

Open wagon consists of bogies, automatic couplers, braking equipment, a frame module, and a body module with side and end walls, stiffening ribs, lower and upper stringers, and a floor. The stiffening ribs of the body module are designed with a variable cross-sectional geometry that decreases along the height of the body walls from the lower frame to the upper frame; the side and end walls, stiffening ribs, and lower and upper frames are made of a fiber-reinforced polymer composite.