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Edition of 2022

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KOYO

elevator



Escalator





KOYO
elevator

CONTENT

- P03 Company profile
- P05 KOYO escalator description
- P07 Intelligent control system
- P09 Material
- P13 Standard and optional function
- P16 Specification option table
- P17 Perfect layout
- P18 Installation notice
- P20 Escalator specifications & parameters
- P29 Considerate service

Company Profile

Founded in 2002, KOYO has been a modern elevator and escalator manufacturer based in Kunshan, China with invested capital of 130 million US Dollars, and an occupied area of 230,000 square meters. It is a comprehensive elevator manufacturer that integrates research & development, design, manufacture, sales, installation, maintenance, and retro-fitting into one combined solution. Up until today, the company is capable of producing high-speed elevators with a maximum speed of 8m/s. The built units are equipped with the Elevator Group Supervisory Control System which is capable of managing eight units at the same time operating in buildings up to 64 stories. In addition to KOYO's product line, the maximum lifting height of escalators can reach 25 meters, and the maximum length for passenger conveyor products can reach 200 meters. By collaborating with Suzhou University and Shanghai Jiaotong University, KOYO has developed a series of mainboards and control systems of its own. Since 2002, our products are popular in 122 countries such as Germany, France, Italy, USA, Britain etc.

KOYO Elevator was ranked as the National High-tech Entrepreneur due to its heavy investment in R&D and innovative technology. With automated metal-working production equipment and escalator assembly-line assembly equipment plus a mindset of constantly striving for perfection, KOYO has been able to ensure its product quality and performance since day one. All production conforms to the standards of CCC, GB, VDI, EN81, EN115, CE, TUV, IEC, etc. KOYO has also obtained ISO9001:2015 Quality Supervision System Authentication Certificate, ISO14001:2015 Environmental Management System Certificate and ISO45001:2018 Occupational Safety Hygiene Management System Certificate issued by the authoritative international certification institutes.

Capital invested : **130** million USD

Occupied area : **230,000** square meters

8 m/s maximum speed

64 floors, **8** units group supervisory control system

Maximum **25** m height escalator

Maximum **200** m length passenger conveyor

Popular in **122** countries



Comfortable ride Enjoy city life

KOYO escalators and passenger conveyors, complying Europe latest EN115 & China GB16899-2011 standards, are fully adopted new materials and advanced technology to carry on its design and manufacture. They have been operating smoothly, low noise and high reliability, high structure. They are durable and easy to maintain. Because of its superior design concept and advanced manufacturing process, KOYO escalator and passenger conveyor comes with exquisite structure, excellent step design and elegant appearance.

KOYO escalator and passenger conveyor has full range of specifications, attractive cabin design and flexible decoration, which has been widely used in shopping malls, supermarkets, subways, airports, exhibition centers etc.



ISO9001:2008 / ISO14001:2004 / OHSAS18001:2007
European certification / Energy-saving system

Intelligent control system It ensures safe travel

According to the requirement of modern industrial product design, KOYO escalator control cabinet applies the golden section design method for the section size of the cabinet and each part, which makes the cabinet be elegant and new appearance. In view of the heat radiating problem, the heat radiating holes has been designed on the upper and below part of the cabinet. When the electrical components generate heat, the heat will be exhausted through the upper holes as the heat generates and the cold wind will consistently enter into the cabinet through the below holes, which makes the sealed cabinet become an air duct to realize the heat radiating purpose.

KOYO escalator control cabinet with sealing design is approved by third testing part and labeled as security level of IP54, which can be used in different working condition. The cabinet door and operating handle of breaker or isolating switch are designed with a mechanical interlock, the handle can be opened only when the door is in the subsection position which raises the safety factor of operator

KYM08E301 embedded automatic escalator control board

KYM08E301 embedded automatic escalator control board is on the basis of ARM 32 microprocessor which is independently developed by KUNSHAN KOYO Elevator Co., Ltd, it is a product of high technology and delivers a stable quality performance and high capacity of anti-interference. This product has the following characteristics.

It has the following features and properties:

- ARM 32 embedded micro-processor ;
- Basic points: 36 points input and 24 points output and extended to 68 points input;
- Press- Key input, LED display, parameters to be set up and history record to be stored;
- Automatic diagnosis of defect and history record can be stored with capacity of 1000 items.
- Long-distance control communication interface (RS485 and CAN);
- Real-time clock for power failure protection ;

Escalator programmable electronic safety related systems (PESSRAE)

The system meets with European standard: EN115-1:2008+A1:2010 and IEC61508 on the corresponding requirement of the programmable electronic safety related systems. The system uses the security controller: G9SP, the controller itself is certified by TUV, safety protection comes to SIL3 level. The system uses dual channel self-diagnosis and other advanced monitoring method, which also has passed the testing from the Rhine technology (Shanghai) Co., LTD. Safety protection comes to SIL2 level, and getting CE certificate.

The system mainly has the following features:

- Design according to the needs of SIL;
- Multiple redundancy, monitoring of each input electric for every security monitoring (main engine speed, escalator step missing monitor, handrail belt speed detection, etc.)
- Superior self-test system ;
- Compatible with all kinds of system, PLC, PC board system, etc.
- Good electromagnetic compatibility EMC ;
- Systematic solution making KOYO escalator control products more outstanding ;

Unique design Aesthetic appreciation

Step



Stainless steel
with plastic side-frame

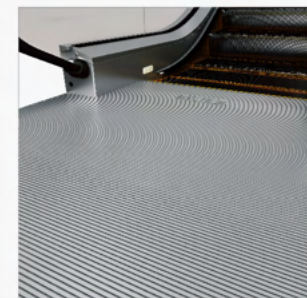


Aluminum alloy
with plastic side-frame

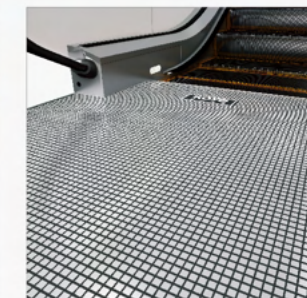


Die-casting aluminum step
with painted frame

Front Landing panel

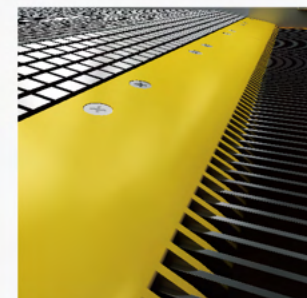


Aluminum alloy

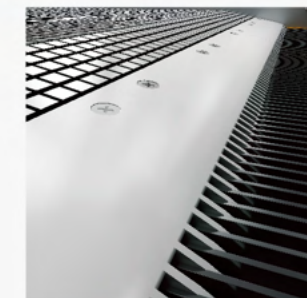


Stamped stainless steel

Comb



Synthetic resin

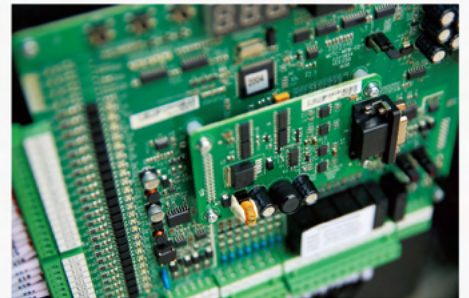


Aluminum alloy

Anti-creep device



Functional safety board



Truss material-selection



Painted angle-steel

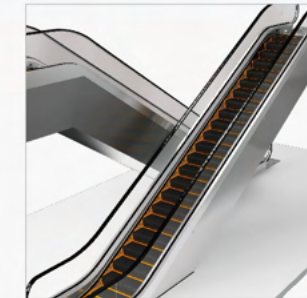


Hot dip galvanizing angle-steel

Outer packing material-selection



Glass paralleling escalator

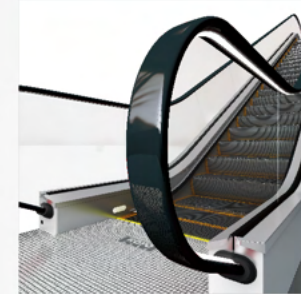


Stainless steel cross escalator

Tailor-made splendor Under your feet



Handrail color



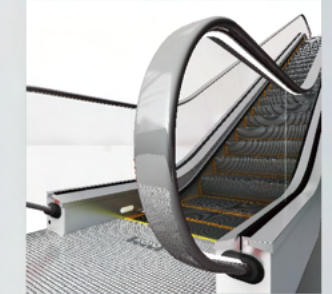
Black



Red



Blue



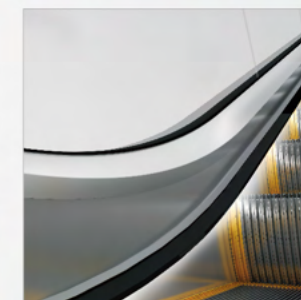
Grey

Handrail lighting



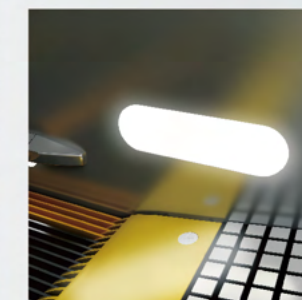
White

Skirt panel lighting

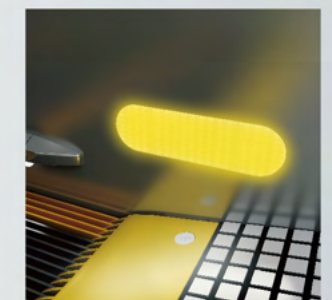


Ribbon

Comb lighting



White light

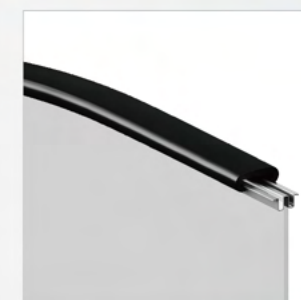


Yellow light

Handrail brackets



Aluminum alloy

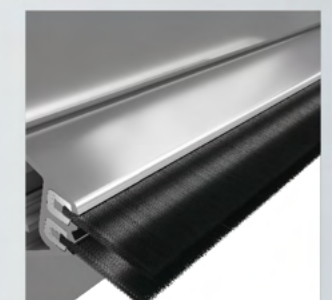


Stamped stainless steel

Skirting brush



Single-row skirting brush



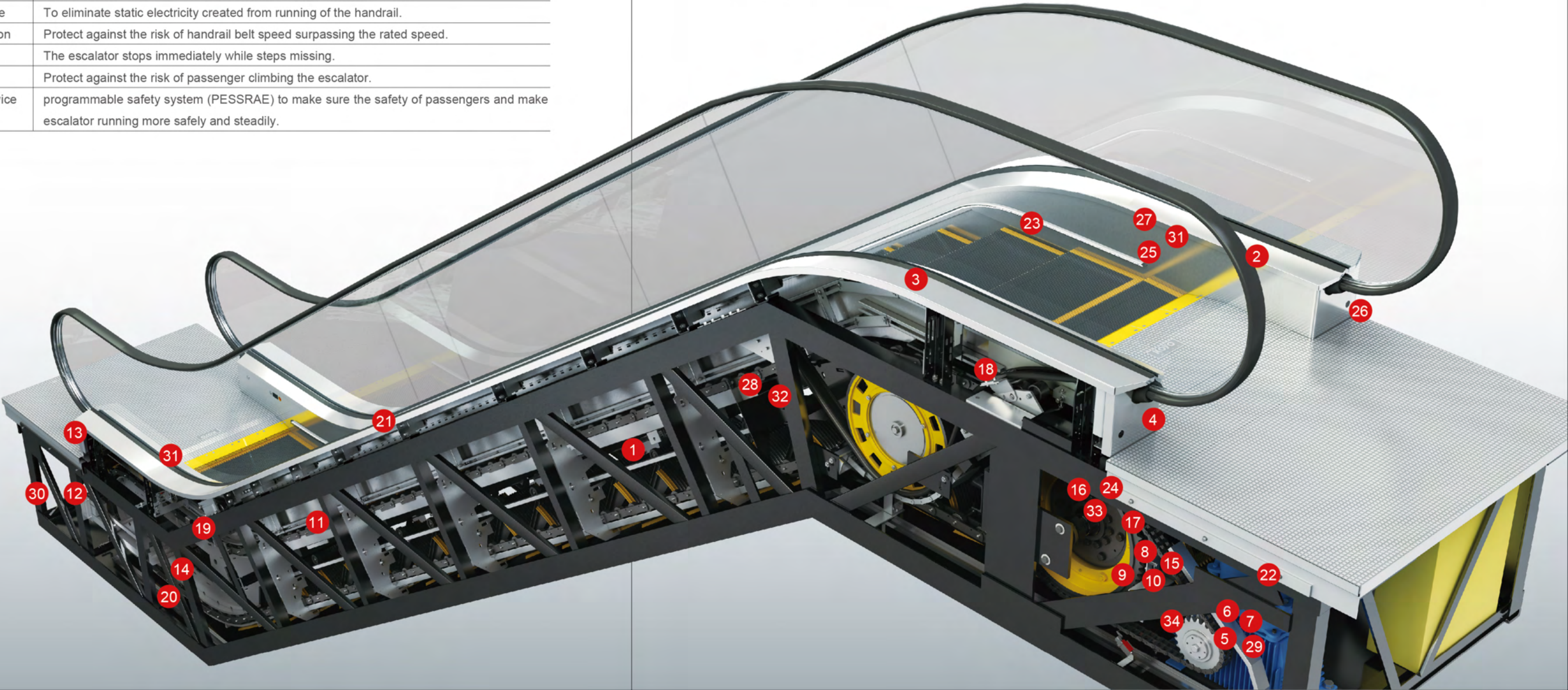
Double-row skirting brush

Safety device

No.	Safety function	Remarks
01	Anti-static brush	Eliminates static electricity created from running of the steps\pallets.
02	Emergency stop press-button	To stop the escalator immediately for emergency.
03	Skirting protection	Protect against the risk caused by the foreign bodies between steps and skirting panels.
04	Handrail entrance protection	Protect against the risk of foreign matter being jammed into handrail entrance.
05	Broken Drive-chain protection	Protect against the risk of drive chains breaking or elongation.
06	Over/under-speed monitor	Protect against the risk of the escalator being order or under speed.
07	Anti- reversal protection	Protect against the risk of wrong running direction.
08	Default phase protection	Protect against the risk of phase failure.
09	Electrical circuit protection	Double protection on circuits to make sure escalator running more steadily.
10	Motor overload, overheat protection	The escalator will stop running automatically while the motor electric current is over 120%.
11	Step (tread) sagging protection	Protect against the risk of steps \pallets breaking and sagging.
12	Broken step-chain protection	Protect against the risk of step chain breaking or undue elongation.
13	Comb safety protection	Protect against the risk of foreign bodies being trapped at the point.
14	Step gap illumination	To light up the top and bottom entrances of escalator.
15	Trouble self-diagnosis	Self diagnostic and displaying fault to improve work efficiency.
16	Automatic lubrication	Supply oil for chain timely and precisely.
17	Alarm-bell start device	3 seconds alarm alert to remind passengers before escalator starts.
18	Handrail anti-electrostatic device	To eliminate static electricity created from running of the handrail.
19	Handrail speed-detection function	Protect against the risk of handrail belt speed surpassing the rated speed.
20	Step missing function	The escalator stops immediately while steps missing.
21	Anti-creeping device	Protect against the risk of passenger climbing the escalator.
22	Functional safety protection device	programmable safety system (PESSRAE) to make sure the safety of passengers and make escalator running more safely and steadily.

No.	Safety function	Remarks
23	Skirting brush	Avoid the passenger's shoes, socks touching the skirting to protect passenger's safety, also protect the steps and the whole escalator normal operation.
24	Machine room Protection-panel	To make sure the safety of the passengers avoid touching the steps when under maintenance.
25	Fault display	The error number will be display on the screen and easy for maintenance.
26	*Auto-start by Microwave sensors/ photocell sensors / step contact mats	Stop or slow running to achieve energy saving.
27	*Comb heating function	Avoid comb freezing under low temperature.
28	*Truss heating function	Avoid the step freezing under low temperature.
29	*BMS remote monitoring system	Remote control the single escalator, centralized control method for Multi-escalators.
30	*Oil - water separator	Separated Oil from water to avoid polluting the environment while escalators are intalled outside.
31	*Comb lighting	Providing higher brightness level for safety.
32	*Step up-skid function	Switch on-off to stop escalator running if steps jump.
33	*Auxiliary brake	The escalator will be stopped when the drive chain broken or overspeed.
34	*Mechanical anti-reversal function	Protect against the wrong running direction.

*Optional function



Specification option table

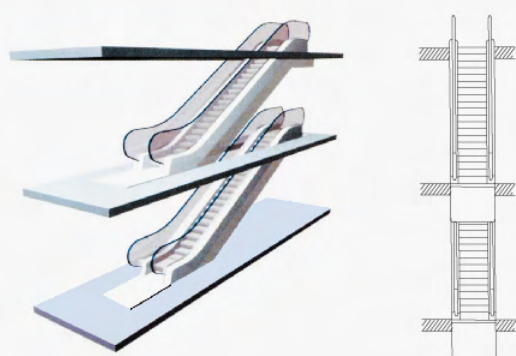
		Indoor escalator		Outdoorescalator	Public transport type
		Slender type	Commercial type	Commercial type	
Handrail belt	Black	●	●	●	●
	Red, blue, other colors etc	◎	◎	◎	◎
Handrail bracket	Hairline stainless steel	●			
	Aluminum alloy		●	●	●
Balustrade panel	Color-less transparent Tempered glass	●	●	●	●
	Colored transparent Tempered glass	◎	◎	◎	◎
	Hairline stainless steel		◎	◎	◎
Inner and outer decking	Hairline stainless steel	●	●	●	●
	Teflon layer steel plate	◎	◎	◎	◎
	Teflon layer stainless steel	◎	◎	◎	◎
Skirting panel	Hairline stainless steel	●	●	●	●
	Teflon layer steel plate	◎	◎	◎	◎
	Teflon layer stainless steel	◎	◎	◎	◎
Step	Stainless steel with yellow warning line	◎	◎		
	Overall die-casting aluminum	◎	◎	◎	◎
	Die casting Aluminum with yellow warning line	●	●	●	●
Comb	Synthetic resin (yellow)	◎	◎	◎	◎
	Aluminum alloy	●	●	●	●
Landing panel	Stamped stainless steel	●	●		
	Etching stainless steel	◎	◎	◎	◎
	Aluminum alloy	◎	◎	●	●
Truss	Painted angle-steel	●	●		
	Hot dip galvanizing angle-steel	◎	◎	●	●
Exterior decoration	Painted steel plate (colors for choice)	◎	◎	◎	◎
	Hairline stainless steel	◎	◎	◎	◎
	Tempered glass	◎	◎	◎	◎

Note: ● Standard configuration ◎ Optional configuration

Perfect Layout

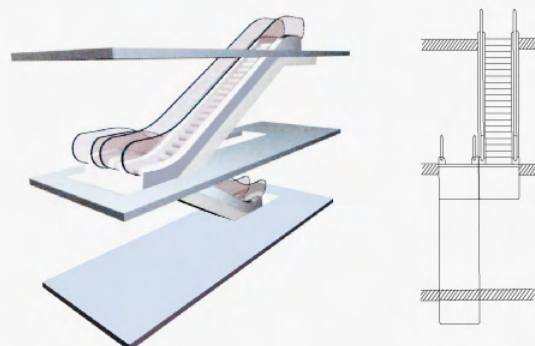
Intermittent layout style (one-way traffic)

Suitable for small-sized shopping malls with three floors.



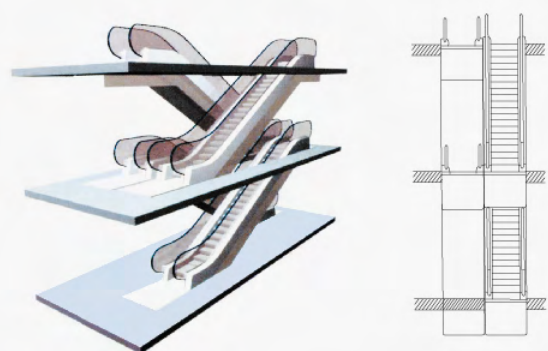
Continuous layout style (one-way traffic)

Continuous layout type escalator and moving walk can connect several floors, but they need more space than the inconsistent layout.



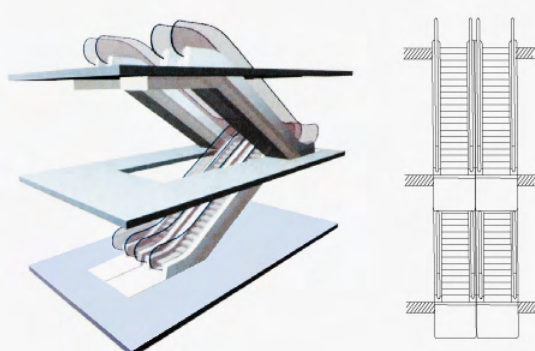
Cross and continuous layout (two-way traffic)

Installed in buildings with multiple floors, the crisscross layout can travel in two directions to limit the traveling time between floors. This type is widely used in shopping malls and now being used more and more in government institutes and public places.



Parallel and continuous layout style (two-way traffic)

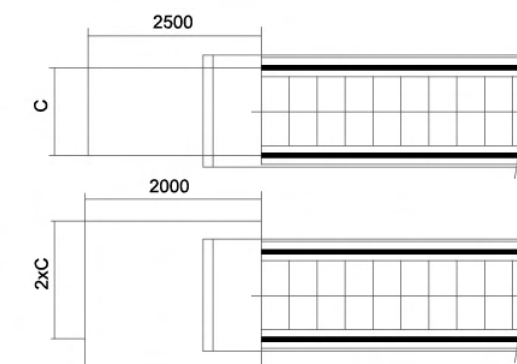
The layout of this type may cause slight inconvenience to shoppers, but advantageous for shopping mall owners since they can market certain products and service to shoppers on their way to change escalators.



Installation Notice

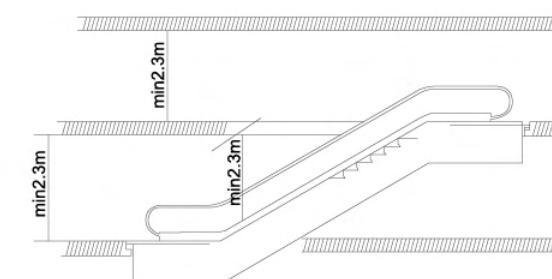
Besides complying with the drawing of the contract, attention should be also drawn to the following

- To ensure the safety of the escalator and moving walk, free space should also be large enough in the landing area. (See the minimum size right)
- C=handrail belt width



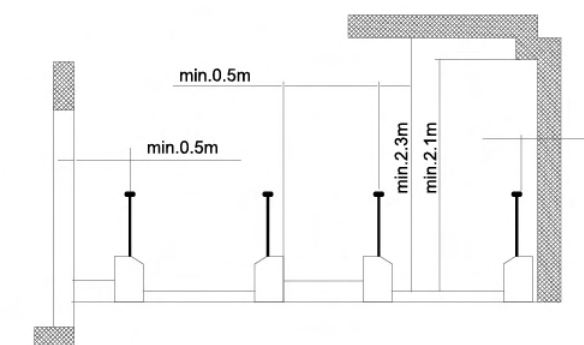
Vertical safety distance

- There should be at least 2.3m upside safety distance staring upward from the step board.
- Notice: if the vertical rise of one escalator, which is installed above another one, is less than 3.3m, the upside safety distance can not reach 2.3m.

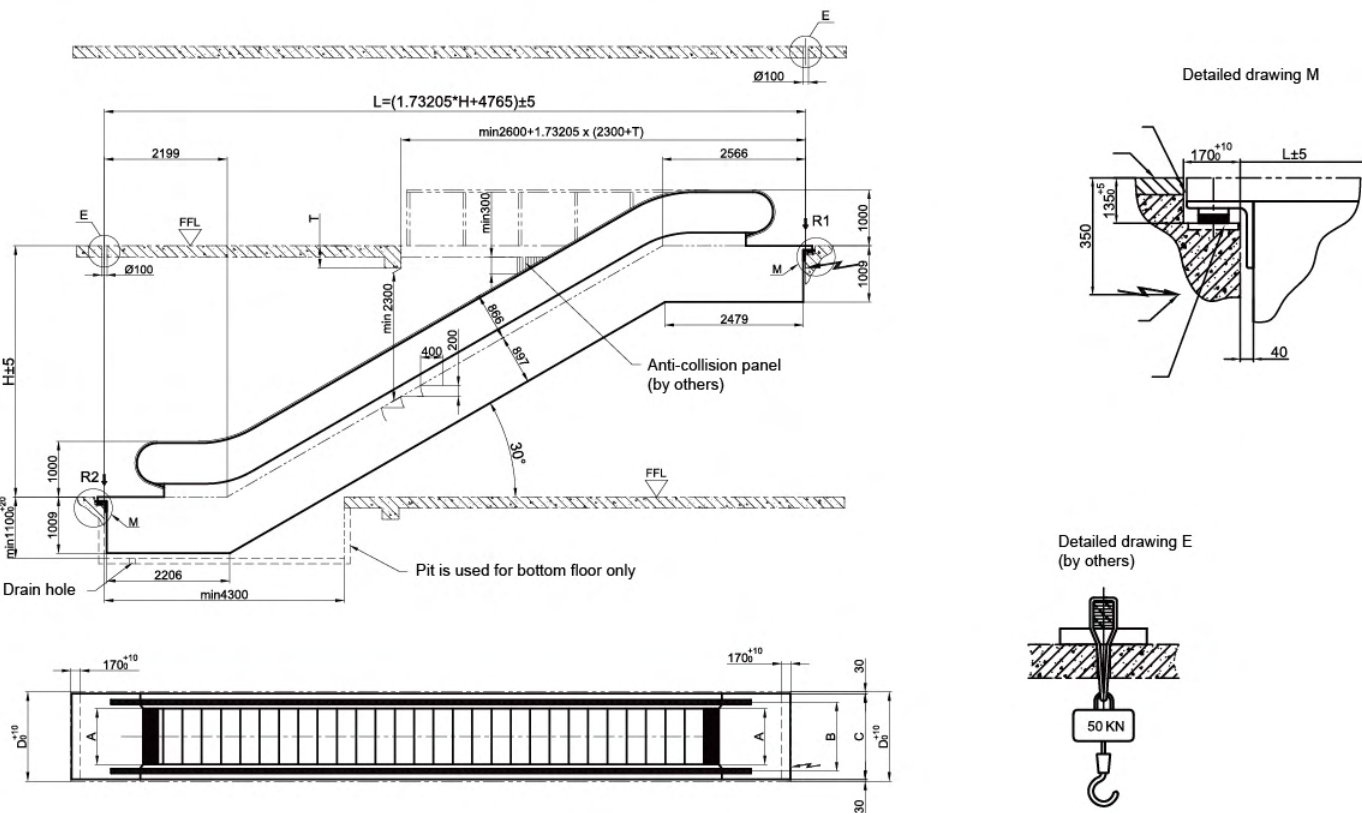


Escalators and moving walk horizontal safety distance

- The horizontal distance between the handrail edge and the wall or other objects should be more than 80mm.
- The vertical distance above the step board should be more than 2.3m.
- The vertical distance above the handrail space should be more than 2.1m.
- In case of floor spaces or the cross layout of escalators and moving walk, the safety distance between the handrail center and the object should be more than 0.5m.
- If the above-mentioned requirements cannot be met, a special protection device and a bumper rail should be sued.
- For further information, please contact KOYO elevator.



KYS/C 230 commercial escalator
Construction layout



Travelling height:
Maximum 6000

Inclination:
30°

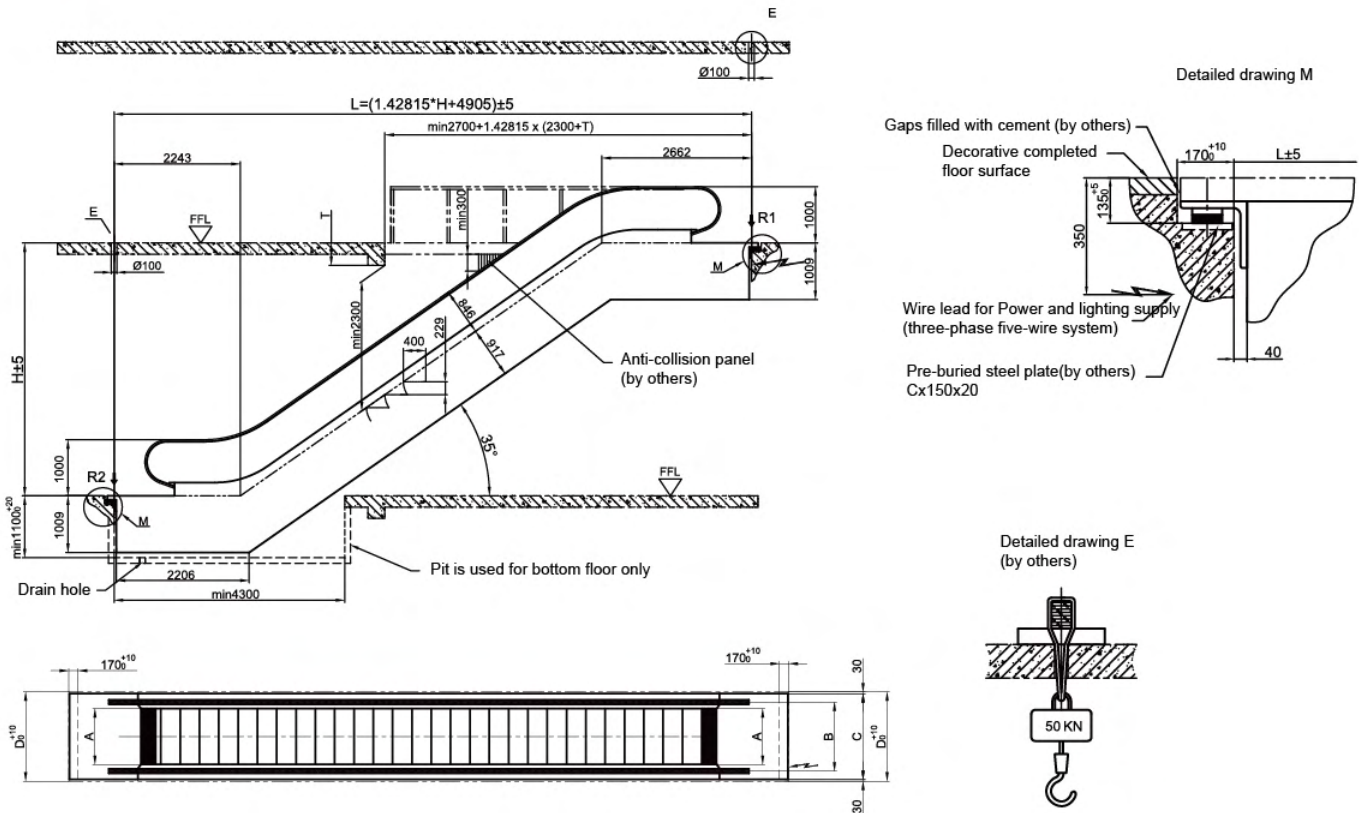
Description:

1. All dimensions are based on "mm";
2. If more horizontal steps required, extend the horizontal length correspondingly;
3. When the width of step A+600, the truss must be extended by 420mm;
4. Pit depth should be 1450mm for outdoor escalators.

Model	KYS/C230-600	KYS/C230-800	KYS/C230-1000
A:Step width	600	800	1000
B:Handrail center width	838/910	1038/1110	1238/1310
C:Width of Escalator	1140/1200	1340/1400	1540/1600
D:Width of Pit	1200/1260	1400/1460	1600/1660

Step width A (mm)	Travelling height H (mm)	Dead weight KN	Support reaction	
			R1 (KN)	R2 (KN)
600	3000	57	46	41
	3500	60	49	44
	4000	64	52	47
	4500	68	56	50
	5000	71	59	53
	5500	75	62	56
800	6000	79	65	59
	3000	59	52	47
	3500	63	56	50
	4000	67	60	54
	4500	71	64	57
	5000	74	68	60
1000	5500	82	74	66
	6000	86	78	69
	3000	63	59	53
	3500	67	64	57
	4000	71	68	61
	4500	75	73	65
	5000	83	79	71
	5500	87	84	75
	6000	92	88	79

KYS/C 235 commercial escalator
Construction layout



Travelling height:
Maximum 6000

Inclination:
35°

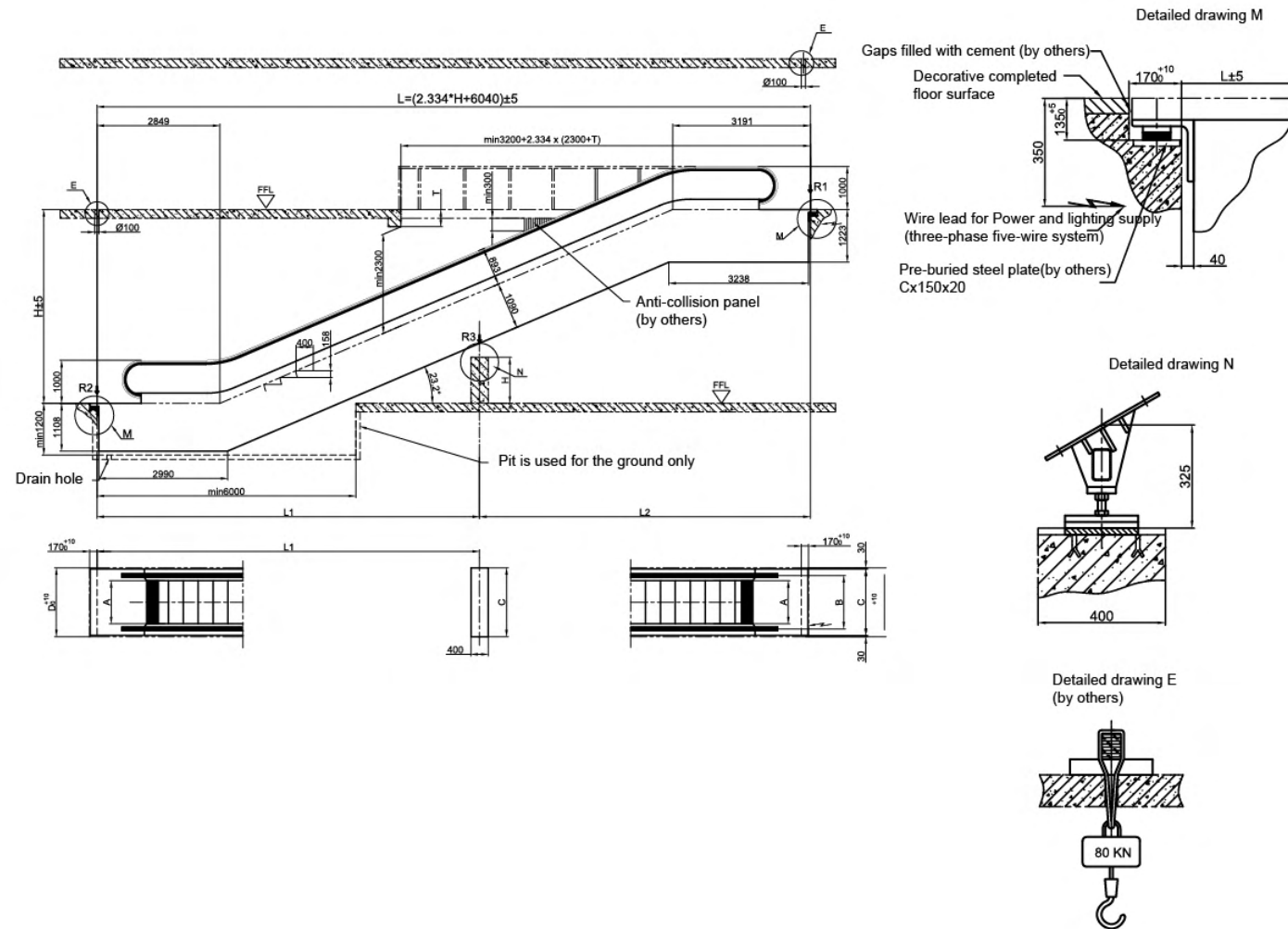
Description:

1. All dimensions are based on "mm";
2. If more horizontal steps required, extend the horizontal length correspondingly;
3. When the width of step A+600, the truss must be extended by 420mm;
4. Pit depth should be 1450mm for outdoor escalators.

Model	KYS/C235-600	KYS/C235-800	KYS/C235-1000
A:Step width	600	800	1000
B:Handrail center width	838/910	1038/1110	1238/1310
C:Width of Escalator	1140/1200	1340/1400	1540/1600
D:Width of Pit	1200/1260	1400/1460	1600/1660

Step width A (mm)	Travelling height H (mm)	Dead weight KN	Support reaction	
			R1 (KN)	R2 (KN)
600	3000	54	43	39
	3500	57	46	41
	4000	60	49	44
	4500	64	52	46
	5000	67	54	49
	5500	70	57	51
800	6000	73	60	54
	3000	56	49	44
	3500	60	52	47
	4000	63	56	50
	4500	66	59	53
	5000	70	62	56
1000	5500	73	65	59
	6000	76	69	61
	3000	60	56	50
	3500	64	60	53
	4000	67	64	57
	4500	71	67	60
	5000	74	71	64
	5500	82	77	69
	6000	85	81	72

KYXF/KYH 323 public transportation escalator Construction layout



Travelling height:
Maximum 15000

Horizontal steps:
3

Inclination:
23.2°

Step width :
600/800/1000

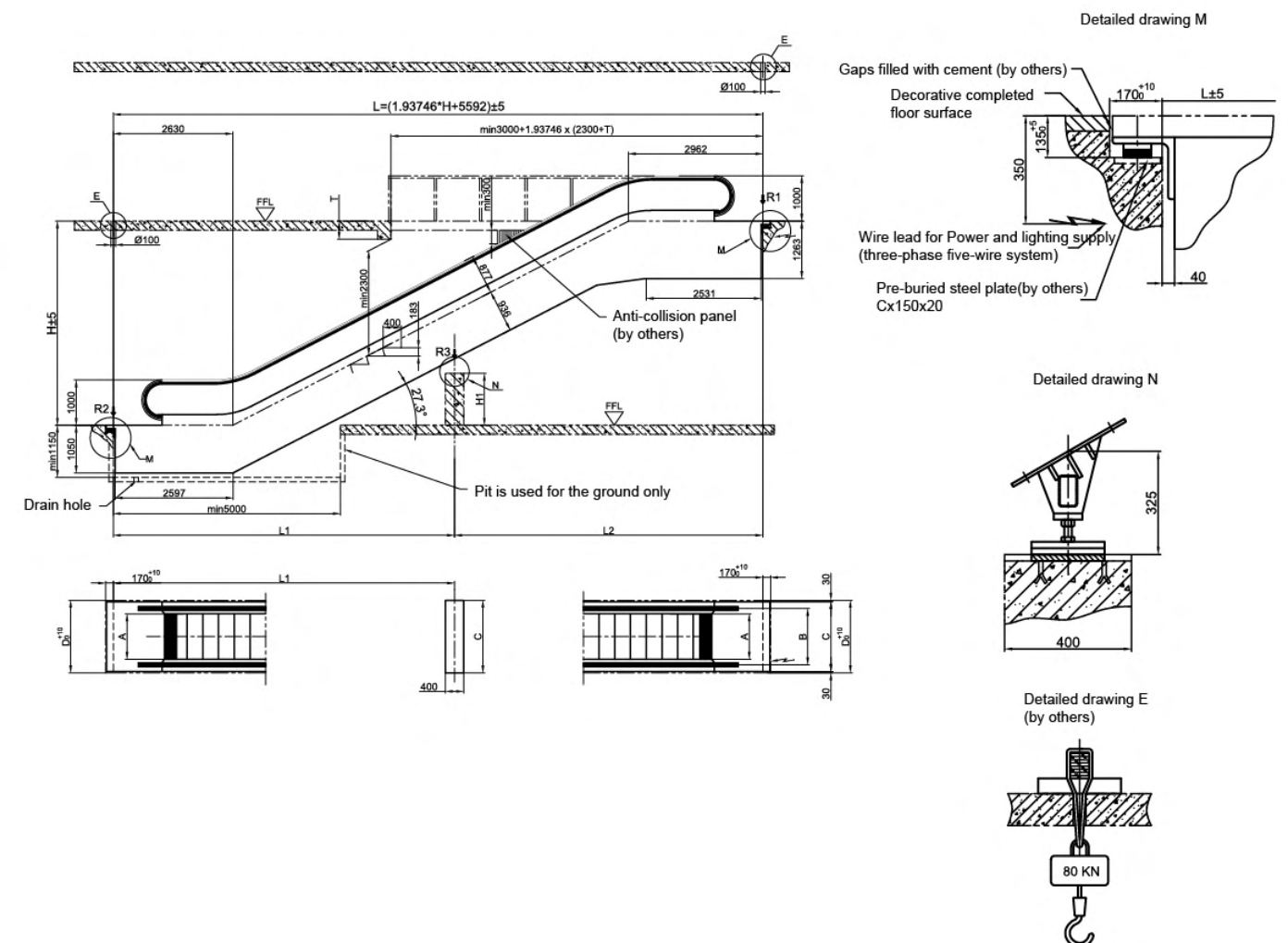
Model	KYXF/KYH 323-600	KYXF/KYH 323-800	KYXF/KYH 323-1000
A:Step width	600	800	1000
B:Handrail center width	838	1038	1238
C:Width of Escalator	1200	1400	1600
D:Width of Pit	1260	1460	1660

Description:

1. All dimensions are based on "mm";
2. If more horizontal steps required, extend the horizontal length correspondingly;
3. When the width of step A+600, the truss must be extended by 420mm;
4. Pit depth should be 1500mm for outdoor escalators.

Step width	600	800	1000
R1 (KN)	$4.1 \times L2 + 19.5$	$4.5 \times L2 + 20.1$	$5 \times L2 + 21.5$
R2 (KN)	$4.1 \times L1 + 11.8$	$4.5 \times L1 + 11.8$	$5 \times L1 + 12.5$
R3 (KN)	$4.25 \times L + 13.5$	$4.5 \times L + 15.5$	$5.2 \times L + 15.5$
Description:	L, L1, L2 unit is m, L1, L2 will not exceed 15m		

KYXF/KYH 327 public transportation escalator Construction layout



Travelling height:
Maximum 15000

Horizontal steps:
3

Inclination:
27.3°

Step width :
600/800/1000

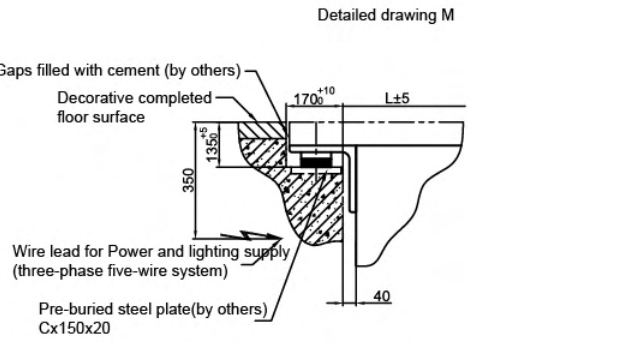
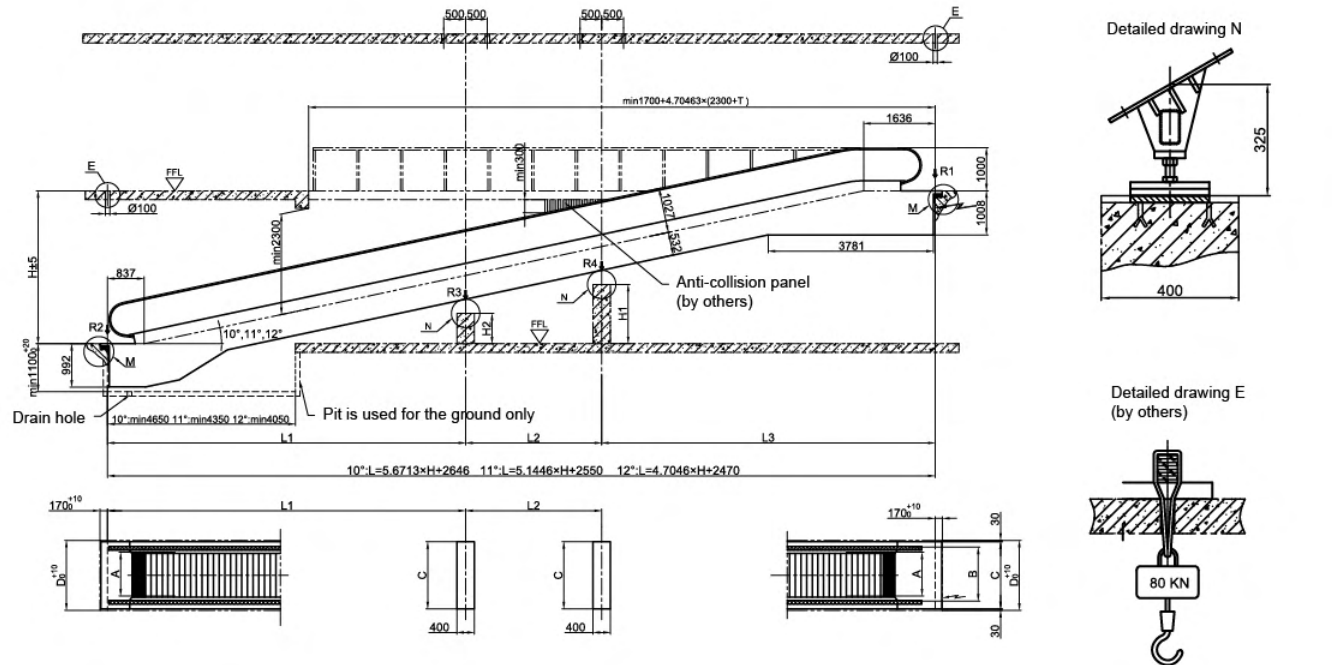
Model	KYXF/KYH 327-600	KYXF/KYH 327-800	KYXF/KYH 327-1000
A:Step width	600	800	1000
B:Handrail center width	838	1038	1238
C:Width of Escalator	1200	1400	1600
D:Width of Pit	1260	1460	1660

Description:

1. All dimensions are based on "mm";
2. If more horizontal steps required, extend the horizontal length correspondingly;
3. When the width of step A+600, the truss must be extended by 420mm;
4. Pit depth should be 1500mm for outdoor escalators.

Step width	600	800	1000
R1 (KN)	$4.1 \times L2 + 17.5$	$4.5 \times L2 + 18.1$	$5 \times L2 + 19.5$
R2 (KN)	$4.1 \times L1 + 9.8$	$4.5 \times L1 + 9.8$	$5 \times L1 + 10.5$
R3 (KN)	$4.25 \times L + 11.5$	$4.5 \times L + 12.5$	$5.2 \times L + 13.5$
Description:	L, L1, L2 unit is m, L1, L2 will not exceed 15m		

KYPS 12 commercial use moving walk
Construction layout for commercial use



Travelling height: Maximum 8000
Inclination: 10° 11° 12°
Step width : 800/1000

Description:
1. All dimensions are based on mm;
2. Pit depth should be 1450 for outdoor moving walk.

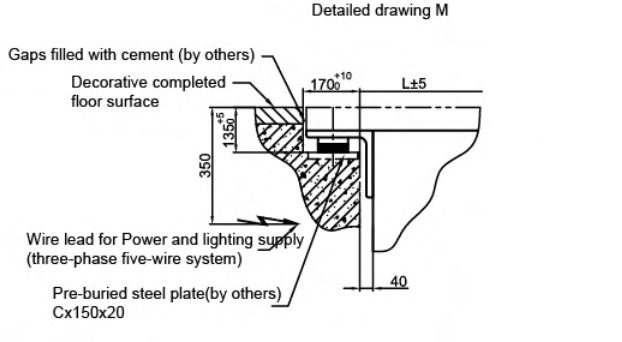
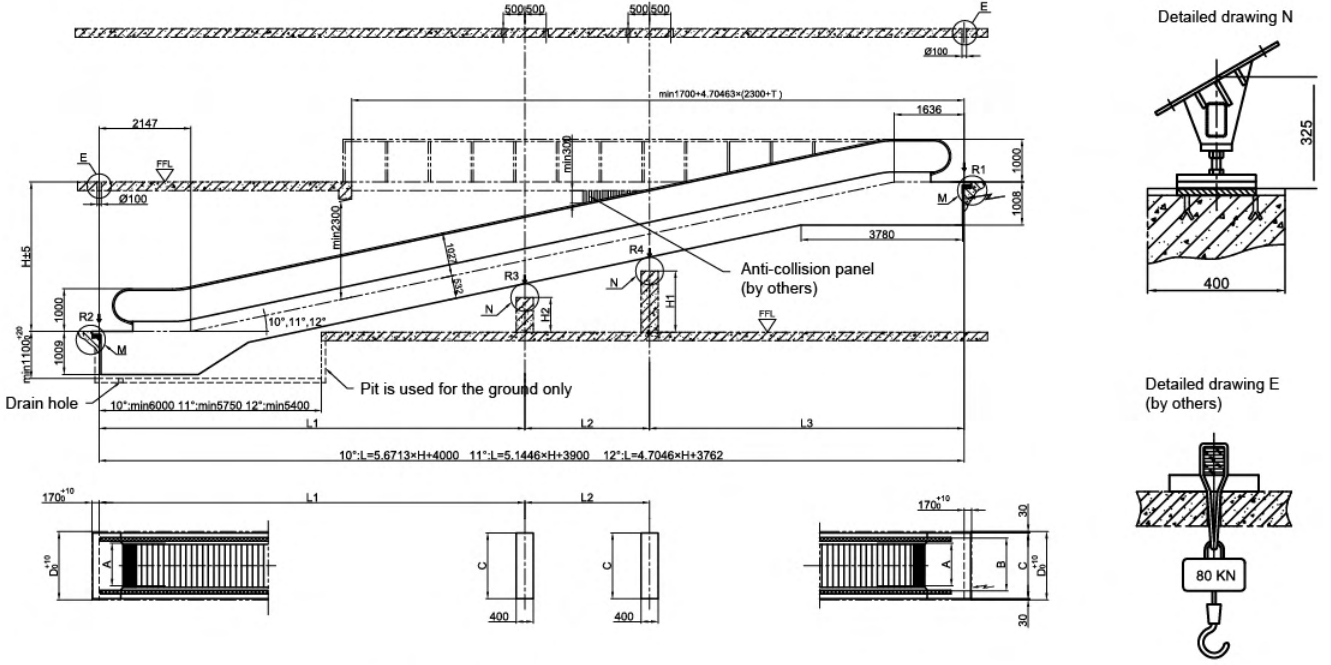
Model	KYPS12-800	KYPS12-1000
A:Step width	800	1000
B:Handrail center width	1038	1238
C:Width of Escalator	1340	1540
D:Width of Pit	1400	1600

Supporting force	Q	M	N
800	0.0039	9.5	4.5
1000	0.0045	11	5

Angle of inclination	Travelling height		In termideate supporting	
	From	To	R3 (KN)	R4 (KN)
10°	1297	2178	-	-
	2179	4823	1	-
	4824	6000	1	1
11°	1449	2420	-	-
	2421	5335	1	-
	5336	6000	1	1
12°	1601	2663	-	-
	2664	5851	1	-
	5852	6000	1	1

	Supporting force	
	No intermediate supporting(KN)	Double intermediate support (KN)
R1=L×q+M	R1=L3×q+M	R1=L3×q+M
	R2=L1×q+N	R2=L1×q+N
R2=L×q+N	R3=(L1+L3)×1.3×q	R3=(L1+L2)×1.3×q
	R4=(L3+L2)×1.3×q	R4=(L3+L2)×1.3×q
Remarks	L1、 L2 will not exceed 15m	

KYPF 12 public transportation moving walk
Construction layout



Travelling height: Maximum 8000
Inclination: 10° 11° 12°
Step width : 800/1000

Description:
1. All dimensions are based on mm;
2. Pit depth should be 1450 for outdoor moving walk.

Model	KYPF12-800	KYPF12-1000
A:Step width	800	1000
B:Handrail center width	1038	1238
C:Width of Escalator	1340	1540
D:Width of Pit	1400	1600

Supporting force	Q	M	N
800	0.0039	9.5	4.5
1000	0.0045	11	5

Angle of inclination	Travelling height		In termideate supporting	
	From	To	R3 (KN)	R4 (KN)
10°	1263	1792	-	-
	1793	4437	1	-
	4438	6000	1	1
11°	1393	1975	-	-
	1976	4891	1	-
	4892	6000	1	1
12°	1523	2160	-	-
	2161	5349	1	-
	5350	6000	1	1

	Supporting force	
	No intermediate supporting(KN)	Double intermediate support (KN)
R1=L×q+M	R1=L3×q+M	R1=L3×q+M
	R2=L1×q+N	R2=L1×q+N
R2=L×q+N	R3=(L1+L3)×1.3×q	R3=(L1+L2)×1.3×q
	R4=(L3+L2)×1.3×q	R4=(L3+L2)×1.3×q
Remarks	L1、 L2 will not exceed 15m	

