

1. Material-related characteristics

Chemical composition [wt.%]

	Natural	White	Dentine	Gingiva
Polyether ether ketone	≥ 99.99	≥ 80	≥ 80	> 90
Titanium dioxide	-	< 20	< 20	< 5
further additives	< 0.01	< 0.1	< 1	< 1

Physical specifications

Flexural strength	[ISO 20795-1]	[MPa]	≥ 155
Flexural E modulus	[ISO 20795-1]	[GPa]	≥ 3.8
Water absorption	[ISO 20795-1]	[µg/mm ³]	0.0
Solubility	[ISO 20795-1]	[µg/mm ³]	0.0
Density	[ISO 1183]	[g/cm ³]	1.5
Softening temperature	[ISO 11357]	[°C]	> 300

2. Explanation of symbols



Manufacturer



Date of manufacture



Consult instructions for use



Use by



Batch code



Catalogue No.



Store dry



Protect from direct sunlight

3. Instruction Manual

3.1. Indications

Zfx™ PEEK are natural (without color additives) or additionally colored dental milling blanks out of PEEK for the manufacture of fixed or removable dental framework constructions for long-term use.

3.2. Contraindications

- × intolerance to the contained components
- × no more than two adjacent pontics
- × too little connector cross section

3.3. Safety information

Please pay attention to the information in the safety data sheet in its current version. Avoid the inhalation of dust particles during processing. Wear protection gloves, safety glasses and a dust mask to prevent irritations of eyes, skin and respiratory system.

3.4. Handling and storage

Only use clean, defect-free material out of undamaged packaging and make sure that the blanks are always stored in their original container in a dry and cool place, protected from light. Avoid contact with fluids.

3.5. Processing

Handling this medical device should only be allowed to trained staff. Following construction parameters need to be considered:

		Single crown	3-unit bridge
Anterior	Wall thickness [mm]	0.6	0.7
	Occlusal thickness [mm]	1.0 - 1.2	1.0 - 1.2
	Connector cross section [mm ²]	-	> 10
Posterior	Wall thickness [mm]	0.7	0.7
	Occlusal thickness [mm]	1.2 - 1.4	1.2 - 1.4
	Connector cross section [mm ²]	-	> 16

The given requirements for thickness and span need to be observed.

In general all constructions should be designed in a way to enable the compensation and the transfer of the mastication forces to the abutment teeth.

Design for vestibular veneering:

- × wraparound technique is required
- × where applicable produce retentions
- × where applicable construct thin, labial / circularly shoulder margins
- × no occlusal contacts in the transition area of framework and veneering

As most other plastics PEEK exhibit an X-ray absorption close to human tissue. Therefore, the material lack contrast and is invisible in X-ray examinations.

3.6. Milling and further processing



Only use one-edged milling tools in the milling machine or wet grinding procedures!

Further processing:

Tungsten carbide burs like the one you use for soft reline materials are suitable for rough adaption. For the finalization common cross-toothed millers can be used. Polishing should be carried out with regard to a low contact pressure, otherwise the resulting heat might lead to smearing or melting.

3.7. Vestibular veneering

Please pay attention to the instructions of the manufacturer of the veneering resin!

Conditioning:

- × sandblasting of the veneering surface (Al₂O₃, 110 µm, 2,5 bar)
- × clean the framework with compressed air
- × apply a primer, suitable for the veneering resin

Veneering:

Elements made of Zfx™ PEEK can be individualized with all common veneering and composite resins that have a comparable elastic modulus. Veneering resins with a different e-modulus might lead to gap formation in removable dentures.

3.8. Cleaning

- × ultrasonic bath (max. 40 °C) with mild cleaning agent
- × process of sterilisation in an autoclave up to 121 °C

Do not use the following methods for cleaning:

- × steam blasting
- × organic solvents and acids (e.g. acetone, hydrochloric acid)
- × highly concentrated alcohols
- × chemical denture cleaners
- × abrasive cleaning agents

3.9. Mounting

Bonding extra-orally:

Preparation of frame according to point 7 "Conditioning", choose primer-suitable for the adhesive. Only use special adhesives, adapted to the material you want to combine with the PEEK. Pay attention to the instructions of the adhesive manufacturer.

Cementation:

For temporary cementations temporary cements and for permanent cementations self-adhesive glass ionomer cements are recommended.

3.10. Disposal

Remains of PEEK blanks can be disposed of in the regular household garbage.

3.11. Information on Manufacturer



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We reserve the right to make changes because of the continuous development of our products. Please find the current version of the instruction manual on our website:

www.zfx-dental.com

