CLAIMS

1. A longitudinal joint structure for hat-type steel sheet piles, in which a first hat-type steel sheet pile and a second hat-type steel sheet pile are coupled by causing end surfaces thereof in a member axis direction to butt each other, the longitudinal joint structure comprising:

a first engagement target portion that protrudes outward from a side surface of the first hat-type steel sheet pile; and

an installation portion that is provided on a side surface of the second hat-type steel sheet pile and locks the first engagement target portion of the first hat-type steel sheet pile in the member axis direction,

wherein a cross-sectional area in a case where a part of the installation portion excluding a locking region with respect to the first engagement target portion is seen in a cross section perpendicular to the member axis direction is maximized at a butting position between the first hat-type steel sheet pile and the second hat-type steel sheet pile.

2. The longitudinal joint structure for hat-type steel sheet piles according to Claim 1, further comprising:

a second engagement target portion that protrudes outward from the side surface of the second hat-type steel sheet pile,

wherein the installation portion also locks the second engagement target portion in addition to the first engagement target portion.

3. The longitudinal joint structure for hat-type steel sheet piles according to Claim 2,

wherein the end surface of the first hat-type steel sheet pile and an end surface of the first engagement target portion are flush with each other, and

wherein the end surface of the second hat-type steel sheet pile and an end surface of the second engagement target portion are flush with each other.

4. The longitudinal joint structure for hat-type steel sheet piles according to any one of Claims 1 to 3,

wherein the first engagement target portion has an extension projection which extends in the member axis direction on a front end side of the extension projection, and

wherein the installation portion has a recess which extends in a wall width direction perpendicular to the member axis direction and a through-thickness direction of the first hat-type steel sheet pile and locks the extension projection.

5. The longitudinal joint structure for hat-type steel sheet piles according to Claim 4, further comprising:

a slide prevention portion that restricts relative movement between the installation portion and the first engagement target portion in the wall width direction.

6. The longitudinal joint structure for hat-type steel sheet piles according to any one of Claims 1 to 5,

wherein a plurality of the first engagement target portions are provided while being separated from each other along the member axis direction.

7. The longitudinal joint structure for hat-type steel sheet piles according to Claim 6,

wherein the plurality of first engagement target portions are provided integrally with a common substrate.

8. The longitudinal joint structure for hat-type steel sheet piles according to any one of Claims 1 to 7,

wherein the installation portion is fixed to the hat-type steel sheet piles using the bolts.

9. The longitudinal joint structure for hat-type steel sheet piles according to any one of Claims 1 to 8,

wherein the installation portion has a installation portion-side projections protruding in the through-thickness direction, and

the first engagement target portions and the installation portion-side projections abut each other on the abutting surfaces inclined in the through-thickness direction.

10. A longitudinal joint hat-type steel sheet pile unit comprising:

the longitudinal joint structure for hat-type steel sheet piles according to any one of Claims 1 to 9.

11. A steel wall in which a plurality of the longitudinal joint hat-type steel sheet pile units according to Claim 10 are continuously installed in the wall width direction perpendicular to the member axis direction and the through-thickness direction of the first hat-type steel sheet pile,

wherein the installation portions of the longitudinal joint hat-type steel sheet pile units adjacent to each other in the wall width direction are disposed at different

positions in the member axis direction.