Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.

Mitsubishi Electric elevators and escalators are currently operating in approximately 90 countries around the globe. Built placing priority on safety, our elevators, escalators and building system products are renowned for their excellent efficiency, energy savings and comfort. The technologies and skills cultivated at the Inazawa Works in Japan and 12 global manufacturing factories are utilized in a worldwide network that provides sales, installation and maintenance in support of maintaining and improving product quality.

As a means of contributing to the realization of a sustainable society, we consciously consider the environment in business operations, proactively work to realize a low-carbon, recycling-based society, and promote the preservation of biodiversity.

New publication effective Nov. 2020. Specifications are subject to change without notice.
Committed to Unparalleled Excellence for People, Society, and the Environment.

To keep our promise to deliver security and comfort...
To pursue products that are more aesthetic, safer, and easier to use...
To introduce new values expected for escalators to a wider variety of spaces...
Mitsubishi Electric u Series escalators are leading the way with an extensive range of technologies.
Kinder Safety Functions
Supporting the safety and security of all users by preventing falls and accidents.

Universal

Safety Specifications for All

Secure boarding / exiting for the elderly
Elderly people and children can fall when they get on or off an escalator because their steps are small, and they have difficulty in stepping on or off the steps moving fast. Operating the escalator at lower speed ensures a safe and comfortable ride for all passengers.

Energy-saving mode*1
The escalator speed can be reduced using the key switch*2, for example, when the escalator is frequently used by elderly people, or when the escalator runs in downward direction as passengers can feel nervous about getting it on safely.

Variable-speed operation*1
The escalator speed can be reduced using the key switch*3, for example, when the escalator is frequently used by elderly people, or when the escalator runs in downward direction as passengers can feel nervous about getting it on safely.

Secure, gentle stop at the time of an emergency
The sudden stop triggered by the emergency stop button or other safety devices can cause passengers to lose their balance and fall. This function stops the escalator gently*4 to prevent the passengers from falling. Safety can be further enhanced by the mechanical structure that stops the escalator gently in case of power outage.*5

Sterilized for comfortable and safe ride
Handrail sterilizer
The sterilizer continuously emits UV light to remove viruses from the handrails while the escalator is running.

Specifications to Prevent Unlikely Events

Protection against falling by stepping on the deck board
The deck boards are ergonomically set at a height that makes it more difficult for passengers to put their feet on them, in order to discourage passengers from standing on them.

Protection against entrapment of sandals and clothing
Yellow demarcation lines on the step edges, tiered demarcation lines on both sides of the steps and skirt brushes guide passengers to stand away from the sides to prevent passengers’ shoes or clothes from getting caught. A special coating on the skirt guards reduces friction to minimize the risk.

Secure, easy boarding / exiting
We have made the comb teeth at a 10° angle to keep passengers from tripping at landing areas. Improved visibility on the boundaries between moving and stationary parts and between steps ensures passenger safety. Further, three horizontal steps help passengers safely get on or off the escalator.

Energy-saving mode*1
The escalator does not go into energy-saving mode (operation during light traffic) when it is in variable-speed operation.

Notes:
*1 The escalator does not go into energy-saving mode (operation during light traffic) when it is in variable-speed operation.
*2 The speed can be set at your desired speed.
*3 The switch to be installed on the skirt guard at a landing area is optional. If the switch is not installed, a technician can switch the speed by operating the control panel.
*4 If any safety device that detects entrapment is activated, the escalator stops instantly. The escalator stops slowly or instantly depending on the activated safety device.
*5 Slow-stop feature in case of power outage is optional.
*6 Please consult our local agents whenever you require this device.
**Energy-saving mode combined with automatic operation – slow operation in stand-by**

This operation mode controls the travel speed depending on the passenger traffic volume detected by the sensor. This mode saves energy without compromising riding comfort. The escalator runs at 0.2 m/sec when no passengers are on the steps, and gently accelerates when the sensors detect a passenger. The travel direction is readily apparent to approaching users.

**Energy-saving mode combined with automatic operation – stationary in stand-by**

The escalator stops when no passengers are on the steps. When the sensors detect a passenger, the escalator gently accelerates to the rated speed.

**Passenger sensors (for automatic operation)**

Passenger sensors detect the passenger traffic. Postless- and post-type sensors are available for passenger detection.

**Regenerative converter**

The regenerative converter has the effect of reducing energy consumption by transmitting the power generated when the escalator runs downward with a certain passenger load or more to other facilities in the building.

**LED lighting**

Using long-lasting, low power consumption LED lighting for all lighting options (under-handrail lighting, skirt guarding lighting, comb lights and step demarcation lighting) reduces power consumption by approximately 73% compared to fluorescent lights.

**Kinder Environmental Performance**

Substantial energy savings achieved through efficient use of energy improves building value.

**Kinder Architectural Design**

Industry-leading compact, lightweight design enhances the flexibility in architectural design.

**Kinder Preventive Maintenance**

Downtime minimized through proven achievements in Mitsubishi Electric product quality and preventive maintenance technologies.

**Higher degree of freedom in architectural design achieved through “the industry-leading compact escalator” and “substantial reduction in weight (25% lighter than our previous models)”**

By optimizing the equipment space, we have achieved an industry’s shortest escalator length. We have employed a structural optimization (topology) tool to minimize the amount of materials used, thus enabling reduction in truss weight by 25% compared to conventional escalators while maintaining the same level of structural strength. The compact and reduced weight truss makes it easy to install and provides architectural flexibility to your building design.

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Kinder Designs Blend into Buildings
A diverse product lineup offers aesthetic effects for building transportation modes and more.

Notes:
*1: The lighting is not applicable to outdoor use. Under-handrail lighting cannot be combined with skirt guard lighting.
*2: The sensor posts for automatic operation are available in stainless-steel hairline finish or stainless-steel mirror finish.

**Designs**

**Model**
- Glass Panel
- Glass Panel with Under-handrail Lighting
- Stainless-steel Panel

**Step demarcation lines**
- Yellow painted
- Yellow plastic

**Skirt guard**
- Low-friction black paint finish
- Stainless-steel, hairline finish

**Comb**
- Yellow plastic
- Aluminum

**Floor plate**
- Embossed stainless-steel plate with black grooves
- Natural embossed stainless-steel plate

**Handrail**
- Rubber
- Polyurethane

**Lighting**
- Under-handrail lighting
- Skirt guard lighting
- Comb lights
- Step demarcation lighting

**Sensor post for automatic operation**
- Direction indicator

**Deck board**
- Stainless-steel, hairline finish

**Indicators**
- Indicator on inner deck
- Indicator on outer deck

**Floor plate**
- Embossed stainless-steel plate with black grooves
- Natural embossed stainless-steel plate

**Notes:**
*1: The lighting is not applicable to outdoor use. Under-handrail lighting cannot be combined with skirt guard lighting.
*2: The sensor posts for automatic operation are available in stainless-steel hairline finish or stainless-steel mirror finish.
Safety Devices

Various safety devices ensuring high levels of safety and reliability.

Cautions for Outdoor Use

A roof must be provided over outdoor escalators. In rainy weather without a roof, passengers are in great danger of having their umbrellas blown away by the wind or falling down on the slippery steps. In hot weather, the handrails and deck boards can easily heat up in the sun to a surface temperature exceeding 50°C, causing the unnecessary chance that passengers could get burnt on the overheated elements.

1. How to define outdoor escalators

Escalators are classified into three categories: outdoor, semi-outdoor and indoor. Outdoor escalators are defined as escalators exposed to environmental factors such as wind, rain, snow or direct sunlight.

2. Environmental requirements for outdoor escalators

<table>
<thead>
<tr>
<th>Permissible ambient temperature</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>10°C (Special measures are required in cold districts where the ambient temperature can drop below -10°C)</td>
<td>For escalator operation</td>
</tr>
<tr>
<td>6°C to less than 35°C</td>
<td>Wind pressure</td>
</tr>
</tbody>
</table>

Others

Measures are required for escalators installed within a radius of 2 km from a shore to protect them from direct exposure to salty wind.

3. Architectural requirements for outdoor escalators

(1) Intermediate support beams must be provided.

(2) The level of the escalator floor plate must be higher than the floor finish of the building to minimize the chance of rain or draining water running into the escalator truss. Area A in the illustrations to the right must be a slope of at least 10°, and the surface of A must be waterproofed entirely when a whole truss is installed inside the pit.

(3) The level of the escalator floor plate must be higher than the floor finish of the building to minimize the chance of rain or draining water running into the escalator truss. Area B must be at a slope of at least 10° but no less than 30°. Area C must be at a slope of 30° or more. Area D must be at a slope of 30° or more.

(4) The escalator pit must be waterproofed entirely when a whole truss is installed inside the pit.
**Product Data**

**Mitsubishi Electric Standard Specification**

### Table 1: Standard dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>1 step (nominal)</th>
<th>1.5 steps (nominal)</th>
<th>2 steps</th>
<th>3 steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA</td>
<td>2840</td>
<td>2140</td>
<td>2340</td>
<td>2140</td>
</tr>
<tr>
<td>RB</td>
<td>3125</td>
<td>2530</td>
<td>2740</td>
<td>2530</td>
</tr>
<tr>
<td>NJ</td>
<td>3040</td>
<td>2410</td>
<td>2640</td>
<td>2410</td>
</tr>
<tr>
<td>NK</td>
<td>3125</td>
<td>2530</td>
<td>2740</td>
<td>2530</td>
</tr>
</tbody>
</table>

*The dimensions are approximate and are for escalators with a handrail height at landing areas of 900mm, and other dimensions are for those with a handrail height at landing areas of 1000mm.*

### Table 2: Loads (N)

<table>
<thead>
<tr>
<th>Type</th>
<th>1 step (nominal)</th>
<th>1.5 steps (nominal)</th>
<th>2 steps</th>
<th>3 steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>RA</td>
<td>3009</td>
<td>3118</td>
<td>3858</td>
<td>4208</td>
</tr>
<tr>
<td>RB</td>
<td>3125</td>
<td>3331</td>
<td>3968</td>
<td>4208</td>
</tr>
<tr>
<td>NJ</td>
<td>3125</td>
<td>3331</td>
<td>3968</td>
<td>4208</td>
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<td>NK</td>
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<td>4208</td>
</tr>
</tbody>
</table>

*The dimensions are approximate for escalators with a handrail height at landing areas of 900mm, and other dimensions are for those with a handrail height at landing areas of 1000mm.*
**Work Not Included in Escalator Contract**

The following items are excluded from Mitsubishi Electric’s escalator installation work and are therefore the responsibility of the building owner or general contractor. Safety measures shall be provided in accordance with the local laws and standards.

<table>
<thead>
<tr>
<th>Architectural work</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Installation of support beams (including intermediate supports)</td>
</tr>
<tr>
<td>2. Hole filling and floor finishing in surrounding areas after escalator installation</td>
</tr>
<tr>
<td>3. Fireproofing and fire-prevention measures for escalator exterior materials and surrounding areas</td>
</tr>
<tr>
<td>4. Safety features for surrounding areas</td>
</tr>
<tr>
<td>- Safety fences</td>
</tr>
<tr>
<td>- Nets</td>
</tr>
<tr>
<td>- Wedge guard</td>
</tr>
<tr>
<td>- Deck guards</td>
</tr>
<tr>
<td>- Deck barricades</td>
</tr>
<tr>
<td>- Guiding fences</td>
</tr>
<tr>
<td>5. Outer panel sheathing</td>
</tr>
<tr>
<td>6. Installation of inspection doors</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facility work</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Conduit and wiring work for power supply to control panel in upper truss, power supply for lighting and grounding</td>
</tr>
<tr>
<td>2. Other wiring and conduit work</td>
</tr>
<tr>
<td>3. Installation of outlets in the upper and lower trusses</td>
</tr>
<tr>
<td>4. Installation of fire-prevention shutters</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Notes on building work</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tolerance in distance between supporting beams: +40mm to 0</td>
</tr>
<tr>
<td>2. Flooring around the escalator must not be finished until the escalator is installed.</td>
</tr>
<tr>
<td>3. Flooring within 300mm of the escalator floor plate must not be finished until the floor plates are in place.</td>
</tr>
<tr>
<td>4. Sprinkler pipes or wiring for safety lights, or any other electric conduits for items other than escalator, must not be laid inside the truss.</td>
</tr>
<tr>
<td>5. No walls or other parts of the building structure must be supported on the truss.</td>
</tr>
<tr>
<td>6. Allowable maximum weight of outer sheathing: 20kg/m²</td>
</tr>
</tbody>
</table>

**Principle**

Based on our policy, “Quality in Motion”, we provide elevators and escalators that will satisfy our customers with high levels of comfort, efficiency, ecology and safety.

Mitsubishi Electric elevators, escalators and building management systems are always evolving, helping achieve our goal of being the No.1 brand in quality. In order to satisfy customers in all aspects of comfort, efficiency and safety while realizing a sustainable society, quality must be of the highest level in all products and business activities, while priority is placed on consideration for the environment. In the times change, Mitsubishi Electric promises to utilise the collective strengths of its advanced and environmental technologies to offer its customers safe and reliable products while contributing to society.

**We strive to be green in all of our business activities.**

We take every action to reduce environmental burden during each process of our elevators’ and escalators’ lifecycle.
State-of-the-Art Factories…
For the Environment. For Product Quality.

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ISO9001/14001 certification

Mitsubishi Elevator Asia Co., Ltd. has acquired ISO 9001 certification from the International Organization for Standardization based on a review of quality management. The plant has also acquired environmental management system standard ISO 14001 certification.

MITSUBISHI ELECTRIC CORPORATION
HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-ku, TOKYO 100-8310, JAPAN
www.MitsubishiElectric.com/elevator

Safety Tips: Be sure to read the instruction manual fully before using this product.