



VITAPAN EXCELL®

Setup guide

Premium anterior teeth generation with a brilliant play of shape, shade and light for natural-looking dentures.

VITAPAN EXCELL[®] – anterior tooth

Premium anterior teeth made of MRP composite for highly esthetic full, partial and implant-retained dentures.

- **Truly natural.**

The wide range of shapes and shades provides absolute freedom of choice and individuality.

- **Truly lifelike.**

The balanced light transmission results in true-to-life light dynamics. Natural fluorescence always comes from within the tooth, which is also the case with VITAPAN EXCELL.

- **Truly strong.**

The VITA premium teeth made of high-quality MRP composite combine durability, improved polishing characteristics and natural esthetics.

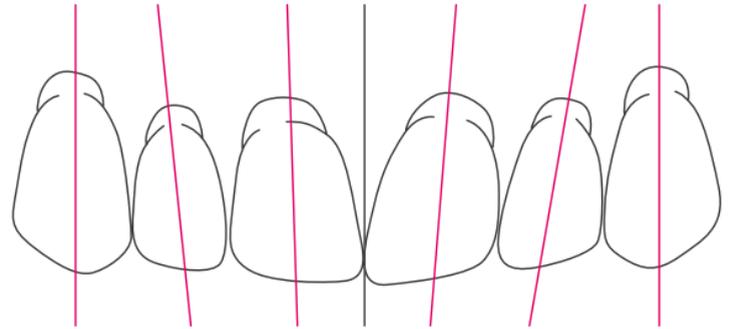


Setup of the upper anteriors.

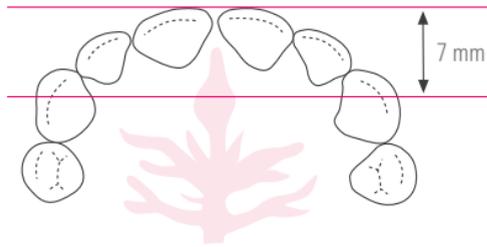
A natural anterior tooth setup is achieved with the following features:

- The central incisors are upright.
- The cervical portion of the lateral incisors is inclined distally.
- The canines are tendentially upright, with the tooth neck inclined vestibularly.
- The incisal edges of the upper central incisors run parallel to and are situated approximately +/- 1-2 mm above the occlusal plane.
- The incisal edges of the upper lateral incisors run parallel to the occlusal plane and do not touch it.
- The tips of the canines are situated approximately on the occlusal plane.

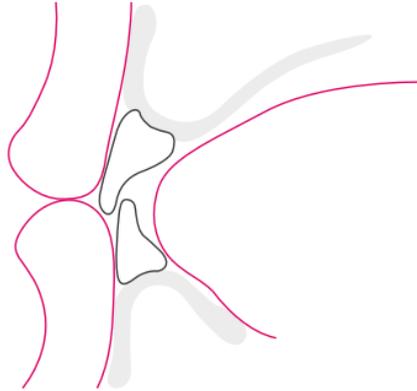
The teeth are mostly positioned according to the atrophy of the upper jaw in front of the alveolar ridge – with their labial surfaces above the vestibule.



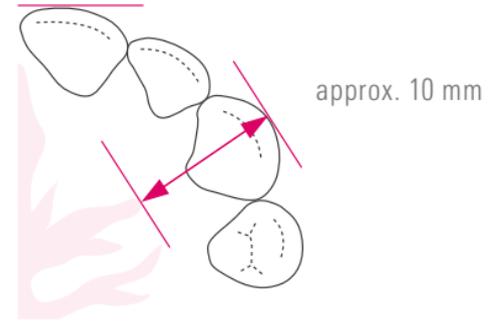
Setup of the upper anteriors.



In a normal bite, the upper anterior teeth are about 7 mm from the center of the incisive papilla.

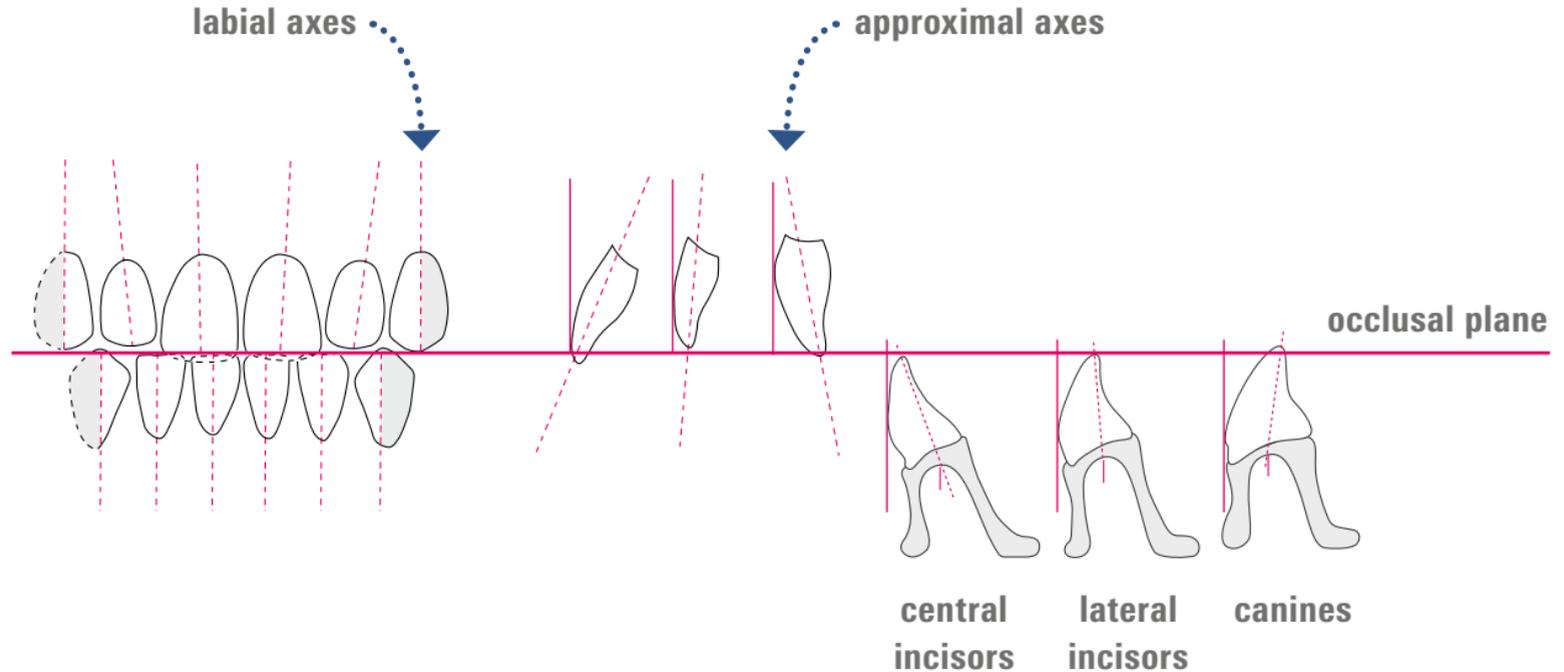


The labial surfaces of the upper anteriors provide support to the upper lip. The incisal edges of the central incisors ensure a harmonious lip contour.

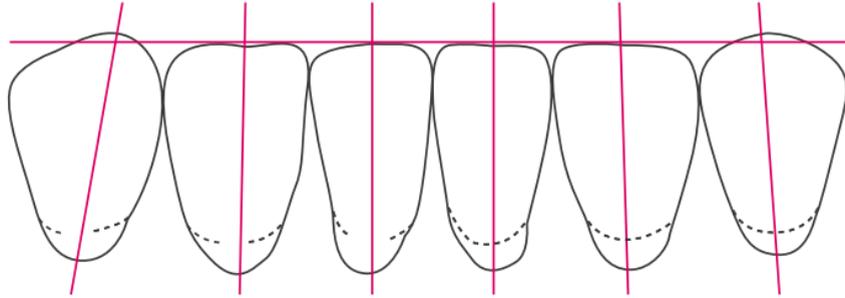


The tips of the two canines are positioned at a distance of approx. 10 mm from the end of the first pair of palatal folds.

Setup of anterior teeth in relation to the occlusal plane.



Setup of the lower anteriors.



Characteristics for the setup of the lower anterior teeth:

- The incisal edges of the lower incisors are level with, and run parallel to, the occlusal plane.
- The tips of the canines are situated slightly above the occlusal plane.

From the labial view:

- The central incisors are straight and upright.
- The lateral incisors show a slight mesial inclination.
- The canines are straight or show a slight mesial inclination.
- The distal facet of the canine points in the direction of the molars.

Rule of thumb for tooth neck positions

When positioning the tooth necks on the alveolar ridge, the following rule of thumb can be applied: the central incisors are on, the lateral incisors at and the canines are outside of the lower alveolar ridge path.

For all prosthetic concepts through multi-functional chewing surface design.

VITAPAN® LINGOFORM – posterior tooth

Premium posterior teeth combine function and esthetics in an outstanding way.

- **Truly functional.**

Functionally designed occlusal areas promote optimal static alignment of the prosthesis, protect the tooth substance and offer a high level of comfort.

- **Truly simple.**

VITAPAN LINGOFORM is suitable for all setup concepts, including lingualized occlusion. The VITA Easy Centric principle facilitates a simple and intuitive setup with automatic centering.

- **Truly esthetic.**

The multiple layers and nature-identical surface morphology create vibrant and harmonious light reflexive properties.



The significance of lingualized occlusion in dental prosthetics.

The main characteristic of lingualized occlusion is the optimization of the positional stability of a dental prosthesis.

In both static and dynamic occlusion, it is important to ensure that all occlusal forces in close occlusal contact are aligned towards the center. When setting up the teeth, the focus is on the central palatal contact relationship.



The significance of lingualized occlusion in dental prosthetics.

Positive static and medical outcomes:

- **Prosthetic restorations for patients** are significantly improved when faced with difficult statics, or when there is a strong divergence between conditions in the upper and lower jaw. This means that in the case of larger lower, and smaller upper dental arches – which are often solved by setting up a crossbite – the teeth can be set up further buccally without compromising the stability of the prosthesis. This can also help avoid the buildup of pressure areas.
- Thanks to the **axial direction of force**, this concept prevents **excessive strain** on the rest area of the prosthesis, which is beneficial, particularly in the case of implant prosthetics. This is mainly due to the fact that this offers protection, to a great extent, against horizontal shear forces.
- The greater accuracy in the positioning of the mastication elements in the **"neutral zone" (i.e., muscular balance)**, leads to better cheek contact of the teeth and noticeably more tongue space for the patient. This cheek contact prevents the formation of a food bolus in the vestibular area and helps horizontally stabilize the prosthesis.

The significance of lingualized occlusion in dental prosthetics.

For the patient, this means:

- More tongue space, resulting in a greater degree of comfort.
- Less biting of the cheek, through reduction of buccal contacts.
- Alleviates pressure areas.
- Small, regulatory checking movements (Dr. Hildebrandt) with slight disclusion are possible.

Benefits for the dental technician:

- Clear, unmistakable and reproducible contact relationships.
- Understandable and verifiable setup criteria.
- Time is saved by efficient and accurate setup procedures.



Image: Highfield Design, Lukas Wichnalek

Setup of the lower anteriors and the first premolar.



The lower incisors are aligned to the occlusal plane with the labial surfaces pointing in the direction of the upper anterior sulcus. The canines stand in their longitudinal axis at right angles to the occlusal plane and should be situated approximately one millimeter above the occlusal plane.



The setup of the first lower premolar is identical to the canine. As a result, it is aligned at right angles to the occlusal plane. The mesial area of the buccal facet is above the occlusal plane, as is the canine; the distobuccal area follows the line of the occlusal plane.

Checking the setup of the first lower premolar.



The mesio Buccal area is situated above the occlusal plane



The setup of the disto Buccal area follows the line of the occlusal plane



The lingual cusp tip is located in the area of the occlusal plane

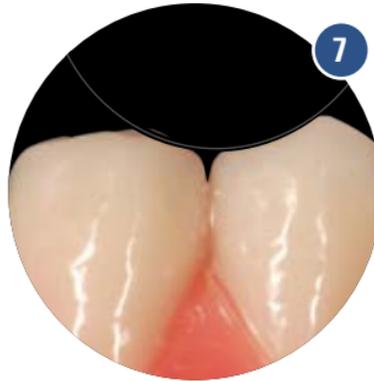
The tooth axis is aligned at right angles to the occlusal plane

Note: In order to achieve the optimal relationship between the contact points, the dominance of the lingual cusp of the lower first premolar was designed in a function-oriented manner. See also **Figs. 16, 21, 23.**

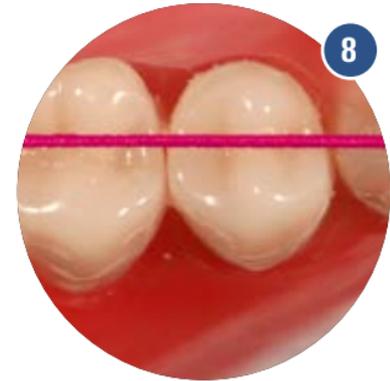
Setup of the second lower premolar.



The neck of the second lower premolar shows a slight distal inclination in comparison to the first premolar.



Mesially to the first premolar, a harmonious rounded contour should be established that facilitates appropriate functional setup of the first upper premolar. See also **Fig. 19**.



The lingual cusp is aligned to the occlusal plane. See also **Figs. 10, 13**. The setup follows an imaginary line, which runs from the canine distal facet, through the central fissures of the premolars and molars. See also **Fig. 11**.

Setup of the first lower molar. (**without** the setup of the second lower molar)



In line with the orientation of the second premolar, the first molar is raised distally, such that the distobuccal cusp is at the level of the canine and the first premolar, i.e., it is situated approx. 1 mm above the occlusal plane: **Fig. 9.**



The lingual cusps are aligned with the occlusal plane: **Fig. 10.** See also **Fig.13.**



The setup follows an imaginary line, which runs from the canine distal facet through the central fissures of the premolars and molars: **Fig.11.**

Setup of the lower posteriors.



Aids for checking the setup: In addition to checking using a rubber thread, markings on the lingual cusp tips of the lower VITAPAN LINGOFORM posteriors (**important: no contact points**) can be used to easily verify the correct gradient of the posterior setup, as well as the alignment of the posterior teeth, in terms of their uniform height with regard to the occlusal plane.

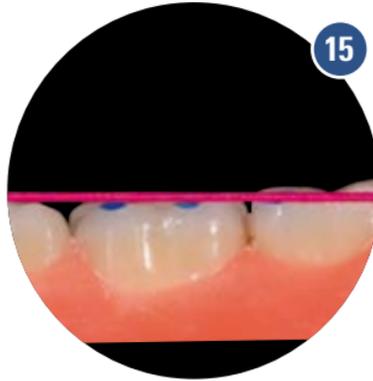


This **view clearly shows the cuspal progression** of the setup from lingual to buccal, as well as from buccal to lingual. It shows that all cusps up to the buccal cusp of the first premolar and the distal cusps of the first molar are aligned to the occlusal plane.

Setup of the first lower molar. (**with** the setup of the second lower molar)



In this case, continuing the trend of the second premolar, the first molar is set up flat (i.e., with its distobuccal cusp touching the occlusal plane).

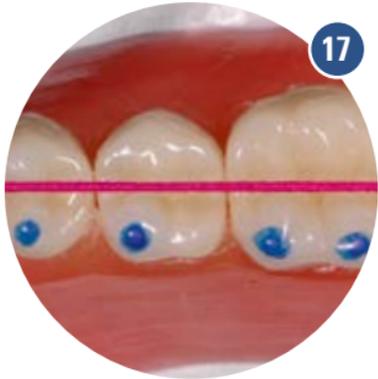


Also the lingual cusps are in contact with the occlusal plane.



The setup follows an imaginary line, which runs from the distal facet of the canine through the central fissures of the premolars and molars.

Setup of the lower posteriors.



With the help of markings on the lingual cusp tips of the lower VITAPAN LINGOFORM posterior teeth, in addition to checking with the rubber thread, the correct course of the posterior tooth setup can be easily checked.



This perspective shows the straight lingual progression of the cusps from mesial to distal.

Setup of the upper posteriors – first upper premolar.



The first upper premolar is positioned at a right angle to the occlusal plane, resulting in a tooth-to-tooth relationship with its antagonist. See also **Figs. 4, 7.**



On the buccal side, the first upper premolar is slightly open, and the first lower premolar has contact on the mesial marginal ridge and in the area of the mesiocentral fossa of the first upper premolar.



Palatally, the upper first premolar achieves secure contact in the central fossa of its lower antagonist to improve static occlusion.

First upper premolar: contact relationship.



The mutual contact relationship of the first premolars is clear, unmistakable and always reproducible:

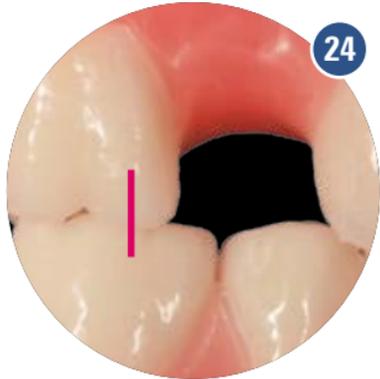
The mesial marginal ridge of the palatal cusp in the upper jaw forms a clear mutual tripodization (three-point support) with the distolingual fossa of the lower premolar.



It is important to ensure sufficient buccal freedom.

This is required in order to benefit from the free space in the molar area. See also Fig. 20.

Setup of the first upper molar.



With a reliable and specific setup pattern of the teeth (highest number of reference points), **it is advantageous to set up the first molar before the second premolar.** For this purpose, the first molar, like the premolars, is set up in a tooth-to-tooth relationship.



Besides the centric palatal contact relationship, care should also be taken to ensure **sufficient free space buccally.** A space of between 1 and 2 mm is generally required. See also **Figs. 26, 27, 28.**

Setup of the second upper premolars.



The second upper premolar is then set up in the remaining space. From a functional viewpoint, it is also in a tooth-to-tooth relationship and approximately **at a right angle to its antagonist** in the lower jaw.



The second upper premolar is also set up with buccal freedom. According to its size, this is positioned between the first premolar and the first molar. The goal is to achieve a **harmonious transition** in which the free space is increased successively from the first premolar to the last molar.



Contact relationships of the upper to the lower posteriors.



The contact relationship of the **VITAPAN LINGOFORM posterior tooth:**

Fig. 29: The focus is mainly on the palatal support.

Fig. 30: The palatal cusps bite precisely into the fossae of the mandibular teeth.



This setup promotes restoration stability, improves statics and expands the tongue space. The forces on the mucous membrane and bones underneath are minimized.



This is generally **beneficial in protecting the denture bed** and can be an important factor regarding the survival rate of placed implants.

Fig. 31: The palatal view shows ideal intercuspation.

The completed restoration.



The mesial, buccal and palatal view of the completed setup shows the connection between clear, reproducible function and **esthetic harmony**.



The **very good (highly precise) palatal contact relationship** is due to the consistent application of the principles of lingual occlusion, according to Prof. Dr. Gerber. At the same time, the requirements regarding the functional alignment of the teeth are met in a statically perfect setup.

Special tooth moulds.

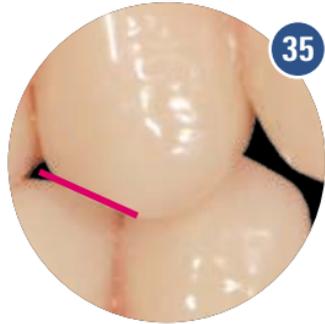


The first upper premolar in particular, plays a key part in complete denture prosthetics. In addition to centric palatal support, it can also provide guidance when the lower mandible slides into the centric position, just as in natural dentition.



To make this guidance more active or more passive, the first upper premolar can be exchanged, quadrant-wise, prior to setting up. No change is made to the setup of the lower teeth. The centric contact relationship of the premolars remains virtually unchanged.

Exchange 14/24.

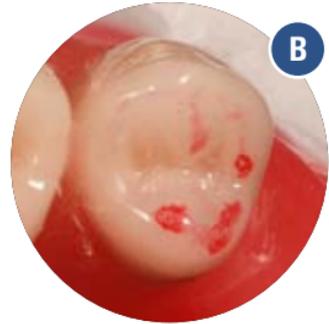
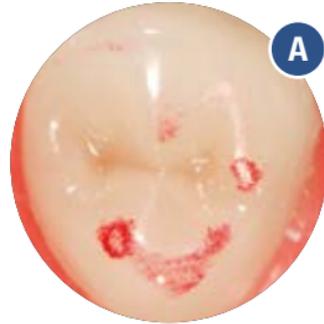


Tooth 14 straight from the teeth set



Exchanged tooth 24

As illustrated, a further essential difference can be seen if tooth 14 is exchanged with tooth 24. **Fig. 35:** The occlusal contact surface on the first premolar is clearly recognizable from the distobuccal view. **Fig. 36:** When tooth 14 is replaced by tooth 24, this occlusal contact surface changes from distal to mesial. This increases the free space buccally around the centric position and strengthens the palatal contact relationship.



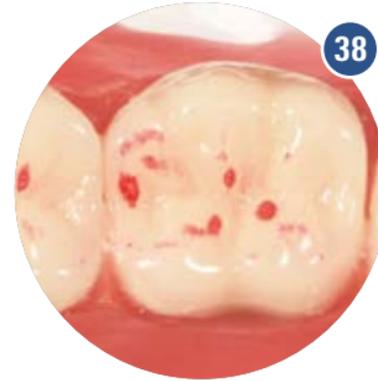
This makes **virtually no difference** to the alignment of the tooth axis or the tooth-to-tooth relationship.

Figs. A and B: The appearance of the contact relationship remains identical in its arrangement, despite the exchange of a tooth.

Safely reaching the contact points.



Defined centric occlusion with stable tripodization of the molars in the mesial, central and distal area of the lower fossa, highlights the multifunctionality of VITAPAN LINGOFORM teeth.



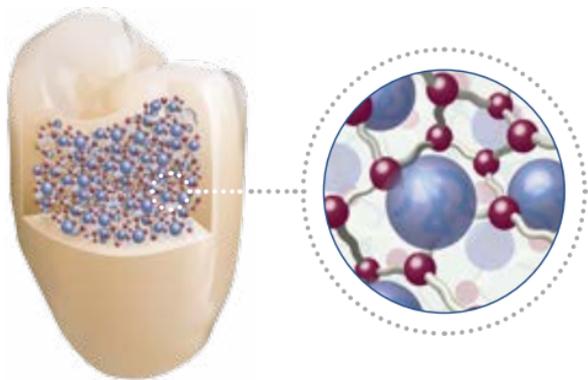
In the case of a mesial shift, the tripodic function remains fully intact - this plays a decisive part in both the combined technique and in implant prosthetics.



Finished restoration with
VITAPAN EXCELL® and
VITAPAN® LINGOFORM.



VITAPAN EXCELL® – Truly impressive.



Schematic structure of MRP composite; Source VITA R&D



PMMA:
Proven for decades:
polymethylmethacrylate.



Silanated filler material
The SiO₂-filler improves
the mechanical
properties.

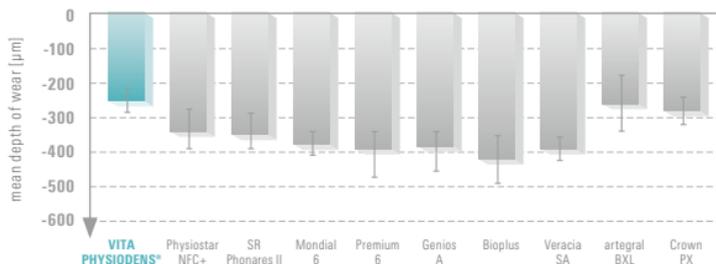


Cross-linked matrix
without MMA
The crosslinking ensure a
good bond between all
material components.

- VITA premium denture teeth are developed and produced in Germany, according to the highest quality standards.
- With VITAPAN EXCELL and VITAPAN LINGOFORM, the proven MRP composite (microfiller reinforced polymer matrix) ensures reliable grinding and high abrasion-resistance.
- The special pressing process ensures that the three layers of enamel, dentin and neck polymerize together uniformly and tightly at the same time: No flaking or chipping of the layers.

Truly proven

Wear study



Source: University of Regensburg, Germany, Prof. Dr. M. Rosentritt, Test Report No. 280_2, Report 11/15 ([2] cf. 14. References)

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We would like to thank...

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We are happy to help.

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CE 0124: VITAPAN EXCELL®, VITAPAN® LINGOFORM



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References

Internal studies, VITA R&D:

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Detailed test data

See technical and scientific documentation

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