Case Study

Dental Splints

W2P

Dental Splints (vertical position)

Application: Abrasions

Dental splints are orthodontic devices designed to address dental problems such as bruxism. The splints protect the teeth from further abrasions. Moreover, atypical bite conditions and craniomandibular dysfunctions are indications for dental splints.

Requirements

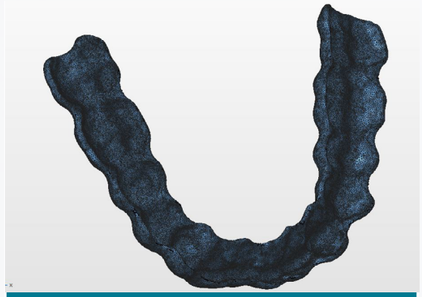
Material: Medical device class IIa, high mechanical strength
Prodution Method: High precision, exact fit, quick and easy production

Recommended Material

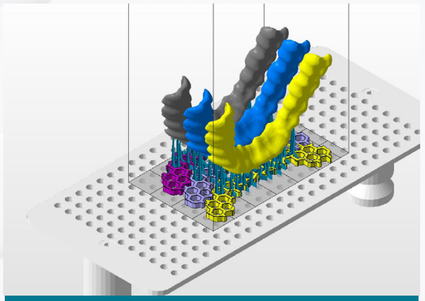
SolFlex Splint

Digital Workflow

Preparation: Prior to the printing process, the splints have to be prepared for printing.
A 3D printing software helps to place the model on the building platform. Also, support structures have to be added.



3D Model



Support Structures

Printing Process: In the next step, the prepared files are being processed by the printer.
In this specific case the splints were 3D printed under the following conditions:

3D printer:	SolFlex 150 PLUS
Layer thickness:	100 µm
Printing time:	55 min.
Resin:	SolFlex Splint
Number of printed objects:	3
Resin use:	10.1 g
Total resin use (incl. support structures):	13.1 g
Total resin costs:	€ 4.19

Depending on the size of the 3D printer‘s building platform, a different number of dental splints can be 3D printed.

Number of splints that fit on the building platform:

SolFlex 650:	18
SolFlex 363:	12
SolFlex 350:	9
SolFlex 170:	6
SolFlex 150:	3

Post-Processing: The 3D printed splints are post-cured in a UV light box, cleaned and the support structures have to be removed. For a finish, the splints are polished to get a glossy surface.

Finished Object

Dental Splints (horizontal position)

Application: Abrasions

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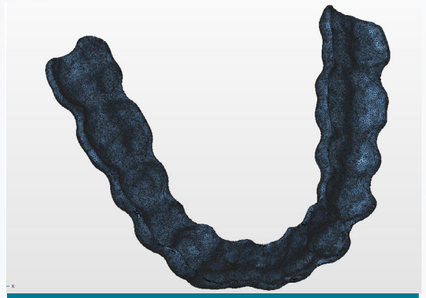
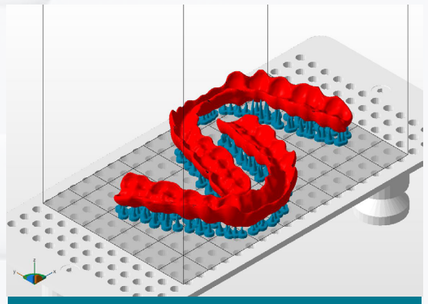


3D Model



Support Structures

Printing Process: In the next step, the prepared files are being processed by the printer.
In this specific case the splints were 3D printed under the following conditions:

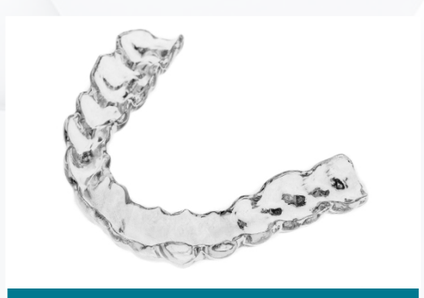
3D printer:	SolFlex 150 PLUS
Layer thickness:	100 µm
Printing time:	55 min.
Resin:	SolFlex Splint
Number of printes objects:	2
Resin use:	6.2 g
Total resin use (incl. support structures):	6.9 g
Total resin costs:	€ 2.21

Depending on the size of the 3D printer's building platform, a different number of dental splints can be 3D printed.

Number of splints that fit on the building platform:

SolFlex 650:	6
SolFlex 363:	4
SolFlex 350:	3
SolFlex 170:	2
SolFlex 150:	1

Post-Processing: The 3D printed splints are post-cured in a UV light box, cleaned and the support structures have to be removed. For a finish, the splints are polished to get a glossy surface.



Finished Object