

# A NEW TRANSFERENCE SYSTEM FOR THE INDIRECT BONDING OF BRACES

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## ABSTRACT

*The technical procedure for the elaboration of transference trays for the indirect placing of braces using a new combination of a rigid material and a flexible material is described. The resulting trays are precise and reusable.*

*Key words: Lingual orthodontics, bonding, transference trays.*

Two features define an efficient appliance bonding system in lingual orthodontics:

1. Correct conveyance of information of the three orders until the dental model<sup>1-4</sup>, and
2. Precise transference of the information from the model to the lingual surface of the teeth<sup>5-7</sup>.

The correct placement of appliances is fundamental to treatment results. Several placement systems have appeared on the market to deal with the problems related to the morphological irregularity of and difficulty of access to the lingual surface. These range from placements carried out in commercial laboratories, where the technician follows the orthodontist's treatment plan<sup>8</sup>, to placement carried out by the orthodontist or assistant inside the clinic itself<sup>9</sup>.

There are also many transference systems, from those based on traditional vinyl acetates to those making use of several materials (such as flexible silicon or rigid acrylic) and taking advantage of the characteristics of each one<sup>10-12</sup>.

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This article describes a new transference system which combines one rigid and one flexible material. The resulting transference trays, besides exploiting the characteristics of both materials, are reusable, and thus lead to cost and time savings.

## PROCEDURE

1. Set up the models of the patient to determine the ideal positions (*Figures 1 and 1a*).
2. Construct a  $.018 \times .025$  stainless steel guide wire (*Figure 2*). Insert the braces in the planned final position as indicated by the Hiro system (*Figure 3*).
3. Block the slot of the brace with zinc oxide eugenol so that the transference material does not become trapped.
4. Apply Barricaide (Dentsply Caulk), a smooth material commonly used in periodontal treatments, distributing it with a brush until a layer 2mm thick is formed. Polymerize the material (*Figure 4*).
5. Apply a 3mm metallic mesh over the Barricaide to provide rigidity to the minitray (*Figures 5 and 5a*).
6. Apply another layer of Barricaide and polymerize (*Figure 6*).
7. Individually number the trays for easy identification (*Figure 7*).
8. Applying pressure with a spatula, remove the trays, and with them the braces, from the model (*Figure 8*).
9. The braces are ready to be bonded (*Figure 9*).
10. Prepare the lingual surfaces (*Figures 10 and 10a*).
11. Bond the appliances (*Figures 11 and 11a*).
12. Remove the minitrays and store for reuse.

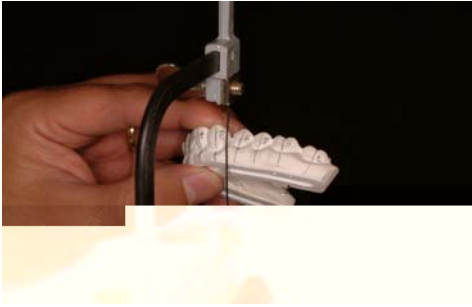


Figure 1. Cutting the model.

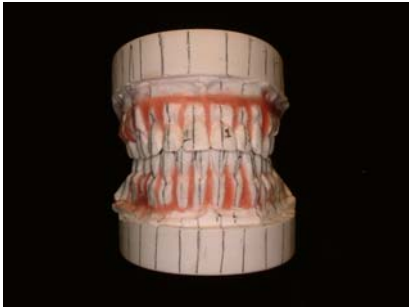


Figure 1. Ideal position of the teeth.



Figure 2. Guide wire.



Figure 3. Insertion of the braces.



Figure 4.Placement of the smooth material.

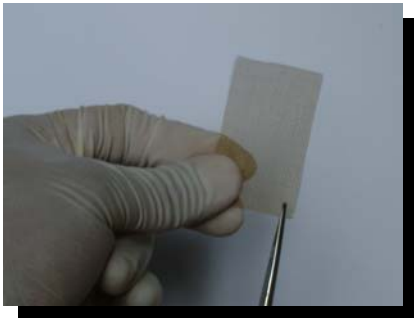


Figure 5. Smooth metallic mesh.

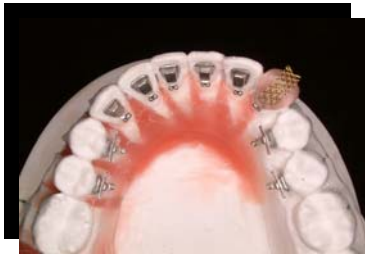


Figure 5a. Placement of the 3mm mesh over the smooth material.

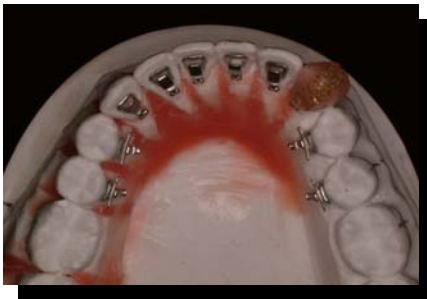


Figure 6. Application of a second layer.



Figure 7. Individual numbering for identification.



Figure 8. Removal of the trays from the model.



Figure 9. Brace ready to be bonded.



Figure 10. Etching the tooth.



Figure 10a. Application of the bonding resin.



Figure 11. Appliances in place.



Figure 11a. Appliances in place.

## DISCUSSION

Exactitude is an indispensable factoring the transference of braces from the model to the patient's mouth. Consequently, the trays used must be extremely precise and easy to manage. Trays constructed exclusively from rigid materials or from flexible materials may possess these characteristics. However the former are fractured upon removal, making impossible their reutilization and carrying the risk of damaging the surface of the appliance. The latter entail the danger of not being able to manipulate the transference with sufficient stability.

The procedure described above possesses four principle virtues:

- a) Stability at the moment of transference.
- b) No damage to the surface of the appliance when the tray is removed.
- c) The tray may be recovered and reused in the majority of cases.
- d) Simple elaboration with reasonable cost.

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