+8.5	
R3(kN)	4.5XL+10.5	5.2XL+11.5	
Power/kw	Max Rise (800 step width)	Max Rise (1000 step width)	
7.5	5000	4000	
11	7000	5800	
15	10000	8000	
18.5	12000	10000	
22	15000	11800	
30	---	15000	

Heavy duty public escalator of 4 levels FTGN Max Rise 25m Inclination Angle 30°





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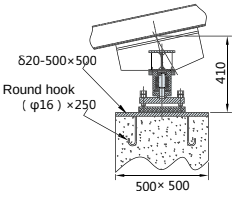
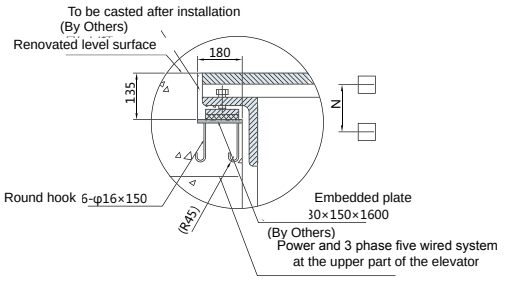
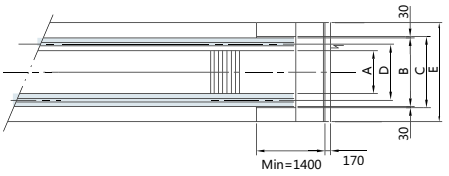


C



A



A	800	1000	Remark
R1(kN)	4.7XL3+16.1	5.2XL3+17.5	L,L1,L2 measured in m
R2(kN)	4.7XL1+7.8	5.2XL1+8.5	
R3(kN)	4.7X(L1+L2)+10.5	5.4X(L1+L2)+11.5	
R4(kN)	4.7X(L2+L3)+10.5	5.4X(L2+L3)+11.5	
Power/kw	Max Rise(800 step width)	Max Rise(1000 step width)	
11	7000	5800	
15	9000	7500	
18.5	11000	9200	
22	13500	11000	
30	18000	14000	
37	22000	18000	
44	25000	22000	
60	---	25000	

ESP Escalator/Travelator Standard Functions

No.	Function	Description
1	Dual running option	Direction of conveyance can be controlled by the switch key
2	Overload protection	When escalator is overloaded, it will stop.
3	Overspeed protection	When the escalator's speed exceeds 20% of its preset speed, it will stop.
4	Step loss protection	When step fault is detected, the escalator will stop.
5	Handrail inlet protection	When object is stuck at the inlet of the handrail, the escalator will stop.
6	Skirt brush	Prevents objects from entering the slit between steps and skirt panel.
7	Circuit protection	When circuit safety switch is opened, the escalator will stop.
8	Step sink protection	When steps or landing board sink(s) in, the ecalator will stop.
9	Round-edged steps	Safeguard the safety of all passengers.
10	Emergency stop	Escalator can be stopped immediately when Emergency Stop Button is pressed.
11	Broken step chain protection	Escalator will stop when step chain is loosened or broken.
12	EM braking device	This device can stop an escalator in times of emergency.
13	Broken drive chain protection	Escalator will stop when driving chain is loosened or broken.
14	Comb plate protection	When object that is potentially hazardous enters the comb plate enters the comb plate, the escalator will stop.
15	Exit/entrance skirt panel protection	When foreign objects got stuck in between the step and skirt panel, the escalator will stop
16	Power fault protection	During power fault, this protection will stop the escalator and refrain the escalator from starting-up.
17	Static removal device	Transfer static electricity generated by the escalator to the ground.
18	Open landing plate protection	On the escalator, under the cover lies a safety switch,unless in maintenance mode, once the switch is turned on, the escalator will stop operating.
19	Entrance/exit lightings	To remind passengers to keep clear of the entrance/exit.
20	Breakdown lighting	Serves as indicator for maintenance.
21	Reversal non-operating protection	When the escalator moves in the reverse direction, the escalator will stop.
22	Maintenance safety switch	Maintenance safety switch can switch off the escalator during emergency.

No.	Function	Description
23	Mobile maintenance device	Every escalator will be equipped with this device for the convenience of maintenance.
24	Mobile lighting	Hand-held lighting device.
25	Handrail speed control	When the difference between the speed of steps and handrail is too great, the escalator will stop.
26	Start-up/fault alarm	Startup/fault alarm reminds passengers not to board the escalator during startup/fault respectively.
27	Removable disk driver wheel detection switch	Automatically detects if the disk drive is working
28	Brake fault inspection	Automatic brake fault inspection
29	Braking Device	When the speed of escalator exceed 140% of the preset speed or travels in reverse direction, the braking device will stop the escalator.

ESP Escalator/ Travelator Optional Functions

No.	Function	Description
1	Intelligent inverter	To reduce power consumption and boost life span, the inverter will accelerate the escalator when in use and decelerate when not in use.
2	Auto start/stop	To reduce power consumption and boost life span, the light switch at the entrance/exit will activate the escalator when in use and deactivate when not in use.
3	Remote monitoring	Monitors the condition of escalator through communication lines.
4	Comb lighting	To increase visibility of steps for the ease of boarding.
5	Handrail lighting	Enhance appearance of the escalator.
6	Direction indicator	Brightly-litted indicator to signal to passengers the direction of escalator.
7	Brake wear inspection	If abnormal or uneven wearing is detected, it will send out a signal to stop the escalator from operating so that a new brake lining can be replaced.
8	Low lubrication alarm	When the sensor in the oil pool detects that there is insufficient oil, this alarm will sound.
9	Parallel energy coupling	When the escalators are coupled, the down-running escalator will be able to generate electricity that can be used to power this pair of escalators.
10	Automatic lubrication	Auto-lubrication of escalator during preset time.

Contact **XJ Schindler** to know more!