CLAIMS

1. A composite aluminum plate assembly, comprising at least two aluminum honeycomb profile units (6), wherein, each aluminum honeycomb profile unit (6) comprises a sandwich aluminum honeycomb (11), a first aluminum plate (10) and a second aluminum plate (9), and the sandwich aluminum honeycomb (11) is filled in between the first aluminum plate (10) and the second aluminum plate (9); an extended section is provided on a butt-joint side of at least one of the aluminum plates on two sides of each aluminum honeycomb profile unit (6), and the extended section extends to an outside of the sandwich aluminum honeycomb (11) on this side; the composite aluminum plate assembly further comprises a support member, and the strength of the support member is greater than the strength of the sandwich aluminum honeycomb (11), each extended section of the two adjacent aluminum honeycomb profile units (6) is correspondingly assembled and fixedly connected by the support member,

wherein the support member is an aluminum profile (13) and comprises a first auxiliary aluminum plate, a second auxiliary aluminum plate and a reinforcing rib, the first auxiliary aluminum plate is parallel to the second auxiliary aluminum plate, the reinforcing rib supports between the first auxiliary aluminum plate and the second auxiliary aluminum plate, the first auxiliary aluminum plate and the second auxiliary aluminum plate are respectively fitted with the extended sections on the two sides and the first auxiliary aluminum plate and the second auxiliary aluminum plate cover the butt-joint seam formed by the two extended sections on the corresponding side.

2. A composite aluminum plate assembly, comprising at least two aluminum honeycomb profile units (6), wherein, each aluminum honeycomb profile unit (6) comprises a sandwich aluminum honeycomb (11), a first aluminum plate (10) and a second aluminum plate (9), and the sandwich aluminum honeycomb (11) is filled in between the first aluminum plate (10) and the second aluminum plate (9); an extended section is provided on a butt-joint side of at least one of the aluminum plates on two sides of each aluminum honeycomb profile unit (6), and the extended section extends to an outside of the sandwich aluminum honeycomb (11) on this side; the composite aluminum plate assembly further comprises a support member, and the

strength of the support member is greater than the strength of the sandwich aluminum honeycomb (11), each extended section of the two adjacent aluminum honeycomb profile units (6) is correspondingly assembled and fixedly connected by the support member, wherein, the support member is a box-shaped aluminum profile (14), each extended section abuts against and is welded to an external surface on the corresponding side of the support member, wherein the aluminum honeycomb profile unit (6) comprises an aluminum profile which is integrally formed and forms a hollow structure, the first aluminum plate (10) and the second aluminum plate (9) are respectively two side surfaces of the aluminum profile, the extended section extends outward from the first aluminum plate (10) and abuts against an upper surface of the box-shaped aluminum profile (14), and a thickness of the extended section is greater than a thickness of a body of the first aluminum plate (10), the sandwich aluminum honeycomb (11) is filled in the hollow structure; the second aluminum plate (9) is connected to a side wall of the box-shaped aluminum profile (14) by welding through a connecting plate.

3. The composite aluminum plate assembly according to claim 2, wherein, the box-shaped aluminum profile (14) is an integrally formed structure, a boss is provided on the upper surface of the box-shaped aluminum profile (14), and each of two sides of the boss and an end face of the extended section on the corresponding side form a welded groove.

4. The composite aluminum plate assembly according to any one of claims 1 to 3, wherein, the two extended sections that are butt jointed with each other are connected by welding; or/and the extended section is connected to the support member by welding.

5. A cab of a rail vehicle, comprising:

a front half portion; and

a rear half portion,

wherein, the front half portion comprises a front portion of a side door frame, and the rear half portion comprises a rear portion of the side door frame and a roof portion; the front half portion comprises a first skeleton structure and an aluminum single plate covered outside

the first skeleton structure; the rear half portion comprises a second skeleton structure formed by a top curved beam and a side portion lateral beam, and the composite aluminum plate assembly according to any one of the claims 1 to 4 is covered outside the second skeleton structure.

6. The cab according to claim 5, wherein, the first skeleton structure comprises a plurality of parallel lateral plates, and further comprises a longitudinal plate in cross-connection with the lateral plate, the first skeleton structure forms a front window mounting skeleton, a front lamp mounting skeleton and a side door lower support skeleton.

7. The cab according to claim 5, wherein, at least one top curved beam is provided, and each top curved beam is successively arranged and space apart in a longitudinal direction of a vehicle body, two end portions of the top curved beam are respectively connected to the side portion lateral beam closest thereto.

8. A rail vehicle, comprising:

the composite aluminum plate assembly according to any one of claims 1 to 4;

or/and the cab of the rail vehicle according to any one of claims 5 to 7.