Claims

1. A foam cement composite board with a dovetail groove type steel boundary rib structure, comprising any one of the following boards: a foam cement composite bottom board, a foam cement composite wall board, and a foam cement composite top board,

wherein a dovetail groove type steel frame boundary rib is arranged in the foam cement composite bottom board, or the foam cement composite wall board or the foam cement composite top board;

the dovetail groove type steel frame boundary rib comprises upper and lower flanges and a dovetail groove type boundary rib groove; and

a wedge block is arranged in the dovetail groove type boundary rib groove,

wherein

the wedge block arranged in the dovetail groove type boundary rib groove is slidable to install quickly at a correct position,

the wedge block has a shape matched with the groove, and

the wedge block includes a hole matched with a bolt, and a slot for placing a nut; or the wedge block includes a threaded hole matched with a bolt,

the connection between the foam cement composite wall board and the foam cement composite bottom board is carried out by fixedly connecting bolts, a connecting piece, and the wedge blocks arranged in the dovetail groove type boundary rib grooves of the boards,

the connection between the foam cement composite wall boards is carried out by fixedly connecting bolts, a connecting piece, and the wedge blocks arranged in the dovetail groove type boundary rib grooves of the boards,

the connection between the foam cement composite wall board and the foam cement composite top board is carried out by fixedly connecting bolts, a connecting piece, and the wedge blocks arranged in the dovetail groove type boundary rib grooves of the boards,

the connecting piece is a right-angled connecting piece, and includes a through hole matched with a bolt,

a rib plate is arranged on the right-angled connecting piece to obtain an increased board connection strength by increasing the strength of the connecting piece; and/or a reinforcing rib is arranged in each of the upper and lower flanges of the dovetail groove type boundary rib so as to obtain an increased board connection strength,

the foam cement composite bottom board is composited with a steel frame, a reinforcement truss, a steel wire mesh, an inorganic foam cement core material, and upper and lower cement mortar surface layers,

the steel wire mesh is fixedly connected to the steel frame, and

the steel wire mesh is entirely or partially paved according to a design requirement,

the foam cement composite wall board is composited with a steel frame, upper and lower steel wire meshes, a plurality of connecting pieces tied to the upper and lower steel wire meshes, an

inorganic foam cement core material, and upper and lower cement mortar surface layers,

the steel wire mesh is fixedly connected to the steel frame, and

the steel wire mesh is entirely or partially paved according to a design requirement,

the foam cement composite top board is composited with a steel frame, a steel wire mesh, a reinforcement truss, an inorganic foam cement core material, and upper and lower cement mortar surface layers,

the steel wire mesh is fixedly connected and fixed to the steel frame, and

the steel wire mesh is entirely or partially paved according to a design requirement.

2. The foam cement composite board with a dovetail groove type steel boundary rib structure according to claim 1, wherein

the foam cement composite wall board has another structure in which the foam cement composite wall board is composited with a steel frame, a steel wire mesh, a reinforcement truss, an inorganic foam cement core material, and upper and lower cement mortar surface layers,

the steel wire mesh is connected and fixed to the steel frame, and

the steel wire mesh is entirely or partially paved according to a design requirement.

3. The foam cement composite board with a dovetail groove type steel boundary rib structure according to claim 1, wherein the wedge block is pre-placed in the groove of the dovetail groove type boundary rib, or placed in the groove of the dovetail groove type boundary rib during installation.

4. A connection method of a foam cement composite board with a dovetail groove type steel boundary rib structure, comprising the following steps:

manufacturing a foam cement composite bottom board or a foam cement composite wall board or a foam cement composite top board according to a design requirement,

wherein a dovetail groove type steel frame boundary rib is arranged in the foam cement composite bottom board or the foam cement composite wall board or the foam cement composite top board,

the dovetail groove type steel frame boundary rib comprises upper and lower flanges and a dovetail groove type boundary rib groove, and

a wedge block is arranged in the dovetail groove type boundary rib groove,

the wedge block arranged in the dovetail groove type boundary rib groove is slidable to install quickly at a correct position,

the wedge block has a shape matched with the groove, and

the wedge block includes a slot for placing a nut; or the wedge block includes a threaded hole matched with a bolt,

a method of connecting the foam cement composite bottom board with the foam cement composite wall board comprises the steps of:

first, placing the foam cement composite bottom board on a horizontal base plane, and vertically placing the foam cement composite wall board at a corresponding position of the foam cement composite bottom board according to a design requirement;

then respectively placing the wedge block, in which a nut is placed, in the dovetail groove type boundary rib groove arranged in each of the foam cement composite bottom board and the foam cement composite wall board; and

running bolts through a connecting piece respectively and fixedly connecting the bolts to the nuts in the wedge blocks so as to fixedly connect the foam cement composite bottom board with the foam cement composite wall board by fastening the wedge blocks with the dovetail groove type steel frame boundary ribs,

a method of connecting the foam cement composite wall board with another foam cement composite wall board comprises the steps of:

according to a design requirement, placing the wedge block, in which a nut is placed, in the dovetail groove type boundary rib groove arranged in each of the foam cement composite wall board and the another foam cement composite wall board; and then

running bolts through a connecting piece respectively and connecting and fixing the bolts to the nuts in the wedge blocks so as to connect the foam cement composite wall board with the another foam cement composite wall board by fastening the wedge blocks with the dovetail groove type steel frame boundary ribs,

a method of connecting the foam cement composite wall board with the foam cement composite top board comprises the steps of:

according to a design requirement, placing the foam cement composite top board on the foam cement composite wall board, and placing the wedge block, in which a nut, is placed in the dovetail groove type boundary rib groove arranged in each of the foam cement composite top board and the foam cement composite wall board; and

then, running bolts through a connecting piece respectively and connecting and fixing the bolts to the nuts in the wedge blocks so as to connect the foam cement composite wall board with the foam cement composite top board by fastening the wedge blocks with the dovetail groove type steel frame boundary ribs,

the connecting piece is a right-angled connecting piece, and includes a through hole matched with a bolt,

a rib plate is arranged on the right-angled connecting piece to obtain an increased board connection strength by increasing the strength of the connecting piece; and/or a reinforcing rib is arranged in each of the upper and lower flanges of the dovetail groove type boundary rib so as to obtain an increased board connection strength.

5. The connection method of a foam cement composite board with a dovetail groove type steel boundary rib structure according to claim 4, wherein the wedge block is pre-placed in the groove of the dovetail groove type boundary rib, or placed in the groove of the dovetail groove type boundary rib during installation.