LATELUX® Pro

❖ Universal microhybrid light cure restorative composite
System kit

User application

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1. Prescription of the kit

The professional system kit **LATELUX *Pro*** is an optimal kit of structurally interconnected micro-hybrid composite pastes of various color shades, three degrees of transparency, three consistencies, auxiliary materials and accessories. **LATELUX *Pro*** is intended for use in therapeutic dentistry for filling carious cavities of all classes by Black, removing minor damage of non-carious origin, restoring the anatomical shape and cosmetic restoration of the crown parts of the teeth.

2. Composition of the kit

The components of the **LATELUX *Pro*** system kit are selected according to the nomenclature and the universal pastes are also numbered according to the data of dental practice.

The kit includes:

- universal composite pastes of 10 shades: 1 incisal, 6 enamel and 3 opaque;
- fluid composite **LATELUX *flow*** of one enamel and one opaque shade;
- condensable composite **LATELUX *MS*** of one opaque shade;
- composite light-curing lining cement **Reoliner-LC;**
- phosphoric acid etching gel **Soft Etch**;
- Monotex adhesive;
- varnish-glaze **Lateglint;**
- dentin-primer **Saturol;**
- polishing paste **Diapol-1.5;**
- accessories (color scheme, brushes, micro-applicators, cannulas).

The following instructions for use describe the procedures for working with the base material of the **LATELUX** and **LATELUX *MS*** kit and separately with the Monotex adhesion system, **Reoliner-LC** lining cement, **LATELUX *flow*** flowable composite, Lateglint varnish-glaze and polishing paste **Diapol -1.5**.

3. Instruction for the use of adhesive system *Monotex*

Prescription

Monotex used like an adhesive agent for enamel and dentine under light-curing filling materials of any type.

Composition

Monotex made on the basis of a specially synthesized binder which are the basis BisGMA, HEMA and glutar aldehyde. The adhesive also contains an effective antiseptic detergent - benzalkonium chloride, of a filler having a particle size of 0,4 microns and multi component highly volatile solvent.

Characteristics

Monotex have a highly stable adhesion to phosphoric acid etched dentine and enamel with the properties as a binder, and due to the penetration of micro-particles of filler to dentinal tubules on a greater depth than just the unfilled liquid adhesive systems.

Method of application

Etching of enamel and dentin

For a more complete cleaning of the enamel and dentin and the creation of active micro-relief under the application of the adhesive, processing of filling cavities have to be made by 37% of phospate gel. For approximal cavities put polymer matrix strip and wedges.

The necessary quantity of gel is extruded from the syringe through the cannula into the cuvette or glass and then by brush applied first to the enamel and 15 seconds after to the dentin. In some cases the gel may be applied directly onto the surface of the tooth. Exposure of gel on the enamel should be 30 seconds, on dentin– 15 seconds.

After the processing time rinsed thoroughly etching gel during 10–15 seconds by a water jet under pressure, and dried with compressed air 15 seconds to slightly moistened state of the dentin and enamel tarnishing. The cannula have to be washed with water after use with a syringe.

Applying adhesive

A drop of adhesive is applied from the bottle-dropper to applicator and rubbed into the tooth cavity within 10-15 seconds, then dried with compressed air for 10 to 15 seconds.

Monotex applied in one layer without subsequent photo polymerization.

Further sealing is carried out in accordance with the instructions for use of the composite with the necessary applying of the first thin layer(less than 0,5 mm).

Recommendations

Before use shake the contents of the vial.

At high exposures of dentin is recommended before application of Monotex applied to the surface of dentin 3-4 time dentin-primer **Saturol.**

4. Instruction for the use of interlining cement Reoliner-LC

Prescription

Reoliner-LC used in therapeutic dentistry like insulate and damping inlay in the case of filling deep caries cavities 1,2 and 3 class by Black.

Using of Reoliner-LC prescribe for:

- prevention of postoperative complications like result of effect to the pulp stresses which are spring up in shrinking of composite sealer;

- insulation of dentin from unfavorable factors in process of preparation of cavity to filling: action of etching acids, acrylic components of adhesive systems, exothermic heat;

- filling of undercut and roughness in cavity, covering medical inlay or root filler;

- decrease osmotic pressure of dentinal fluid;

- suppression lifetime of microorganism and penetration of toxins.

Characteristic

Reoliner-LC belong to the group of flowable light-curing composite materials. Have natural light-brown color without identification in scale Vita. Depth of curing about 3 mm by wavelength of ligh 400-500 nm during 40 seconds. Thanks to special combination of components of oligoester acrylates bonding agent material have high indifference to the pulp of the tooth, good adhesive to the dentine and resilience. strength mean value of polymerizator in axial compression 140-160 MPa give opportunity to treat it easy in tooth cavity or if it is need to remove. Filling of the cavity can continue after 2-3 minutes after polymerization of inlay.

Method of application

The prepared cavity of the tooth have to be good light and look through easy with dentistry mirror. This is very important for deep cavities 2 and 3 classes. All prepared cavity of the tooth clean from smear layer (etching) short duration treatment phosphorescent gel **Soft Etch**, wash by water from dentistry installation 10-15 seconds and dry by compressed air. If the dentine is thickness 1 mm (and less) make only wash with warm water without using of etching products. Little dose of **Reoliner-LC** squeeze out from the cannula of syringe and put it to the bottom of cavity. By close-fitting movement of plugger allocate **Reoliner-LC** on surface of the dentine not crossing dentine-enamel border. For getting necessary thickness inlay **Reoliner-LC** supplementary put to the bottom and ride of cavity with help of nozzle applicator to syringe and carefully condense by plugger. Thickness coat of inlay doesn't

have to exceed 1 mm. Photo polymerization of inlay doing during 30 seconds in distance 2-3 mm.

5. Instructions for use LATELUX and LATELUX *MS*

Prescription

The universal composite filling material light-curing **LATELUX** and condensable **LATELUX *MS*** are designed to form the main structural element of the restoration or a seal replacing the missing tissues of the tooth crown.

Application of **LATELUX** shown:

- in the case of filling caries cavities of all classes by Black;
- to eliminate traumatic defects of the teeth and complete restoration of the crown;
- with pathological abrasion of the enamel;
- for cosmetic restoration of teeth with strongly changed color of enamel;
- to correct the diastema and build up the crowns.

LATELUX *MS* has a similar function, but thanks to very elastic consistency it is more suitable for filling large cavities of grinding teeth, creating a high-strength opaque layer for cosmetic restoration, stamping the stump in the case of micro-prosthetics and making inlays in a direct and indirect way.

Composition

LATELUX 1 g contains:

- Bis-GMA;
- urethanedimethacrylate (UDMA);
- triethylene glycol dimethacrylate (TEGD;
- silanized barium aluminum boron silicate particularly fine-grained glas;
- pyrogenic silica;

Technical characteristics of the filler:

- Average particle size-0,7 microns;
- The maximum size of particles-3.0 microns;
- The filler content of the paste Incisal-63,4 % by volume, enamel-61,7 % by volume, opaque-63,7 %, LATELUX MS-68,8 %.

Characteristics

LATELUX belongs to the group of universal micro-hybrid composites curing under the influence of light with a wavelength of 400-500 nm. The curing depth by illuminated with a 75 W lamp for 40 seconds is 8-12 mm.

LATELUX pastes have high plasticity, transparency (except opaque), they do not stick to the tool. Pastes **LATELUX *MS*** differ from universal by high plastic elasticity.

Pastes **LATELUX** are available with three different degrees of transparency:

- 7 opaque shades of pastes for dentinal layers of the seal: OA2, OA3, OA3.5, OB1, OB2, OB3, UD, which is quite enough to reproduce the most common natural dentin color;
- 15 transparent color shades by the scale Vita Classic for the enamel layers of the seal: A1, A2, A3, A3.5, A4, B0.5, B1, B2, B3, B4, C2, C3, C4, D2, D3, UD;
- 4 very transparent shades for simulating the cutting edge (Incisal): In (neutral). The combination of a transparent composite layer with an opaque (or glass-ionomer cement using "sandwich-technology") gives an exceptionally high cosmetic effect, especially necessary in the restoration of the front teeth.

The **LATELUX *Pro*** system kits include **LATELUX** universal composite pastes of the ten most common shades which are shown on the package of the kit. The rest of the assortment of color shades is available as separate syringes (additional packages). **LATELUX *MS*** is available in 10 shades: opaque - OA2, OA3, OB2; translucent - A1, A2, A3, A3.5, B1, B2, C2. In the packaging **LATELUX *Pro***-one syringe opaque shade.

Seals from **LATELUX** are

characterized by radiopaque, high hardness, color stability, natural fluorescence, low water absorption and good polish-ability.

Method of application

Selection of the color of the filling material.

Before choosing a color, teeth have to be cleaned from soft plaque. During the procedure the tooth should be moist. The color of the filling material is selected by natural light before the carious cavity is prepared, preferably by comparing the tooth color with the Vita classic coloring or sampler of the **LATELUX** brand color. The color samples of cured pastes in the **LATELUX** system kits correspond exactly to the color of the contents of the corresponding syringe. They are used to select the color in the case of filling in the limit of the enamel. In the case of deep carious cavities have to keep in attention the color of the dentine and the opaque shades of the composite: a transparent paste is selected after polymerization of the opaque layer.

A sufficiently high transparency of the composite should also be taken into account: if the depth of the defect is large, the seal will appear somewhat darker than the surrounding tissues of the tooth, at a small thickness on the color of the seal will influence coloration of the prepared dentine under her. If the package contains no intermediate shade of color it can be obtained by mixing neighbor's light and dark or with Incisal paste. The color of the mixture in this case is checked by sample directly on the patient's tooth with obligatory photopolymerization for 30 seconds.

Carious cavity preparation

The tooth is isolated from the saliva by a cofferdam or cotton swab. The carious cavity is treated according to the generally accepted method for composites with some refinements: it is recommended that the finishing of the edges of the enamel have to be made at an angle to the vertical of 30-45 ° about half her thickness, made the cone and other elements for mechanical confinement are not required. After finishing the treatment the cavity is thoroughly rinsed and dried with clean compressed air.

In the case of deep caries to the bottom of the caries cavity put inlay **Replex-LC** based on calcium hydroxide, depending on the indications, insulating **Reoliner-LC** inlay which are included in the kit (see instructions for use above), **Ionolat-BL** from glass ionomer cement or polycarboxylate cement. It is possible to use similar inlay materials after preliminary approbation and comparison of clinical properties in vitro with those mentioned above.

Attention! Do not use temporary seals and inlays which containing eugenol.

Creation of an adhesive sublayer

Before applying the filling material on the surface of the restoration should be creating an adhesive sublayer using the ***Monotex*** dentine-enamel adhesive system (see the instructions for the use of the adhesion system).

Filling

Any filling should be performed in at least by two layers: the first thin layer (0,2-0,4 mm) to create a good adhesion contact. When it is applied, the first portion of the composite paste is applying slightly by grinding movements of the plugger. After applying the first layer, the photopolymerization is carried out for 15-20 seconds, gradually moving the light spot from one edge of the seal to the other. The next layers harden during 20-30 seconds.

When using **LATELUX *MS*** composite the first layer of paste should be a

thickness of 1,5-2 mm. Each layer after insertion into the cavity of the tooth must be sealed with condensing movements of the plugger. The final expopse of **LATELUX *MS*** is 40-45 seconds. If the tooth enamel is very clear, then the last top layer of the seal on the vestibular surface is made with the Incisal color, approximately 1/2 the thickness of the enamel.

Time of work with **LATELUX** pastes in the oral cavity should not exceed 3 minutes.

Glazing of a seal

To obtain a smooth and glossy surface of the seal and edge sealing it is covered with a thin layer of **Lateglint** varnish-glaze. Glazing of the seals is especially indicated for the front teeth. Instructions for the use varnish-glaze are given below.

Polishing

Mechanical grinding and polishing of the seals (instead of glazing) are carried out by methods customary for composite materials. For final polishing use diamond paste **Diapol-1.5,** included in the kit, or **Diapol-1.10.** Polishing with **Diapol** pastes is indicated for the treatment of restorations from **LATELUX** flow and for the grinding group of teeth. Instructions for using **Diapol-1.5** polishing paste are given below.

Recommendations

Do not leave the syringes open after performing the work with the composite paste. After taking a portion of the material from the syringe, the spout should be immediately closed with a cap.

6. Instruction for the use Latelux flow

Prescription

LATELUX *flow* have to be used in therapeutic dentistry for:

-Immediate elimination of all the defects of the enamel: like white and tetracycline spots, erosion, discoloration and etc. with minimal treatment of the tooth;

-Filling of cavities V classes by Blake;

-Restorative procedure make with classic composite materials;

-restore of acrylic veneer;

-provision of fissure sealants;

-tunnel filling;

-concealment of the metal pins (shadow shading).

Characteristic

LATELUX *flow* is belong to the group of micro hybrid composites tight-cured by influence of visible light with the length of the wave 400-500 nm. Profundity of light-curity in the course of 40 seconds for the enamel and dull shade about 4-6mm; for masking shade is 1,5mm. High fluidity and optimal thyrotrophic properties of material make it possible to put it directly from syringe to the surface which have to be restarted or to the cavity and give him the right form without condensation. Below modulus of resilient in combination with adhesive characteristic could guarantee high-quality border attachment. Latelux flow have his one bond to the etched surface of the enamel by phosphorous gel. In the case of exposing of the dentin should have to put two coat of bond **Latebond-LC** or 3-4 coat dentin-primer **Saturol.**

LATELUX *flow* going out in 6 enamel shades by the scale of Vita: A2, A3, A3.5, B1, B2, C3;

4 dull: OA2, OA3, OA3.5, OB2 and 4 not transparence shades: U (universal), DY (dark-yellow), G (grey), W(white)

Composition

1g of **LATELUX *flow*** content:

- urethane dimethacrylate (UDMA);
- ethoxylated bisphenol A dimethacrylate;
- triethylene glycol dimethacrylate;.
- roentgen-opaque fine-grain glasses filler;
- pyrogenic silicon oxide;
- polymerization initiator, inhibitors and adhesive additions.

Method of use:

Preparation of the surface

The process of preparation usually include this kind of steps:

- cleaning of the surface from tooth pellicle;
- selection of right color;
- the process of preparation usually involve removing from the tooth damaged tissue;
- etching of the surface by phosphorous gel **Soft Etch**;
- applying adhesive Monotex (except case of sealing fissure) or dentin-primer **Saturol** in area of the dentin.

Preparing surface of the tooth for restoration in our time is common standard procedure that is not make difference for any kind of materials. For a more detailed description of methodology see the part 3 and 5 instruction for the kit **Latelux *Pro*.**

Overlay of **LATELUX *flow***

Paste **LATELUX *flow*** should be putted directly from siring to prepared surface or cavity of the tooth for get better micro relief. First slim coat of the paste rub in lightly by plugger on the restored surface. Then again put necessary quality of the paste and smooth the coat excess off the paste you should take off by burnisher or modeling knife and every time the instrument have to be cleaned by paper napkin.

Working time in oral cavity with paste **LATELUX *flow*** is not more than 3 minutes. Process of polymerization realizing by photopolymer, the distance between fiber optic and restored surface should be about 2-3 mm.

After end of the work with composite paste you should clean the cap and spout of the syringe immediately close by cover.

Polishing

Mechanical polishing and polishing of restorated surface can be done in the classic ways. After end of the process you should use diamond paste **Diapol-1.3** or **Diapol-1.5** (which is included in the kit).

7. Instruction for the use of varnish-glaze Lateglint

Prescription

Lateglint used for finishing seal to give it a high gloss, eliminate small defects of the seals and enamel.

Composition

Lateglint is a mixture of Bis GMA, TEGDMA and other di-and monometakrilate with additions of pyrogenic silica, polymerization initiators and stabilizers.

Characteristics

Lateglint has good adhesion to the composite material and the phosphoric etched acid enamel. After polymerization on the surface of the seal with irradiated by visible light with a wavelength of 400-500 nm Lateglint forms a hard glossy surface that does not require additional polishing.

Method of application

Lateglint use one of the following ways: before of the polymerization and after a short (5 second) polymerization. In the first case form a seal. Little drop of Lateglint squeeze from a dropper bottle to the brush and uniformly applied to the surface of the seal.

For a better spreading of the glaze and filling by her small defects of the seal (opening air bubbles, scratches, chipping, cracks) the seal is blown with dry compressed air during 10-15 seconds, after that do photo polymerization. Polishing of the seal after the application of the glaze is usually not required.

In the second case the glazing of the seal is performed after a 5 second seal polymerization and processing by diamond abrasive head and abrasive tool. It is not allowed to use silicone heads and abrasive pastes.

The surface of the seal and the adjacent areas of enamel must be completely clean and dry. Glaze deposited in this case polymerized in the same time with the final

polymerization of seal during 40 seconds.

When covering by glaze all the surface of the tooth it have to be pre-etched by phosphate gel during 30 seconds and treated with adhesive.

***Annotation**. Glaze has a viscous consistency. That because we recommend to stand bottle in a horizontal position or tilted cap down to fill spout of insertion-dropper.*

8. Instruction for the use of paste polishing Diapol-1.5

Prescription

Paste polishing **Diapol-1.5** used for final polishing of the seals and restorations from composite materials which have the average dispersion of the filler not more than 5 mkm, preferably up to 3 mkm, and metal elements of the bridges in the oral cavity.

Characteristics

Paste polishing **Diapol-1.5** is made on the base of synthetic diamond with dispersion 1 micron. Pasta has a neutral light-gray color, sweet taste, gel-like consistency, does not spread, does not have any odor.

Diapol-1.5 Pasta is easily washed off by water. Duration polishing composites is typically 40-60 seconds, the metal-1,5-2 minutes.

Methode of application

Processing of the surface is performed first by grinding heads and disks (approximal surfaces) with more larger abrasive, then medium and then finally the smallest.

After this treatment the surface must acquire a uniformly matt appearance. Polishing is performed using rubber heads with internal ribs, using a cotton tampons, inserted into the polishing head or felt microfilz.

Tampons is made independently from tightly rolled up cotton turundas by cutting the lasts in the cylinder length of 5 mm.

Moistened in the water tampon by forceps have to be inserted into the rubber head in that way that it protrudes slightly outward. When attaching of the tampon in the rubber head **excess** water is drained and dried with compressed air.

Ensure that tampon firmly fixed internal ribs rubber head. Before polishing tampon should not be dry. The processing is carried out using angle hand piece at a speed of 5-6 thousands rpm.

A small quantity of paste **Diapol-1.5** is applied to the surface which have to be polished and with light pressure polishing during 15-20 seconds. Thereafter tampon or microfilz moisturize by drop of water from a syringe, applying the paste again and continue polishing other 15-20 seconds. On completion of the processing the tooth cleaned with a damp cotton ball and then washed by water from the dental unit. Gloss of the restoration control in a dry state.

9. Storage conditions

LATELUX *Pro* kit in packaged form should be stored in closed, cool place, protected from atmospheric precipitation and direct sunlight, at a distance of at least 1 meter from heaters. To increase the shelf life of long-term storage is recommended to use a refrigerator at +5 ° C. Before working **LATELUX *Pro*** kit should be kept 2-3 hours at room temperature to recover the ductility of composite pastes.

For professional use only