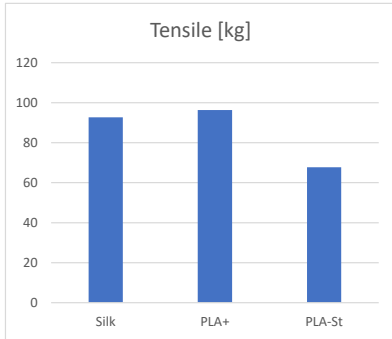


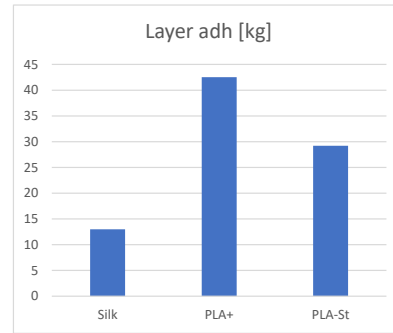
e-Sun PLA filaments:

Average			
Tensile	test 1	test 2	Tensile [kg]
Silk	95.2	90.2	<b>92.7</b>
PLA+	94.6	98	<b>96.3</b>
PLA-St	67.2	68.2	<b>67.7</b>



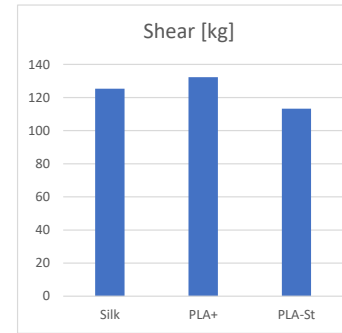
Minimal area: 4x4 mm

Average			
Layer adhesion	test 1	test 2	Layer adh [kg]
Silk	10.2	15.8	<b>13</b>
PLA+	36	49	<b>42.5</b>
PLA-St	23.6	34.8	<b>29.2</b>



Minimal area: 4x4 mm

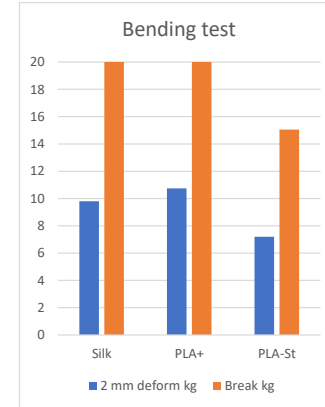
Average			
Shear	test 1	test 2	Shear [kg]
Silk	129	121.6	<b>125.3</b>
PLA+	131	133.6	<b>132.3</b>
PLA-St	114	112.6	<b>113.3</b>



Double shear area  
2 x Ø5 mm

Bending	2 mm deform kg	Break kg
Silk	9.8	22.25
PLA+	10.75	22
PLA-St	7.2	15.05

\*none of them broke, just deform

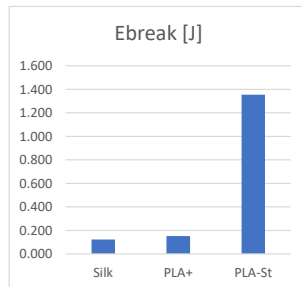


\*Based is ISO 178  
distance between supports: 50 mm  
Test specimen 80x10x4 mm

Impact test  
based on ISO 180 (IZOD test specimen)

Tensile	dist from 0 [mm]	E <sub>break</sub> [J]
Silk	25	0.123
PLA+	31	0.152
PLA-St	276	1.354

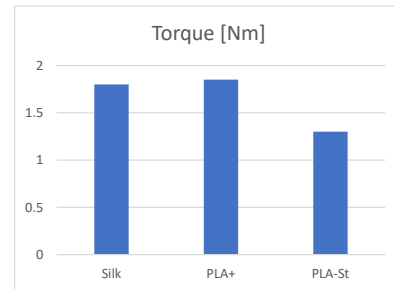
$$E_{br} = m * g * H = 0.5 \text{ kg} * 9.81 \text{ m/s}^2 * H \text{ [m]}$$



Test specimen: 80x10x4, notch 2mm deep, ISO 180

Torque (twist) test

Torque	test 1	test 2	Torque [Nm]	twists
Silk	1.8	1.8	<b>1.8</b>	360°
PLA+	1.9	1.8	<b>1.85</b>	90°
PLA-St	1.2	1.4	<b>1.3</b>	135°



Test specimen: D6 mm, 30 mm between two sides (+holder weights)

Temperature test, first movement at:

Temp	°C
Silk	50
PLA+	50
PLA-St	50

eSUN PLA FILAMENTS  
MyTechFun, 2021-05-08