

## Technical Note:

# The Application of Nickelplast in Fabricating a PTB Insert

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For several years, we have been experimenting with various materials in an effort to develop a PTB insert that would meet the following criteria:

1. Ease of fabrication
2. Appealing cosmesis
3. Ease of modification
4. Material integrity that is not compromised under weight bearing

In our opinion, Kemblo and PELITE™, the materials of choice in the past, do not satisfactorily meet the above criteria. Nor do Aliplast, Lynadure, Spenco®, PPT, or silicone gel. Nickelplast<sup>1</sup> is the material that has come the closest to fitting our needs.

## FABRICATION

The steps in fabricating the Nickelplast insert are as follows:

1. Lay up the leather interface in the normal fashion.
2. Cut a pattern out of  $\frac{3}{16}$ " Nickelplast as shown in Figure 1.
3. Skive one side of the material, on a drum sander, at least one inch in from leading edge.
4. Glue the leather interface and Nickelplast with 3M contact cement or an equivalent adhesive.
5. Allow the glue to set five minutes, and then place the Nickelplast in the

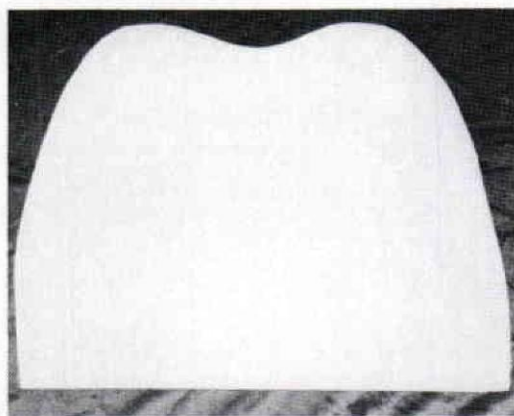


Figure 1. A pattern is made of the Nickelplast material according to the measurements of the positive model.

oven at 350°F for one minute, after which time the material will be flexible and easily worked.

6. Remove the material from the oven and place the skived edge of the Nickelplast along the posterior midline as shown in Figure 2. Continue to wrap the material around the positive model while moderately stretching and hand forming to insure a good bond between the materials.
7. Trim the posterior, leaving a one inch overlap, as shown in Figure 3. Glue the edge with poly adhesive,<sup>2</sup> and skive the overlapped material to provide a smooth seam.

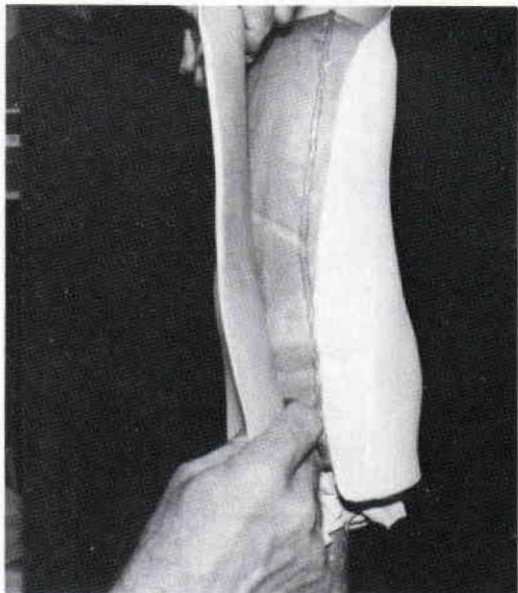


Figure 2. One edge of the skived material is attached to the midline.

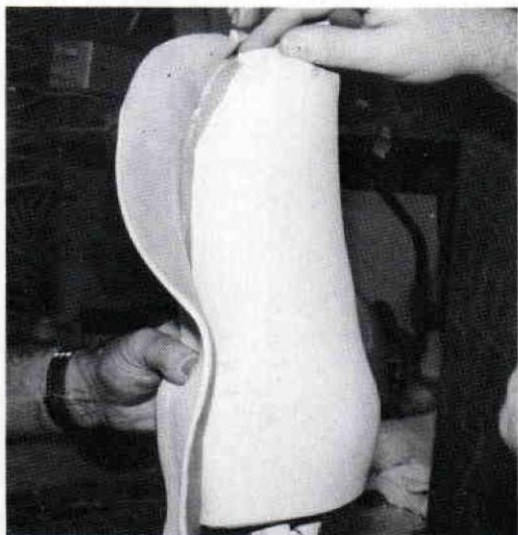


Figure 3. A one-inch overlap is made of the insert material after molding around the positive mold.

8. Cap the distal end with  $\frac{3}{16}$ " Nickelplast using poly adhesive. Skive the distal end cap, pull a sheet of P.V.A. over the liner and laminate the socket in the usual manner. A finished insert is shown in Figure 4.

We have now been using Nickelplast, successfully, in the fabrication of PTB in-

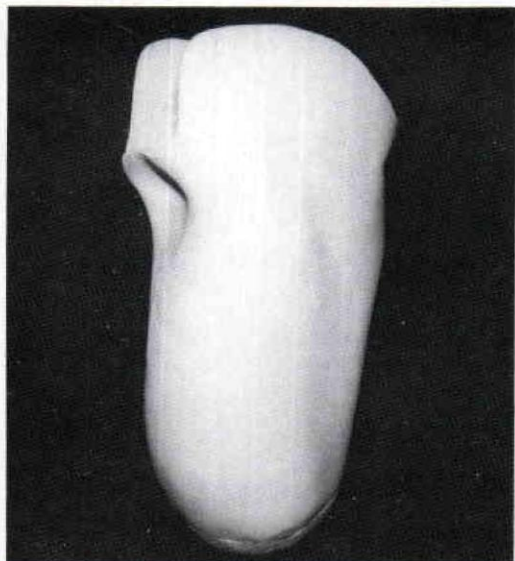


Figure 4. The finished appearance of the Nickelplast insert.

serts for over two years. In this length of time we have fit ninety-two patients using this material. PTB inserts with supracondylar and suprapatellar suspension have also been successfully fabricated with nickelplast. On examination of the first inserts we fabricated from this material, we found that they held up better than inserts made from the other previously mentioned materials. Recently we have used Nickelplast in conjunction with silicone gel and other materials for management of difficult fitting problems. Patient acceptance is very good, and comfort and durability has increased over other inserts that they have worn.

#### NOTES

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