

ENA HRi® BIO FUNCTION

(EN) ENGLISH

Ena HRi Bio Function is a light curing radiopaque composite for direct and indirect aesthetic restorations in posterior and functional areas. It follows the standard ISO 4049. Bio Function is part of the Ena HRi aesthetic restorative system and can be used in combination with the associated composite shades, e.g. dentines or intensives.

Bio Function Enamel shades, are subjected to low abrasion and high resistance to compression which are comparable to the natural enamel. Ideal for use in posterior areas with direct or indirect technique and especially for prosthetic rehabilitation. Apply with a minimum thickness of 0,5 mm, in order to allow occlusal corrections without exposing the dentine. Three "Bio Function" enamel shades are available: BF1 low value - BF2 medium value - BF3 high value

Composition of "Biofunction" Enamel: MONOMER MATRIX: Urethane dimethacrylate; Tricyclodecane dimethanol dimethacrylate. TOTAL CONTENT OF THE FILLERS: 74% by weight (60% by volume); particle size of highly dispersed silicone dioxide is 0,005-0,05 µm, glass fillers have a particle size of 0,2-3,0 µm.

Clinical indications

DIRECT TECHNIQUE

Class I (all cavities), Class II (small and medium cavities), Class III (all cavities), Class IV (all cavities), Class V (all cavities), Total and partial vestibular covering, Cosmetic corrections

INDIRECT TECHNIQUE

Inlays Class I (all cavities), Inlays Class II (all cavities), Inlays Class IV (all cavities), Onlays, Luting of translucent composite and ceramic restorations (thickness < 2 mm), Final layering of restorations on implants and combined denture prosthesis, Rehabilitations/Adjustments and characterization of acrylic teeth or temporary prosthesis

Contra-indications: In case of known allergy to some of the components do not use it.

Hazard statement: May cause an allergic skin reaction.

Precautionary statements: Wear protective gloves/protective clothing/eye protection/face protection. If skin irritation or rash occurs: Get medical advice/attention.

Side effects: In deep cavities we suggest the use of a liner in order to avoid pulpal irritation.

Materials to be avoided: Materials containing phenolics (like eugenol) could inhibit composite curing. Avoid the use of these materials as liners.

DIRECT TECHNIQUE

Fillings and direct aesthetic restorations of class I-II-III-IV-V.

Preparation

Clean with fluoride-free prophylaxis paste.

Place a rubber dam.

Preparation should be made without undercuts, and for posterior restorations, slightly tapered diamonds are recommended to round out internal edges. Minimum thickness of composite layers should be >1.5 mm to avoid breakage. We suggest Ena Shiny preparation kit CS2LV for posteriors of Dr. L. Vanini, in which the Shiny 33 rubber, for polishing preparation, is included. In case of interproximal restorations, use Ena Matrix sectional matrix system.

Etching and bonding

Regular etching and bonding techniques are applicable. We recommend Ena Etch / Ena Bond. Alternatively to the Etch & Rinse technique, it is possible to use a self-etch bonding like Ena Bond SE. Please consult and follow the instructions given in etching / bonding manuals.

Composite application

Take Ena HRi composite out of the syringe or "tip" with a suitable tool like TLV2 instrument spatula side; apply very small quantities of material by pulling it down with a TLV2 instrument or a brush (Micerium "F" brush and Micerium Silicone Brushes) in order to avoid any bubbles. Close any first undercuts by using Ena HRi Flow composite, or use a Ena HRi dentine colour for large restorations. Then apply Ena HRi Bio Function enamel. Cure layers of 1-1,5 mm (no more than 2 mm for risks due to shrinkage) for 20 seconds (see detailed curing information below), from all sides of the build up; keep the light-curing tip as close as possible to the restoration. Oxygen leaves a thin layer of uncured composite: this layer should not be contaminated or wetted because it creates a chemical connection between the different layers of composite. We advise to apply an Air Block (Shiny G), when the restoration is finished and before the final light curing takes place. This glycerine based product eliminates the oxygen inhibition layer. Curing: Working time under standard light is approximately 3 minutes. During a long procedure, cover the composite with an opaque foil or use a colour palette with orange or black cover (COSSTAIN01). Note: avoid direct light of the overhead light and turn it off if possible. Cure each layer for 20 seconds (see detailed curing information below).

Finishing and polishing

Use diamond burs and diamond pastes. Do not use any disc buccally in order to avoid destroying the texture surface. We suggest using the complete finishing and polishing system Ena Shiny.

INDIRECT TECHNIQUE

Ena HRi Bio Function can be used indirectly for the above mentioned indication. The dental technicians use Ena HRi with the same stratification technique used with modern ceramic systems.

Impression and Temporary

Take an impression and use Ena Temp for temporary inlay and cement it with eugenol-free cement. For inlays, it is possible to use Ena Soft elastic composite. Its elastic properties allow for the complete and easy removal of the temporary inlay which leaves the preparation clean. Please consult the appropriate product manuals.

Model preparation

Pour a model with extra-hard plaster. After the plaster sets, remove the impression and apply an oil-free separator (e.g. Temp Sep) to the model. Follow the same stratification technique as in the direct method.

Inlays, Onlays

Supragingival preparation is required with a width of at least 2 mm in the occlusal area and the closing limits must not correspond to the occlusal contacts. Prepare the model and remove with wax any undercuts and any other interference to cementation. For inlays, first build up the external walls and then the occlusal areas. It is possible to use Ena Stains between Dentine and Enamel. Each layer should not be thicker than 2 mm and should be cured for 40 sec.

ENA HRi® BIO FUNCTION

Recommended final curing time is 11 minutes using a high power light curing unit such as LaborluxL or if using an 86W light box like LampadaplusT final curing time is 30 minutes. Finish with burs and polish with Ena Shiny brushes, aluminium oxide and diamond pastes. Wash with soap and water and dry with oil-free air spray.

Luting

Remove the temporary appliance and clean the preparation. Carefully try-in the restoration and proceed with any adjustments. Post-cure in an oven like LampadaplusT for 9 min. Apply the rubber dam. Clean the surface of the preparation with alcohol and sandblast. Etch the cavity and apply two coats of Ena Bond but do not cure. Sandblast the internal part of the composite restoration, then clean it with alcohol; apply the bond resin but do not cure. Warm a small amount of Ena HRi Bio Function (according to the depth of the cavity, after heating up to 55 °C into Ena Heat syringe heater) and apply it to the inside of the restoration. When the restoration is in place, apply a small amount of pressure either mechanically or manually. Remove the composite excess at margins and cure for at least 80 seconds from each side of the tooth. Check the occlusion, finish and polish with Ena Shiny system, using burs, strips and diamond pastes. **Note:** In case of inlay thickness over 2 mm use a dual luting composite such as Ena Cem^{HF} (see instructions for details).

Final layering of restorations on implants and combined denture prosthesis

Ena HRi Bio Function can be used as final composite layer of Tender HRi System.

Preliminary working steps

Apply metal primer, e.g. Tender Bond on the prepared metal framework. Cover the framework by using a paste opaque, e.g. Tender Paste Opaque. Do first composite application by using Tender Bodies for total covering of Opaque. For detailed information please consult the appropriate product manuals.

Composite application

Use Ena HRi composite on pretreated frameworks. Composites can be processed by using regular layering technique or by using a pressing system for light curing composites, e.g. Tender Flask system.

Layering technique: follow instructions described above under "Direct technique – composite application".

Pressing technique: Press the Ena HRi Bio Function composite chosen for the total tooth covering into the silicone mould, close the flask and light-cure (each layer should not be more than 2 mm thick for risks due to shrinkage). Open the flask, make final light-curing (Final curing in Laborlux3 for 9 min).

Finishing and Polishing

Finish and polish using diamond and carbide burs, diamond rubbers, pre-impregnated brushes and felts; diamond and aluminium oxide pastes can be used in order to improve the polishing phase. Do not use any disc buccally in order to avoid destroying the texture surface. We suggest using the complete finishing and polishing system Ena Shiny.

Rehabilitations, Adjustments and characterization of acrylic teeth or temporary prosthesis

Roughen the facings up to 2 mm around the margin of the area to be corrected or repaired and smooth again by sandblasting. Soak the to be treated surface by applying Temp Bonding Fluid using a paintbrush and light cure it for about 90 sec. in Laborlux3. If the cured layer looks whitish, it has been polymerised excessively and must be removed. Repeat the above-mentioned procedure, but reduce the curing time. Then Ena HRi Bio Function material should be applied and cured as indicated before.

CURING INFORMATION

A perfect curing is granted for layers not thicker than 3,56 mm as from ISO 4049. (we suggest no more than 2 mm for risks due to shrinkage) It is necessary to use a light-curing unit with a spectrum of 350 - 500 nm. We suggest a periodical check of the light intensity following the instructions of the manufacturer.

Dental office curing units:

We recommend regular LED-curing units having a light intensity of around 1200 mW/cm². The intensity must not be reduced below 650 mW/cm² (= minimum intensity). A curing time of 20 sec is applicable while a 2x20 sec is optimal.

Dental office curing times:

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| - Blue Phase (Ivoclar) | min. 20 sec per layer |
| - Cledplus (Micerium) | min. 20 sec per layer |

Laboratory curing units:

The required physical results can be reached only if using a multi-wall reflecting unit.

Laboratory curing times:

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| - Laborlux3 (Micerium) | approx. 90 sec. (final curing 16 min.) |
| - Hilite (Kulzer) | approx. 180 sec (final curing 3 min) |
| - Spektramat (Ivoclar) | approx. 60 sec. (final curing 20 min.) |
| - LampadaplusT with light 71- 86W (Micerium) | approx. 10 min. (final curing 30 min.) |

USE AND STORAGE

Do not store below 3°C and above 25°C. Do not use the product after the expiration date (see label on syringe or on "tips" container). Due to hygienic reasons Ena HRi "Tips" and flow application needles should be used only once. If the product is used more than once, a contamination of the material and/or the transmission of germs cannot be excluded. Use the material at room temperature. Medical device, for dental use only: keep away from children. To avoid material waste, turn back the spindle after removing the material. After use, close container with cap and keep it closed. Avoid direct exposure to sunlight. If the material is not completely cured, it may discolour, mechanical properties deteriorate and pulpal inflammation can occur.



MICERIUM S.p.A.
Via G. Marconi 83 - 16036 - Avegno (GE) Italy
Tel. (+39)0185-7887870 fax: (+39)0185-7887970
http/ www.micerium.it e-mail: micerium@micerium.it