OPTIONS AND PLANNING DIMENSIONS

KONE ECO3000® Escalators

KONE ECO3000 escalator product range

Reliability Now and for the Future

Well designed and manufactured escalators are a must for today's highly demanding public areas. They are key to ensuring the smooth, efficient and safe flow of people traveling within a building's environment.

KONE prides itself on delivering the "low risk" option to customers. We offer "peace of mind" in terms of product design, customer support and project management, combined with the highest levels of efficiency and safety during the installation phase.

The versatile ECO3000 escalator range is ideal for new installations while also providing one of the best small footprint options for customers looking for a replacement escalator solution.

The KONE ECO3000 delivers a "no compromise," high quality, durable escalator that operates smoothly and quietly, providing customers with increased longevity and low life-cycle costs. Reliability is what's built in.

As a leading manufacturer of energy-saving solutions, KONE's innovative design, performance and service standards have been proven in all types of demanding escalator applications.

ECO3000 escalator solutions are based on superior technology and decades of refined expertise.

The ECO3000 product range incorporates two specific models:

- ECO3000 escalator
- ECO3000 autowalk

Each one is specifically designed to meet the exact demands and needs of the market sector, whether it's a low-rise retail escalator you are looking for, or an airport or stadium application.

ECO3000 escalator – the perfect retail solution

The KONE ECO3000 is a commercial escalator targeted primarily towards the retail segment – supermarkets, hypermarkets, department stores and shopping centers. Here it is part of the total KONE solution offering together with other KONE products such as:

- Commercial autowalks --------e.g. KONE ECO3000 autowalk
- Passenger elevators ----------e.g. KONE EcoSpace™, KONE MonoSpace®
- Service elevators ----------e.g. KONE EcoSpace, KONE MonoSpace
- Scenic elevators ----------based on KONE MonoSpace or KONE MonoSpace Special

Secondary focus areas for the KONE ECO3000 include airports, hotels, hospitals and offices.

It is designed, from both a technical and visual point of view, to fulfill the main customer requirements of the target segments:

- Cost competitiveness
- High quality in terms of technical performance and visual appearance
- Large standard offering with some engineering flexibility
- Elegant and modern design
- Low energy consumption

Overview of technical specifications

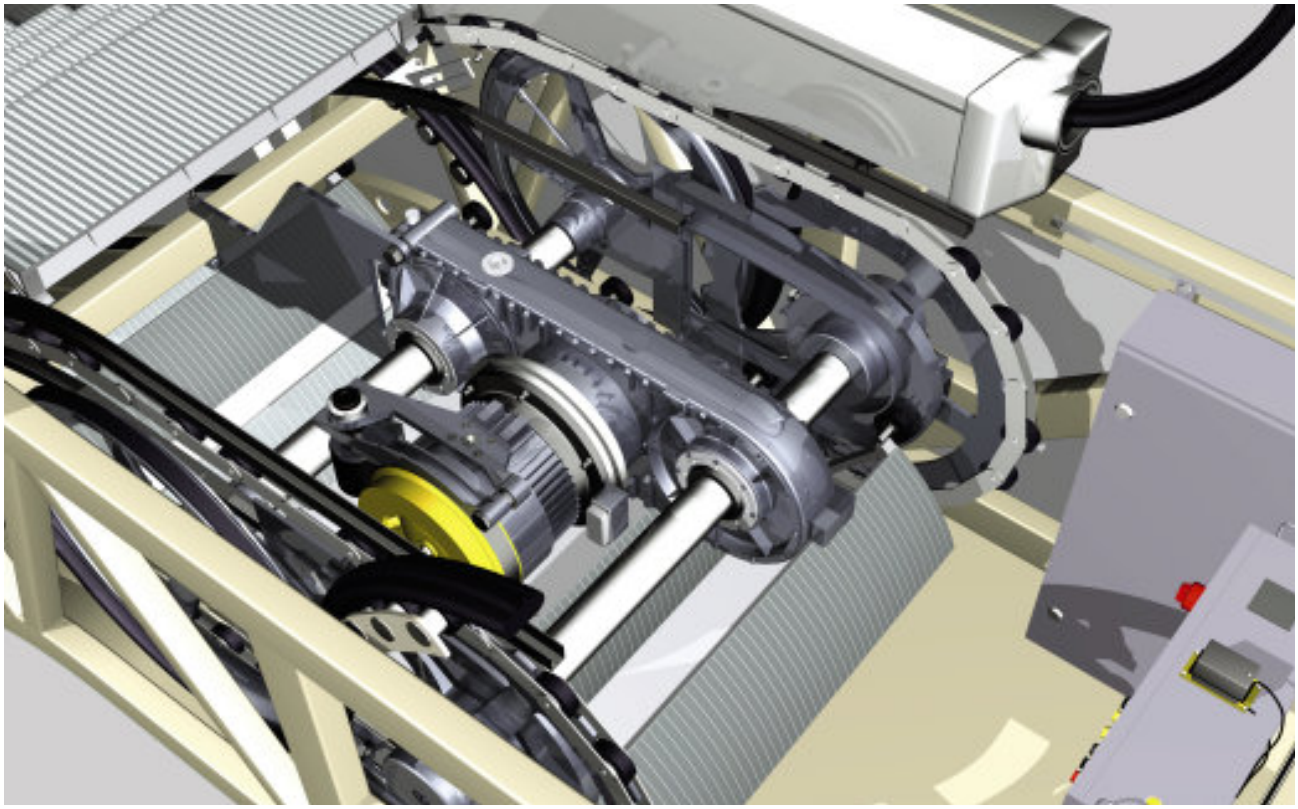
KONE ECO3000 basic data		
	ECO3000 (1.0)	ECO3000 (1.5)
Inclination	30°	30°
Horizontal steps	2	2 or 3
Transition radii (top/bottom)	1.0 / 1.0	1.5 / 1.0
Maximum rise	23.06 ft. (7.03 m)	49.2 ft. (15 m)
Operational environment	Indoor, semi-outdoor	Indoor, semi-outdoor, outdoor
Step width	24 in. (600 mm), 32 in. (800 mm), 40 in. (1000 mm)	24 in. (600 mm), 32 in. (800 mm), 40 in. (1000 mm)
Balustrade type	Glass, sandwich panels	Glass, sandwich panels, solid inclined
Balustrade height	40 in. (1000 mm)	40 in. (1000 mm)
Speed	100 fpm (0.5 m/s)	100 fpm (0.5 m/s)
Step chains	Inside roller chains (Ø 75 x 1 in. [23.5 mm])	Inside roller chains (Ø 75 x 1 in. [23.5 mm])
Duty cycle	Up to 16 hours/day	Up to 16 hours/day
Typical service life	100,000 hours	100,000 hours

Eco-efficiency

KONE firmly believes that sustainable buildings are our future. We are committed to helping customers achieve their environmental objectives by providing environmentally responsible products and services.

Escalators and elevators account for 2–10% of a building's entire energy consumption. KONE Eco-efficient™ solutions not only save energy and reduce the carbon footprint, they also improve performance, safety and comfort.

- The patented KONE EcoDrive™ is chainless (even for the handrail) and utilizes a 96% efficient planetary reduction gear, thereby improving operating efficiency, which in turn reduces energy consumption and environmental impact.
- Standby speed operation, using a frequency inverter, reduces the escalator speed when no passengers are traveling, thus further reducing energy consumption and increasing equipment lifetime.
- The EcoDrive only requires an oil change after 30,000 operating hours (twice as long as conventional drive systems). This reduces downtime and oil disposal costs, and increases availability. And compared to conventional drives, oil leaks and their associated smells belong to the past.
- The optional lubrication-free step chain means no oil, a cleaner escalator and environment, reduced fire hazard, simpler cleaning and easier maintenance.
- Optional LED decorative lighting systems use 90% less energy and last up to 6 times longer than fluorescent tubes.
- Escalator packaging and timber protection are examples of our commitment to using wood taken from sustainable forests.
- At the end of March 2008, all of our escalator production operations were certified according to the ISO 14001 standard.
- EcoDrive results in carbon footprint reduction: 1014 lbs. (460 kg) CO_2/year**
- Average oil savings achieved through lubrication-free step chain
  - Commercial escalator: .26-.52 gallons/month (1-2 liters/month)
  - Transit escalator: 1.3 gallons/month (5 liters/month)
- Digital EcoStart® aids in energy management
  - Reduces energy when an escalator is operating with no load or is lightly loaded while maintaining a constant speed
  - EcoStart has enhanced electronic motor protection to protect an escalator motor from damaging power fluctuations
  - EcoStart is CSA and CE certified
  - Provides a soft-start functionality for smooth acceleration until the motor reaches its normal operating speed
  - Energy savings: up to 40%



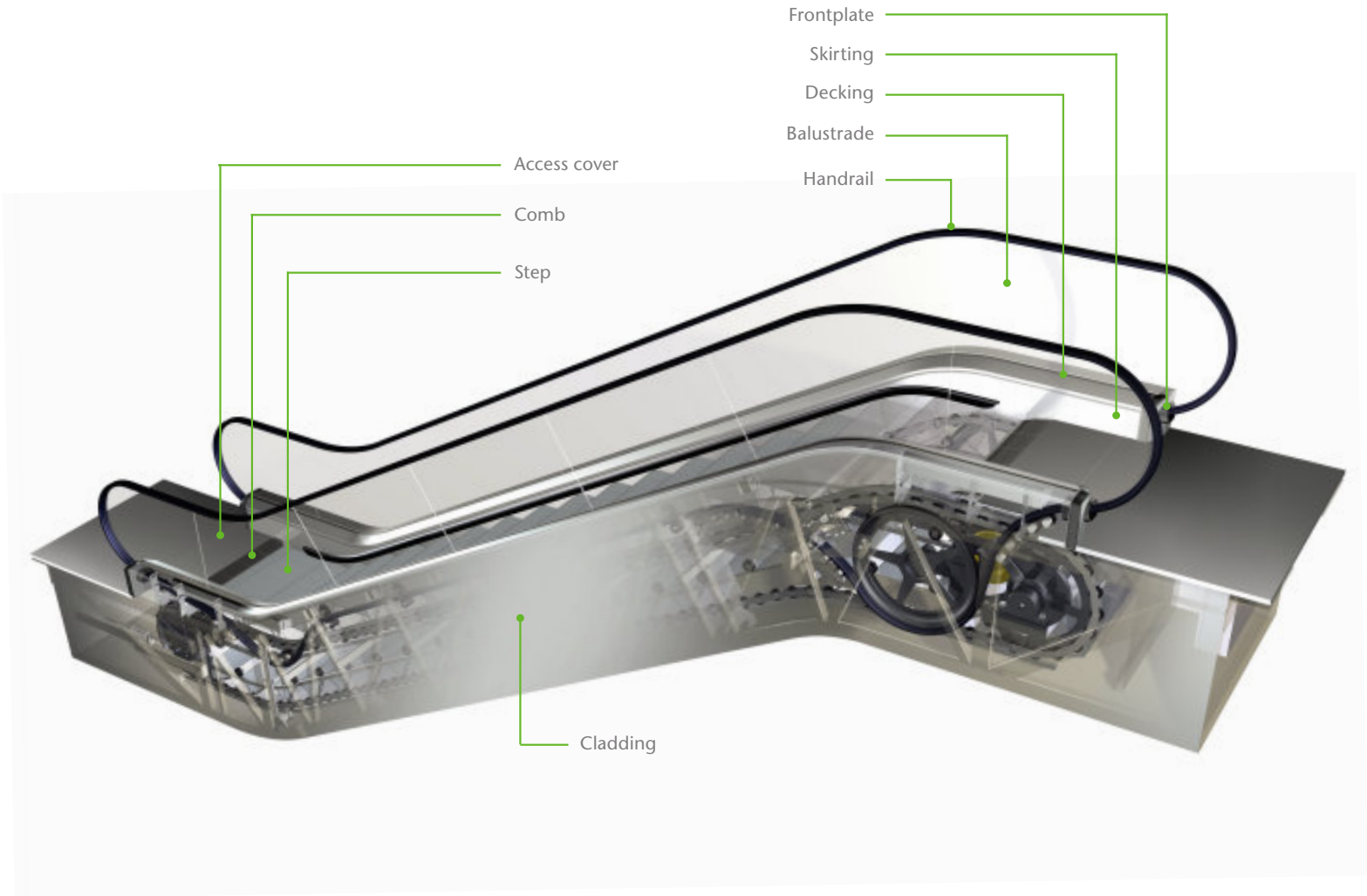
The heart of the escalator is the innovative KONE EcoDrive, which provides increased reliability, reduced energy consumption, extended service intervals and a longer operating life.

***Emission coefficient equal to 17 oz. (485 g) CO_2/kWh based on the EU electrical energy mix.*

Safety options

The standard safety features of the KONE ECO3000 escalator according to the ASME A17.1 2010 safety code are the following:

- Emergency stop buttons for passengers located at the escalator top and bottom newel ends on the right-hand side
- Broken step-chain (chain tension) switches in the return station which stop the escalator in case of failure of the step chain
- Handrail inlet switches with contacts at the handrail inlets into the balustrade heads
- Combplate impact device switches which stop the escalator in case objects become trapped between the comb teeth and the moving step band
- Level step device, which stops the escalator if a step is not level by more than 0.2 in. (5 mm) before it enters the comb
- Step protection covers at the top and bottom
- Step band locking device
- Speed sensor system, which electronically monitors the motor for over/under speeds and step band reversal
- Main switch with thermal and magnetic release
- Stop switches for engineers' use within upper and lower end pits
- Skirt deflector brushes
- Access cover contacts
- Handrail speed monitor
- Missing step monitor

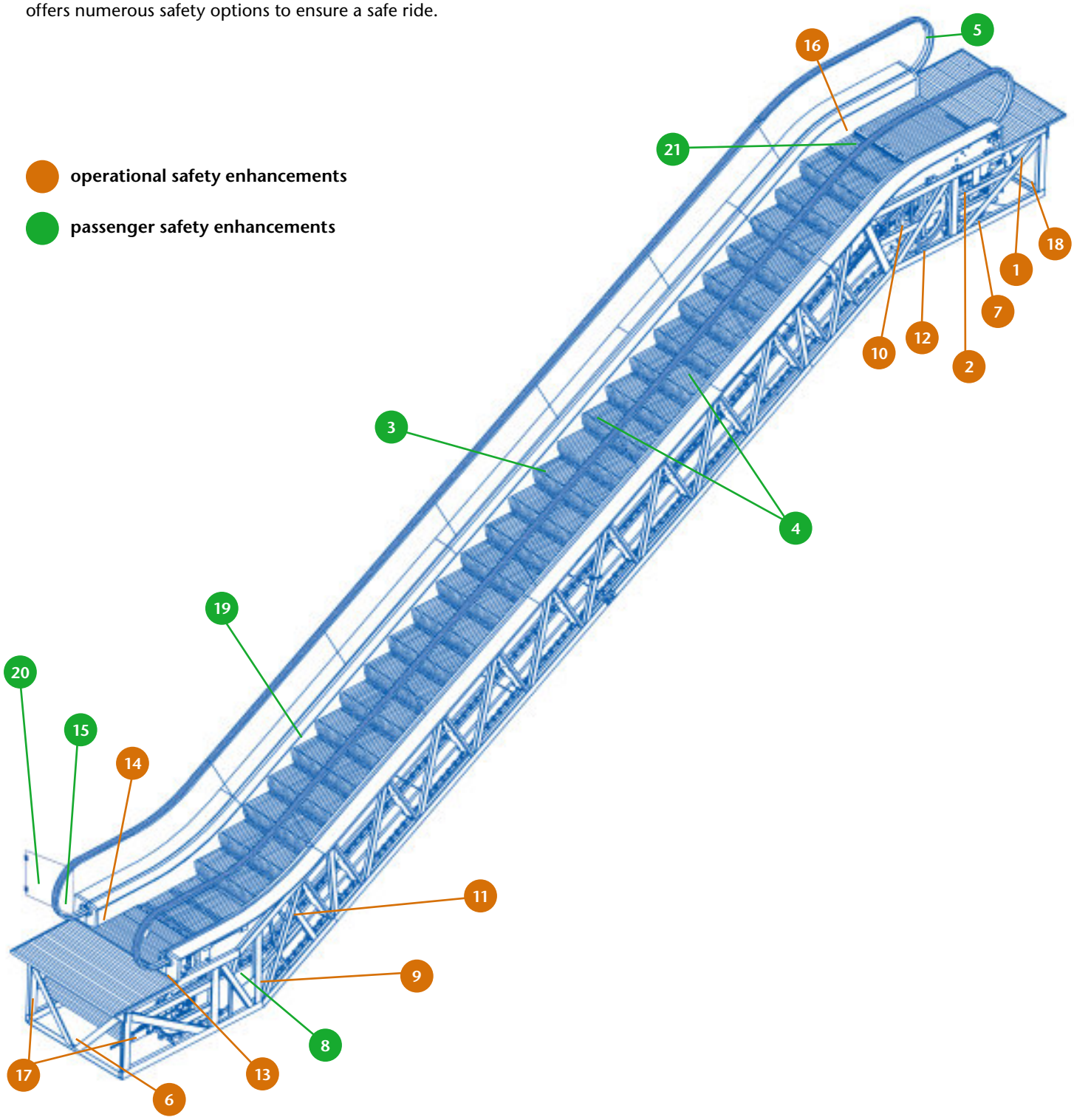


KONE ECO3000 is Safer by Design

With the KONE ECO3000, safety and reliability are built in. All major components undergo rigorous testing to assure proper function and operation. The KONE ECO3000 meets or exceeds worldwide escalator safety code requirements, including ASME, EN115 and B44. The ECO3000 solution offers numerous safety options to ensure a safe ride.

operational safety enhancements

passenger safety enhancements



1 Control & annunciator:
This microprocessor controller is designed to work in conjunction with other safety devices to provide correct information processing and proper escalator control. Escalator faults are identified by the control and illuminated in a display on the control cabinet.

2 Escalator brake:
A permanent-magnet ceramic brake is designed to gradually stop the escalator, and hold it stationary under full load. The closed-loop brake circuit is designed to meet current ASME Code deceleration rate requirements and operate in conjunction with a velocity feedback encoder and microprocessor controller.

3 Skirt gap and stiffness:
Installation of skirt stiffening channels is designed to provide uniform clearance between the step edge and skirt, reducing the possibility of entrapment between the step and skirt.

4 Demarcation inserts:
Installation of plastic demarcation inserts along the side and rear of step warn passengers of possible foot entrapment points and will not wear off after time like paint.

5 Emergency stop buttons and alarm:
The emergency stop button installed at a 45-degree angle increases accessibility in the event of an emergency.

6 Pit stop switch:
All escalator machine spaces and areas where interior access to the escalator is allowed, are furnished with a stop switch.

7 Reversal stop device:
Protection against accidental or inadvertent reversing of an escalator operating in the UP direction is monitored by a directional feedback encoder. This device, when activated, turns off the motor and activates the brake, bringing the escalator to a smooth stop.

8 Step demarcation lights:
Green fluorescent light fixtures beneath the steps at the landings are designed to signal the passenger that the end of the escalator is near.

9 Step upthrust device:
This device is designed to detect obstructions in the lower curve area, which could cause a step to be elevated, thus impacting the combplate. When this device detects a raised step, it will shut off the motor and activate the brake to stop the escalator.

10 Handrail speed monitoring device:
A Handrail Speed Sensor is designed to measure the variation in speed between the step band and handrail. If speed variation exceeds the standard, the controller will sound an alarm buzzer, turn off power to the motor and activate the brake to stop the escalator.

11 Missing step device:
This device is designed to detect a missing step. When a missing step is detected, power to the motor is turned off and the brake is activated to stop the escalator.

12 Step level device:
This device is designed to detect a step that is about to enter the comb area at a "lower elevation" than the combplate. If a "low step" is detected, the escalator is turned off and the brake is applied to stop the escalator.

13 Handrail entry device:
This device is designed to turn off the motor and activate the brake to stop the escalator when an object is detected entering the handrail inlet area.

14 Comb impact device:
This device is designed to shut off the motor and activate the brake in the event that combplate movement is detected horizontally or vertically.

15 Safety signs:
These signs are designed to caution and provide safety information to the passengers.

16 Skirt obstruction device:
This device is designed to detect obstructions between the skirt and step at the point where the step approaches the upper and/or lower combplate area. This device will shut down the escalator in the case of an entrapment.

17 Broken step-chain device:
Installed on the lower end carriage, this device is designed to detect step-chain breakage or excessive step-chain sag.

18 KONE EcoStart (optional):
This energy performance control is designed to save up to 40% in energy costs, extend motor life and provide a smooth, safe start.

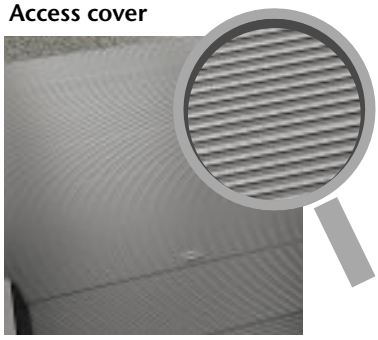
19 Skirt brushes:
These escalator skirt deflector brushes are designed to encourage safe escalator use by providing a subtle indicator to passengers riding near the step's edge.

20 Deck guards:
These plastic barriers are designed to prevent an object and people from getting wedged between the escalator handrail and a wall or another escalator.

21 Yellow comb segments:
These yellow comb segments define the end of a moving escalator step and the stationary aluminum access cover while warning passengers to pick up their feet.

Visual options

Access cover

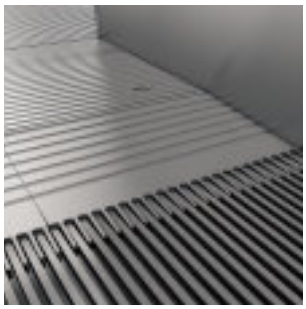


Ribbed aluminium

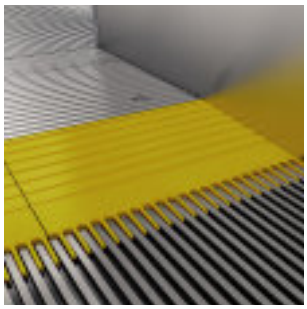
Ribbed aluminium with black painted grooves

Stainless steel

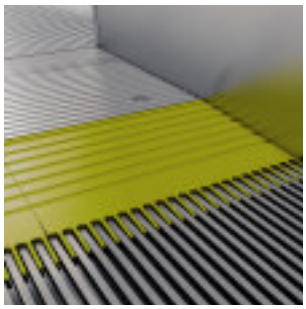
Comb



Aluminium comb segments



Yellow plastic comb segments



Aluminium comb with yellow coating

Frontplate

Grey plastic

Satin polished stainless steel

Balustrade

Clear glass balustrade panels

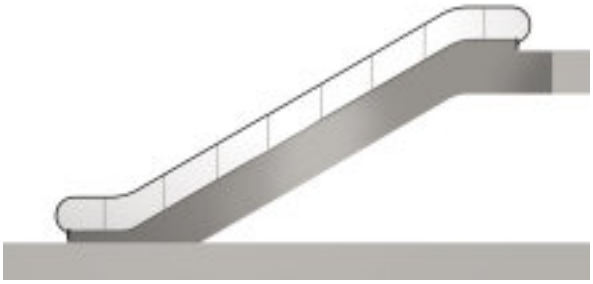
Brushed satin stainless steel sandwich panel balustrade

Balustrade extension

Note: 28 in. (700 mm) extended balustrade is available either at both ends or at the top end only.

Balustrade joints

As standard, joints between glass balustrade panels are arranged perpendicular to the truss.



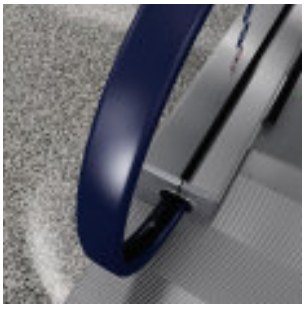
As an option, the inclined panel widths can be equalized with joints arranged perpendicular to the floor.

Handrail

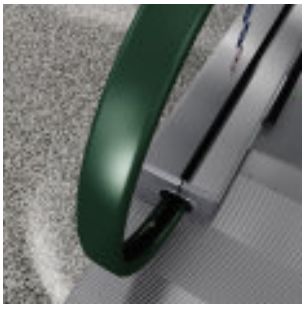
Black

Black with white demarcation inserts

Red

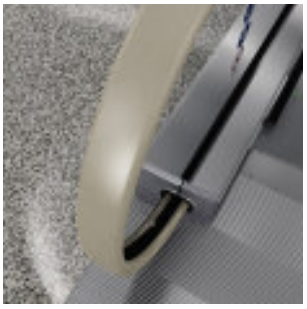


Blue



Green

Brown



Beige

Grey

Decking

Brushed satin stainless steel

Center deck

Skirt

Sheet steel skirt with black anti-friction coating

Brushed satin stainless steel skirt with clear anti-friction coating

Step

Silver aluminium

Black color aluminium with metal color ribs

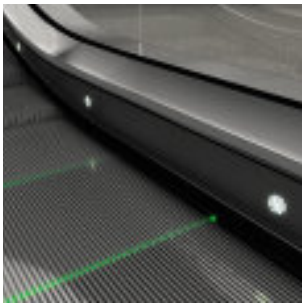
Step demarcation

Yellow painted (RAL1004)

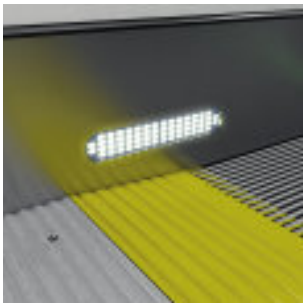
Yellow plastic insert (RAL1023)

Lighting

Continuous LED handrail lighting

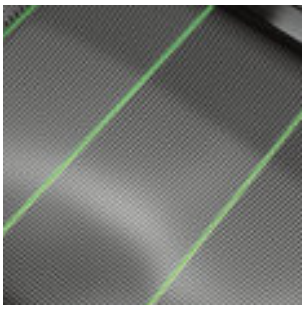


LED skirt spotlighting



LED comb lighting

Traffic lights located in the decking



Under-step demarcation lighting

Horizontal steps

2 horizontal steps

3 horizontal steps

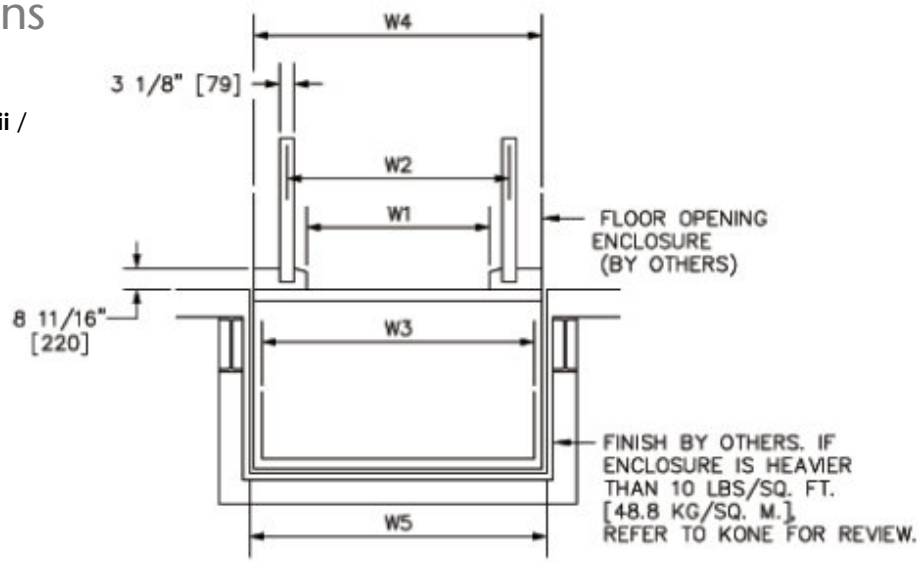
Additional options

Diagnostics display

KONE ECO3000 escalator planning dimensions

Architectural planning data

30° inclination / 1.0 transition radii / 2 horizontal steps at each landing
Code: ASME A17.1 2010

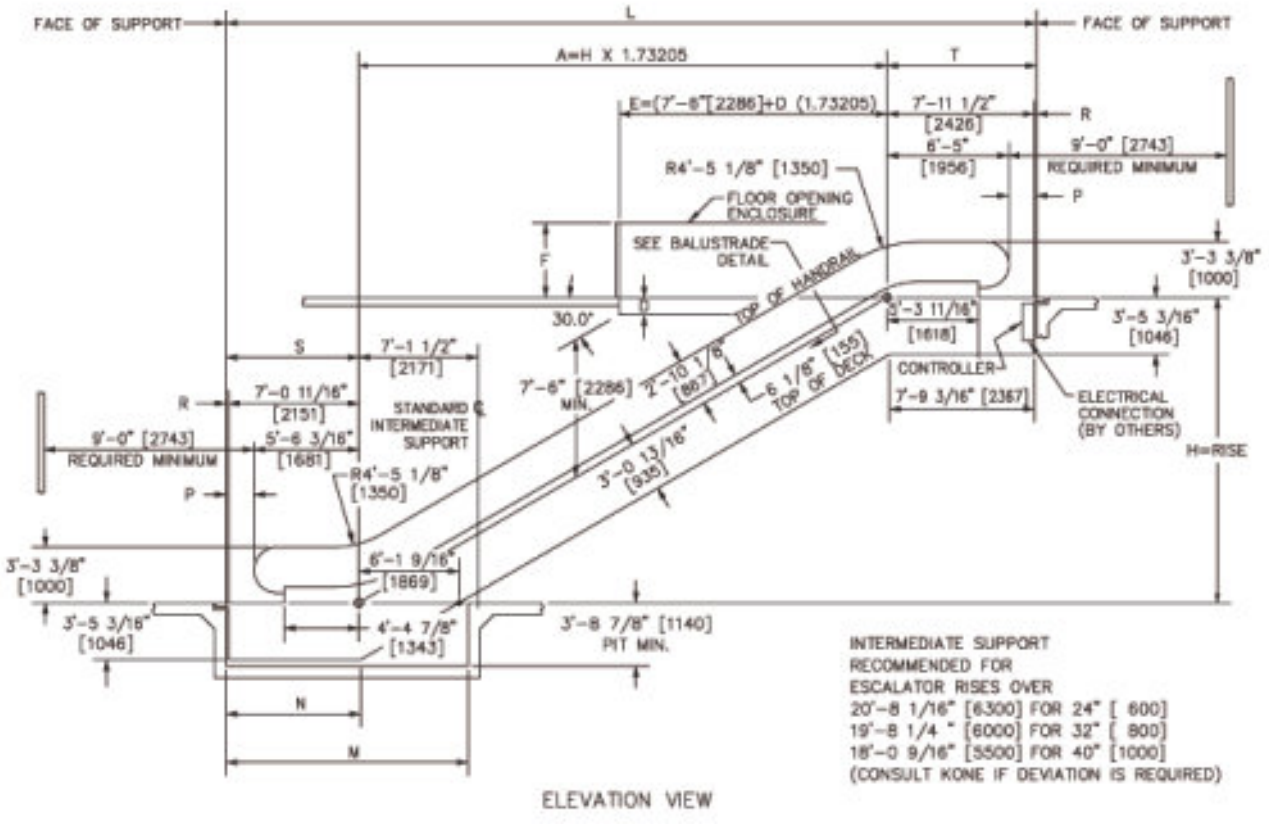


Width Chart				
Nominal step width W1 (mm)	Handrial width (C–to–C) W2 (mm)	Truss width W3 (mm)	Finished width W4 (mm)	Rough opening W5 (mm)
24" (600)	2'-10 1/8" (866)	3'-7 7/16" (1104)	3'-11 1/16" (1196)	4'-1 1/16" (1246)
32" (800)	3'-5 7/8" (1064)	4'-3 1/4" (1302)	4'-6 7/8" (1394)	4'-8 7/8" (1444)
40" (1000)	4'-1 11/16" (1262)	4'-11 1/16" (1500)	5'-2 11/16" (1592)	5'-4 5/8" (1642)

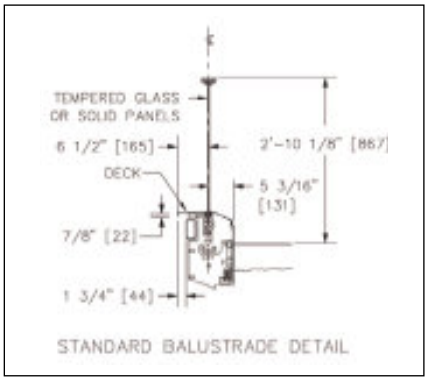
				460 Volts				575 Volts			
						Over-Current Protection				Over-Current Protection	
	Nominal Step Width (mm)	Motor Rise Limit (mm)	Motor HP (kw)	Starting AMPS	Full Load Running AMPS	Time Delay Fuses (AMPs)	Circuit Breakers (AMPs)	Starting AMPS	Full Load Running AMPS	Time Delay Fuses (AMPs)	Circuit Breakers (AMPs)
Single Drive	24" (600)	6'-6 3/4" – 19'-2 3/8" (2.0 – 5.85)*	6.2 (4.8)	18.6	9.3	15.0	15-20	14.8	7.4	10.0	10-15
	32" (800)	6'-6 3/4" – 24'-0" (2.0 – 7.32)*	9.6 (7.5)	27.2	13.6	20.0	20-30	21.8	10.9	15.0	15-25
	40" (1000)	6'-6 3/4" – 20'-6" (2.0 – 6.25)*	9.6 (7.5)	27.2	13.6	20.0	20-30	21.8	10.9	15.0	15-25
	40" (1000)	>20'-6" – 23'-3/4" (6.25 – 7.03)	12.9 (10.0)	36.0	18.0	25-30	25-45	28.8	14.4	20-25	20-35
Dual Drive	24" (600)	>19'-2 3/8" – 38'-2 1/4" (5.85 – 11.64)	6.2 (4.8) [12.4 (9.6)]	37.2	18.6	25.0	25-30	29.6	14.8	20.0	20-25
	32" (800)	>24'-0" – 47'-9 5/8" (7.32 – 14.57)	9.6 (7.5) [19.2 (15.0)]	54.4	27.2	35.0	35-45	43.6	21.8	25-30	25-35
	40" (1000)	>23'-3/4" – 40'-9" (7.03 – 12.42)	9.6 (7.5) [19.2 (15.0)]	54.4	27.2	35.0	35-45	43.6	21.8	25-30	25-35
	40" (1000)	>40'-9" – 49'-2 9/16" (12.42 – 15.0)	12.9 (10.0) [25.8 (20.0)]	72.0	36.0	45-50	45-60	57.6	28.8	35-40	35-50

**Contact your KONE Sales Professional for rises that fall below 6'-6¾" (2.0).*
Note: 208 Volt requires a transformer to be located remotely from the elevator.
Note: Indicated values are for building electrical component sizing. Actual motor amperage may vary due to the motor characteristics and escalator rise.

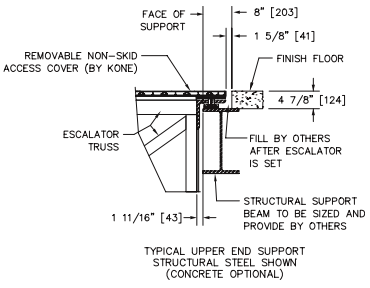
1.0M Upper end radius elevation view



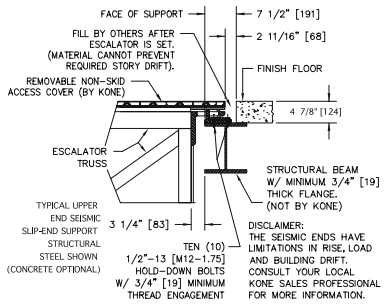
		A	L	M	N	P	R	S	T
1.0 M Upper End Radius	Non-Seismic	H * 1.73205	A + 15'-3 9/16" (4663)	13'-9 1/16" (4193)	7'-4 5/8" (2252)	1'-8 3/16" (512)	1 11/16" (43)	7'-2 3/8" (2194)	8'-1 3/16" (2469)
	Seismic	H * 1.73205	A + 15'-6 11/16" (4743)	13'-10 5/8" (4233)	7'-6 1/4" (2292)	1'-9 3/4" (552)	3 1/4" (83)	7'-3 15/16" (2234)	8'-2 3/4" (2509)



Typical End Support Detail Non-Seismic



Typical End Support Detail Seismic

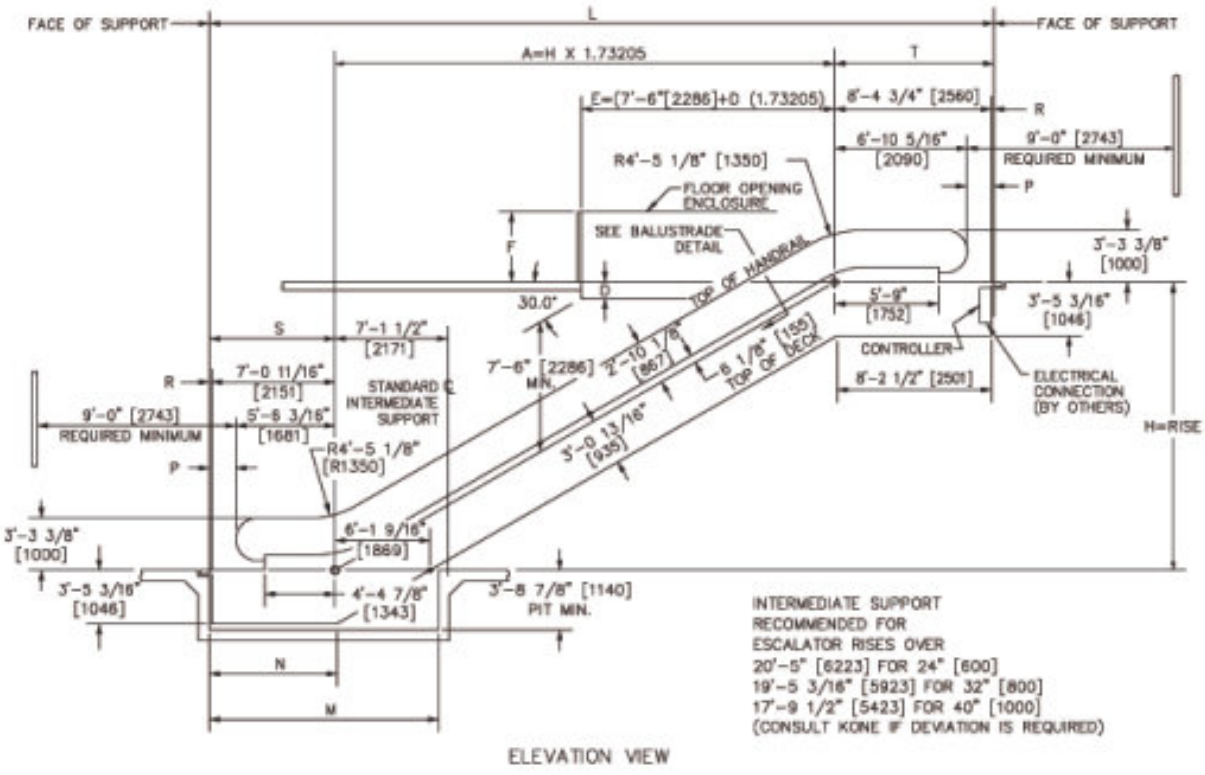


Width Chart – 1.0 meter upper radius truss	
Nominal Step Width	**Rise Limits**
24" (600)	6'-6 3/4" – 35'-9 1/2" (2.0 – 10.91)
32" (800)	6'-6 3/4" – 28'-2 9/16" (2.0 – 8.6)
40" (1000)	6'-6 3/4" – 23'-3/4" (2.0 – 7.03)

KONE ECO3000 escalator planning dimensions

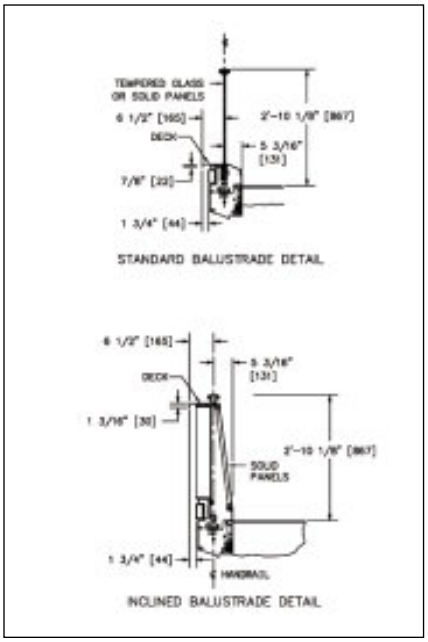
Architectural planning data

30° inclination / 1.5 transition radii / 2 or 3 horizontal steps at each landing
Code: ASME A17.1 2010

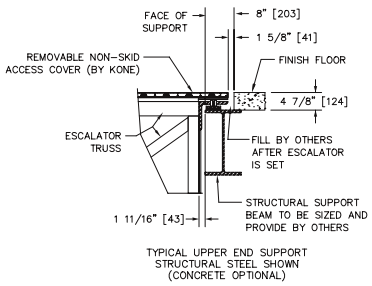


ELEVATION VIEW

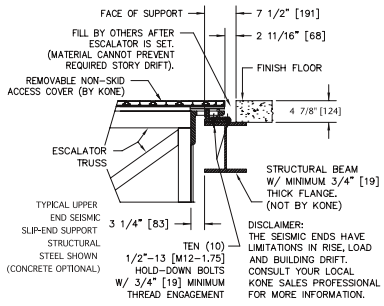
		A	L	M	N	P	R	S	T
1.5 M Upper End Radius	Non-Seismic	H * 1.73205	A + 15'-8 13/16" (4797)	13'-9 1/16" (4193)	7'-4 5/8" (2252)	1'-8 3/16" (512)	1 11/16" (43)	7'-2 3/8" (2194)	8'-6 7/16" (2603)
	Seismic	H * 1.73205	A + 16' 0" (4877)	13'-10 5/8" (4233)	7'-6 1/4" (2292)	1'-9 3/4" (552)	3 1/4" (83)	7'-3 15/16" (2234)	8'-8 1/16" (2643)



Typical End Support Detail Non-Seismic



Typical End Support Detail Seismic



Width Chart – 1.5 meter upper radius truss	
Nominal Step Width	**Rise Limits**
24" (600)	>35'-9 1/2" – 38'-2 1/4" (10.91 – 11.64)
32" (800)	>28'-2 9/16" – 47'-9 5/8" (8.6 – 14.57)
40" (1000)	>23'-3/4" – 49'-2 9/16" (7.03 – 15.0)

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