Abstract

A vehicle body collision energy absorption structure, ~~comprising a front end collision energy absorption structure mounted at the front end of a head vehicle and a middle end collision energy absorption structure mounted at an end of a middle vehicle (14); the front end collision energy absorption structure comprises an airtight partition wall (4) connected to both a framework and a skin of driver's cab, a front end coupler (1) arranged below the airtight partition wall (4) along a central line of the vehicle body, front end anti-creepers (2) symmetrically distributed at two sides of the central line of the vehicle body and located below the airtight partition wall (4), and a front end energy absorption module (3), the front end energy absorption module (3) being mounted on the airtight partition wall (4) at a side deviating to the central line of the vehicle body; and the middle end collision energy absorption structure comprises a middle breakable coupler (10) mounted below a chassis, middle energy absorption modules (11) mounted at two sides of an end wall of the middle vehicle (14), and middle anti-creepers (12) located below the middle energy absorption modules (11) and corresponding to positions of side beams, wherein the length of the middle energy absorption modules (11) extends along the height direction of the end wall where the middle energy absorption modules are located~~ 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 (14), where the front-end collision energy absorbing structure includes a hermetic partition wall (4) connected to both a cab skeleton and a skin, a front-end coupler (1) arranged below the hermetic partition wall (4) along a center line of a vehicle body, front-end anti-climbers (2) symmetrically distributed on both sides of the center line of the vehicle body and located below the hermetic partition wall (4), and a front-end energy absorbing module (3), where a side of the front-end energy absorbing module (3) deviating towards the center line of the vehicle body is mounted on the hermetic partition wall (4); and the middle-end collision energy absorbing structure includes a middle shearing coupler (10) mounted below an

underframe, middle energy absorbing modules (11) mounted on both sides of an end wall of the middle carriage (14), and a middle anti-climber (12) mounted at a position corresponding to a side beam and below the middle energy absorbing modules, where a length of each of the middle energy absorbing modules (11) extends along a height direction of the end wall. A rail vehicle, comprising a vehicle body collision energy absorbing~~absorption~~ structure mounted at the head end of a vehicle body. Said structure can be used to improve ~~the safety performance~~ the vehicle collision safety performance under the premise of unchanging urban rail vehicle platform~~during vehicle collision while the existing urban rail vehicle platform remains unchanged~~.

FIG. 1