Model and modelling materials

Model materials

Model materials are used to make a model of the situation in the oral cavity on the basis of an imprint. Depending on the type of produced replacement, we choose one or a combination of model materials. The choice of material depends on the imprint material used, the type of model (working, situational, study,...) and the type of replacement (fixed, removable, metal, resin, plastic, ...)

- In the Czech Republic, gypsum and metal materials are used, sometimes ceramic or plastic materials are used.

Required properties of model masses

- Volumetric stability.
- Perfect reproduction of all details.
- Smooth, strong and hard abrasion-resistant surface.
- Contrasting color.
- Fast preparation of the mass.
- Short setting time.

Gypsum

Metallic model materials

Galvanoplastic copper and silver

Galvanoplastic copper and silver are good model materials for their small volume change during processing. They are characterized by perfect drawing and low abrasion. They are used only for the surface layer of the model, the core of which is made of plaster. Plating takes place in a common galvanizing solution for twelve to fifteen hours, so that the anode is made of silver or copper and the cathode is connected to the imprint.

Low-melting alloys

Low-melting alloys based on bismuth, lead, tin and cadmium are also model materials. They are used to spray the imprint. For this, a special spray gun is used, which operates at a temperature of 138 ° C and creates a 0.5 mm thick shell. It is supplemented with model plaster or model chemically polymerizing resin.

Moulding materials

Other model materials are moulding materials. We use them in the production of casting model for the construction of metal dentures cast from high-melting alloys of base metals. We use these materials in the way described in the processing of the all-shell crown.

Modelling clays

Modelling clays are used for the creation of pre-shapes, which are later burned during the creation of the structure itself. The supporting structure can be both metal and non-metallic. To produce this pre-shape, we need a working model made of previously (above) described model materials. The properties of the model materials are also represented by volumetric stability, perfect reproduction of details, contrasting color. These requirements are best met by wax mixtures made of natural and synthetic waxes and resins, fats, fatty acids, oils and dyes.

Waxes

In particular, waxes are characterized by high thermal expansion and a low softening point. The wax starts flowing as early as 42 °C, which causes easy deformation. Their great advantage is perfect combustibility.

Cutting of wasps

- Inlays – rollers for modelling the pre-shape in the oral cavity,
- casting – for modelling in the laboratory in the form of plates with lower plasticity temperature,
- model – for modelling in the laboratory,
- adhesive
- wax preforms.

Modelling plastics

Modelling plastics are used as prefabricated or modelling resins. They polymerize chemically or with light. Their feature is volumetric stability, accuracy and poor deformability.

Links

Related articles

- Sádra
- Pomocné protetické materiály

Reference

Bibliography

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Kategorie:Zubní lékařství Kategorie:Preklinické zubní lékařství