

# F Series Flexible Resin Instruction

## 1. The Product Description

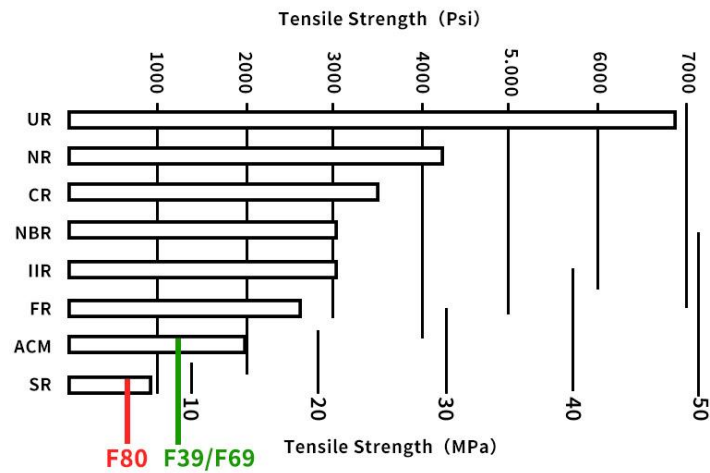
F39/F39T/F69 refer to white,transparent and black (the details of the printed piece are clear and sharp) flexible resin respectively. This resin is designed to provide prints with outstanding tear strength and flexibility. It finds wide application in figure toys such as dolls' vests, capes, weapons, and footwear, tires, shoe samples, seals, buffers, gaskets, transmission belts, and various flexible prototype production. Additionally, mixing F69 with other resins can enhance the non-brittleness of printed parts.

F80 is a soft and elastic resin, you can choose between black and pink colors for your printing needs. The pink option is particularly well-suited for creating dental gingival models, while the black option is suitable for making toy tires, shoe samples, seals, buffers, and various elastic prototypes. F80 resin can retain its softness even in colder temperatures. It is not recommended for novice users due to its high viscosity, which can pose a printing challenge.

The products have passed the inspection and obtained ROHS and REACH certificates.

## 2. Material Properties Data

	<b>METHOD</b>	<b>F39/F69 DATA</b>	<b>F80 DATA</b>
<b>Shore Hardness</b>	ASTM:D2240-05	60~75A	50-60A
<b>Tear strength</b>	ASMT:D624-98	47.2KN/m	9.75KN/m
<b>Tensile Strength</b>	ASTM: D412-06	7.9MPa	3.8MPa
<b>Elongation at Break</b>	ASTM: D412-06	255.10%	159%
<b>Viscosity (25℃)</b>	ASTM:D4212-10	1250mpa.s	2360mpa.s

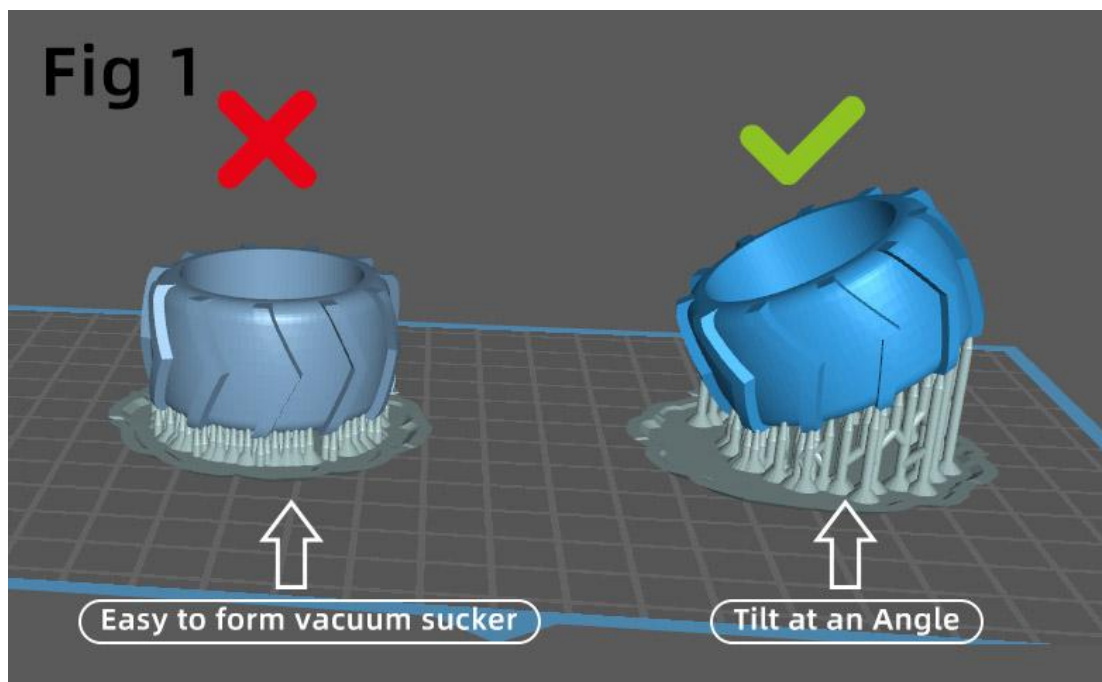


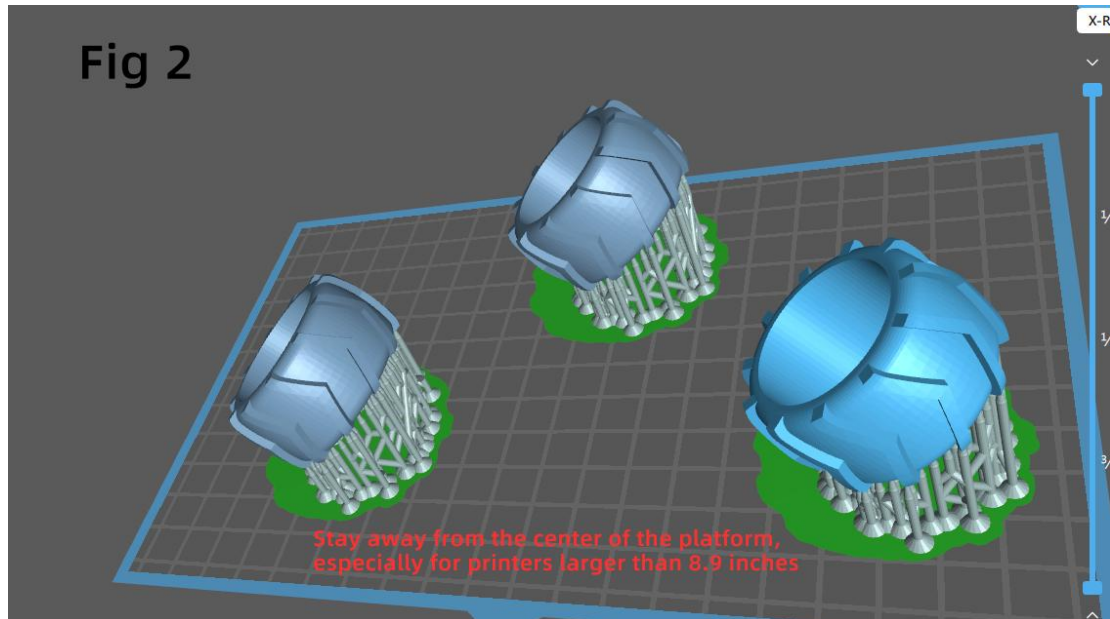
Comparison of tensile strength of various rubber materials at 25°C

### 3. Printing

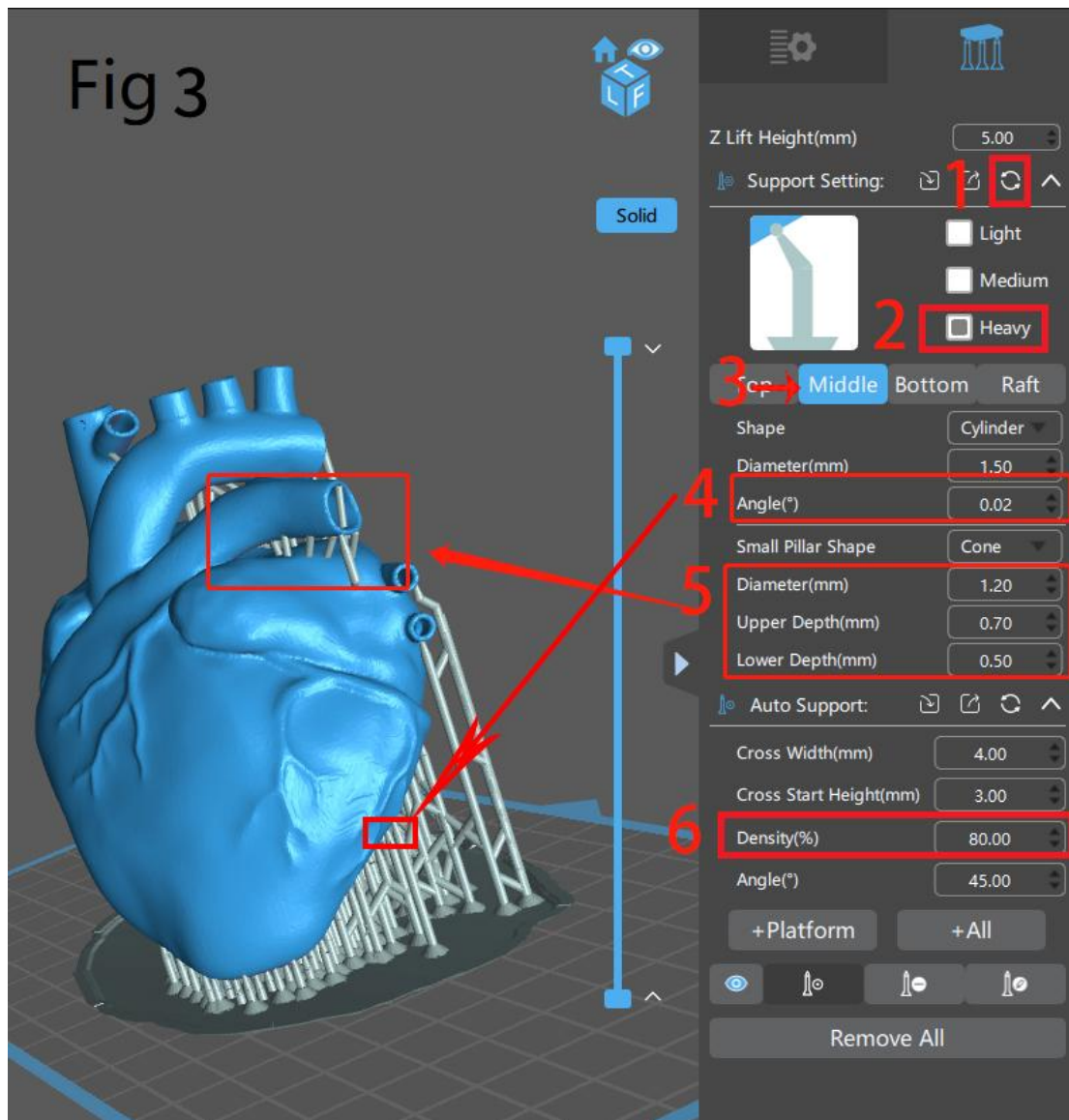
Because the soft resin prints are easy to be stretched and deformed when they are separated from the FEP film during printing. Please following below steps in order to improve the success rate of printing.

I. **Model Location:** Please don't place the model in the middle of the build plate. Because F39/F39T/F69/F80 series resin is soft resin with high viscosity.(Fig2).The model should be placed at a certain Angle to avoid a vacuum sucker. (Fig1)





II. **Supports Settings:** Please use heavy and massive support (Density: 80%-95%), vertical supports (Angle: 0°). The supports in the middle of the model also need to be thick. (Figure 3). A thin raft or none raft are much better considering easy remove the prints from the build plate, because F series resin are very tightly stick to the build plate.



III. **Printing Settings:** You can download the resin printing parameters from RESIONE's official website. The detailed operations are as follows: RESIONE's official website —>Support —>Settings

The slow Lifting Speed is required to ensure that the model will not stretched and deformed; High Lifting Distance ensures that the printing piece is completely separated from the FEP film; Long Rest Time After Retract ensures the resin fully backflow.

#### 4. Cleaning and Post-curing

**Cleaning:** Cleaning with the ethanol (concentration  $\geq 95\%$ ), or IPA. It is not recommended to brush the prints with a toothbrush. Please use compressed air to dry the prints after cleaning it. It is a normal phenomenon if there are a little sticky hand feeling. (Cleaning and soaking time should not exceed 3min)

**Post-curing:** If you use a post-curing box with a power of 40W, our recommended post-curing time is about 10-20mins (Adjust the post-curing time according to the power of the post-curing

box, the greater the power, the shorter the time). So you can get a dry surface print.



RESIONE Resin	F39/F39T	F80	F69
<b>Cleaning time</b>	≤3min	≤3min	≤3min
<b>Cleaning solvent</b>	95% Ethanol or IPA	95% Ethanol or IPA	95% Ethanol or IPA
<b>Post-curing light source</b>	385-405nm UV (40W)	385-405nm UV (40W)	385-405nm UV (40W)
<b>Post-curing time</b>	10-20min	10-20min	10-20min

**Attentions:**

- a. Too long post-curing time will make the resin prints easy to warping, hard and brittle.
- b. The resin prints will be fragile after post-curing. It is not recommended to apply force to the prints immediately. Just need to wait for a while until the internal stress of the prints is completely released.

**5.Use and Save**

- a. Add the needed resin liquid when printing. To avoid moisture absorption of resin, please filter the remaining resin as soon as possible and pour it into a new light-proof container for sealing and preservation after printing.
- b. The prints can maintain normal performance at 25-35°C, and they will become hard and brittle at low ambient temperature like traditional plastics. F series of soft resin prints show more obvious, F39/F69/F39T printings will become harden and lose flexibility if the temperatures below 20°C. The lower the temperature, the harder the prints become.  
The F80 prints retains good elasticity at low temperatures, but feels harder than it does at normal temperature.
- c. In order to make the flexible resin prints maintain good flexibility for a long time. It is recommends that save the prints in sealed bags or apply a layer of soft waterproof coating.

For more questions, please contact [support@godsaid3d.com](mailto:support@godsaid3d.com)