A new technique for preprosthetic restorations.

Developments in composite materials and adhesive systems now put us in a position to be able to fabricate an ever increasing number of preprosthetic restorations made from glass fibre-reinforced posts and composite cores.

The **Glassix® plus (Nordin)** posts and UNIC® (Nordin) system with prefabricated posts and cores are a part of these modern innovations for the fabrication of preprosthetic restorations.

What is Glassix® plus (Nordin)?

Glassix® plus (NORDIN) is a glass fibre-reinforced post. It is a non-metallic post with a modulus of elasticity similar to that of dentine. This minimises the risk of root fracture. The fracture resistance is higher than metal or ceramic. In contrast to the previous generation of posts, it does not contain any epoxy resin, which is completely unsuitable for adhesive luting.

Why Glassix® plus (Nordin)?

Glassix® plus (Nordin) has a wide range of valuable properties:

- Optimal radiopacity (Fig. 1).
- The glass fibres in the post (Fig. 2), which transfer the light, guarantee transmission of the polymerising light over the entire length of the post. (Fig. 3).

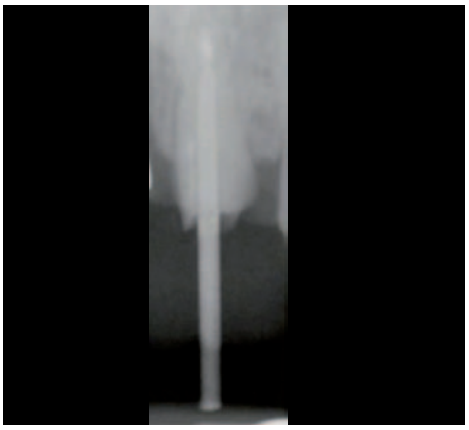

Fig. 1

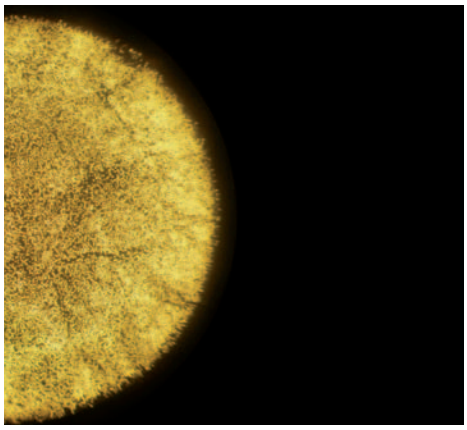

Fig. 2

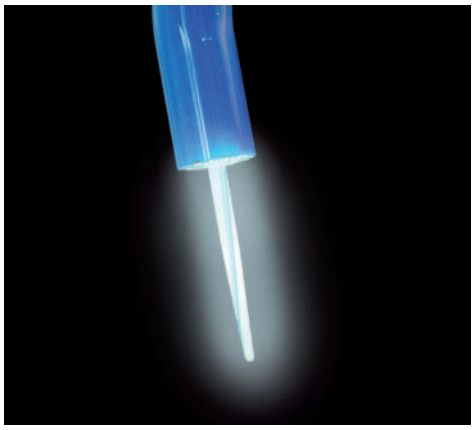

Fig. 3

- The modulus of elasticity is similar to that of dentine (Fig. 4).
- The flexural resistance has been increased (Fig. 5).

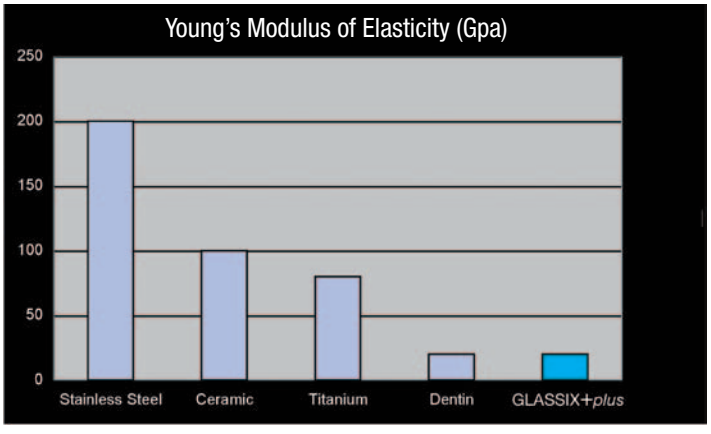

Fig. 4

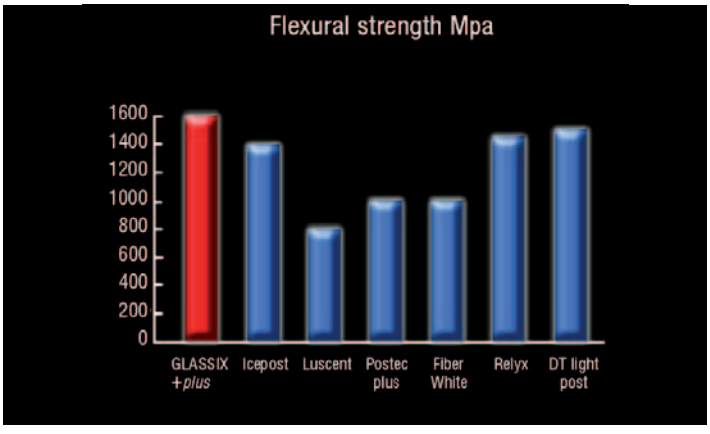

Fig. 5

The design of the **Glassix® plus (Nordin)** post provides optimal anchorage and superior adhesive bonding in the root canal (Fig. 6, 7).

- A conical shape adapted to the root canal.
- A spiral-shaped design guarantees mechanical retention, without having any weak spots and a consequent increase in the risk of fracture.
- The escape channels ensure reliable removal of excess luting cement.
- The spiral-shaped structure provides rotational security.

Fig. 6

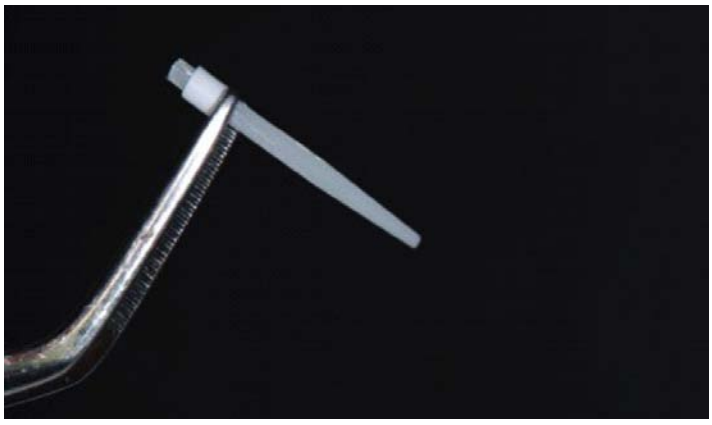

Fig. 7

How is Glassix® plus (Nordin) fitted?

The preparation and adhesive luting procedure with Glassix® plus (Nordin) is simple:

- After determining the post length, there are two drills available; the predrill for removing the gutta-percha (Fig. 8) and the reamer drill (Fig. 9), which is used to prepare the exact shape of the post site.
- The post is tried in after disinfection and drying of the canal (Fig. 10). An all-in-one adhesive, Shotbond® (Nordin), is applied to the canal wall and coronal area. The adhesive etches, primes and bonds in one step. (Fig. 11, 12).
- Any excess is removed using paper points. The adhesive is then light cured.
- A dual-curing cement should be used for luting the post, Corposit® (Nordin) (Fig. 13,14).
- After curing (Fig. 15), it can also be used for the core build-up, or another composite material can be used to produce an aesthetic restoration (Fig. 16,17).

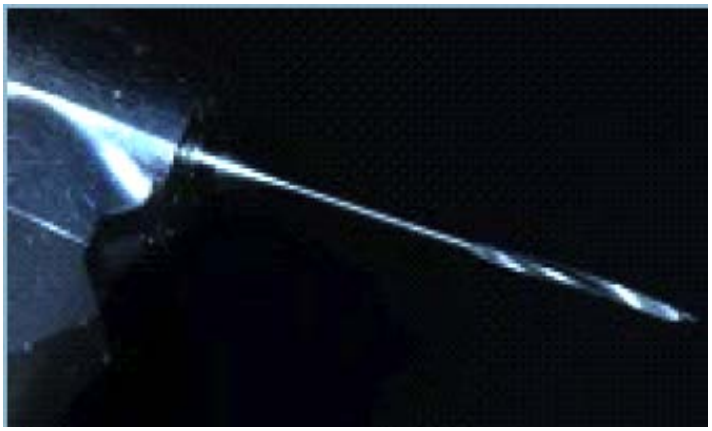

Fig. 8

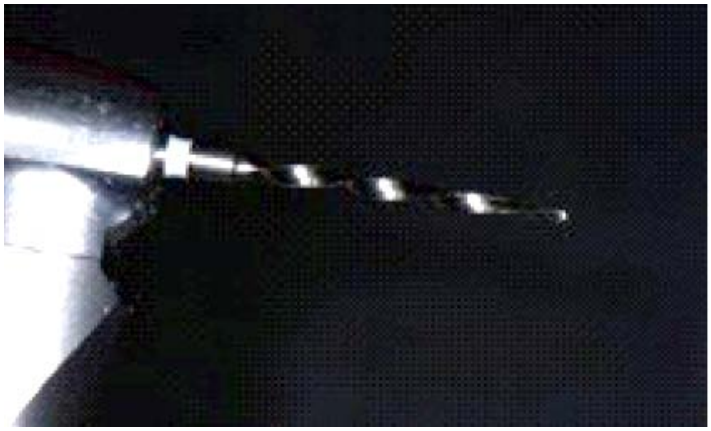

Fig. 9


Fig. 10

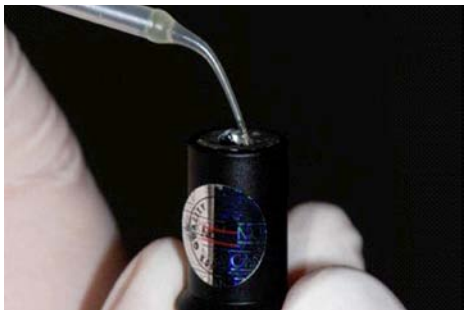
Fig. 11


Fig. 12


Fig. 13


Fig. 14


Fig. 15


Fig. 16


Fig. 17

A direct core restores the missing tooth structure of a severely damaged tooth to ensure anchorage and stabilisation of the planned crown.

The working procedure for fabricating a core can be divided into three main stages:

- Root treatment over several appointments. A temporary post crown is used for the interim periods.
- Adhesive luting of an endodontic post.
- Fabrication of the core using several composite layers applied incrementally.

The UNIC® (Nordin) post and core system completely changes all of these principles. The system comprises prefabricated cores with different diameters and different sizes of posts. (Fig. 18, 19). It is based on a modified concept for fabricating a preprosthetic restoration. The standard three treatment stages have been modified to simplify the treatment procedure:

- After preparation using a countersinking drill/calibration drill, the prefabricated core is adhesively luted in the crown area of the tooth. The prefabricated core has a central channel, which enables access to the root canal. The tooth is then prepared for fitting a crown and fabricating a temporary crown without a post.

- After removal of the temporary crown, root treatment is performed (over as many appointments as required) through the channel in the core.

- The post is adhesively luted through the prefabricated core.

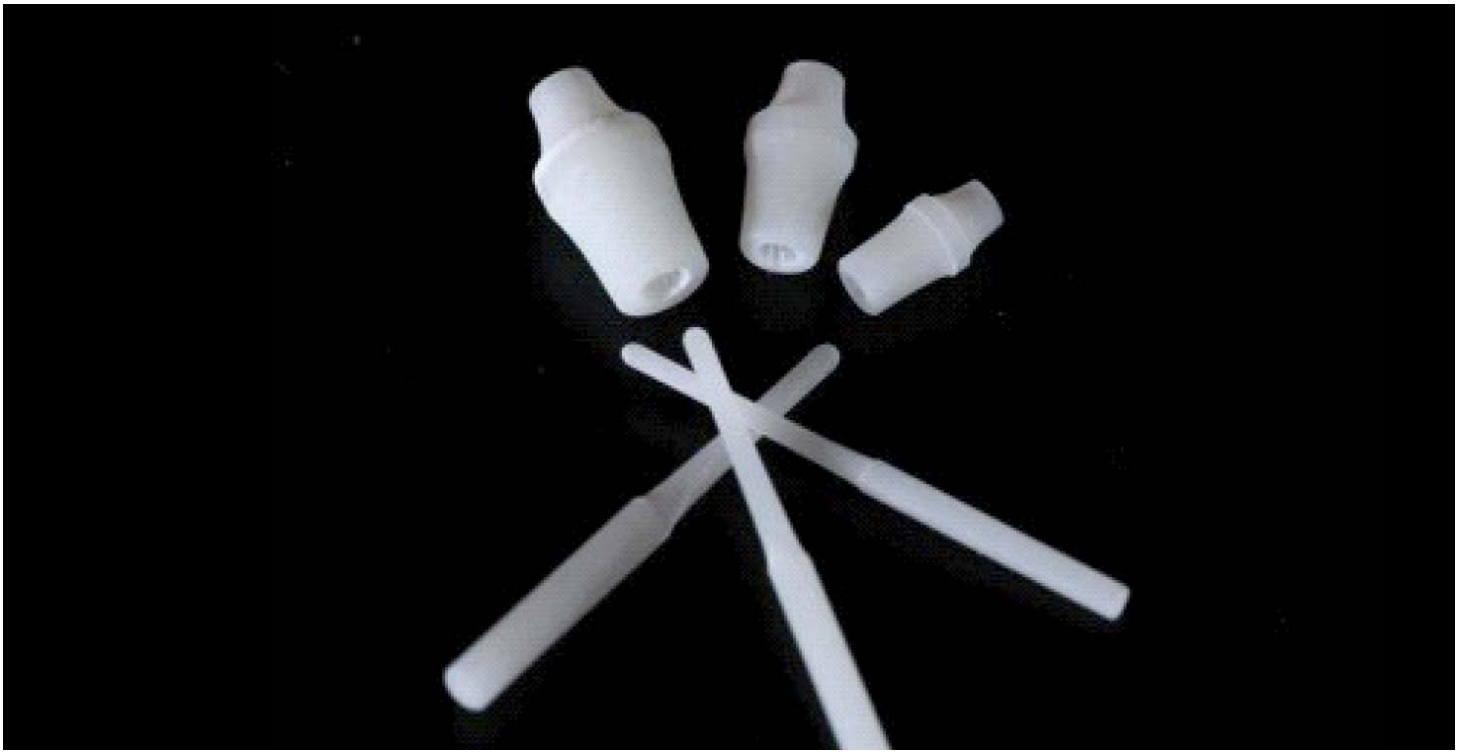

Fig. 18

Treatment procedure using the **UNIC® system (Nordin)**

- The coronal post box is prepared to the diameter of the prefabricated core using a calibration drill/ countersink drill (Fig. 19).
- An all-in-one adhesive, **Shotbond® (Nordin)**, is applied to produce a bond in the coronal post box region (Fig. 20). Any excess is removed using suction.

- Composite luting cement **(Corposit®, Nordin)** is applied to the inner wall of the box and the prefabricated core inserted. A gutta-percha post in the central channel protects against composite penetrating the channel cavity. The cement is then polymerised (Fig. 21, 22).

- Preparation for the planned crown.

- The channel of the core is sealed/ covered using a temporary sealant or Teflon strip. Fabrication of a temporary crown (Fig. 23, 24).
- Root canal treatment is simply performed through the core (over as many appointments as necessary) after the temporary crown and temporary seal have been removed (Fig. 25).

- The hole for post site preparation is drilled (Fig. 26).

- **Shotbond® (Nordin)** is inserted into the canal using a micropipette and polymerised (Fig. 27, 28).

- Corposit® (Nordin) luting cement is injected, the post inserted and the cement is then light cured (Fig. 29, 30).

- The post is shortened as required. A precision impression is taken for the permanent crown and the temporary crown is refitted (Fig. 31, 32).

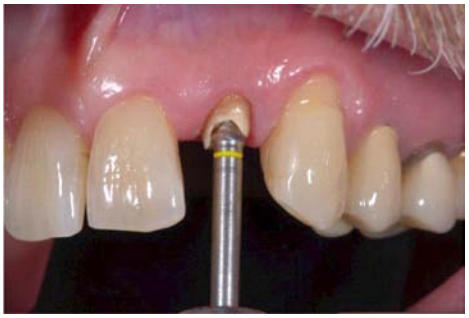
Fig. 19

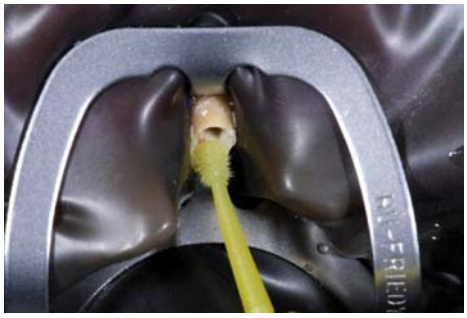
Fig. 20

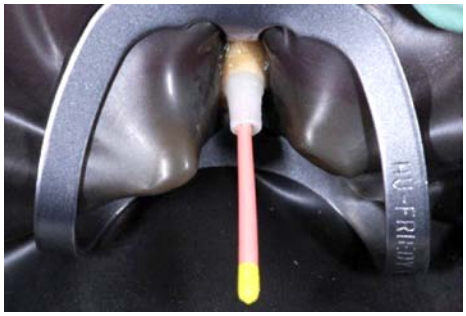
Fig. 21

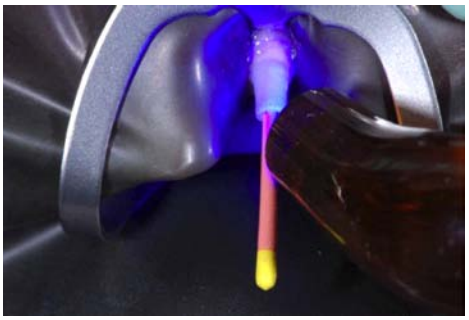
Fig. 22


Fig. 23


Fig. 24

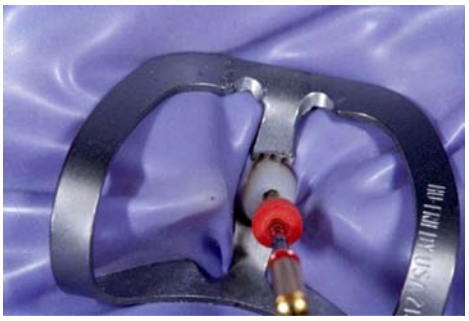
Fig. 25

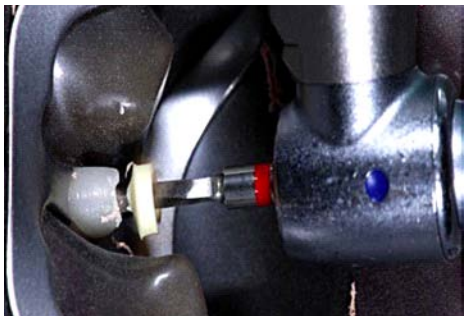
Fig. 26


Fig. 27

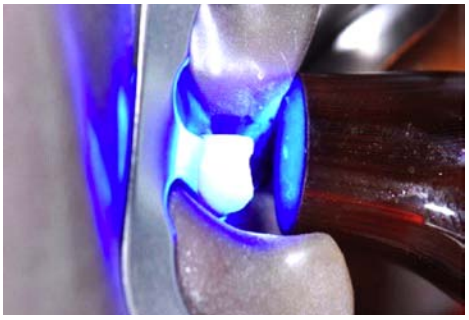
Fig. 28

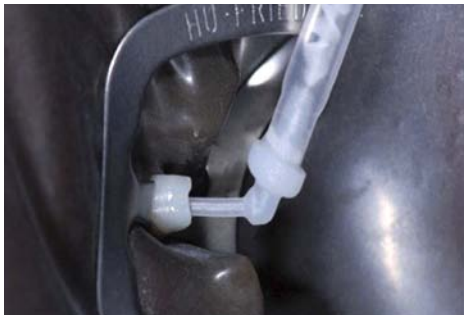
Fig. 29

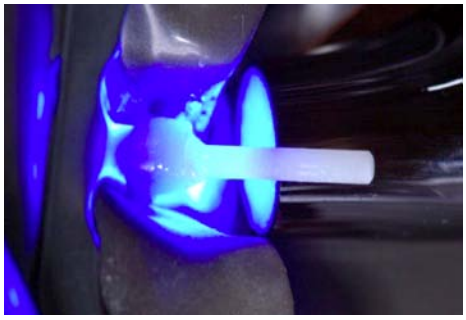
Fig. 30


Fig. 31


Fig. 32

What are the advantages of the **UNIC® (Nordin)** system?
The **Unic® (Nordin)** system has many advantages:

design and mechanical properties:

- Hyperboloid shape of the core ensures perfect alignment, absorption and distribution of force peaks.
- No weak spots with increased tendency to fracture.
- High flexural strength (Fig. 33).
- Minimal loss of dentine structure.

clinical aspects:

- Root canal treatment can proceed immediately through the prefabricated core.
- No treatment stage is required using a temporary post crown, as the core is already luted adhesively. A temporary crown without a post can be fabricated to the final preparation margin.
- As preparation for the permanent crown has already been completed, a precision impression of the preparation can be taken on the same day as cementing the post. This saves an additional stage.

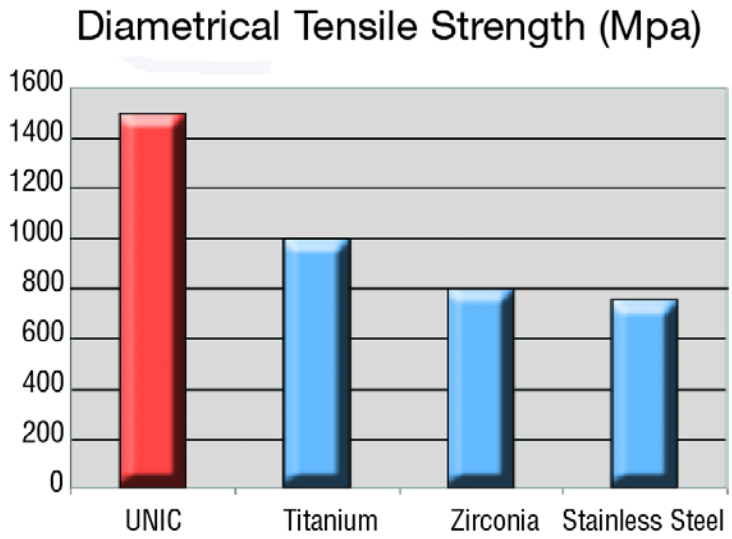

Fig. 33

The Glassix® plus (Nordin) and the Unic® (Nordin) system are a part of the new generation of materials for modern preprosthetic restoration. They provide an anatomical shape of post, a core tailored to the tooth, optimal strength due to their design and reinforced fibres as well as improved mechanical and adhesive properties. Taking everything into consideration, the system provides a very uncomplicated clinical procedure.