WHAT IS CLAIMED IS:

1. A protective member attaching apparatus for attaching a sheet comprising a thermoplastic resin to a front surface of a substrate having projections and recesses on the front surface side, the protective member attaching apparatus comprising:

a pressure reduction chamber that includes an upper housing and a lower housing separable from the upper housing, with a pressure reduction unit and an atmospheric air opening unit connected respectively to the upper housing and the lower housing;

a support table that is provided inside the lower housing and on which the substrate is mounted;

a sheet fixing section for fixing the sheet in such a manner as to partition an inside space of the pressure reduction chamber into the upper housing side and the lower housing side when the upper housing and the lower housing are united;

a heating unit that heats the sheet to soften the sheet; and

a control unit that controls the pressure reduction chamber and the heating unit to reduce pressures inside the upper housing and the lower housing, and thereafter softens and brings the sheet into close contact with the

substrate mounted on the support table by a differential pressure generated by opening the upper housing to the atmospheric air,

wherein the sheet fixing section has

an outer periphery fixing section that fixes an outer periphery of the sheet, and

a temporary fixing section that holds that region of the sheet that faces the support table from the upper housing side and temporarily fixes the sheet to the substrate mounted on the support table through a gap between the sheet and the substrate, and

the temporary fixing section is a support plate provided on a lower surface thereof with a resin layer for holding the sheet by a tack force, and the resin layer and the support plate are formed with ventilation holes.

2. The protective member attaching apparatus according to claim 1, wherein the heating unit heats the support table.

3. A protective member attaching method for attaching a sheet comprising a thermoplastic resin to a front surface of a substrate having projections and recesses on the front surface side by use of a protective member attaching apparatus,

the protective member attaching apparatus including

a pressure reduction chamber that includes an upper housing and a lower housing separable from the upper housing, with a pressure reduction unit and an atmospheric air opening unit connected respectively to the upper housing and the lower housing,

a support table that is provided inside the lower housing and on which the substrate is mounted,

a sheet fixing section that fixes the sheet in such a manner as to partition an inside space of the pressure reduction chamber into the upper housing side and the lower housing side when the upper housing and the lower housing are united,

a heating unit that heats the sheet to soften the sheet, and

a control unit that controls the pressure reduction chamber and the heating unit to reduce pressures inside the upper housing and the lower housing, and thereafter softens and brings the sheet into close contact with the substrate mounted on the support table by a differential pressure generated by opening the upper housing to the atmospheric air,

the sheet fixing section having

an outer periphery fixing section that fixes

an outer periphery of the sheet, and

a temporary fixing section that holds that region of the sheet that faces the support table from the upper housing side and temporarily fixes the sheet to the substrate mounted on the support table through a gap between the sheet and the substrate,

the temporary fixing section being a support plate provided on a lower surface thereof with a resin layer for holding the sheet by a tack force,

the resin layer and the support plate being formed with ventilation holes,

the protective member attaching method comprising:

a heating step of operating the heating unit;

a preparation step of fixing the sheet to the sheet fixing section and mounting the substrate on the support table;

a pressure reduction step of uniting the upper housing and the lower housing and reducing pressures inside the upper housing and the lower housing in a state in which the sheet held by the temporary fixing section on an upper side of the substrate faces the substrate, after the heating step and the preparation step are carried out; and

a sheet close contact step of causing the pressure

inside the upper housing to approach the atmospheric pressure to set a difference in atmospheric pressure between the inside of the upper housing and the inside of the lower housing to be equal to or more than a predetermined value, thereby causing the sheet to be separated from the temporary fixing section and brought into close contact with the substrate, after the pressure reduction step is carried out.

4. The protective member attaching method according to claim 3,

wherein the sheet close contact step includes

a preliminary close contact step of causing the inside of the upper housing to approach the atmospheric pressure and bringing a center of the sheet into close contact with the substrate, and

a final close contact step of bringing the inside of the upper housing to the atmospheric pressure to widen a close contact area of the sheet brought into close contact with the substrate in the preliminary close contact step, from the center to the outside of the sheet.