Claims:

1. A vehicle body collision energy absorbing structure, comprising:

a front-end collision energy absorbing structure mounted at a front end of a head carriage, and a middle-end collision energy absorbing structure mounted at an end of a middle carriage,

wherein the front-end collision energy absorbing structure includes a hermetic partition wall connected to both a cab skeleton and a skin, a front-end coupler arranged below the hermetic partition wall along a center line of a vehicle body, front-end anti-climbers symmetrically distributed on both sides of the center line of the vehicle body and located below the hermetic partition wall, and a front-end energy absorbing module, wherein a side of the front-end energy absorbing module deviating towards the center line of the vehicle body is mounted on the hermetic partition wall; and

the middle-end collision energy absorbing structure includes a middle shearing coupler mounted below an underframe.

2. The vehicle body collision energy absorbing structure of claim 1, wherein the middle-end collision energy absorbing structure further includes middle energy absorbing modules mounted on both sides of an end wall of the middle carriage, and a middle anti-climber mounted at a position corresponding to a side beam and below the middle energy absorbing modules, wherein a length of each of the middle energy absorbing modules extends along a height direction of the end wall.

3. The vehicle body collision energy absorbing structure of claim 2, wherein the middle anti-climber is provided with a guide rod, and an axis of the guide rod deviates from a central line of the middle anti-climber.

4. The vehicle body collision energy absorbing structure of claim 1, wherein along a direction of the center line of the vehicle body, a front end of the front-end coupler, a front end of the front-end anti-climber and a front end of the front-end energy absorbing module are staggered.

5. A vehicle body collision energy absorbing structure, comprising:

a front-end collision energy absorbing structure mounted at a front end of a head

carriage, wherein the front-end collision energy absorbing structure includes a hermetic partition wall connected to both a cab skeleton and a skin, a front-end coupler arranged below the hermetic partition wall along a center line of a vehicle body, front-end anti-climbers symmetrically distributed on both sides of the center line of the vehicle body and located below the hermetic partition wall, and a front-end energy absorbing module, wherein a side of the front-end energy absorbing module deviating towards the center line of the vehicle body is mounted on the hermetic partition wall.

6. The vehicle body collision energy absorbing structure of claim 5, wherein along a direction of the center line of the vehicle body, a front end of the front-end coupler, a front end of the front-end anti-climber and a front end of the front-end energy absorbing module are staggered; the cab skeleton and the hermetic partition wall are mounted on the underframe; and in a vertical height direction of the vehicle body, the front-end energy absorbing module is symmetrically mounted with an upper surface of the underframe as a center line or has a given offset relative to the upper surface of the underframe.

7. The vehicle body collision energy absorbing structure of claim 6, wherein the front-end energy absorbing module includes a housing, a back plate and an energy absorbing inner core mounted in the housing and abutted against the back plate, wherein the front-end energy absorbing module is mounted on the hermetic partition wall through the back plate.

8. The vehicle body collision energy absorbing structure of claim 7, wherein the offset of the front-end energy absorbing module relative to the upper surface of the underframe is less than or equal to 20% of a height of the back plate, and the back plate is connected to the hermetic partition wall by bolts.

9. The vehicle body collision energy absorbing structure of claim 7, wherein a circumference of the housing has a taper angle, and the taper angle gradually decreases from a side of the back plate to a front end of the housing, and the taper angle is smaller or equal to 5 degrees.

10. The vehicle body collision energy absorbing structure of claim 7, wherein the

energy absorbing inner core is a honeycomb core, and an axis direction of the honeycomb core is parallel or orthogonal to a travelling direction of the vehicle body.

11. The vehicle body collision energy absorbing structure of any one of claims 5 to 10, wherein a mounting end of the front-end coupler, a mounting end of the front-end anti-climber and a mounting end of the front-end energy absorbing module are not in the same mounting plane.

12. The vehicle body collision energy absorbing structure of any one of claims 5 to 10, wherein a front end of the head carriage is provided with a stop beam, a front end of a traction beam on the underframe extends to be connected to the stop beam, a lower part of the stop beam is provided with reinforcing ribs of the front-end energy absorbing module, and no front-end floor is provided on a front end of the stop beam.

13. A vehicle body collision energy absorbing structure, comprising:

a front-end collision energy absorbing structure mounted at a front end of a head carriage, and a middle-end collision energy absorbing structure mounted at an end of a middle carriage,

wherein the front-end collision energy absorbing structure includes a hermetic partition wall connected to both a cab skeleton and a skin, a front-end coupler arranged below the hermetic partition wall along a center line of a vehicle body, front-end anti-climbers symmetrically distributed on both sides of the center line of the vehicle body and located below the hermetic partition wall; and

the middle-end collision energy absorbing structure includes a middle shearing coupler mounted below an underframe, middle energy absorbing modules mounted on both sides of an end wall of the middle carriage, and a middle anti-climber mounted at a position corresponding to a side beam and below the middle energy absorbing modules, wherein a length of each of the middle energy absorbing modules extends along a height direction of the end wall.

14. The vehicle body collision energy absorbing structure of claim 13, wherein the middle energy absorbing modules are mounted on the end wall of the middle carriage and are located on both sides outside a through passage, and each of the middle energy

absorbing modules includes an aluminum honeycomb and an aluminum plate coated outside the aluminum honeycomb; and

an inner or inner side of the middle energy absorbing module is provided with a drainage tube.

15. The vehicle body collision energy absorbing structure of claim 13, wherein the middle anti-climber is provided with a guide rod, and an axis of the guide rod deviates from a center line of the middle anti-climber.

16. A rail vehicle, comprising a vehicle body and the vehicle body collision energy absorbing structure of any one of claims 1 to 4, any one of claims 5 to 12, any one of claims 13 to 15.