SONHA®
Elevator
www.thangmaysonha.com
HOTLINE:0983.254.951

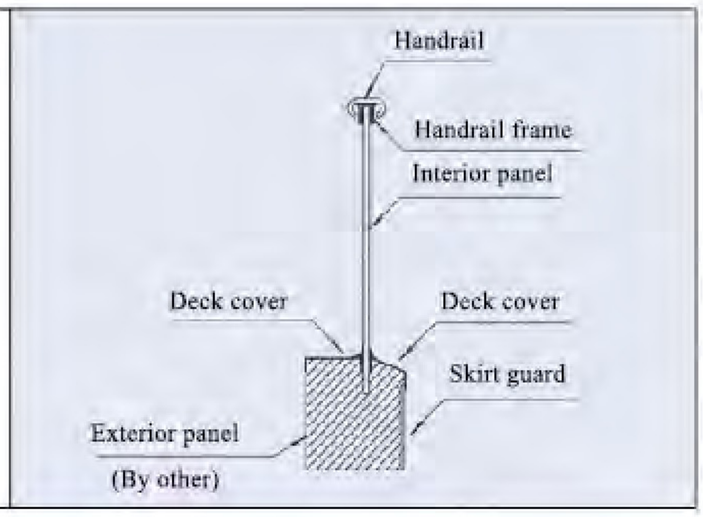
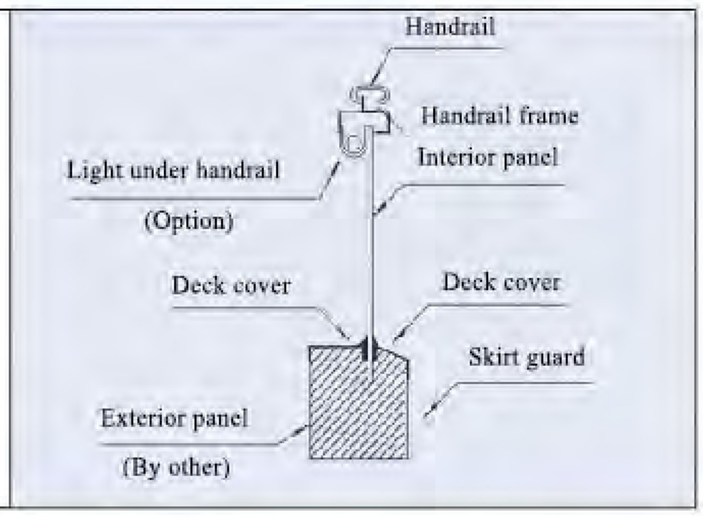
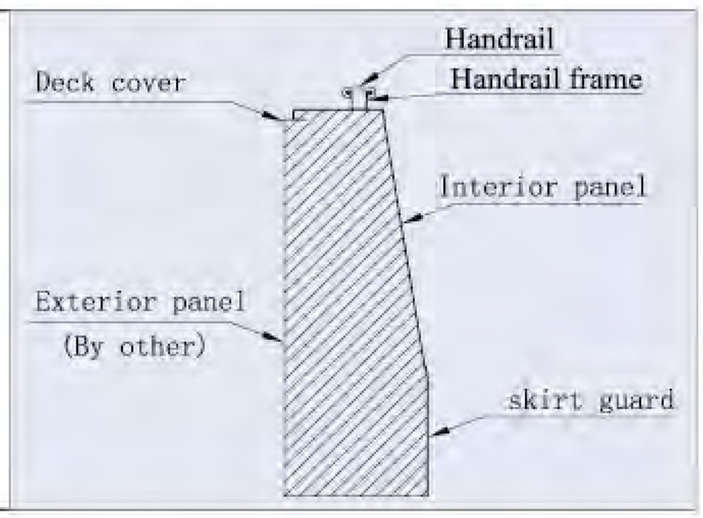
User-friendliness

Illuminated Direction Indicator with high level of visibility

Superb riding comfort

Exceptional smoothness & quietness

Variety of Types

Type-S	**[Slim type]** Interior panels are made of clear tempered glass which provides a sophisticated appearance. Indoor use.	
Type-F	**[Frame type]**(Lighting is option) Interior panels are made of clear tempered glass Optional lighting under the handrails creates an elegant look Indoor & Outdoor use.	
Type-P	**[Panel type]** Interior panels are made of hairline-finished stainless steel and are ideally suited for public transit systems. Indoor & Outdoor use.	

Notes:
Type-S & F are suited for commercial facilities.
Type-P is suited for public transit systems as well as commercial facilities.

Specifications

●: Standard Spec. ■: Optional Spec.

Balustrade		
Handrail	Synthetic Rubber (black)	●
	Polyurethane (black & 7 colors)	■
Handrail Frame	Hairline-finished Stainless Steel	●
Deck Cover (Only S&F type)		●
Interior Panel	Type-S,F: Colorless, Clear Tempered Glass	●
	Type-P: Hairline-finished Stainless Steel	●
Skirt Guard	Hairline finished Stainless Steel	●
	Stainless Steel with low friction coating	■
	Steel with low friction coating	■
Step		
Tread	Indoor: Stainless Steel (black) with Synthetic Resin Demarcation (yellow)	●
	Outdoor: Aluminum Alloy Die-cast (gray) with painted Demarcation (yellow)	●
	Aluminum Alloy Die-cast (gray)	■
Demarcation Line for Aluminum Step	Painted (yellow)	■
	Synthetic Resin (yellow)	■
Floor Plate		
Comb	Synthetic Resin (yellow)	●
Landing Plate	Aluminum	●
	Hairline-finished Stainless Steel	■

Basic Specifications

Item	Model S600	Model S800	Model S1000
Step width (mm)	600	800	1000
Max.vertical rise (m)	For 30° Type-S:9.5; Type-F,P : 14.0		
	For 35° Type-S, F, P : 6.0		
Inclination (degrees)	30°/35°		
Speed(m/min)	30/27		
Transportation capacity (Passengers / hour)	4500	6750	9000
Power	380V/400/V415V 50Hz		
	220V / 380V 60Hz		

Notes:
1)The above specifications are based on EN115.
2)The above specifications shall be changed according to the applied code.

All Computer Graphics may differ from actual appearance.
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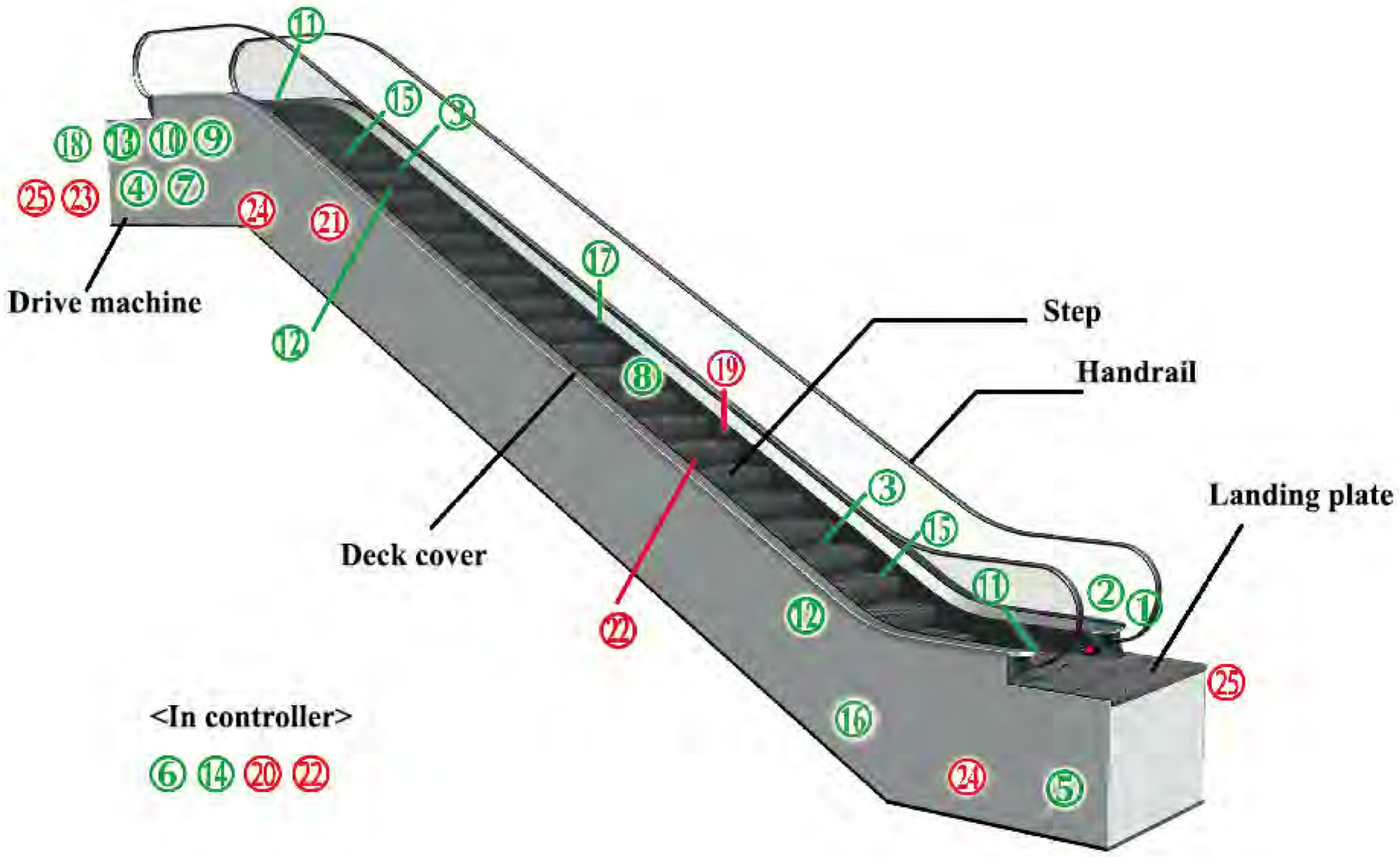
Safety Devices



Standard safety devices

1.Handrail safety guard

Stops the escalator when an object is caught in the handrail inlet. See the photo on page 4.

2.Emergency stop button

Stops the escalator when the button is pressed.

3.Skirt guard obstruction safety device

Stops the escalator if a foreign object is caught between the skirt guard and steps.

4.Broken drive-chain safety device

Stops the escalator if the drive-chain is stretched or broken.

5.Broken step chain safety device

Stops the escalator if the step chain is stretched excessively or broken.

6.Electric circuit protection device

Provided with an automatic circuit breaker to protect the escalator circuitry and power supply parts.

7.Brake

Brake is activated to stop the escalator by a spring force action when the power fails or any safety device is activated.

8.Demarcation line

Yellow synthetic resin demarcation lines are provided on the edges of the escalator tread panel in order to prevent passengers from stepping on the edges between adjacent steps and between the step and skirt guard.
(For stainless steel made step)

9.Reversal protection device

Stops the escalator when reverse operation against the preset direction is commanded.

10.Governor

Should the escalator go in overspeed or in a opposite direction against the preset direction ,the operation is stopped.

11.Comb safety device

Stops the escalator if a foreign object is trapped between a step and the comb.

12.Step sag safety device

Stops the escalator before the steps enter the comb plate when an abnormal step sag is detected.

13.Auxiliary brake

A mechanically-operated auxiliary brake stops the escalator when the governor is activated. (H>6M)

14.Phase failure (phase-reversal) prevention

The escalator operation is automatically stopped if phase failure or phase-reversal occurs.

15.Step upthrust safety device

Stops the escalator if a foreign object is caught between steps and pushes up the steps.

16.Handrail speed delay sensing device

Stops the escalator if the handrail speed becomes slower than the step speed by more than the preset value.

17.Dress guard

Brushes are provided between the skirt guards and the steps to keep the passengers shoes away from the skirt guard.

18.Break releasing sensing device

Monitor brake releasing.Escalator can not be startsd if brake has not released.

Optional safety devices

19.Skirt guards panels

The guards are coated with a slippery fluoroplastic to enhance safety.

20.Fire shutter interlocked device

Stops the escalator when the interlocked fire shutter, which is located near the escalator ,is activated.

21.Broken handrail safety device

Stops the escalator if either handrail is broken.

22.Tandem operation interlock

Should any one of the escalators in a continuous sequence stop,all the interlocked escalators are stopped.
These escalators are electrically interlocked to run in the same direcion.

23.Braking distance monitor device

Locked the Escalator if exceeding the maximum permitted stopping distances by more than 20%.

24.Step missing device

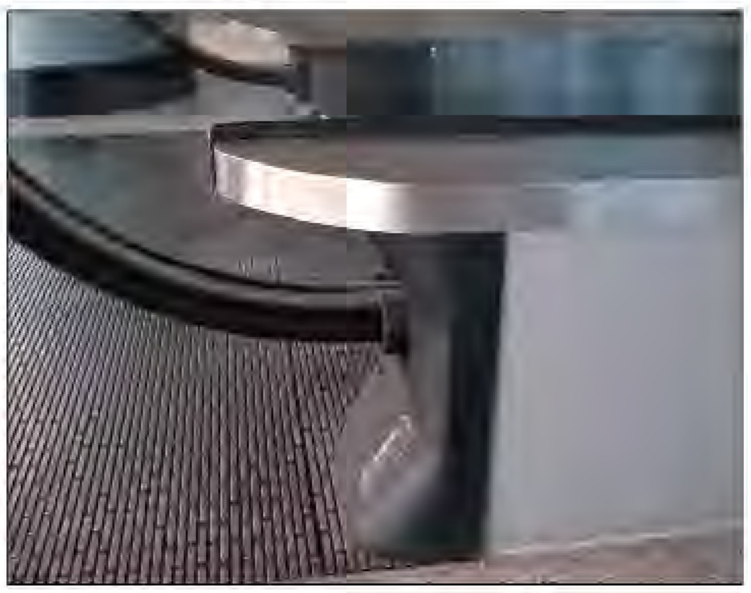
A missing step shall be detected and the escalator stoped before gap (resulting from the missing step) emerges from the comb.

25.Opened floor plate safety device

Stops the Escalator if the floor plate is opened or removed.

Note: Necessary safety devices shall be installed according to the applied code.

Handrail safety guard



Extended deck cover over the handrail safety guard is designed to prevent accidents at the inlet of handrail.

Dress guard

All Computer Graphics may differ from actual appearance.
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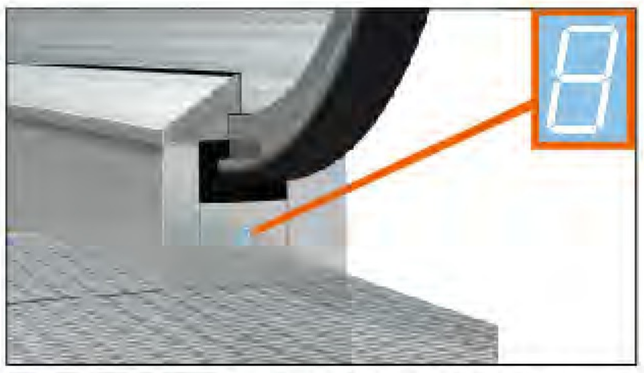
Outstanding Features

Standard Specifications

Stylish Newel Design
Innovative design is applied to the newel made of resin, which enhances the individuality. (For S and F type)
⇒ Outstanding appearance

Illuminated Direction Indicator
The illuminated direction indicator installed at the upper and lower newel provides passengers safety with its high level of visibility.
⇒ High level of visibility for safety
⇒ User-friendliness

Illuminated Direction Indicator for S and F Type

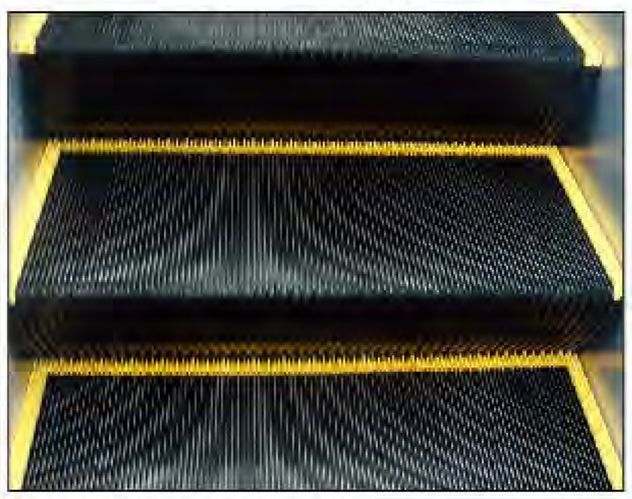


Newel Cover and Fault Display for P Type

Automatic Lubrication System
A central automatic lubrication system lubricates all chains automatically. Galvanized oil collectors come with this system.
⇒ Smooth operation

Rubber Wheel Incorporated in Step Chain
Rubber Wheels integrated with step chain engage with sprocket.(Previously metal step chain engaged with sprocket directly.)
⇒ Superb riding comfort
⇒ Exceptional smoothness & quietness

Stainless Steel Made Step with Demarcation Line
Yellow resin made demarcation lines are provided at the edges of each step for safety.
⇒ User's safety



Demarcation Line

Aluminum Landing Plates
The reverse side of the floor plate can be used during the construction stage to prevent the right face of the plate from any damages by others.
This plate is super-rigid because of its 40mm thickness.
⇒ Longer durability
⇒ Super rigid

Deluxe Balustrade
Durable stainless steel is used for the handrail frames and deck covers
⇒ Longer durability
⇒ Luxurious appearance

Fault Display
It analyzes operational status. When a fault occurs, the cause is displayed on the screen in order to ensure efficient and proper maintenance.
⇒ Efficient & proper maintenance

Fault Display for S and F Type

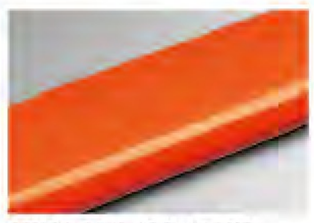
Color Variety Handrail

Standard Color

HRS-170 Black

Optional Colors

HRN-110 RED



HRN-120 ORANGE

HRN-150 GRAY

HRN-180 BEIGE

HRN-130 BLUE

HRN-140 GREEN

HRN-160 CHARCOAL

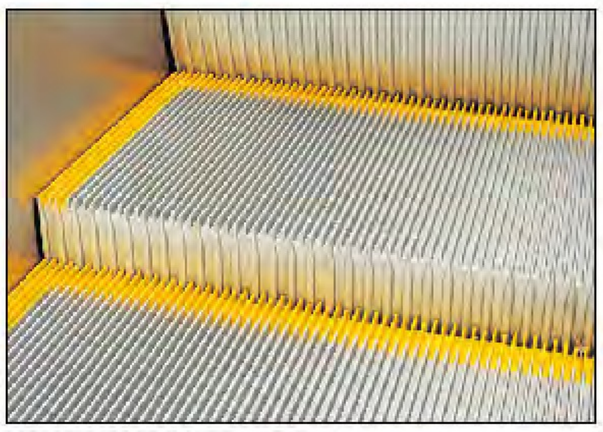
HRN-170 Black

The polyurethane handrails hold the advantage of superior resistance to delamination,drive slippage,dust and vandalism.
All the handrails are of polyurethane made except that HRS-170 Black is made of synthetic rubber.

Optional Specifications

Painted Demarcation Line

Demarcation lines at the side edges of each step are painted by yellow color for safety.
(For aluminum step only)
⇒ User's safety



Demarcation Lines

Comb Lights

Lights are mounted on the skirt guards at the upper and lower landings, illuminating passenger's steps for easier boarding and exiting.
⇒ User's safety

Comb Lights

Skirt Panel Lights

Accentuates step visibility and the overall line of the escalator to enhance safety.

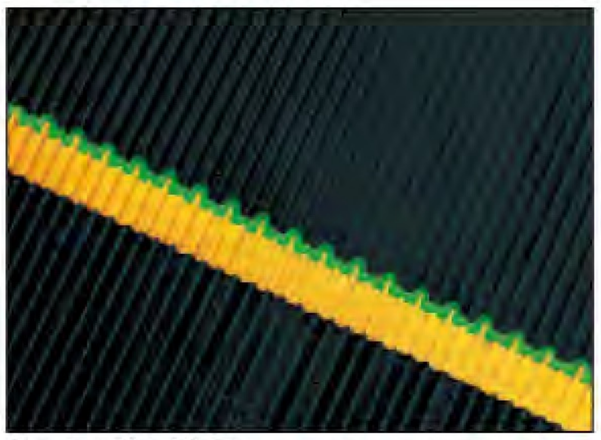
Skirt Panel Lights (LED Type)

Energy Saving System

Variable frequency operation offers the latest inverter technology, that drastically reduces power consumption. The escalator runs at very low speed under the no load condition and resumes normal operation when approaching passengers are detected by the sensor in the poles located near the landing or the sensor by 3D Type. You can choose either 3D Sensor Type or Pole Type. Slow speed operation prevents passengers from misunderstanding that escalators were out of service.
The length of Upper Truss is to be extended by 300mm due to the incorporation of Inverter Unit.
⇒ Less power consumption
⇒ User-friendliness

Demarcation Lights

To help passengers easily identify the boundary line between steps, green fluorescent lights are mounted under the steps. These are located at the upper and lower landings.
⇒ User's safety



Demarcation Lights

Lights Under Handrail

Illuminates all over the escalator from lights under handrail.
The both fluorescent and LED type are available.

Light Under Handrail

Automatic Start/Stop Operation

The sensors located near the landings detect approaching passengers and automatically start operation. The operation is stopped after all the passengers have exited. You can choose either 3D Sensor Type or Pole Type.
⇒ Less power consumption
⇒ Eco-conscious

3D Sensor Type for S and F Type

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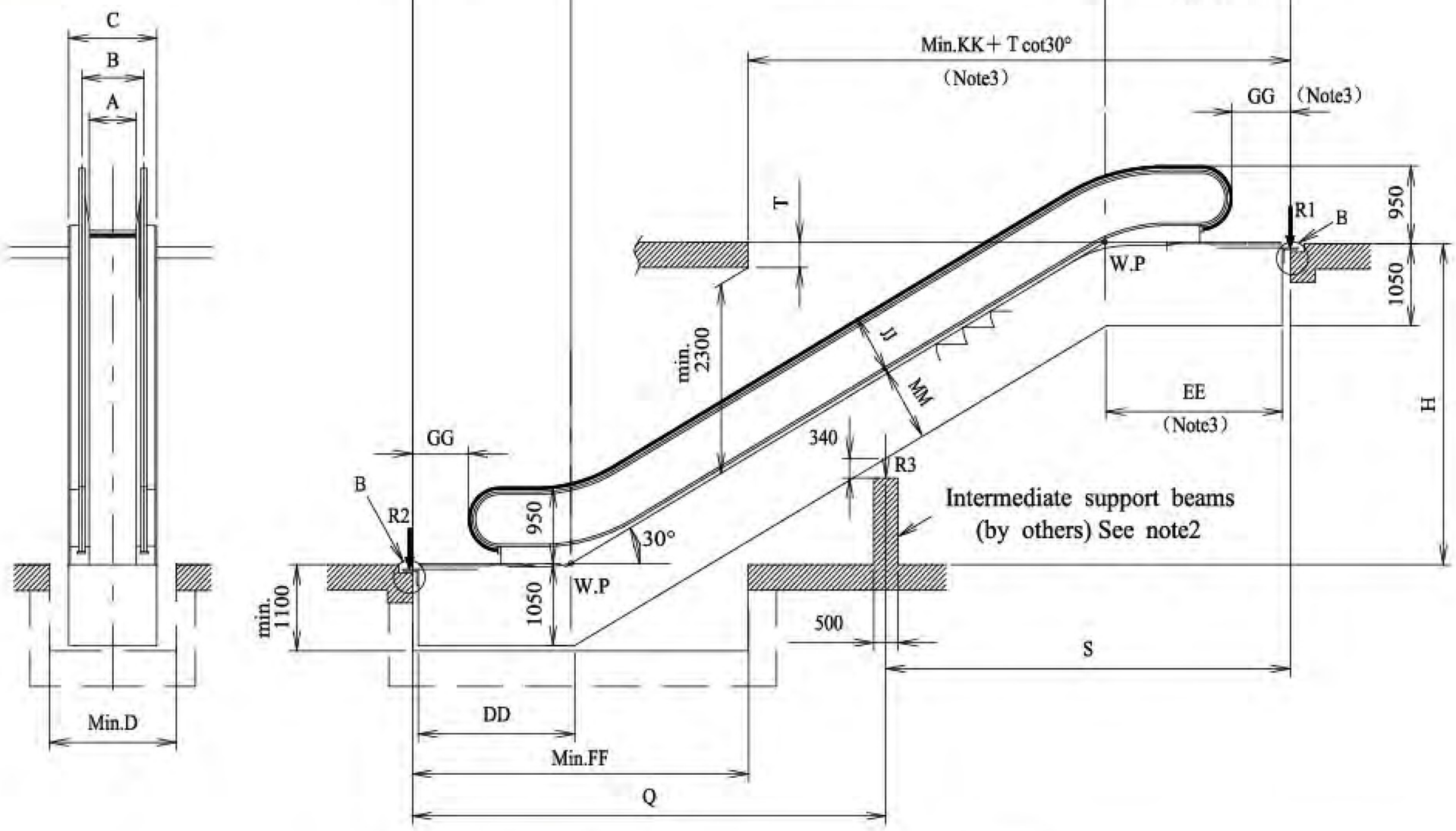
Layout of Escalator Slim & Frame Type for 30-degree (H≦9500)



CONCRETE SUPPORT BEAM

IRON FRAME SUPPORT BEAM

TYPE	AA	BB	CC	DD	EE	FF	GG	JJ	KK	MM	H	Flat steps
S&F	2197	2568	H×1.732	2168	2517	4250	345	850	6555	915	H≦6000	2
S&F	2597	2968	H×1.732	2568	2917	4650	345	850	6955	915	H≦9500	3

Reactions (KN)

A	600	800	1000
B	838	1038	1238
C	1150	1350	1550
D	1250	1450	1650
F	15500	15000	15000

A		R1	R2	R3
600	L≤F	3.66L+12.09-14.97/L	3.66L+2.83+14.97/L	
	L>F	3.66S+12.09-19.07/S	3.66Q+2.83-4.74/Q	3.66(S+Q)+19.70/S+4.74/Q
800	L≤F	4.31L+12.50-15.02/L	4.31L+3.19+15.02/L	
	L>F	4.31S+12.50-20.35/S	4.31Q+3.19-5.34/Q	4.31(S+Q)+20.35/S+5.34/Q
1000	L≤F	4.97L+12.92-15.09/L	4.97L+3.55+15.09/L	
	L>F	4.97S+12.92-21.03/S	4.97Q+3.55-5.94/Q	4.97(S+Q)+21.03/S+5.94/Q

Note: L is in meters.

Notes:

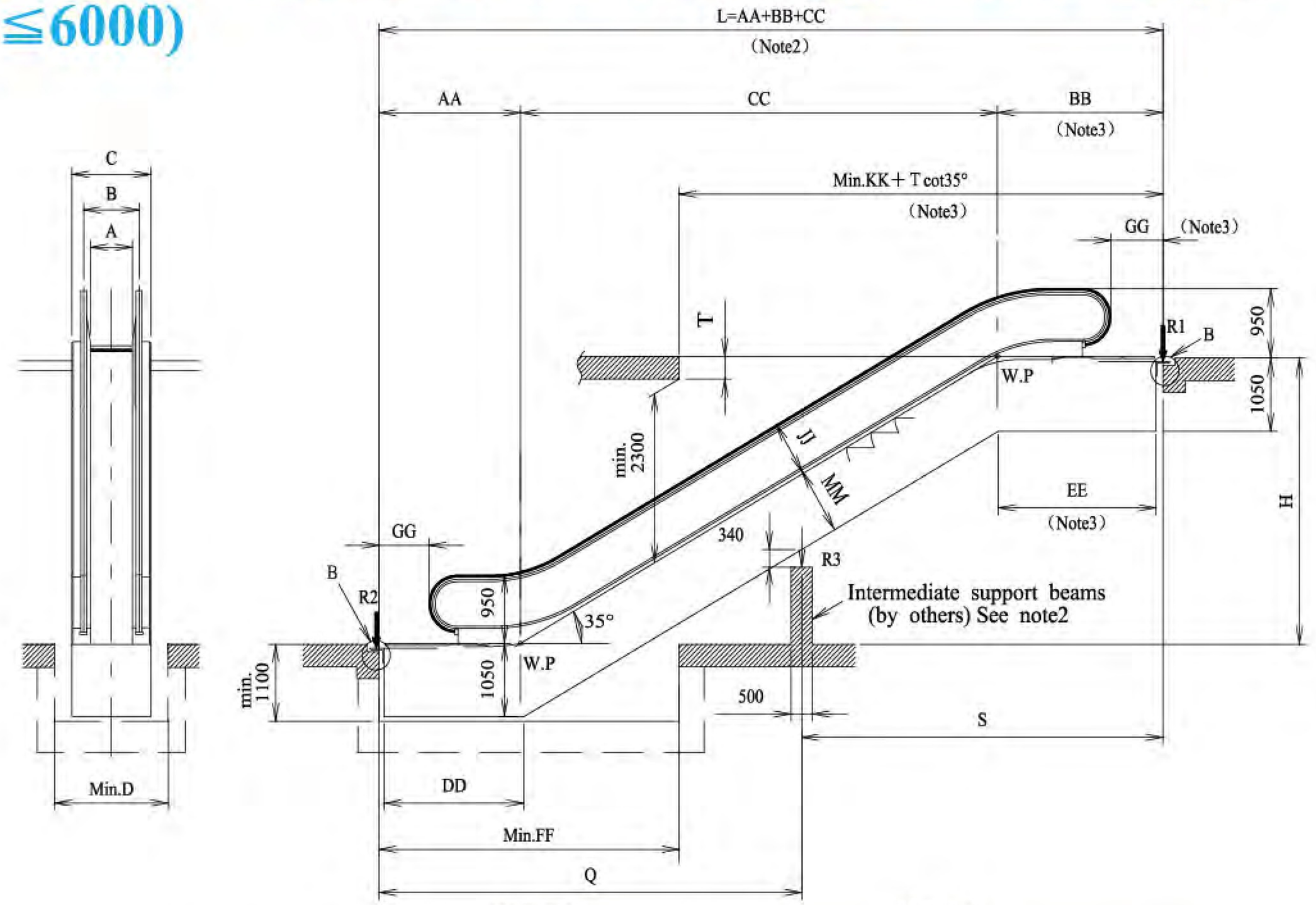
1)The escalator corresponds to European standard EN-115.

2)If L>F,an intermediate support shall be required.

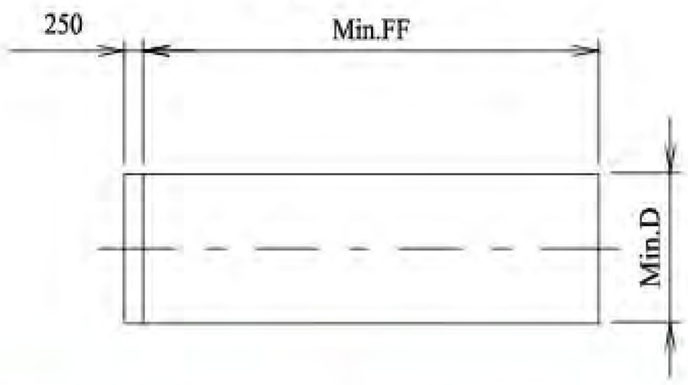
3)Add 500mm in case of A=600.
Add 300mm in case of A=800 and 1000 with energy saving system.
In case of A=1000 and for indoor use,it is no need.

4)For outdoor ,depth of upper truss is 1100mm, depth of lower pit is 1150mm.

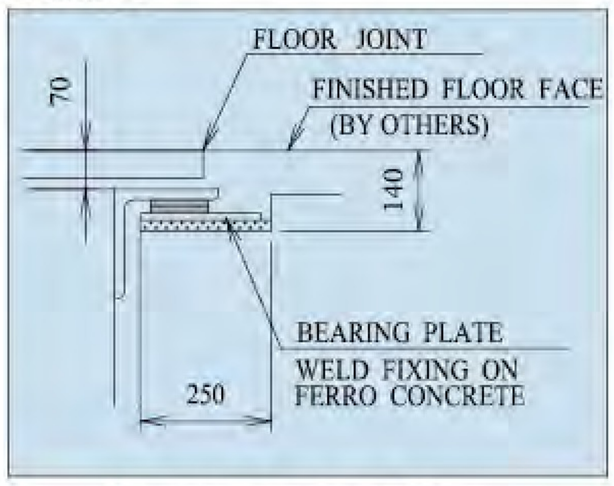
Layout of Escalator Slim & Frame Type for 35-degree (H≦6000)



Lower pit opening
(by others)

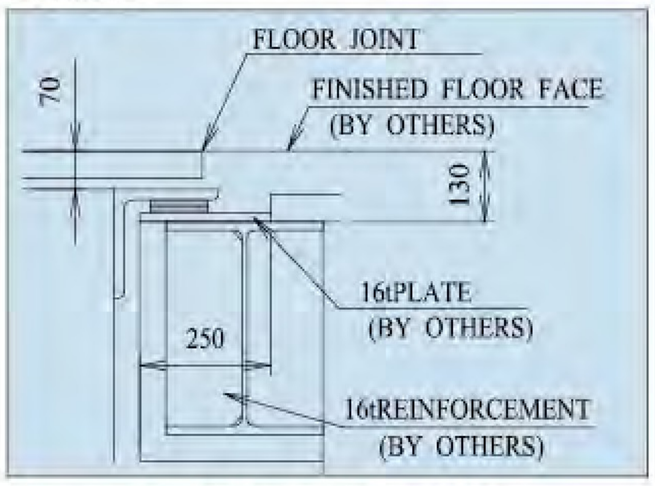


Detail B



CONCRETE SUPPORT BEAM

Detail B



IRON FRAME SUPPORT BEAM

TYPE	AA	BB	CC	DD	EE	FF	GG	JJ	KK	MM	H	Flat steps
S&F	2241	2664	H×1.428	2332	2493	4100	345	830	5950	935	H≦6000	2

Reactions (KN)

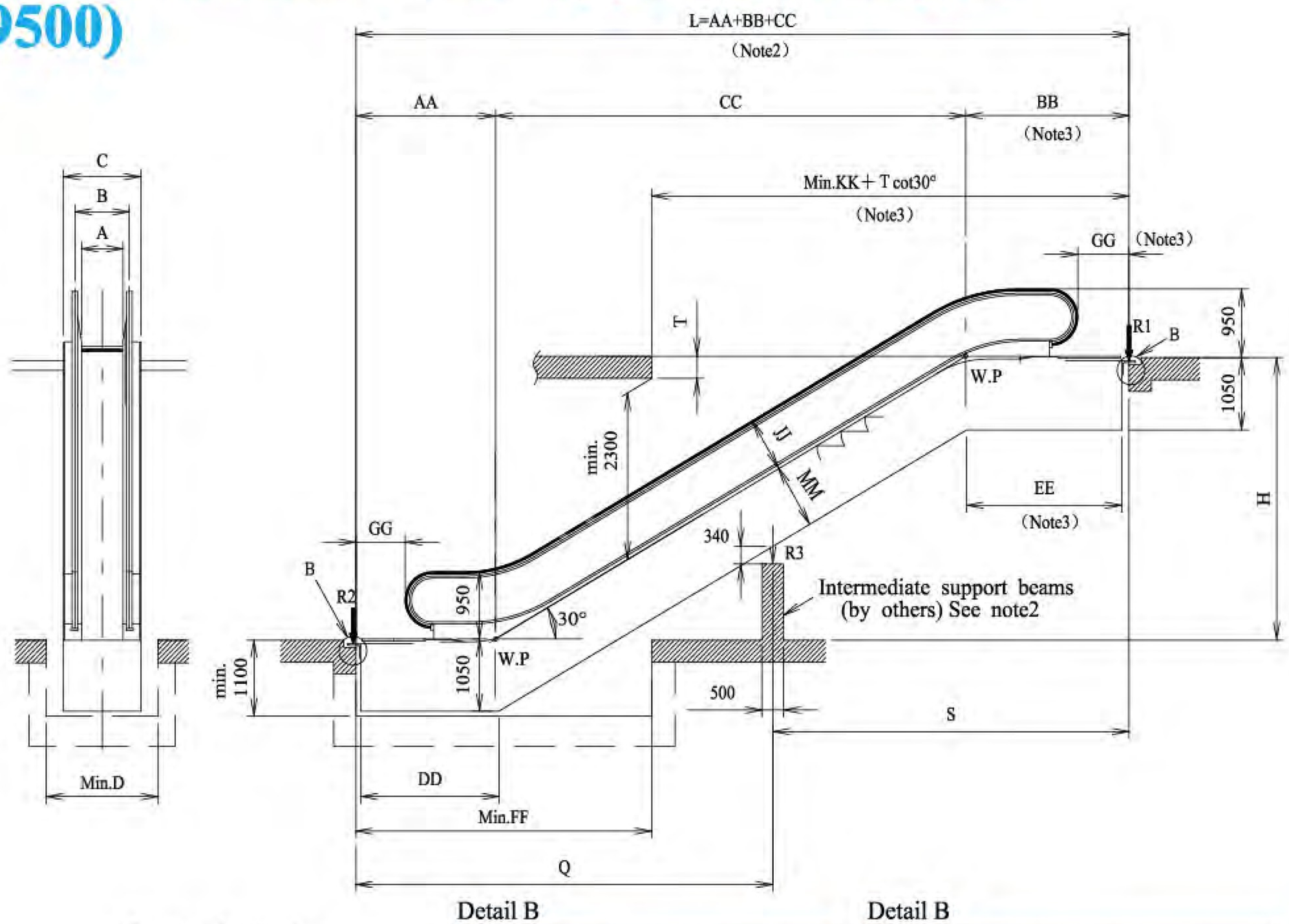
A	600	800	1000
B	838	1038	1238
C	1150	1350	1550
D	1250	1450	1650
F	15500	15000	15000

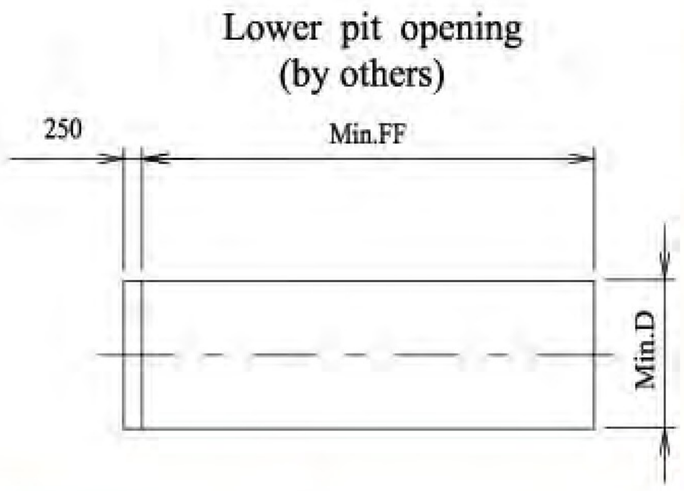
A		R1	R2	R3
600	L≤F	3.75L+11.63-15.60/L	3.75L+2.10+15.29/L	
	L>F	3.75S+11.63-18.85/S	3.75Q+2.10-3.56/Q	3.75(S+Q)+18.85/S+3.56/Q
800	L≤F	4.40L+12.15-15.51/L	4.40L+2.47+15.51/L	
	L>F	4.40S+12.15-19.70/S	4.40Q+2.47-4.19/Q	4.40(S+Q)+19.70/S+4.19/Q
1000	L≤F	5.08L+12.51-15.60/L	5.08L+2.74+15.60/L	
	L>F	5.08S+12.51-20.25/S	5.08Q+2.74-4.65/Q	5.08(S+Q)+20.25/S+4.65/Q

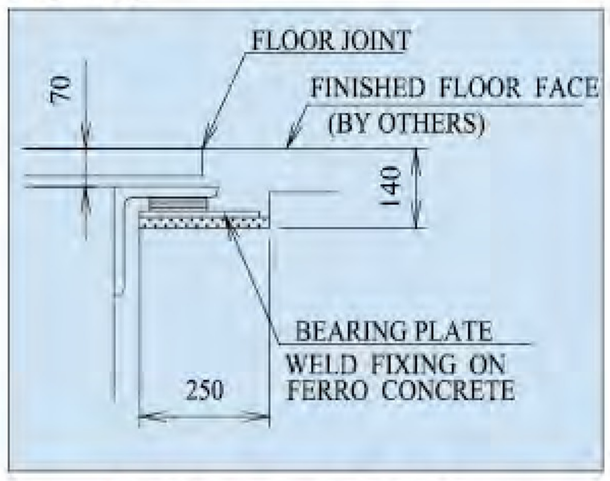
Note: L is in meters.

Notes:
1)The escalator corresponds to European standard EN-115.
2)If L>F,an intermediate support shall be required.
3)Add 500mm in case of A=600.
Add 300mm in case of A=800 and 1000 with energy saving system.
In case of A=1000 and for indoor use,it is no need.
4)For outdoor,depth of upper truss is 1100mm, depth of lower pit is 1150mm.

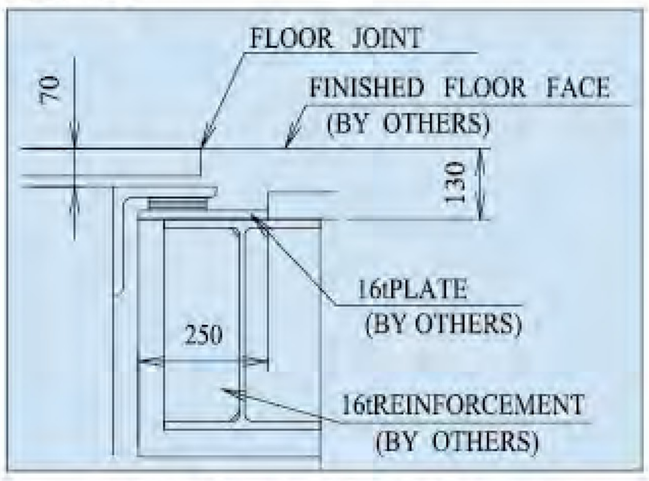
Layout of Escalator Panel Type for 30-degree (H≦9500)







CONCRETE SUPPORT BEAM



IRON FRAME SUPPORT BEAM

TYPE	AA	BB	CC	DD	EE	FF	GG	JJ	KK	MM	H	Flat steps
P	2197	2568	H×1.732	2168	2517	4250	662	800	6555	915	H≦6000	2
P	2597	2968	H×1.732	2568	2917	4650	662	800	6955	915	H≦9500	3

Reactions (KN)

A	600	800	1000
B	838	1038	1238
C	1150	1350	1550
D	1250	1450	1650
F	15500	15000	15000

A		R1	R2	R3
600	L≤F	3.66L+12.09-14.97/L	3.66L+2.83+14.97/L	
	L>F	3.66S+12.09-19.07/S	3.66Q+2.83-4.74/Q	3.66(S+Q)+19.70/S+4.74/Q
800	L≤F	4.31L+12.50-15.02/L	4.31L+3.19+15.02/L	
	L>F	4.31S+12.50-20.35/S	4.31Q+3.19-5.34/Q	4.31(S+Q)+20.35/S+5.34/Q
1000	L≤F	4.97L+12.92-15.09/L	4.97L+3.55+15.09/L	
	L>F	4.97S+12.92-21.03/S	4.97Q+3.55-5.94/Q	4.97(S+Q)+21.03/S+5.94/Q

Note: L is in meters.

Notes:

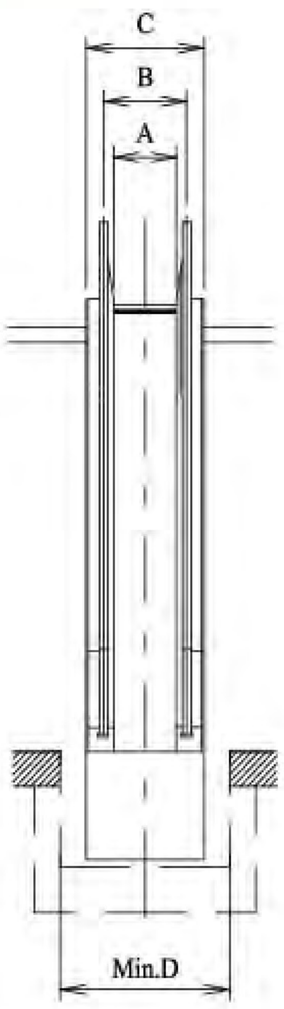
1)The escalator corresponds to European standard EN-115.

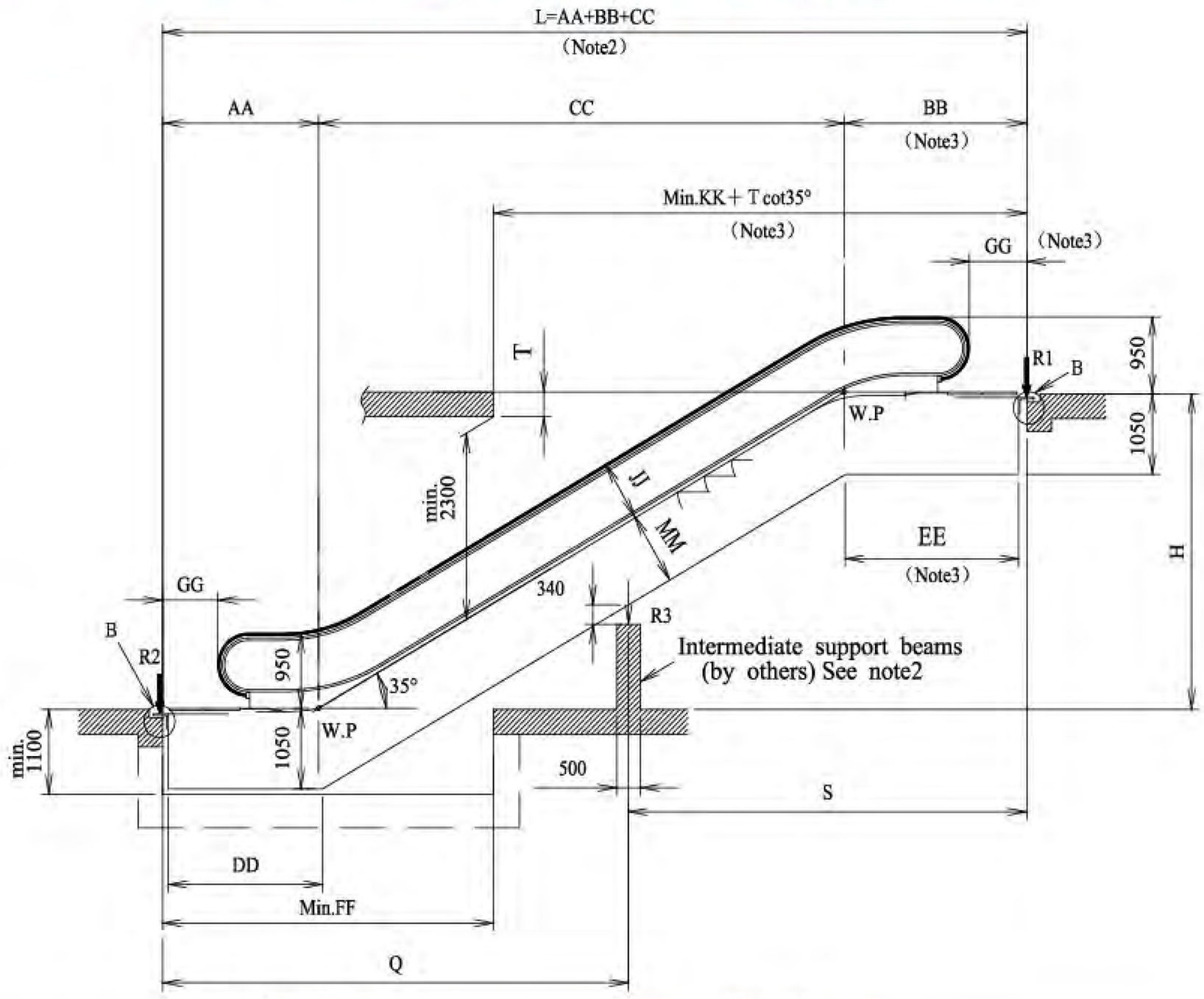
2)If L>F,an intermediate support shall be required.

3)Add 500mm in case of A=600.
Add 300mm in case of A=800 and 1000 with energy saving system.
In case of A=1000 and for indoor use,it is no need.

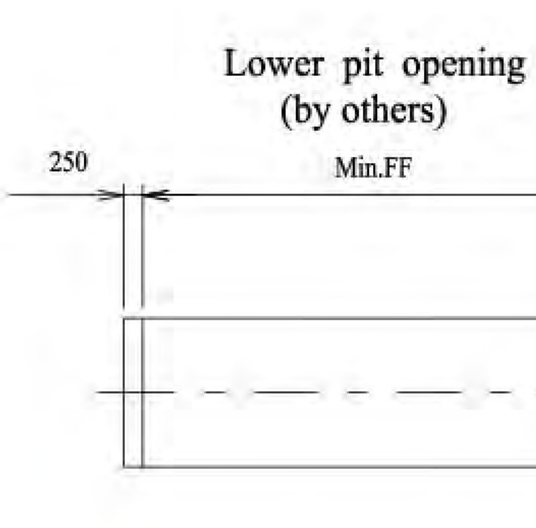
4)For outdoor ,depth of upper truss is 1100mm, depth of lower pit is 1150mm.

Layout of Escalator Panel Type for 35-degree (H≦6000)

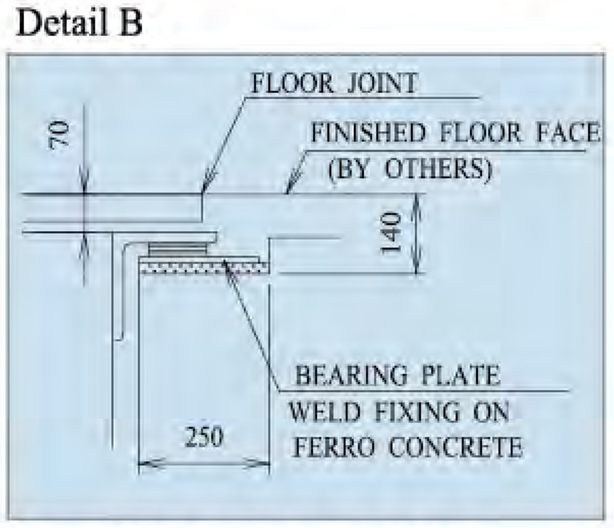




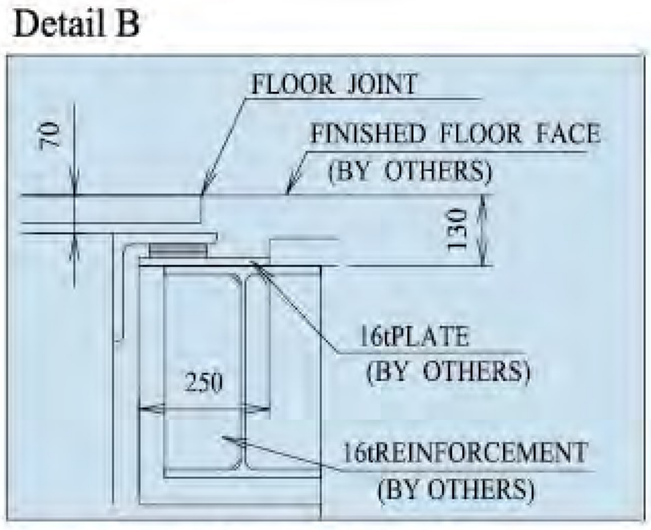
Detail B



Detail B



CONCRETE SUPPORT BEAM



IRON FRAME SUPPORT BEAM

TYPE	AA	BB	CC	DD	EE	FF	GG	JJ	KK	MM	H	Flat steps
P	2241	2664	H×1.428	2332	2493	4100	662	780	5950	935	H≦6000	2

Reactions (KN)

A	600	800	1000
B	838	1038	1238
C	1150	1350	1550
D	1250	1450	1650
F	15500	15000	15000

A		R1	R2	R3
600	L≤F	3.75L+11.63-15.60/L	3.75L+2.10+15.29/L	
	L>F	3.75S+11.63-18.85/S	3.75Q+2.10-3.56/Q	3.75(S+Q)+18.85/S+3.56/Q
800	L≤F	4.40L+12.15-15.51/L	4.40L+2.47+15.51/L	
	L>F	4.40S+12.15-19.70/S	4.40Q+2.47-4.19/Q	4.40(S+Q)+19.70/S+4.19/Q
1000	L≤F	5.08L+12.51-15.60/L	5.08L+2.74+15.60/L	
	L>F	5.08S+12.51-20.25/S	5.08Q+2.74-4.65/Q	5.08(S+Q)+20.25/S+4.65/Q

Note: L is in meters.

Notes:

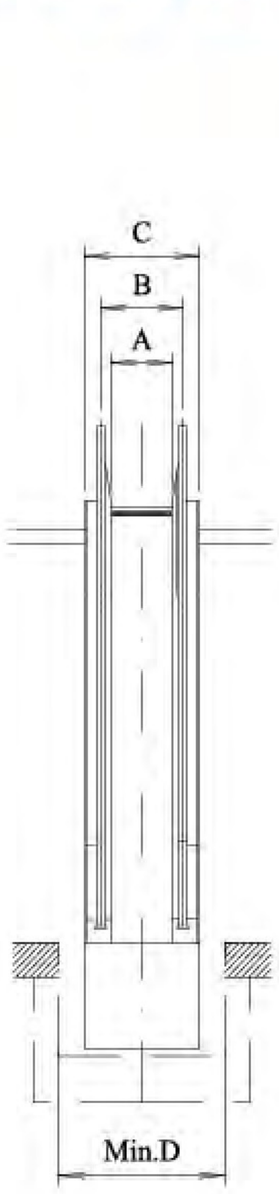
1)The escalator corresponds to European standard EN-115.

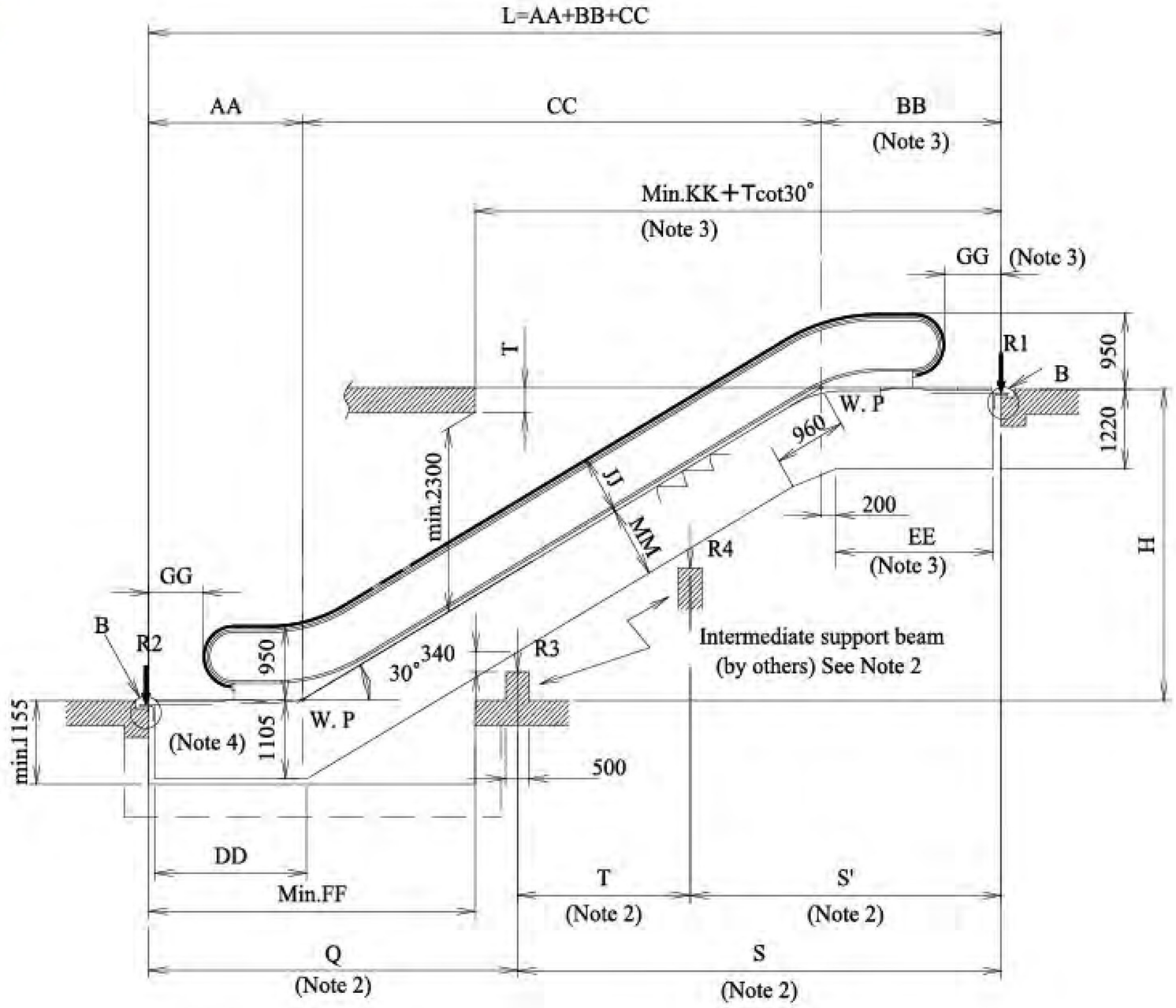
2)If L>F,an intermediate support shall be required.

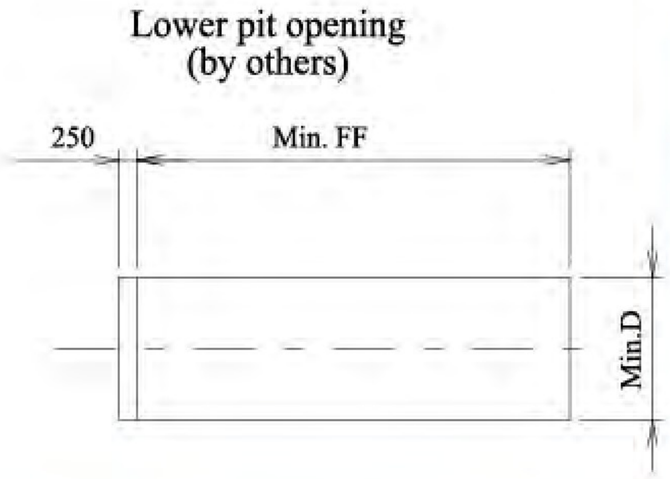
3)Add 500mm in case of A=600.
Add 300mm in case of A=800 and 1000 with energy saving system.
In case of A=1000 and for indoor use,it is no need.

4)For outdoor ,depth of upper truss is 1100mm, depth of lower pit is 1150mm.

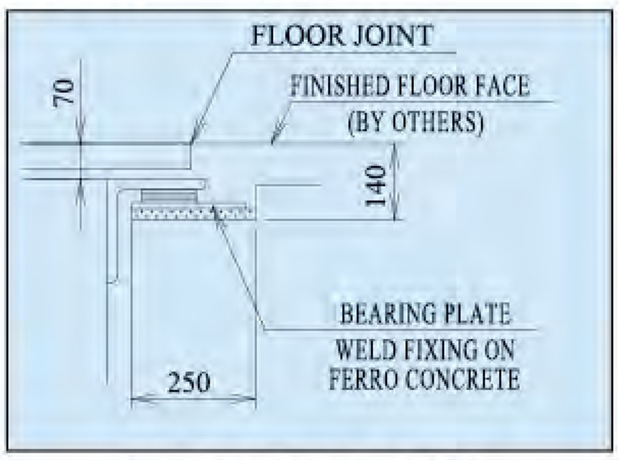
Layout of Escalator Frame & Panel Type for 30-degree (9500<H≦14000)





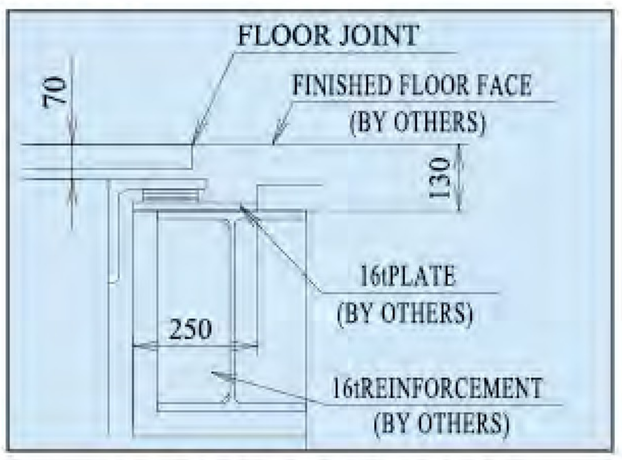


Detail B



CONCRETE SUPPORT BEAM

Detail B



IRON FRAME SUPPORT BEAM

TYPE	AA	BB	CC	DD	EE	FF	GG	JJ	KK	MM	H	Flat steps
F	3015	3435	H x 1.732	2881	3185	5045	780	850	7420	915	9500<H≦14000	3
P							847	800				

Model	S600	S800		S1000
A	600	800		1000
		H≦12000	H >12000	
B	838	1038	1080	1280
C	1150	1350	1410	1610
D	1250	1450	1510	1710

Notes:

1) The escalator corresponds to European standard EN-115.

2) Q,S,S' and T shall not exceed 11000mm.

3) Add 500mm in case of A=600.
Add 300mm in case of A=800 and 1000 with energy saving system.
In case of A=1000 and for indoor use, it is no need.

4) For outdoor, Lower pit depth is 1205mm.

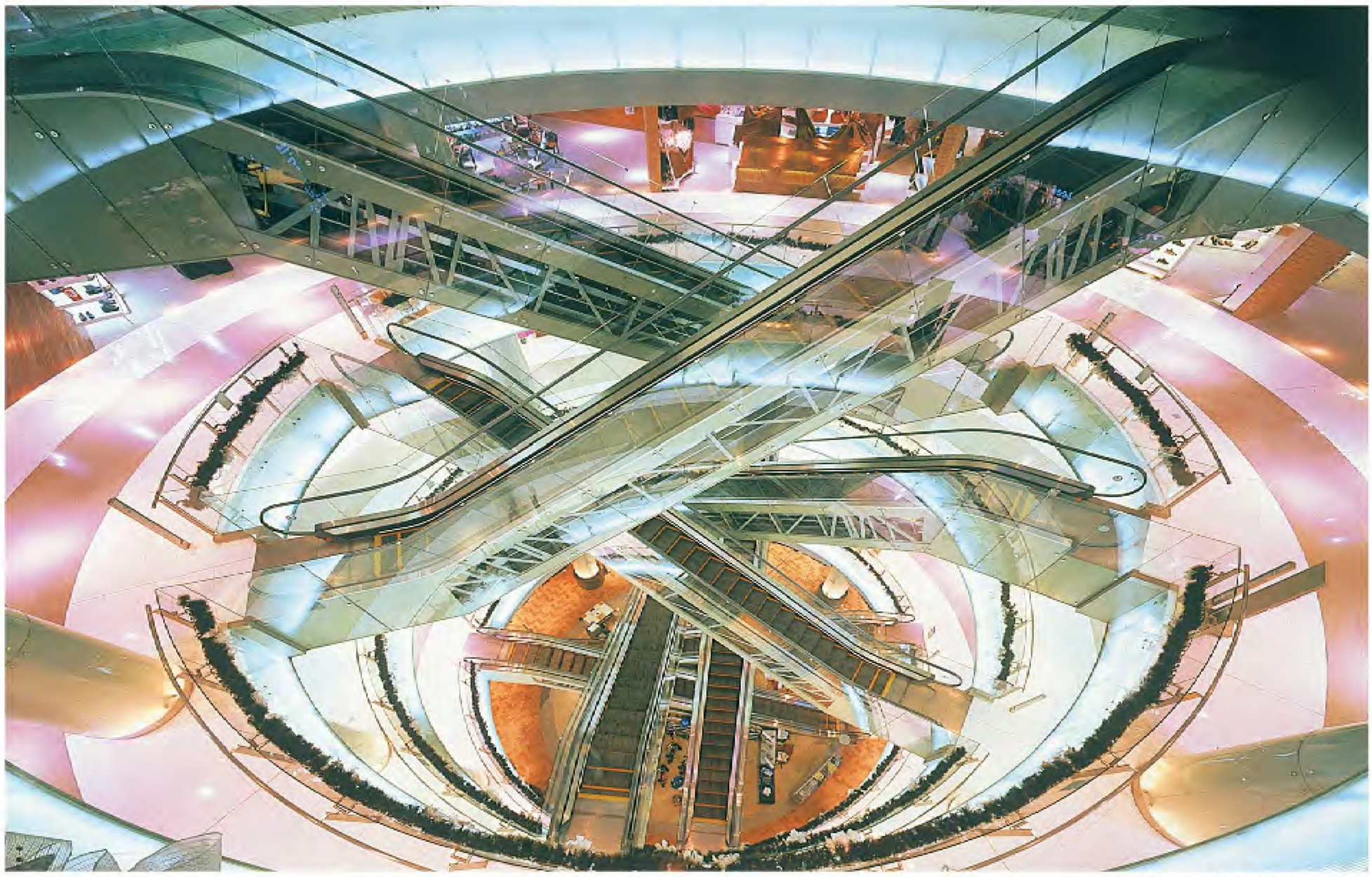
Reactions (KN)

Model	A	Intermediate supports	R1	R2	R3	R4
S600	600	1	4.42S+15.28-27.87/S	4.42Q+6.50-12.88/Q	4.42(S+Q)+27.87/S+12.88/Q	
		2	4.42S'+15.28-27.87/S'	4.42Q+6.50-12.88/Q	4.42(Q+T)+12.88/Q	4.42(S'+T)+27.87/S'
S800	800	1	5.11S+15.22-27.11/S	5.11Q+6.94-13.76/Q	5.11(S+Q)+27.11/S+13.76/Q	
		2	5.11S'+15.22-27.11/S'	5.11Q+6.94-13.76/Q	5.11(Q+T)+13.76/Q	5.11(S'+T)+27.11/S'
S1000	1000	1	5.81S+20.52-32.69/S	5.81Q+7.39 - 14.63/Q	5.81(S+Q)+32.69/S+14.63/Q	
		2	5.81S'+20.52-32.69/S'	5.81Q+7.39 - 14.63/Q	5.81(Q+T)+14.63/Q	5.81(S'+T)+32.69/S'

Notes:

5) Q,S,S' and T are in meters.

6) In case that more than two intermediate supports for truss are required, please consult with us.



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Taipei,Taiwan

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Buenos Aires, Argentina

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Atlantic Terminal
New York, USA

Chonnam National University Hwasoon Hospital
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