does not encourage falling of the passenger even in a normal use state by selecting a material of a shock absorbing cleat provided at the corner of the escalator step and material characteristics thereof.

An escalator step according to an embodiment includes: a tread having a body section on which a plurality of convex sections are arranged in parallel in a width direction thereof; a riser connected to one end portion of the body section of the tread and having thereon a plurality of convex sections arranged in a width direction thereof and a plurality of concave sections formed between the adjacent convex sections; and a shock absorbing cleat provided in a notch formed at a corner at which the riser and tread are connected to each other. The shock absorbing cleat includes a plurality of convex sections which are arranged in parallel with the convex sections of the body section and each of which has a front end surface forming a flat surface with the convex section of the body section. The shock absorbing cleat is formed of a polymeric material having a Young's modulus of 1000 MPa or less.

According to the present invention, it is

possible to provide, at low cost, a safe escalator that can reliably prevent the passenger from suffering a serious injury even when he or she falls down and hits his or her head against a step corner and that does not encourage falling of the passenger even in a normal use state by a molding of a polymeric material.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side view illustrating an escalator step;

FIG. 2 is a partially cut perspective view partially illustrating a vicinity of a corner of the escalator step;

FIG. 3 is a partially cut exploded perspective view illustrating the vicinity of the corner of the escalator step;

FIG. 4 is a top view of a shock absorbing cleat;

FIG. 5 is a front view of the shock absorbing cleat;

FIG. 6 is a bottom view of the shock absorbing cleat;

FIG. 7 is a cross-sectional view of the shock absorbing cleat taken along a line A-A in FIG. 5;

does not encourage falling of the passenger even in a normal use state by selecting a material of a shock absorbing cleat provided at the corner of the escalator step and material characteristics thereof.

An escalator step according to an embodiment includes: a tread having a body section on which a plurality of convex sections are arranged in a width direction thereof; a riser connected to a rear end portion of the body section of the tread and having thereon a plurality of convex sections arranged in a width direction thereof and a plurality of concave sections formed between the adjacent convex sections; and a shock absorbing cleat provided in a notch formed at the body section rear end portion near a corner at which the riser and tread are connected to each other. The shock absorbing cleat includes a plurality of convex sections which are arranged in parallel and each of which has a front end surface faced to each of the plurality of convex sections of the tread, and the shock absorbing cleat is formed of a polymeric material having a Young's modulus of 1000 MPa or less. A length of each of the convex sections of the shock absorbing cleat is set to 14 mm to 50 mm, a thickness of each of the convex sections is set to 2 mm to 4 mm, an interval between of each the convex sections is set to 5 mm to 7 mm, a height of each of

the convex sections is set to 10 mm to 15 mm.

According to the present invention, it is possible to provide, at low cost, a safe escalator that can reliably prevent the passenger from suffering a serious injury even when he or she falls down and hits his or her head against a step corner and that does not encourage falling of the passenger even in a normal use state by a molding of a polymeric material.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side view illustrating an escalator step;

FIG. 2 is a partially cut perspective view partially illustrating a vicinity of a corner of the escalator step;

FIG. 3 is a partially cut exploded perspective view illustrating the vicinity of the corner of the escalator step;

FIG. 4 is a top view of a shock absorbing cleat;

FIG. 5 is a front view of the shock absorbing cleat;

FIG. 6 is a bottom view of the shock absorbing cleat;

FIG. 7 is a cross-sectional view of the shock absorbing cleat taken along a line A-A in FIG. 5;

WHAT IS CLAIMED IS:

1. An escalator step comprising:

a tread having a body section on which a plurality of convex sections are arranged in parallel in a width direction thereof;

a riser connected to a rear end portion of the body section of the tread and having thereon a plurality of convex sections arranged in a width direction thereof and a plurality of concave sections formed between the adjacent convex sections; and

a shock absorbing cleat provided in a notch formed at the body section rear end portion near a corner at which the riser and tread are connected to each other,

the shock absorbing cleat being formed of a polymeric material having a Young's modulus of 1000 MPa or less.

2. The escalator step according to claim 1, wherein

the shock absorbing cleat includes a plurality of long convex sections which are arranged in parallel and each of which has a rear end surface extending so as to be the same flat surface as the convex section of the riser and a

front end surface connected to each of the plurality of convex sections of the tread and a plurality of short convex sections which are arranged in parallel between the adjacent long convex sections and each of which has a rear end surface extending so as to be the same flat surface as the concave section of the riser and a front end surface connected to each of the plurality of convex sections of the tread.

3. The escalator step according to claim 2, wherein

the polymeric material is resin or elastomer.

4. The escalator step according to claim 2, wherein

the elastomer is urethane rubber, natural rubber, synthetic rubber, silicone rubber, or fluorocarbon rubber.

5. The escalator step according to claim 4, wherein

the shock absorbing cleat also serves as demarcation.

6. The escalator step according to any one of

claims 1 to 5, wherein

the shock absorbing cleat is arranged in plural number in the width direction of the tread.

7. An escalator step comprising:

a tread having a body section on which a plurality of convex sections are arranged in parallel in a width direction thereof;

a riser connected to a rear end portion of the body section of the tread and having thereon a plurality of convex sections each of which has an opened upper end and which are arranged in a width direction thereof and a plurality of concave sections formed between the adjacent convex sections; and

a shock absorbing cleat provided in a notch formed at the body section rear end portion near a corner at which the riser and tread are connected to each other, wherein

the shock absorbing cleat includes a plurality of long convex sections which are arranged in parallel and each of which has a rear end surface extending so as to be the same flat surface as the convex section of the riser and a front end surface connected to each of the plurality of convex sections of the tread and a

plurality of short convex sections which are arranged in parallel between the adjacent long convex sections and each of which has a rear end surface extending so as to be the same flat surface as the concave section of the riser and a front end surface connected to each of the plurality of convex sections of the tread,

a length of each of the long convex sections of the shock absorbing cleat is set to 20 mm to 50 mm, a length of each of the short convex sections is set to 14 mm to 44 mm, a thickness of each of the long and short convex sections is set to 2 mm to 4 mm, an interval between the long and short convex sections is set to 5 mm to 7 mm, a height of each of the long and short convex sections is set to 10 mm to 15 mm, and

the shock absorbing cleat is formed of a material having a Young's modulus of not less than 20 MPa and not more than 1000 MPa.

8. The escalator step according to claim 7, wherein

the polymeric material is resin or elastomer.

9. The escalator step according to claim 8, wherein

the elastomer is urethane rubber, natural rubber, synthetic rubber, silicone rubber, or fluorocarbon rubber.

10. The escalator step according to claim 9, wherein

the shock absorbing cleat also serves as demarcation.

11. The escalator step according to any one of claims 6 to 10, wherein

the shock absorbing cleat is arranged in plural number in the width direction of the tread.

12. The escalator step according to claim 7, wherein

the shock absorbing cleat further has a base section which is provided at bottoms of the long convex sections and short convex sections and which has, at a back side of the base section, a hollow section and a protruding section which plugs the opened upper end of each convex section of the riser.

13. The escalator step according to claim 12, wherein

the polymeric material is resin or elastomer.

14. The escalator step according to claim 13, wherein

the elastomer is urethane rubber, natural rubber, synthetic rubber, silicone rubber, or fluorocarbon rubber.

15. The escalator step according to claim 14, wherein

the shock absorbing cleat also serves as demarcation.

16. The escalator step according to any one of claims 12 to 15, wherein

the shock absorbing cleat is arranged in plural number in the width direction of the tread.

WHAT IS CLAIMED IS:

1. An escalator step comprising:

a tread having a body section on which a plurality of convex sections are arranged in a width direction thereof;

a riser connected to a rear end portion of the body section of the tread and having thereon a plurality of convex sections arranged in a width direction thereof and a plurality of concave sections formed between the adjacent convex sections; and

a shock absorbing cleat provided in a notch formed at the body section rear end portion near a corner at which the riser and tread are connected to each other,

the shock absorbing cleat including a plurality of convex sections which are arranged in parallel and each of which has a front end surface faced to each of the plurality of convex sections of the tread, and

the shock absorbing cleat being formed of a polymeric material having a Young's modulus of 1000 MPa or less, wherein

a length of each of the convex sections of the shock absorbing cleat is set to 14 mm to 50 mm, a thickness of each of the convex sections is set to 2 mm to 4 mm, an interval between of each the convex sections is set to 5 mm to 7 mm, a height of each of the convex sections is set to 10 mm to 15 mm.

2. The escalator step according to claim 1, wherein

the convex sections of the shock absorbing cleat includes

a plurality of short convex sections which are arranged in parallel and each of which has a rear end surface extending so as to be the same flat surface as the concave section of the riser, and

a plurality of long convex sections which are arranged in parallel between the adjacent short convex sections and each of which has a rear end surface extending so as to be the same flat surface as the convex section of the riser.

3. The escalator step according to claim 1 or 2, wherein the polymeric material is resin or elastomer.

4. The escalator step according to claims 3, wherein the elastomer is urethane rubber, natural rubber, synthetic rubber, silicone rubber, or fluorocarbon rubber.

5. The escalator step according to any one of claim 1 to 4, wherein

the shock absorbing cleat also serves as demarcation.

6. The escalator step according to any one of claims 1 to 5, wherein

the shock absorbing cleat is arranged in plural number in the width direction of the tread.