CLAIMS

1. A rope terminal assembly (2) of an elevator fixing an elevator rope (R) to a fixing base such as an elevator unit (1, CW), said elevator being suitable for transporting passengers and/or goods, which assembly (2) comprises:
   - an elevator rope (R), whose width is larger than its thickness in a rope transverse direction, with at least one end having an end face (R'),
   - a rope end block (3) attached to the rope end,
   - one or more wedge elements (8, 8'),
   - a wedge housing (4),

   characterized in that said terminal assembly (2) comprises a rope gap through which said elevator rope (R) passes and said wedge element (8, 8') is arranged to wedge between said rope (R) and said wedge housing (4) thus locking said elevator rope (R) in the gap, and said rope end block (3) is attached on said end face (R') side of the elevator rope (R) with respect to the wedge element (8, 8'), and said rope end block (3) is made of plastics or some other electrically non-conductive material.

2. The rope terminal assembly (2) according to claim 1, **characterized** in that said wedge element (8, 8') is an elongated element comprising a smooth contact surface portion (8b, 8b') and a rough or patterned contact surface portion (8a, 8a'), said smooth contact surface portion (8b, 8b') is arranged against said wedge housing element (4) and said rough or patterned contact surface (8a, 8a') is arranged against said elevator rope (R) surface.

3. The rope terminal assembly (2) according to any one of the previous claims, **characterized** in that said wedge housing (4) comprises two elongated side elements (4a, 4a') and two elongated wedge support

elements (4b, 4b'), and said side elements (4a, 4a') and said wedge support elements (4b, 4b') are connected together to form a rope gap of said wedge housing (4).

4. The rope terminal assembly (2) according to any one of the previous claims, **characterized** in that said wedge housing (4) comprises one or more adjustable locking means (9, 9') which are arranged to lock said wedge element (8, 8') in its position in said wedge housing (4).

5. The rope terminal assembly (2) according to any one of the previous claims, **characterized** in that said rope end block (3) has first part (3') on a first side of said elevator rope (R) and a second part (3'') on a second side of said elevator rope (R).

6. The rope terminal assembly (2) according to any one of the previous claims, **characterized** in that said rope end block (3) extends over said end face (R') of said elevator rope (R).

7. The rope terminal assembly (2) according to any one of the previous claims, **characterized** in that said rope end block (3) is a single piece structure where said first part (3') and a second part (3'') of said rope end block (3) are connected with a middle part (3d) of said rope end block (3).

8. The rope terminal assembly (2) according to any one of the previous claims, **characterized** in that said rope end block (3) is attached to said elevator rope end with fastening means.

9. The rope terminal assembly (2) according to any one of the previous claims, **characterized** in that said rope end block (3) is attached to said wedge element (8, 8') with fastening means.

10. The rope terminal assembly (2) according to any one of the previous claims, **characterized** in that said rope end block (3) comprises a first frame portion (3c, 3c') attached to said elevator rope end and a second frame portion (3a, 3a') attached to said wedge element (8, 8'), and an elastic portion (3b, 3b') between said first and second frame portions which elastic portion (3b, 3b') allows relative movement of said first and second frame portions of said rope end block (3).

11. The rope terminal assembly (2) according to any one of the previous claims, **characterized** in that said rope end block (3) comprises an elastic portion (3b, 3b') which is located outside of a frame portion of said rope end block (3) attached to said wedge element (8, 8').

12. The rope terminal assembly (2) according to any one of the previous claims, **characterized** in that said elevator rope (R) is electrically connected to a rope condition monitoring means via said rope end block (3) comprising one or more electrically conductive short circuit elements and fastening means.

13. The rope terminal assembly (2) according to any one of the previous claims, **characterized** in that said elevator rope (R) is made of carbon-fiber-reinforced polymer composite material.

14. The rope terminal assembly (2) according to any one of the previous claims, **characterized** in that said elevator rope comprises carbon-fiber-reinforced polymer load bearing parts (12a, 12b, 12c, 12d) to which rope condition monitoring means are connected with electrically conductive fastening means.

15. Elevator suitable for transporting passengers and/or goods, which elevator comprises:
    - a hoistway (S),

- at least one elevator unit (1, CW) movable in the hoistway (S), including at least an elevator car (1),
- lifting means comprising a lifting device (M) and one or more elevator ropes (R, C) connected to at least one elevator unit (1, CW),

characterized in that said elevator rope (R, C) is fixed to a fixing base such as an elevator unit (1, CW) with a rope terminal assembly (2) according to any of claims 1 to 14.

16. The elevator according to the previous claim 15, **characterized** in that said elevator comprises rope condition monitoring means connected via said rope end block (3) to the load bearing parts (12a, 12b, 12c, 12d) of said elevator rope (R, C).

17. The elevator according to any one of the previous claims 15-16, **characterized** in that said elevator comprises rope condition monitoring means comprising a rope condition monitoring device, which monitors and transmits an electrical signal of said elevator rope (R, C), at predefined time intervals to an elevator controller.

18. The elevator according to any one of the previous claims 15-17, **characterized** in that said elevator comprises rope condition monitoring means and if an error signal is transmitted from said rope condition monitoring means to an elevator controller, the elevator operation is altered or the elevator is taken out of service.

19. The elevator according to any one of the previous claims 15-18, **characterized** in that said elevator rope (R, C) comprises load bearing parts (12a, 12b, 12c, 12d) made of fiber-reinforced polymer matrix composite material, such as carbon fiber-reinforced polymer matrix composite, preferably unidirectional carbon fiber-reinforced polymer matrix composite.

20. The elevator according to any one of the previous claims 15-19, **characterized** in that elevator comprises rope condition monitoring means which is used to measure electrical resistance between said first point and second point of said elevator rope (R, C) first time during elevator installation and second time when said elevator has been used for transporting passenger and/or goods.

21. The elevator according to the previous claim 20, **characterized** in that said first point and second point are points of a non-metallic load bearing part (12a, 12b, 12c, 12d) of the elevator rope (R, C), or points of several electrically connected non-metallic load bearing parts (12a, 12b, 12c, 12d) of said elevator rope (R, C).

[Claim(s)]

[Claim 1]

A rope terminal assembly of an elevator fixing an elevator rope to a fixing base such as an elevator unit, said elevator being suitable for transporting passengers and/or goods, which assembly comprises:

- an elevator rope, whose width is larger than its thickness in a rope transverse direction, with at least one end having an end face,
- a rope end block attached to the rope end,
- one or more wedge elements,
- a wedge housing,

characterized in that said terminal assembly comprises a rope gap through which said elevator rope passes and said wedge element is arranged to wedge between said rope and said wedge housing thus locking said elevator rope in the gap, and said rope end block is attached on said end face side of the elevator rope with respect to the wedge element, and said rope end block is a single piece structure made of plastics or some other electrically non-conductive material.

[Claim 2]

The rope terminal assembly according to claim 1, **characterized** in that said wedge element is an elongated element comprising a smooth contact surface portion and a rough or patterned contact surface portion, said smooth contact surface portion is arranged against said wedge housing element and said rough or patterned contact surface is arranged against said elevator rope surface.

[Claim 3]

The rope terminal assembly according to claim 1 or 2, **characterized** in that said wedge housing comprises two elongated side elements and two elongated wedge support elements, and said side elements and said wedge support elements are connected together to form a rope gap of said wedge housing.

[Claim 4]

The rope terminal assembly according to any one of claims 1 - 3, **characterized** in that said wedge housing comprises one or more adjustable locking means which are arranged to lock said wedge element in its position in said wedge housing.

[Claim 5]

The rope terminal assembly according to any one of claims 1 - 4, **characterized** in that said rope end block has first part on a first side of said elevator rope and a second part on a second side of said elevator rope.

[Claim 6]

The rope terminal assembly according to any one of claims 1 - 5, **characterized** in that said rope end block extends over said end face of said elevator rope.

[Claim 7]

The rope terminal assembly according to any one of claims 1 - 6, **characterized** in that said first part and a second part of said rope end block are connected with a middle part of said rope end block.

[Claim 8]

The rope terminal assembly according to any one of the previous claims, **characterized** in that said rope end block is attached to said elevator rope end with fastening means.

[Claim 9]

The rope terminal assembly according to any one of claims 1 - 8, **characterized** in that said rope end block is attached to said wedge element with fastening means.

[Claim 10]

The rope terminal assembly according to any one of claims 1 - 9, **characterized** in that said rope end block comprises a first frame portion attached to said elevator rope end and a second frame portion attached to said wedge element, and an elastic portion between said first and second frame portions which elastic portion allows relative movement of said first and second frame portions of said rope end block.

[Claim 11]

The rope terminal assembly according to any one of claims 1 - 10, **characterized** in that said rope end block comprises an elastic portion which is located outside of a frame portion of said rope end block attached to said wedge element.

[Claim 12]

The rope terminal assembly according to any one of claims 1 - 11, **characterized** in that said elevator rope is electrically connected to a rope condition monitoring means via said rope end block comprising one or more electrically conductive short circuit elements and fastening means.

[Claim 13]

The rope terminal assembly according to any one of claims 1 - 12, **characterized** in that said elevator rope is made of carbon-fiber-reinforced polymer composite material.

[Claim 14]

The rope terminal assembly according to any one of claims 1 - 13, **characterized** in that said elevator rope comprises carbon-fiber-reinforced polymer load bearing parts to which rope condition monitoring means are connected with electrically conductive fastening means.

[Claim 15]

Elevator suitable for transporting passengers and/or goods, which elevator comprises:

- a hoistway,
- at least one elevator unit movable in the hoistway, including at least an elevator car,
- lifting means comprising a lifting device and one or more elevator ropes connected to at least one elevator unit,

characterized in that said elevator rope is fixed to a fixing base such as an elevator unit with a rope terminal assembly according to any one of claims 1 to 14.

[Claim 16]

The elevator according to claim 15, **characterized** in that said elevator comprises rope condition monitoring means connected via said rope end block to the load bearing parts of said elevator rope.

[Claim 17]

The elevator according to claim 15 or 16, **characterized** in that said elevator comprises rope condition monitoring means comprising a rope condition monitoring device, which monitors and transmits an electrical signal of said elevator rope, at predefined time intervals to an elevator controller.

[Claim 18]

The elevator according to any one of claims 15 - 17,

characterized in that said elevator comprises rope condition monitoring means and if an error signal is transmitted from said rope condition monitoring means to an elevator controller, the elevator operation is altered or the elevator is taken out of service.

[Claim 19]

The elevator according to any one of claims 15 - 18, **characterized** in that said elevator rope comprises load bearing parts made of fiber-reinforced polymer matrix composite material, such as carbon fiber-reinforced polymer matrix composite, preferably unidirectional carbon fiber-reinforced polymer matrix composite.

[Claim 20]

The elevator according to any one of claims 15 - 19, **characterized** in that elevator comprises rope condition monitoring means which is used to measure electrical resistance between said first point and second point of said elevator rope first time during elevator installation and second time when said elevator has been used for transporting passenger and/or goods.

[Claim 21]

The elevator according to claim 20, **characterized** in that said first point and second point are points of a non-metallic load bearing part of the elevator rope, or points of several electrically connected non-metallic load bearing parts of said elevator rope.