New Escalator Owner's License

Inspection Procedure and Checklist

i. Inspection Procedure

Inspection procedure of Escalator	
1	**Angle of Inclination-**
	Angle of incline of the escalator shall not be more than 30º from the horizontal. In particular cases, an angle of incline up to 35ºmay be permitted for escalators having a vertical rise not more than 6 m.
2	**Width of Escalator-**
	The width must accommodate the expected passenger traffic, typically ranging between 600 mm to 1,000 mm.
3	**Balustrading-**
a.	Escalators shall be provided on each side with solid balustrades. On the step side (interior panel), the balustrades shall be smooth and substantially flush except for protective molding parallel to the run of the steps. Vertical moldings that cover joints of panels shall be properly bevelled and shall not project more than 6.5 mm. Gaps between interior panels of the balustrade shall not be wider than 4mm.
b.	The width between balustrades, measured on the incline up to a point 680 mm vertically above the nose line of the steps, shall not be less than the width of the step. It shall not exceed the width of the step by more than 330 mm with a maximum of 165 mm on either side of the escalator.
c.	There shall be no abrupt changes in the width between the balustrades on the two sides of the escalator. Where a change in width is unavoidable, such change shall not exceed 8 per cent of the greater width. In changing the direction of the balustrades resulting from a reduction in width the maximum allowable angle of change in balustrades shall not exceed 15 degrees from the line of the escalator travel
d.	The use of glass for balustrade interior panelling is permitted, provided it is splinter free one layer safety (tempered) glass and has sufficient mechanical strength and rigidity. The thickness of the glass shall not be less than 6 mm
4	**Handrails-**
	Each balustrade shall be provided with a handrail moving in the same direction and at the same speed as the steps.
	Each moving handrail shall extend at normal handrail height not less than 300 mm beyond the line of points of comb plate teeth at the upper and lower landings.
	Hand or finger guards shall be provided at points where the handrails enter the balustrade.
	The horizontal distance between the centre lines of two handrails, measured on the incline, shall not exceed the width between the balustrades by more than 150 mm, with a maximum of 75 mm on either side of the escalator.

5	**Step Treads and Landings-**
a.	Check that step treads are slip-resistant, uniformly illuminated with at least 20 lux, and landings are clear of obstructions.
b.	The depth of any step tread in the direction of travel shall not be less than 400 mm and the rise between treads shall not be more than 220 mm.
c.	The maximum clearance between step treads on the horizontal run shall be 4 mm.
d.	The tread surface of each step shall be slotted in a direction parallel to the travel of the steps. Each slot shall not be more than 6.5 mm wide and not be less than 9.5 mm deep; and the distance from centre to centre of adjoining slots shall not be more than 9.5 mm.
e.	Safety provision shall be installed in the system to stop the escalator when anything is stuck in the clearance between the step tread and the skirting.
6	**Comb Plates-**
	The comb plate teeth shall be meshed with and set into the slots of the tread surface. Comb plates shall be adjustable vertically.Safety provision shall be installed in the comb plate assembly so that the safety contact stops the escalator when anything is caught between the comb plate and the step.
7	**Trusses or Girders-**
	Assess structural components for signs of wear, corrosion, or damage.
8	**Track Arrangement-**
	Ensure tracks guide steps smoothly without misalignment or undue vibration.
9	**Capacity and Loading-**
	Confirm the escalator can handle the maximum designed load without performance degradation
10	**Speed Limits-**
	Measure operational speed to ensure it does not exceed 0.5 meters per second, as per safety standards.
11	**Power Application, Driving Machine, Motor, and Brake-**
	Inspect the driving mechanism, motor, and braking system for proper function and compliance with electrical safety standards.
12	**Chains-**
	Examine chains for tension, lubrication, and signs of wear to prevent mechanical failures.
13	**Safety Devices-**
	Test safety features, including emergency stop buttons, step demarcations, and anti-slide devices, to ensure they are operational.
14	**Machine Room-**
	If applicable, inspect the machine room for adequate space, ventilation, and compliance with safety regulations.

15	**Lighting of Step Treads-**
	Verify that step treads are illuminated with a minimum of 20 lux to enhance visibility and safety
16	**Access to Interior-**
	Ensure safe and convenient access points for maintenance personnel to the interior components of the escalator.
17	**Speed Govornor-**
	The escallator shall be equipped in such a way that the stop automatically before the speed exceed 1.2 times the rated speed. Where speed control device are used for this purpose the shall have switched of the escallator before the speed 1.2 times the rated speed.
18	**Testing-**
	Conduct operational tests to assess performance under normal and emergency conditions, ensuring all systems function correctly.
	1) No new escalator shall be brought into use unless the escalator has been tested as follows: (a) Site tests of escalator: - Each type and size of escalator shall be tested for the rated load that is designed to carry; (b) Over speed test: - The application of the over speed safety device shall be obtained by causing the escalator to travel at the governor tripping speed as specified in sub-rule (3) of rule 64. With escalator driven by alternating current motors, the governor may be tripped by hand with the escalator traveling at its normal speed; (c) Reversal test: - The accidental reversal device as provided in sub-rule (2) (c) of rule62 shall be made to function by manually operating or attempting to operate the escalator in the reversal direction. (d) Broken chain test: - The application of the broken chain safety device as provided in sub-rule (4) of rule 62 may be obtained by operating the device by hand. Broken drive chain device operation of the broken drive chain device required by sub rule (5) of rule 62, where a device chain is used, shall be tested by operating the actuating device by hand. (e) Stop buttons: - The emergency stops buttons required by sub rule (2) (a) of rule 62 operated in each direction of the travel. 2) The person authorized under section 13 for the erection of the escalator shall certify in writing that all the tests specified in these rules are carried out by him to determine the suitability of the escalator for the normal and regular service and if required by the inspector such tests may also be carried out by him
19	**Other Precautions-**
	Review additional safety measures, such as signage, user instructions, and compliance with the National Building Code of India.

ii. Checklist

	GENERAL CHECKLIST FOR ESCALLATOR INSTALLATIONS:-
1	Whether permanent supply upto the dedicated Main Switch/MCCB for lift is available.
	Yes / No.
2	Whether separate & dedicated single and three phase main switch/MCCB has been provided.
	Yes / No.
3	Whether Escallator main switch provided at nearest convenient location in lift loby
	Yes / No.
4	Whether the Escallator Main Switches at Ground Floor have been earthed with 8 SWG G.I wire at two distinct points
	Yes / No.
5	Whether main switch earthings are done to the building earth bar
	Yes / No.
6	Whether building earth bar is connected with minimum two earth pits and those are properly marked as earth pits
	Yes / No.
7	Whether earth resistance at building earth bar measured & is within acceptable limit
	Yes / No.
8	Whether proper marking on Escallator main switch done.
	Yes / No.
9	Whether civil jobs at each floor Escallator landing positions completed.
	Yes / No.
10	Whethet staircase hand rail/guard at each floor provided
	Yes / No.
11	Whether pit is cleaned and water proof.
	Yes / No.
12	All earthing wires, controller wiring etc. are properly dressed.
	Yes / No.
13	Whether pit stop switches are available.
	Yes / No.
14	Whether Pit light is working.
	Yes / No.
15	Whether lift loby lights are provided at each floor.
	Yes / No.

16	Whether alarm bell checked and found ok.
	Yes / No.
17	Whether machine room door is outside opening and made of Fire Proof as per IS 14665.
	Yes / No.
18	Whether metal 415 V danger plate outside Escallator (near control panel are)machine are provided.
	Yes / No.
19	Whether Balustrade provided on two sides.
	Yes / No.
20	Whether handrail switch provided.
	Yes / No.
21	Whether stop switch/push provided.
	Yes / No.
22	whether start key is not accessible to public, as provided.
	Yes / No.
23	Whether comb plate switch provided.
	Yes / No.
24	Whether step broken switch provided.
	Yes / No.
25	Whether floor plate lifting switch provided.
	Yes / No.
26	Whether step chain clatch switch provided.
	Yes / No.
27	Whether skirt panel switch provided.
	Yes / No.
28	Whether stop switch in machine (control panel) room provided.
	Yes / No.