Form-P1

INSPECTION CHECK LIST FOR NEW ESCALATORS

1	Name of the Owner:		
2	Site Address:		
3	Name and Address of Manufacturer/Installer:	Authorisation Number:	
		Validity:	
4	Layout Drawing Reference Number:		
5	Electrical Wiring Diagram Number:		
6	Conformity to Standards:		
	IS 4591 (Part 1/Sec 3):2020 - Escalators and Moving Walks - Inspection and Test (as amended upto date or revised or superseding):	Yes/No/Not applicable* Yes/No/Not applicable*	
	IS 4591 (Part 1/Sec 1):2020 - Escalators and Moving Walks - Safety Requirements (as amended upto date or revised or superseding):		
	IS 4591 (Part 1/Sec 2):2020 - Escalators and Moving Walks - Guide for planning and selection (as amended upto date or revised or superseding):	Yes/No/Not applicable*	
	Others (specify standard):		
7	Make and Serial No:		
8	Angle of Inclination of Escalator:		
9	Vertical distance between the upper and lower finished levels:		
10	Width of the escalator:		
11	Rated speed of Escalator:		
12	Rated capacity:		
13	Confirm that all the above are in accordance with the information on the layout drawing/wiring drawing.:	Ň	/es/No*

*Strike out whichever is not applicable

<u>Enclosure</u>

I	Description of Installation			
1	Installation Configuration			
1.1	Single Unit/ Parallel/ Cris	s Cross / Successive		
2	Power Supply at the time	e of test:		
	Voltage		Frequency	
	Phase		Rating of Fuse/MCCB	
3	Location of Machine & C	ontrol Panel:	Inside Truss/Outside Truss/ in separate machine room	
			Others	
4	Type of Drive		Direct On line/ Inverter (VVVF)/ Soft Start/Other	
5	Escalator Motors			
	No. of Motors		Voltage	
	Make		Capacity	
	Туре		Speed	
	Serial Nos.		Insulation Class	
	Duty			
6	Gears			
	No. of Gears		Туре	
	Make			
7	Operational Brake			1
	Туре	Electromechanical/Others	Number of Brakes fitted	
8	Auxiliary Brake			
	Туре		Number of Brakes fitted	
9	Is step chain lubrication	required	Yes/ No*	

10	Is auxiliary chain lubrication required	Yes/ No*	
11	Is main drive chain lubrication required	Yes/ No**	
12	Is hand winding device fitted	Yes/ No*	
13	Is stand-by operation fitted	Yes/ No*	
14	Is on-demand starting fitted	Yes/ No*	
15	Is remote starting fitted	Yes/ No*	
П	Safety Requirements and Protective Measures as per IS 459	1 (Part 1/Sec 1)	
1	Supporting Structure (Truss) and Enclosure		
1.1	All mechanically moving parts of the escalator completely enclosed within imperforate panels or walls	Yes / No*	
1.2	Confirm whether the exterior panels withstand a force of 250 N at any point at right angles on an area of 25 cm ² without breakage or deflection resulting in any gap	Yes / No*	
1.3	Any Accumulation of materials (for example, grease, oil, dust, paper) representing a fire risk inside the inner part of escalator? If so cleaned		
1.4	Any Apertures for ventilation provided	Provided/ Not Provided	
1.5	If so it is not possible to pass a straight rigid rod 10 mm in diameter through the enclosure and to touch any moving part through the ventilation aperture	Yes / No*	
1.6	Measured Angle of inclination	0	
1.7	Key or access control for Machinery spaces inside the truss provided only to authorized persons	Provided/ Not Provided	
1.8	Are inspection covers and floor plates imperforate?	Yes / No*	
1.9	Are inspection covers, exterior panels and floor plates provided with electric safety device/control device	Yes / No*	
1.10	If so confirm whether, the escalator stops is any said above is opened?	Yes / No*	
1.11	Maximum Calculated or measured deflection of supporting structure for rated load		
2	Steps/Pallets/Belts		

2.1	Step treads and pallets		
2.1.1	Nominal width	m	
2.1.2	Step height	m	
2.1.3	Step depth	m	
2.1.4	Width of grooves of step treads and pallets	mm	
2.1.5	Depth of grooves of step treads and pallets	mm	
2.1.6	Web width	mm	
2.2	Belts		
2.2.1	Width of groves in belt		
2.2.2	Depth of groves in belt		
2.2.3	Web width		
2.3	Have static test (test for deflection) and dynamic tests (Load and torsion test) carried out for steps, step risers, pallets and belts? And the results are satisfactory?	Yes / No*	
2.4	Confirm whether lateral displacement of the steps or pallets out of their guiding system shall not exceed 4 mm at either side or 7 mm for the sum of clearances measured at both sides and the vertical displacement shall not exceed 4 mm for steps and pallets and 6 mm for belts	Yes / No*	
2.5	Clearance between two consecutive steps or pallets in any usable position measured at the tread surface	mm	
2.6	Confirm whether Missing step or pallet device provided at each driving and return station are actuated, and the escalator stops and prevented from starting until failure lock is manually reset?	Yes / No*	
3	Drive unit		
3.1	Driving Machine		
3.1.1	Measured nominal speed of escalator		
3.1.2	Safety Factor of all driving elements gear wheels, multiplex chains, two or more single chains for static calculations		
3.1.3	If a hand winding device is provided, is it easily accessible	Yes / No*	

	and safe to operate?		
3.1.4	Confirm that when the removable hand winding device is actuated, the escalator stops	Yes / No*	
3.1.5	Confirm that when the electrical safety device for stopping the machine is actuated, the escalator stops and restarting is impossible	Yes / No*	
3.2	Braking system		
3.2.1	Measured stopping distances for unloaded and downward moving loaded escalators	m	
3.2.2	Measure deceleration value	m/s²	
3.2.3	Confirm whether the escalator stops and the starting is prevented, when the excessive stopping distance device is actuated until the failure lock is manually reset.	Yes/ No*	
3.2.4	Confirm whether the escalator stops, when the excessive speed device is actuated (speed value exceeds 1.2 times the nominal speed) until it is manually reset.	Yes/ No*	
3.2.5	Confirm whether the escalator stops and starting is prevented, when the unintentional reversal of the direction of travel device is actuated until it is manually reset.	Yes/ No*	
3.2.6	Confirm whether the escalator starting is prevented, when breakage or undue elongation of drive chain electric safety device is actuated/	Yes/ No*	
4	Balustrade		
4.1	Measured Vertical distance between the top of hand rail and step nose or pallet surface	m	
4.2	Confirm the provision of anti-climbing device at lower outer decking to discourage people from climbing on the outsides of the balustrade in accordance with clause 5.5.2.2	Yes/ No*	
4.3	Confirm , where escalators are located adjacent to walls and when lower outer decking width exceeds 125mm, access resistance devices to restrict access to the balustrade decking is provided at the top and bottom ends of these walls	Yes/ No*	
4.4	Confirm , where handrail level balustrade decking are provided between escalators and adjacent walls, anti-	Yes/ No*	

	slide devices are provided on the balustrade decking when the distance between the structure of the building (wall) and the centre line of the handrail is greater than 300 mm.		
4.5	Confirm , where handrail level balustrade decking are provided between adjacent escalators, anti-slide devices are provided on the balustrade decking when the distance between the centre line of the handrails is greater than 400 mm.	Yes/ No*	
4.6	Confirm whether skirt deflector device for minimizing the possibility of trapping (trapping of any foreign element; for example, clothes, shoes, slippers, foot finger, stone etc.) between skirting and steps in accordance with clause 5.5.3 is provided.	Yes/ No*	
4.7	Where the skirting of escalators or moving walks is placed beside the steps and pallets or the belt, the horizontal clearance at either side	mm	
4.8	Where the skirting of escalators or moving walks is placed beside the steps and pallets or the belt, sum of clearances measured at both sides at two directly opposite points	mm	
5	Handrail system		
5.1	When handrail speed monitoring device is acuated, confirm whether the escalator stops in the event of a hand rail speed deviation of more than -15 percent to the actual speed for more than 15 s while the escalator is in motion	Yes/ No*	
5.2	Distance between the handrail profile and guide or cover profiles	mm	
5.3	Width of hand rail	mm	
5.4	Distance between the handrail and the edge of the balustrade	mm	
5.5	Confirm whether the distance between the centre line of the handrails does not exceed the distance between the skirting by more than 0.45 m	Yes/ No*	
5.6	Confirm whether at the point of entry of the handrail into the newel, a guard is installed to prevent the pinching of fingers and hands	Yes/ No*	
5.7	Confirm when the switch to prevent the pinching of fingers and hands at the hand rail entry point is actuated,	Yes/ No*	

	the escalator stops		
5.8	Confirm the speed of hand rails	m/s	
5.9	Clear height above the steps of the escalator at all points	m	
5.10	Confirm whether Vertical deflector are provided at floor intersections and on criss-cross escalators and the vertical deflector is not less than 0.30 m in height, not presenting any sharp cutting edges, and is placed above the handrail level and extend at least 25 mm below the lower edge of the handrail, for example, as an imperforate triangle	Yes/ No*	
6	Landings		
6.1	Confirm whether landings and landing surfaces of the escalator, configuration of steps, pallets and belts conform to clause 5.7	Yes/ No*	
6.2	Confirm if any part of the step or pallet is sagging so that meshing of the combs is no longer ensured, the step sagging safety device is actuated, the escalator stops and starting is prevented until the failure lock is manually reset.	Yes/ No*	
6.3	Mesh depth of the combs into the grooves of the tread	mm	
6.4	Clearance between the upper edge of the tread surface and the root of the comb teeth	mm	
6.5	Confirm whether when Foreign bodies being trapped at the point where the steps, pallets or the belt enter the comb, the comb safety device is actuated and the escalator stops automatically	Yes/ No*	
7	Machinery spaces, Driving Station and Return Stations		
7.1	Size of Standing area	m²	
7.2	Length of smaller side of the standing area	m	
7.3	Independent power supply for Lighting and socket outlets is provided	Yes/ No*	
7.4	Light Intensity at working areas	lux	
7.5	Provision of stop switch in driving and return station	Yes/ No*	
7.6	Does the escalator stops and prevented from starting, when stop switch is activated	Yes/ No*	
7.7	Is the stop switch at accessible position	Yes/ No*	

7.8	Outer and inner decking, truss, pallets/steps, track system conform to class 3 of IS 12777	Yes/ No*	
7.9	Confirm whether complete escalators or sub-assemblies or components of escalators which cannot be handled by hand are either be equipped with fittings for movement by a lifting device or be designed in a way that such fittings can be attached (for example, threaded holes) and be shaped in a way that the lifting device or transportation means can be attached easily	Yes/ No*	
8	Electrical Installations and appliances		
8.1	Confirm whether main switch, capable of breaking the supply to the motor but not to lighting and socket outlets necessary for inspection and maintenance, provided in the vicinity of the machine or in return stations.	Yes/ No*	
8.2	Confirm whether the main switch is locked or otherwise secured in the "isolated" position, with the use of a padlock or equivalent, to ensure no inadvertent operation by others.	Yes/ No*	
8.3	Confirm that if motor overload device (current increase) is actuated, the escalator stops and starting is prevented until it is manually reset.	Yes/ No*	
8.4	Confirm that if motor overload device (temperature increase) is actuated, the escalator stops and starting is prevented until it is manually reset.	Yes/ No*	
8.5	Confirm whether electric wiring is done as per standard IS	Yes/ No*	
9	Protection against electric faults - Controls		
9.1	Confirm whether the driving machine stops, when fault to earth device is actuated	Yes/ No*	
9.2	Confirm that all inspection controls are provided and operate effectively	Yes/ No*	
9.3	Confirm whether all other starting devices are rendered inoperative, when inspection control device is used.	Yes/ No*	
9.4	Confirm that all starting controls and direction controls operate effectively	Yes/ No*	
9.5	Confirm whether, Escalators or moving walks which start or accelerate automatically by the entering of a user (stand-by operation), move with at least 0.2 times the nominal speed when the person reaches the comb	Yes/ No*	

	intersection line and then accelerate less than 0.5 m/s ²		
9.6	Measured running time	S	
9.7	Number of stop switches provide for emergency situations, manually operated		
9.8	Confirm whether the escalator stops, when the stop switch provided for emergency situations is operated and remains stopped, when stop switch is reset.	Yes/ No*	
9.9	Confirm whether restarting is possible only failure lock has been manually reset.	Yes/ No*	
10	Signals and Warning devices		
10.1	Whether all signs, inscriptions and notices for use are of durable material, placed in a conspicuous position and written in clearly legible characters in English and Tamil where the escalator or moving walk is in operation.	Yes/ No*	
10.2	Provision of Indication of direction of travel	Yes/ No*	
10.3	Are stop devices colored in red and marked with inscription "stop"	Yes/ No*	
10.4	 Provision of Mandatory action signs and prohibition signs for the user fixed in the vicinity of the entrances: a) "Small children shall be held firmly" b) "Dogs shall be carried" c) "Use the handrail" and d) "Push chairs not permitted" 	Yes/ No*	
10.5	Provision of clear by visible signal system for example road traffic signals for escalators starting automatically	Yes/ No*	
10.6	If a hand winding device is provided, whether operating instructions for use is available in the vicinity	Yes/ No*	
10.7	At driving and return stations, whether a notice is fixed with the inscription: "Machinery space — danger, access prohibited to unauthorized persons".	Yes/ No*	

*Strike out whichever is not applicable

Signature of the Competent Person/Inspecting Officer Name Designation