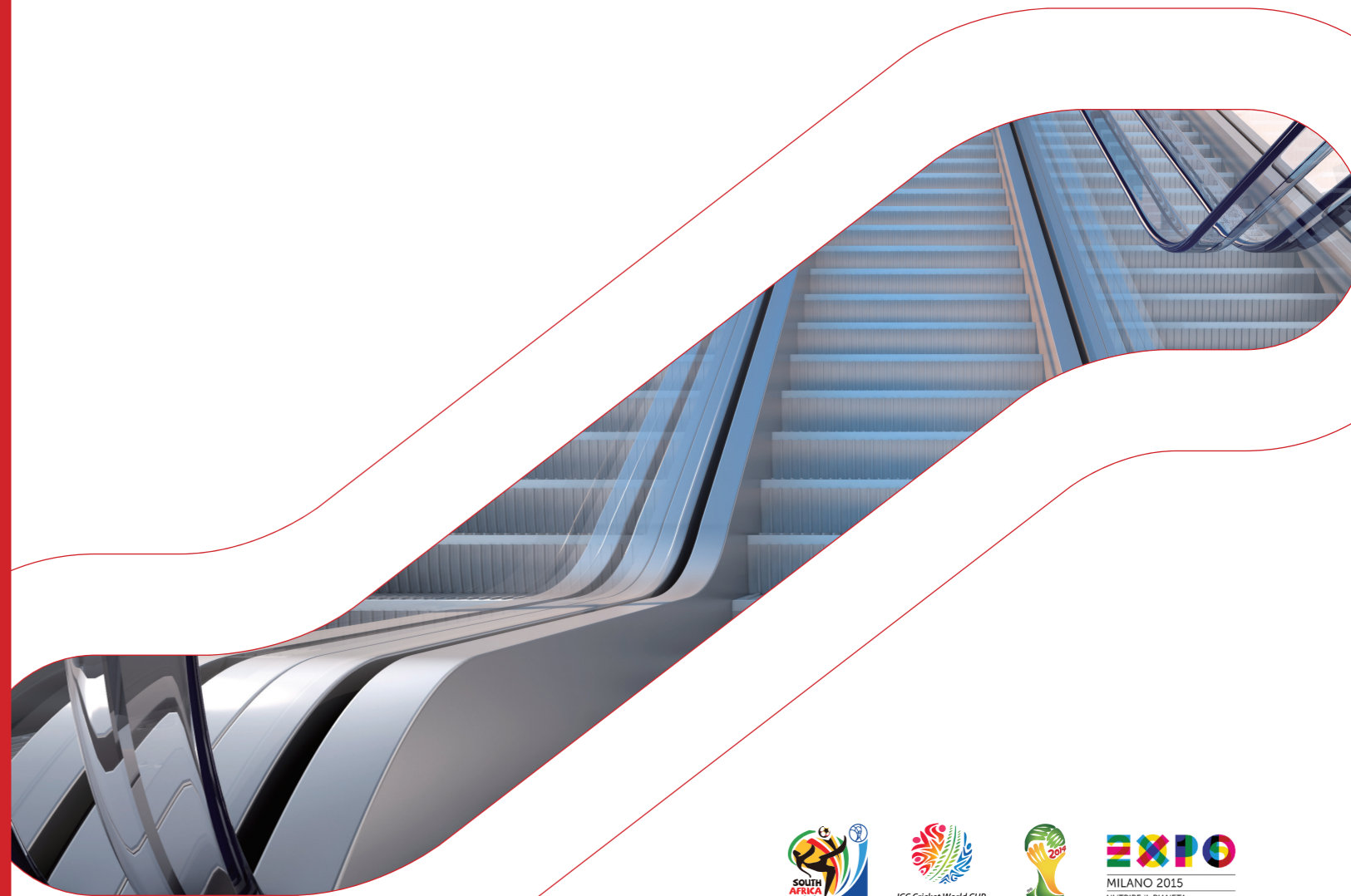


KOYO
elevator



Escalator



KOYO
elevator

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P07	MATERIAL
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98

selling over 98 countries and regions

16

Being Industry model basing on creating 16 first-elevator-company in the world



KOYO Elevator Co., Ltd. established a modern production base in KunShan city, with total investment of USD130 million in 2002. KOYO is a professional designer, researcher, manufacturer, seller, installer and maintainer of elevator, escalator, passenger conveyor with land area is more than 230,000 square meters. At present, KOYO combined with German technology, KOYO can produce up to 8m/s speed, 8 group-controlled elevator with 64 floors, 25 m rise height of escalator and 200m length passenger conveyor.

KOYO has cooperated with Suzhou University and Shanghai JiaoTong University, and successfully researched and developed its own board and control system. Since established in 2002, KOYO products have been sold well in Germany, France, Italy, America, UK etc. Sales network has reached to 98 countries and areas.

KOYO indraughts advanced fabrication process from Germany and use full-automatic metal plate production equipment. The manufacture of product strictly enforces CCC,GB,VDI, EN81,EN115,CE,TUV,IEC ect. KOYO has been awarded as Hi-Tech Enterprise by the government and also got ISO9001 quality standard certificate, ISO14001 Environmental Management System certificate, OHSAS18001 certificate by international Occupational Health & safety Management System.

Milano World Expo



KOYO ESCALATOR DESCRIPTION

KOYO escalators and passenger conveyors, complying Europe latest EN115 & China GB16899-2011 standards, are 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 with exquisite structure, excellent step road, delicate lead way and elegant shape.

KOYO escalator and passenger conveyor has full range specifications, beautiful shape, flexible layout which are widely used in shopping malls, supermarkets, subways, airports, exhibition centers etc.

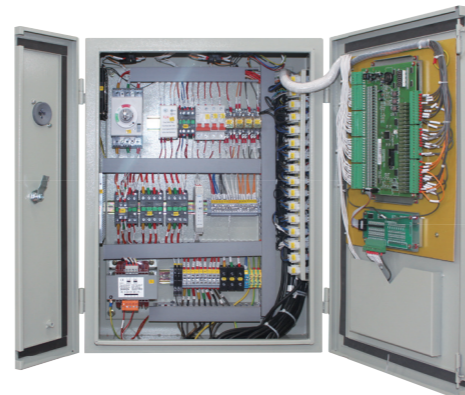


ISO9001:2008 / ISO14001:2004 / OHSAS18001:2007
European Certification / Energy-Saving System

INTELLIGENT CONTROL SYSTEM

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 on the upper and below part of the cabinet has been designed. 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 party 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 is designed with a mechanical interlock, the handle can be opened only when the door is in the subsection position which improves the safety 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 is a product of high technology and delivers a stable quality performance and high capacity of anti-interference. This product has the following characteristics.

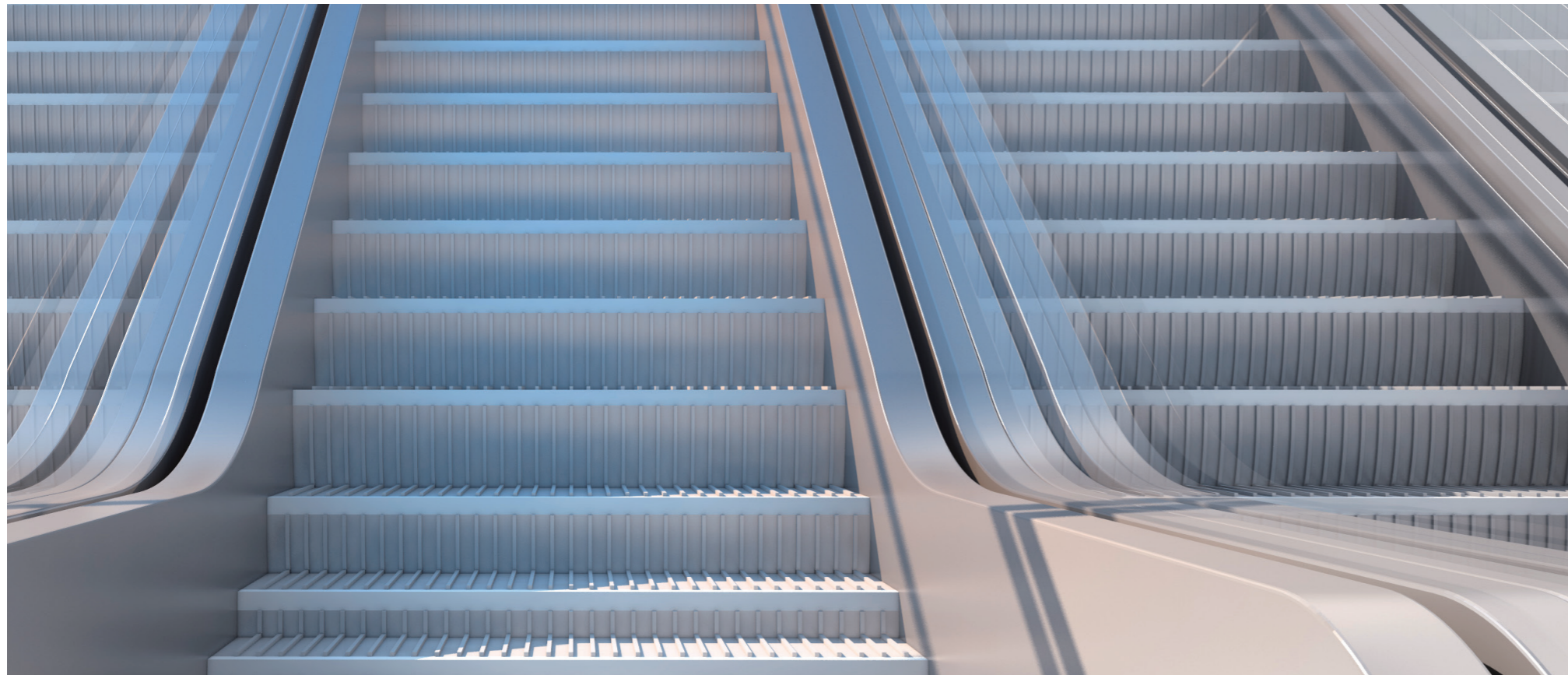
- ARM 32 embedded micro processor
- Basic points: 36 points input and 24 points output and extended to 68 points input
- Frequency conversion, star-delta is available to choose, operation and repair model is available to choose.
- Key input, LED display, parameters to be set up and history record to 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 systems meet 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 system self testing
- Compatible with all kinds of system, PLC, PC board system, etc.
- Good electromagnetic compatibility EMC
- Systematic solution making KOYO escalator control products more outstanding.



Main Components MATERIAL

The Material Option of Truss

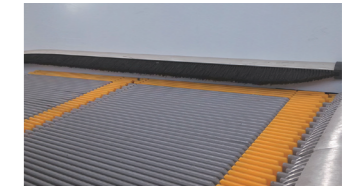


Truss/Painted Angle Steel

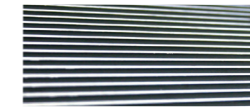


Truss/Hot-dip Galvanizing

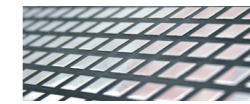
Skirting Brush



Landing Plate



Aluminum

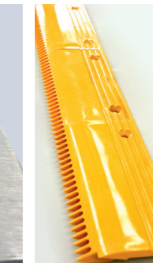


Punched Stainless Steel

Comb

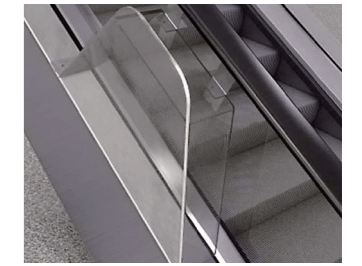


Aluminum

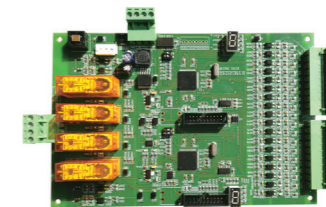


Resin

Anti-Creeping Device



Safety Function Extended Board (PESSRAE)



Handrail Bracket

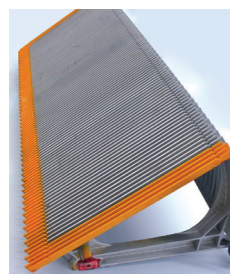


Aluminum

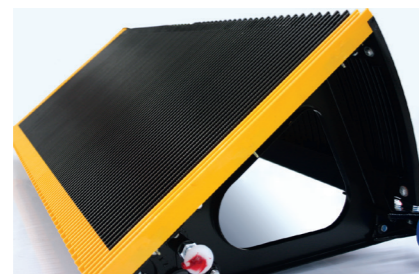


Hairline Stainless Steel

Step



Die-cast Aluminum step with yellow painted frame



Stainless Steel step with yellow plastic frame



Aluminum step with yellow plastic frame



Exterior Decoration MATERIAL

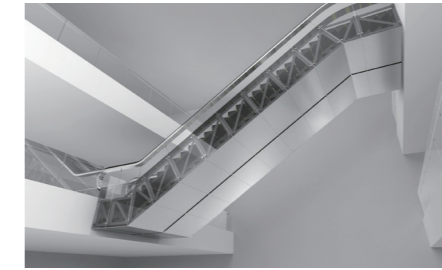
Balustrade Lighting



Skirting Lighting



The Material Option of Outside Cladding



Glass



Hairline Stainless Steel

Handrail Color Option



Black



Red



Orange



Brown



Green



Blue



Gray

The Material of Inner and Outer Decking and Skirting



Hairline Stainless Steel



Hairline Teflon Stainless Steel



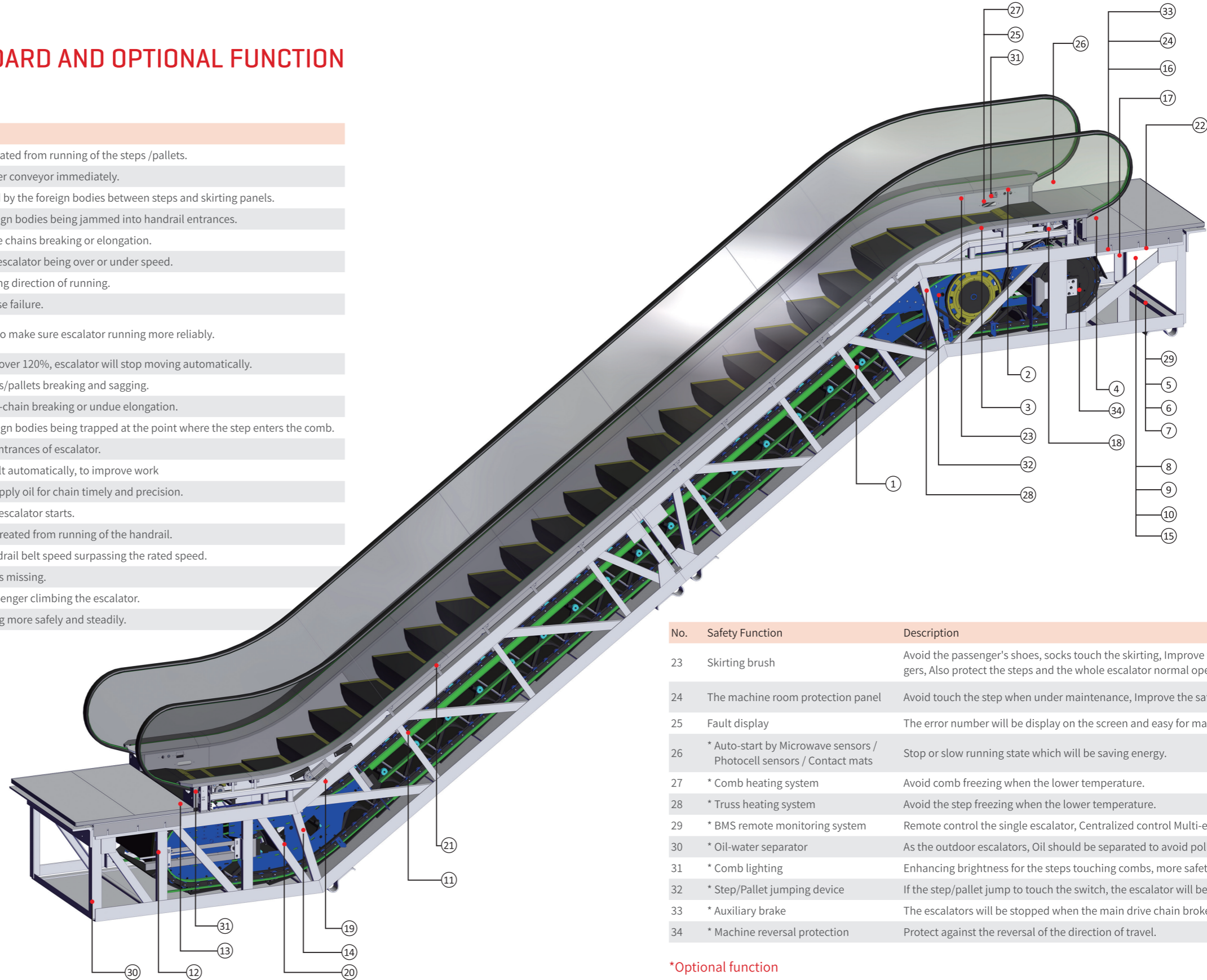
Skirting with Hairline Stainless Steel



Skirting with the Hairline Teflon Finished Stainless Steel

STANDARD AND OPTIONAL FUNCTION

No.	Safety Function	Description
01	Anti-static brush	Eliminates static electricity created from running of the steps /pallets.
02	Emergency stop button	To stop the escalator/passenger conveyor immediately.
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 bodies being jammed into handrail entrances.
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 over or under speed.
07	Anti-reversal protection	Protect against the risk of wrong direction of running.
08	Default phase protection	Protect against the risk of phase failure.
09	Electric circuit protection Motor overload and	Double protection on circuits to make sure escalator running more reliably.
10	Overheat protection	Act when the motor current is over 120%, escalator will stop moving automatically.
11	Step/Pallet 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 protection	Protect against the risk of foreign bodies being trapped at the point where the step enters the comb.
14	Step gap illumination	To show the top and bottom entrances of escalator.
15	Fault display	Diagnosing and displaying fault automatically, to improve work
16	Auto Lubrication System	Efficiency on maintenance. Supply oil for chain timely and precision.
17	Start alarm device	To warn passengers when the escalator starts.
18	Handrail anti-static protection	To eliminate static electricity created from running of the handrail.
19	Handrail belt speed monitor	Protect against the risk of handrail belt speed surpassing the rated speed.
20	Step missing protection	Protect against the risk of steps missing.
21	*Anti-creeping device	Protect against the risk of passenger climbing the escalator.
22	*PESSRAE system	To make sure escalator running more safely and steadily.



No.	Safety Function	Description
23	Skirting brush	Avoid the passenger's shoes, socks touch the skirting, Improve the safety of the passengers, Also protect the steps and the whole escalator normal operation.
24	The machine room protection panel	Avoid touch the step when under maintenance, Improve the safety of the passengers.
25	Fault display	The error number will be display on the screen and easy for maintenance.
26	* Auto-start by Microwave sensors / Photocell sensors / Contact mats	Stop or slow running state which will be saving energy.
27	* Comb heating system	Avoid comb freezing when the lower temperature.
28	* Truss heating system	Avoid the step freezing when the lower temperature.
29	* BMS remote monitoring system	Remote control the single escalator, Centralized control Multi-escalators.
30	* Oil-water separator	As the outdoor escalators, Oil should be separated to avoid pollute the environment.
31	* Comb lighting	Enhancing brightness for the steps touching combs, more safety.
32	* Step/Pallet jumping device	If the step/pallet jump to touch the switch, the escalator will be stopped.
33	* Auxiliary brake	The escalators will be stopped when the main drive chain broken or overspeed.
34	* Machine reversal protection	Protect against the reversal of the direction of travel.

*Optional function

OPTION FORM

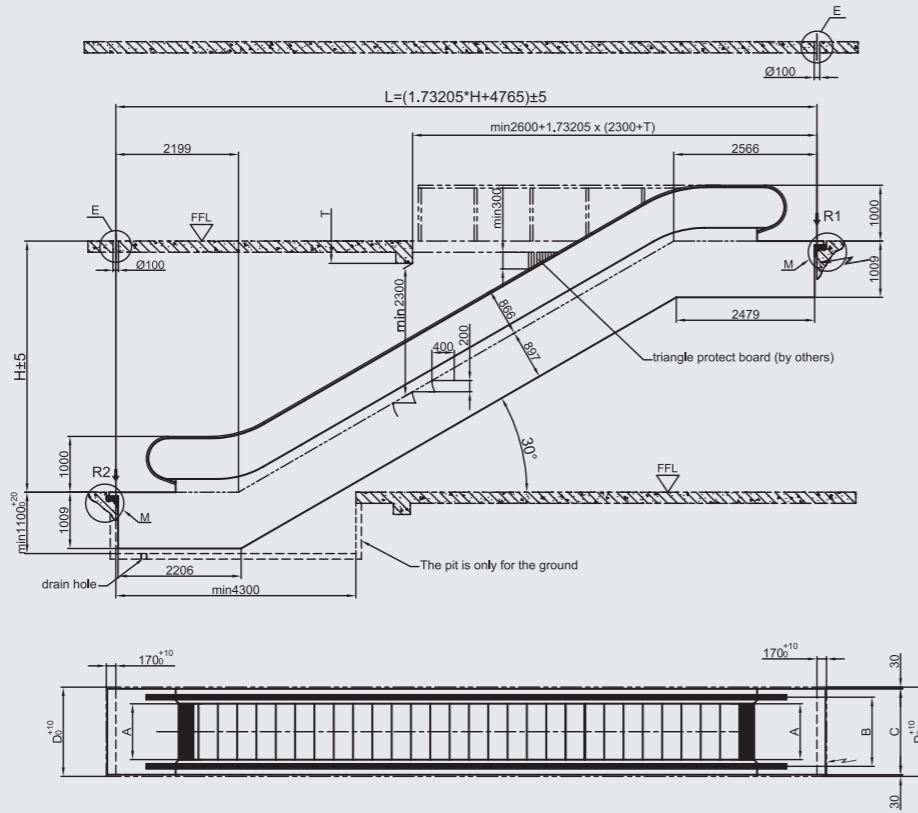
		Indoor		Outdoor	Public Transport Type
		Slim Type	Commercial Type	Commercial Type	
Handrail Belt	Synthetic rubber (black)	●	●	●	●
	Other colors	◎	◎	◎	◎
Handrail Bracket	Hairline Stainless Steel	●			
	Aluminum Alloy		●	●	●
Balustrade Panel	Colorless Transparent Tempered Glass	●	●	●	●
	Colored Transparent Tempered Glass	◎	◎	◎	◎
	Inclined Hairline Stainless Steel		◎	◎	◎
Inner & Outer Decking	Hairline Stainless Steel	●	●	●	●
	Teflon Rnished Steel Plate	◎	◎	◎	◎
	Teflon Rnished Stainless Steel	◎	◎	◎	◎
Skirting	Hairline Stainless Steel	●	●	●	●
	Teflon Rnished Steel Plate	◎	◎	◎	◎
	Teflon Rnished Stainless Steel	◎	◎	◎	◎
Step	Stainless Steel with yellow plastic frame	◎	◎		
	Aluminum with yellow painted frame	◎	◎	◎	◎
	Aluminum with yellow plastic frame	●	●	●	●
Comb	Synthetic Resin (Yellow)	◎	◎	◎	◎
	Aluminum Alloy	●	●	●	●
Landing Plate	Punched Stainless Steel	●	●		
	Etching Stainless Steel	◎	◎	◎	◎
	Aluminum Alloy	◎	◎	●	●
Truss	Painted Angle Steel	●	●		
	Hot-dip Galvanizing Angle Steel	◎	◎	●	●
Outside Cladding	Painted Steel (colors for choice)	◎	◎	◎	◎
	Hairline Stainless Steel	◎	◎	◎	◎
	Tempered Glass	◎	◎	◎	◎

Note: ● Standard ◎ Optional

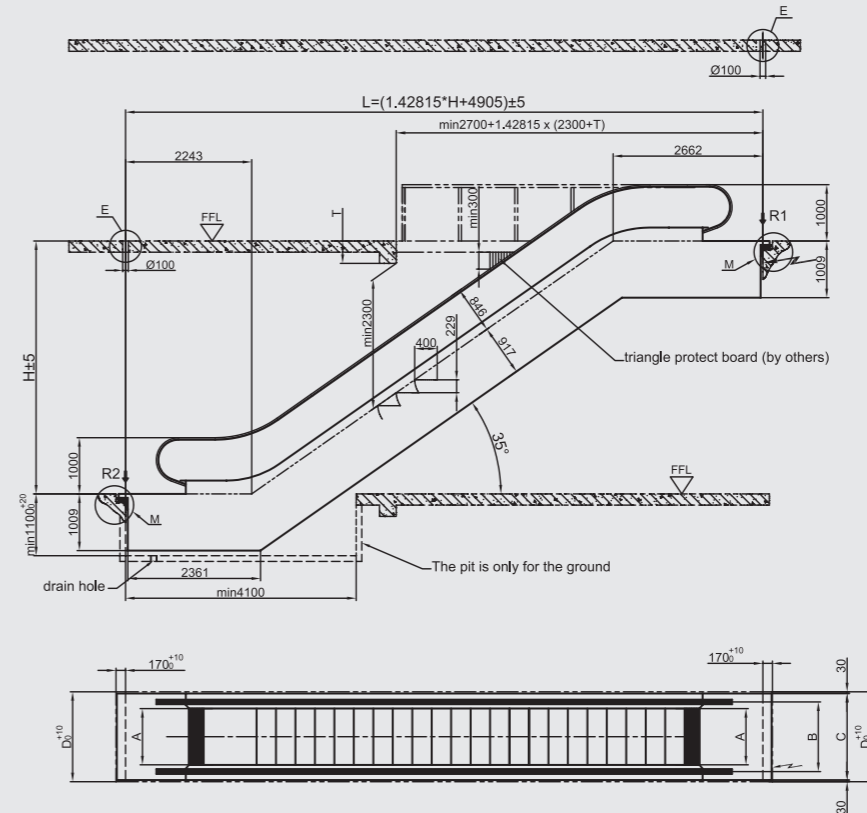
ESCALATOR SPECIFICATIONS & PARAMETERS



Rise:
Max. 6000
Incline :
30°
Horizontal Steps :
2
Step Width :
600/800/1000



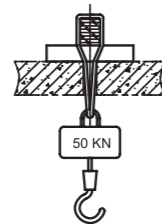
Rise:
Max. 6000
Incline :
35°
Horizontal Steps :
2
Step Width :
600/800/1000



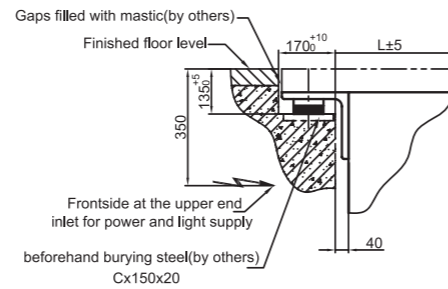
Modle	KYS/C230-600	KYS/C230-800	KYS/C230-1000
A: Step Width	600	800	1000
B: Handrail Center Distance	838/910	1038/1110	1238/1310
C: Width of Escalator	1140/1200	1340/1400	1540/1600
D: Width of Pit	1200/1260	1400/1460	1600/1660

Step Width	Rise	Wight	Support Loads	
			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	3000	59	52	47
	3500	63	56	50
	4000	67	60	54
	4500	71	64	57
	5000	74	68	60
	5500	82	74	66
1000	3000	63	59	53
	3500	67	64	57
	4000	71	68	61
	4500	75	73	65
	5000	83	79	71
	5500	87	84	75

Detail E (by others)



Detail M



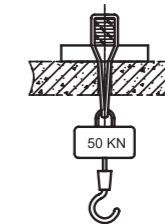
Remark:

1. All dimensions are based on mm;
2. If add horizontal step in must add the horizontal length correspondingly;
3. When the width of step A=600, the truss must be extended by 420;
4. Pit depth will be 1450 for outdoor escalator.

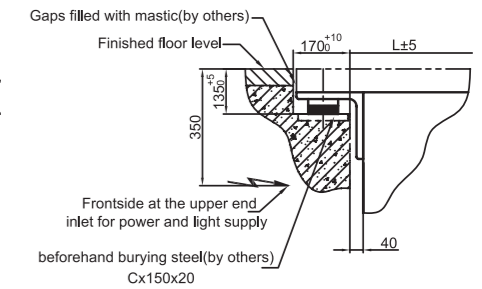
Modle	KYS/C235-600	KYS/C235-800	KYS/C235-1000
A: Step Width	600	800	1000
B: Handrail Center Distance	838/910	1038/1110	1238/1310
C: Width of Escalator	1140/1200	1340/1400	1540/1600
D: Width of Pit	1200/1260	1400/1460	1600/1660

Step Width	Rise	Wight	Support Loads	
			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	3000	56	49	44
	3500	60	52	47
	4000	63	56	50
	4500	66	59	53
	5000	70	62	56
	5500	73	65	59
1000	3000	60	56	50
	3500	64	60	53
	4000	67	64	57
	4500	71	67	60
	5000	74	71	64
	5500	82	77	69

Detail E (by others)



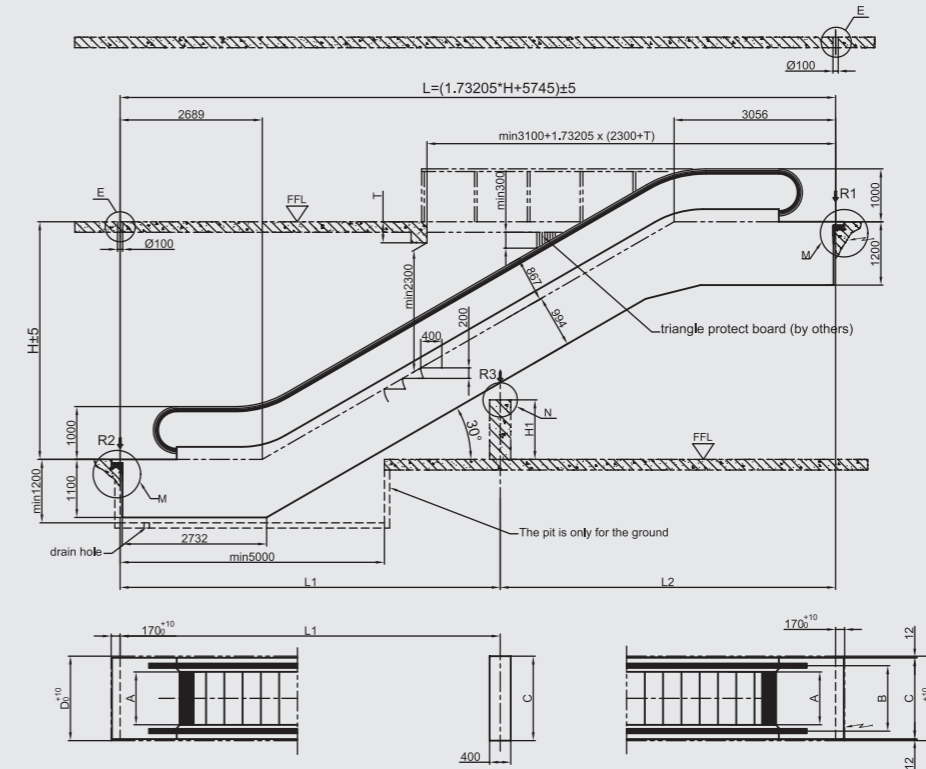
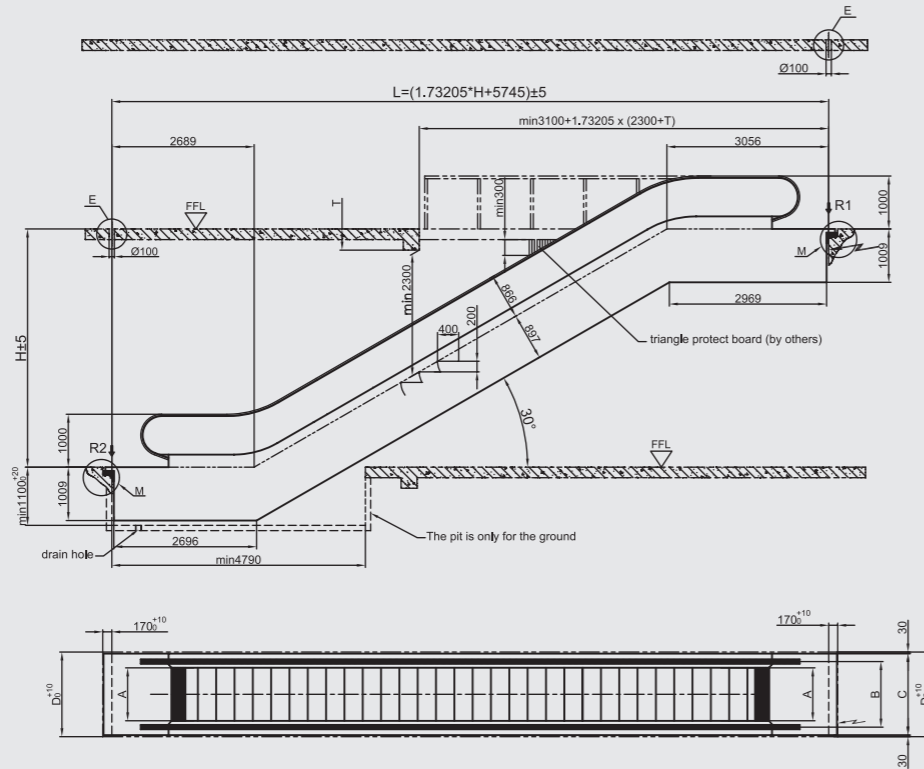
Detail M



Remark:

1. All dimensions are based on mm;
2. If add horizontal step in must add the horizontal length correspondingly;
3. When the width of step A=600, the truss must be extended by 420;
4. Pit depth will be 1450 for outdoor escalator.

Rise:
Max. 8000
Incline :
30°
Horizontal Steps :
3
Step Width :
600/800/1000

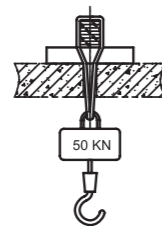


Rise:
Max. 15000
Incline :
30°
Horizontal Steps :
3
Step Width :
600/800/1000

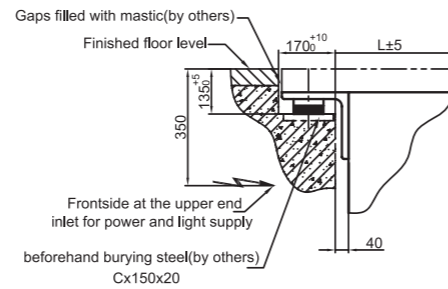
Modle	KYS/C330-600	KYS/C330-800	KYS/C330-1000
A: Step Width	600	800	1000
B: Handrail Center Distance	838/910	1038/1110	1238/1310
C: Width of Escalator	1140/1200	1340/1400	1540/1600
D: Width of Pit	1200/1260	1400/1460	1600/1660

Step Width	Rise	Wight	Support Loads	
A (mm)	H (mm)	KN	R1 (KN)	R2 (KN)
600	3000	58	48	42
	3500	61	51	45
	4000	65	54	48
	4500	68	57	51
	5000	72	60	54
	5500	75	63	57
800	3000	61	55	49
	3500	65	58	53
	4000	68	62	56
	4500	72	65	60
	5000	76	69	63
	5500	82	74	68
1000	3000	65	62	56
	3500	69	66	61
	4000	73	70	65
	4500	79	76	70
	5000	83	80	74
	5500	90	87	79
6000	94	91	83	

Detail E (by others)



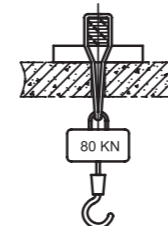
Detail M



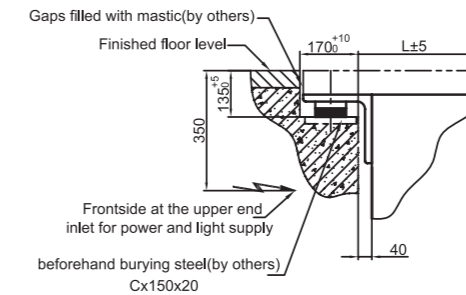
Remark:

1. All dimensions are based on mm;
2. If add horizontal step in must add the horizontal length correspondingly;
3. When the width of step A=600, the truss must be extended by 420;
4. Pit depth will be 1450 for outdoor escalator.

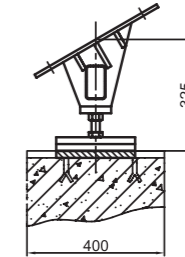
Detail E (by others)



Detail M



Detail N



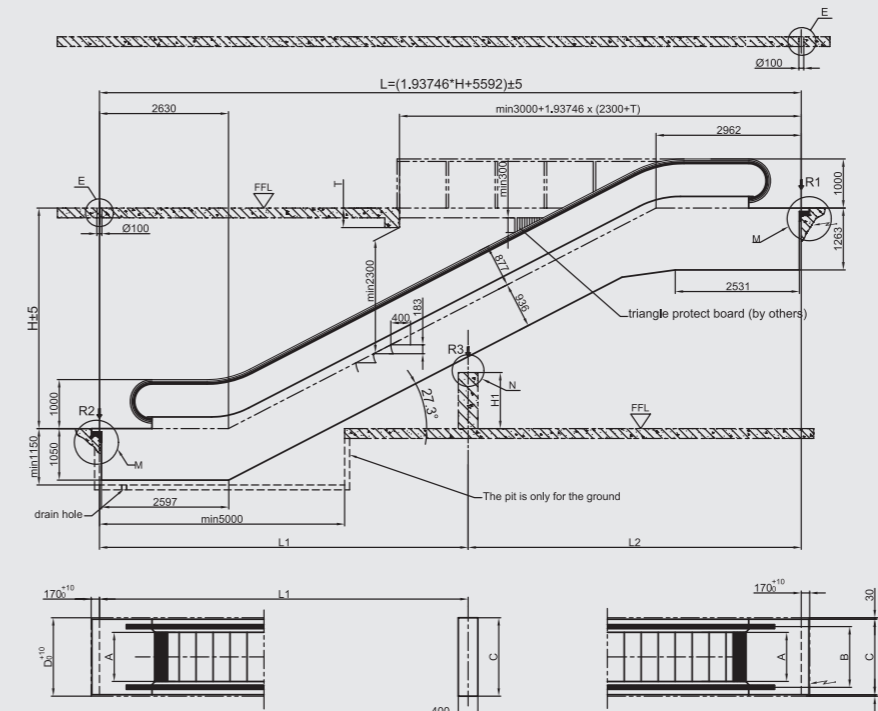
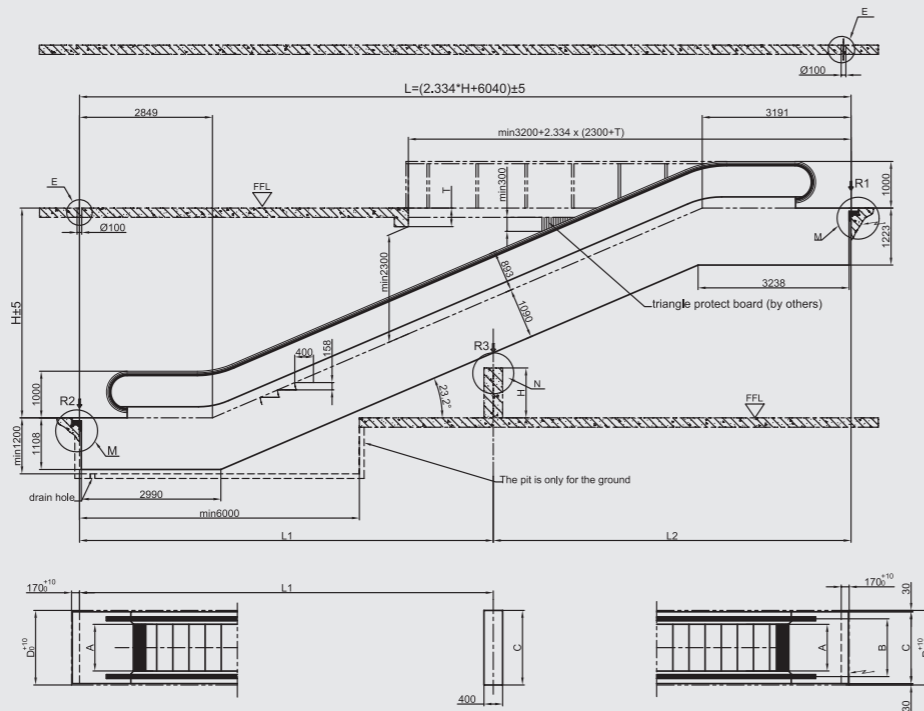
Remark:

1. All dimensions are based on mm;
2. If add horizontal step in must add the horizontal length correspondingly;
3. When the width of step A=600, the truss must be extended by 420;
4. Pit depth will be 1500 for outdoor escalator.

Modle	KYXF/KYH 330-600	KYXF/KYH 330-800	KYXF/KYH 330-1000
A: Step Width	600	800	1000
B: Handrail Center Distance	838	1038	1238
C: Width of Escalator	1200	1400	1600
D: Width of Pit	1260	1460	1660

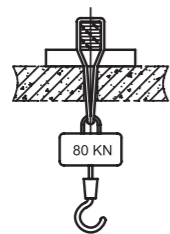
Step Width	600	800	1000
R1 (KN)	4.1 × L2 + 15.5	4.5 × L2 + 16.1	5 × L2 + 17.5
R2 (KN)	4.1 × L1 + 7.8	4.5 × L1 + 7.8	5 × L1 + 8.5
R3 (KN)	4.25 × L + 9.5	4.5 × L + 10.5	5.2 × L + 11.5
Remarks	Unit for L / L1 / L2 is m, L1 / L2 are less than 15m		

Rise:
Max. 15000
Incline :
23.2°
Horizontal Steps :
3
Step Width :
600/800/1000

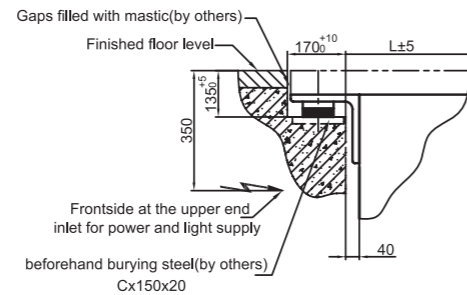


Rise:
Max. 15000
Incline :
27.3°
Horizontal Steps :
3
Step Width :
600/800/1000

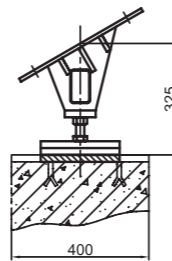
Detail E (by others)



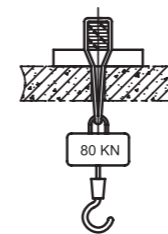
Detail M



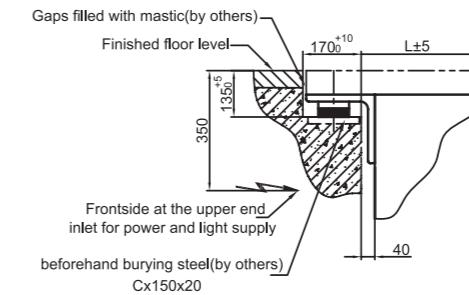
Detail N



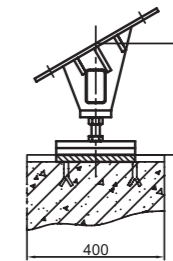
Detail E (by others)



Detail M



Detail N



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

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)	$4.25 \times L + 13.5$	$4.5 \times L + 15.5$	$5.2 \times L + 15.5$
Remarks	Unit for L / L1 / L2 is m, L1 / L2 are less than 15m		

Remark:

1. All dimensions are based on mm;
2. If add horizontal step in must add the horizontal length correspondingly;
3. When the width of step A=600, the truss must be extended by 420;
4. Pit depth will be 1500 for outdoor escalator.

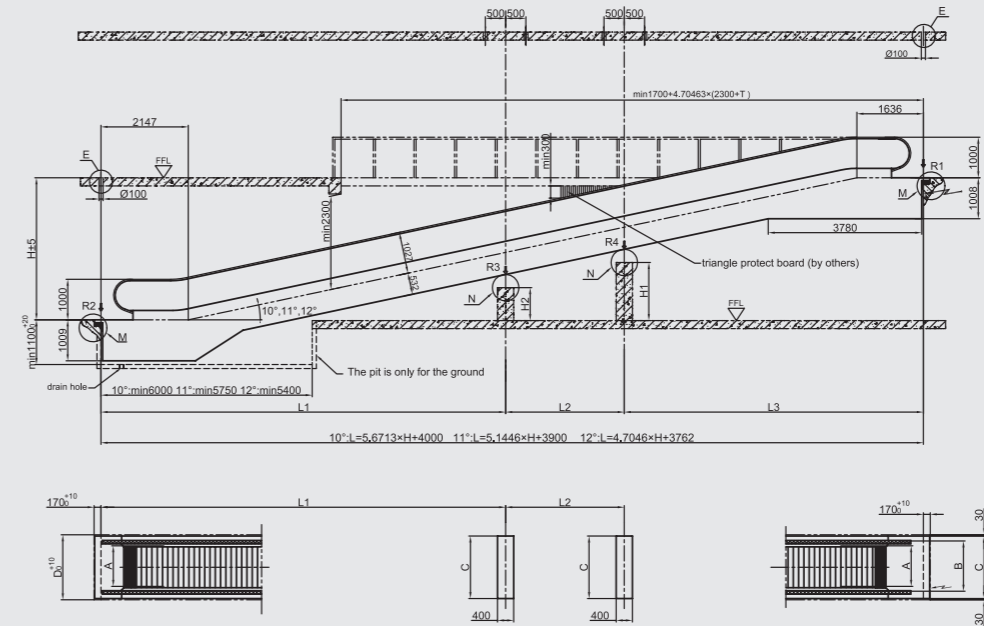
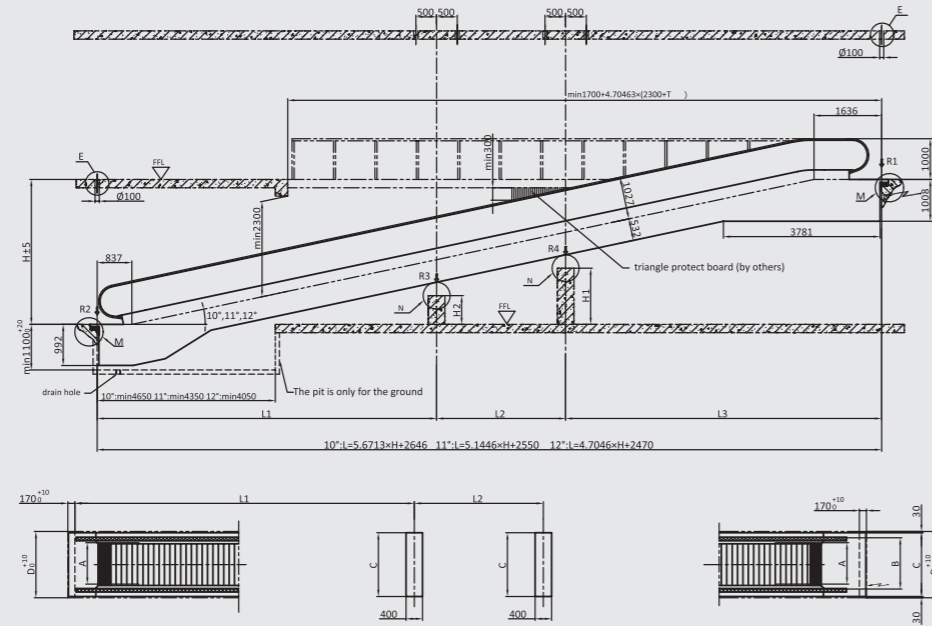
Modle	KYXF/KYH 327-600	KYXF/KYH 327-800	KYXF/KYH 327-1000
A: Step Width	600	800	1000
B: Handrail Center Distance	838	1038	1238
C: Width of Escalator	1200	1400	1600
D: Width of Pit	1260	1460	1660

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)	$4.25 \times L + 11.5$	$4.5 \times L + 12.5$	$5.2 \times L + 13.5$
Remarks	Unit for L / L1 / L2 is m, L1 / L2 are less than 15m		

Remark:

1. All dimensions are based on mm;
2. If add horizontal step in must add the horizontal length correspondingly;
3. When the width of step A=600, the truss must be extended by 420;
4. Pit depth will be 1500 for outdoor escalator.

Rise:
Max. 8000
Incline :
10° 11° 12°
Pallet Width:
800/1000



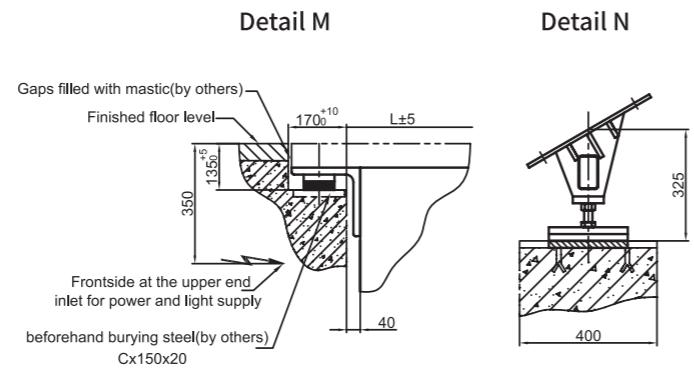
Rise:
Max. 8000
Incline :
10° 11° 12°
Pallet Width:
800/1000

Modle	KYPS12-800	KYPS12-1000
A: Pallet Width	800	1000
B: Handrail Center Distance	1038	1238
C: Width of Moving Walk	1340	1540
D: Width of Pit	1400	1600

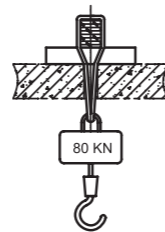
Support Loads Parameter	q	M	N
800	0.0039	9.5	4.5
1000	0.0045	11	5

Inclination	Rise		Inte.Support	
	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

Support Loads		
w/o Inte. Support (KN)	Single Inte. Support (KN)	Double Inte. Support (KN)
R1=L×q+M	R1=L3×q+M	R1=L3×q+M
R2=L×q+N	R2=L1×q+N	R2=L1×q+N
	R3=(L1+L2)×1.3×q	R3=(L1+L2)×1.3×q
R3=(L1+L3)×1.3×q	R4=(L3+L2)×1.3×q	R4=(L3+L2)×1.3×q
Note	Unit for L1 / L2 / L3 are less than 15m	



Detail E (by others)



Remark:

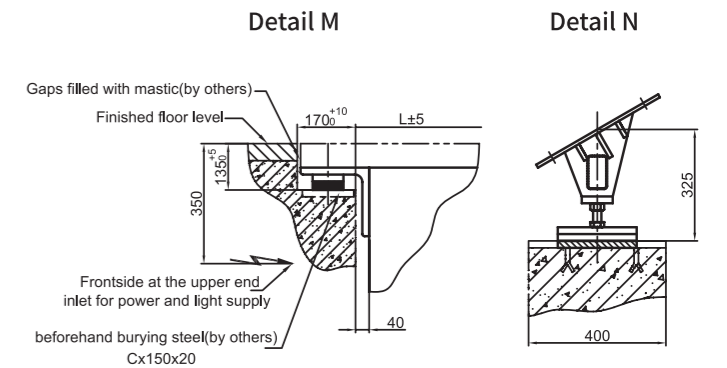
1. All dimensions are based on mm;
2. Pit depth will be 1450 for outdoor moving walk.

Modle	KYPF12-800	KYPF12-1000
A: Pallet Width	800	1000
B: Handrail Center Distance	1038	1238
C: Width of Moving Walk	1340	1540
D: Width of Pit	1400	1600

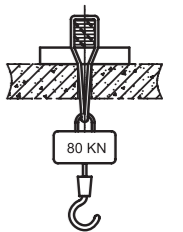
Support Loads Parameter	q	M	N
800	0.0039	9.5	4.5
1000	0.0045	11	5

Inclination	Rise		Inte.Support	
	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

Support Loads		
w/o Inte. Support (KN)	Single Inte. Support (KN)	Double Inte. Support (KN)
R1=L×q+M	R1=L3×q+M	R1=L3×q+M
R2=L×q+N	R2=L1×q+N	R2=L1×q+N
	R3=(L1+L2)×1.3×q	R3=(L1+L2)×1.3×q
R3=(L1+L3)×1.3×q	R4=(L3+L2)×1.3×q	R4=(L3+L2)×1.3×q
Note	Unit for L1 / L2 / L3 are less than 15m	



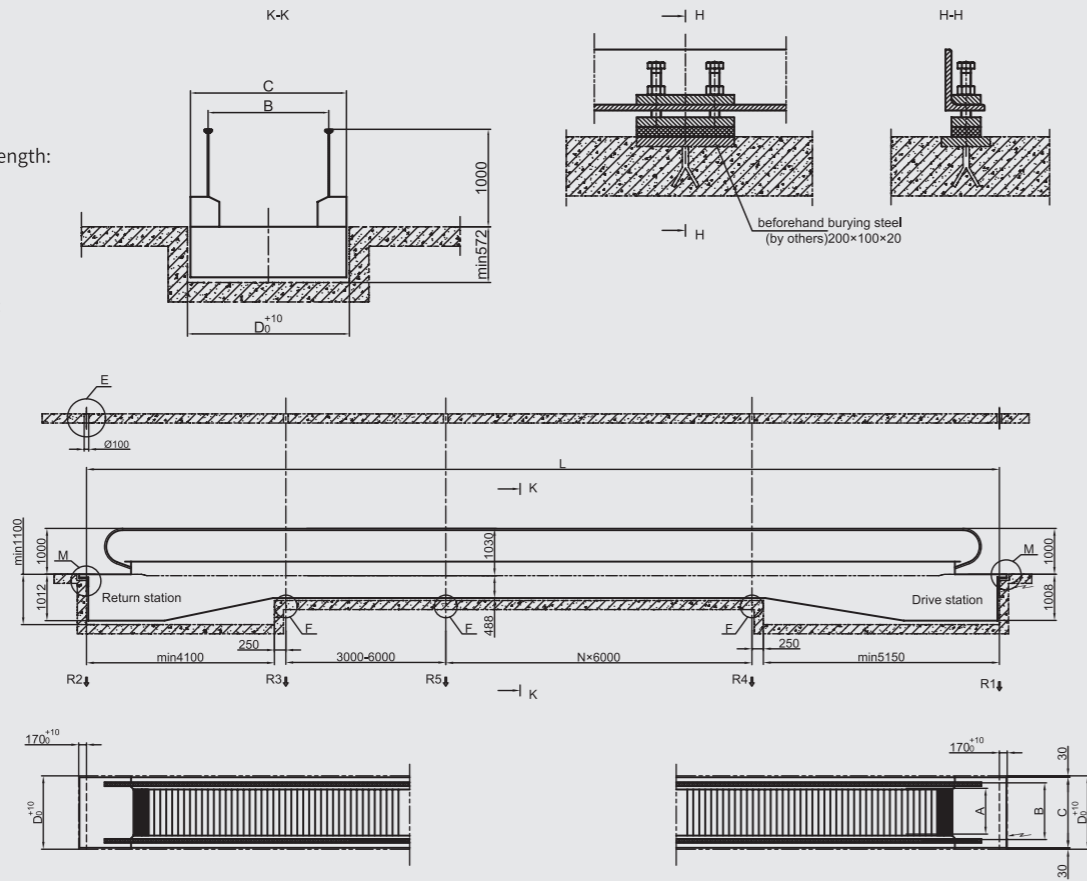
Detail E (by others)



Remark:

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

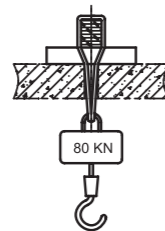
Horizontal Length:
Max. 200mm
Incline :
0°
Pallet Width:
800/1000



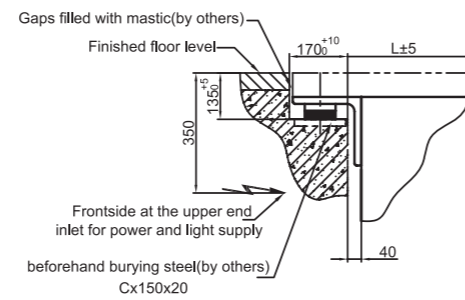
Modle	KYPHO-800	KYPHO-1000
A: Pallet Width	800	1000
B: Handrail Center Distance	1038	1238
C: Width of Moving Walk	1340	1540
D: Width of Pit	1400	1600

Pallet Width	800	K1000
R1	45KN	49KN
R2	31KN	33KN
R3	30KN	32KN
R4	32KN	34KN
R5	44KN	53KN

Detail E (by others)



Detail M



Remark:

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